

# Series A Heavy Duty

CAT.AHD03

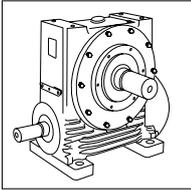


**TEXTRON** POWER TRANSMISSION

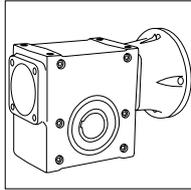
# PRODUCTS IN THE RANGE

0205

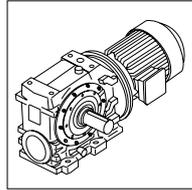
Serving an entire spectrum of mechanical drive applications from food, energy, mining and metal; to automotive, aerospace and marine propulsion, We are here to make a positive difference to the supply of drive solutions.



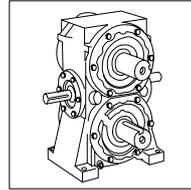
**Series A**  
Worm gear units and geared motors in single & double reduction types



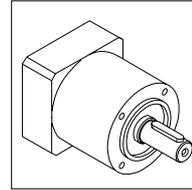
**Series B**  
Conax helicoidal gear geometry right angle gearmotors and reducers



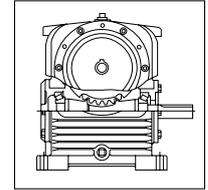
**Series C**  
Right angle drive helical worm geared motors & reducers



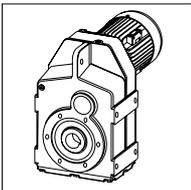
**Series D**  
Dual gears on parallel output shafts



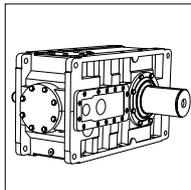
**Series E**  
Economical planetary servo gearboxes



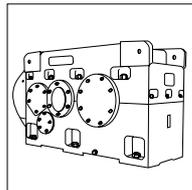
**Extruder Drive**  
Rugged duty reducer takes high screw pressure



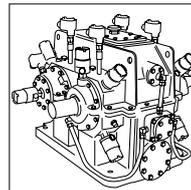
**Series F**  
Parallel helical shaft mounted geared motors & reducers



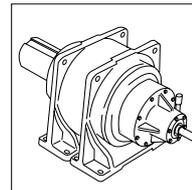
**Series G**  
Helical parallel shaft & bevel helical right angle drive gear units



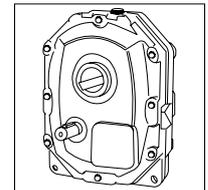
**Series H**  
Large helical parallel shaft & bevel helical right angle drive units



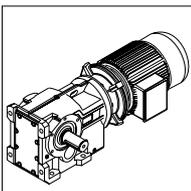
**Highspeed**  
Helical parallel shaft high speed units



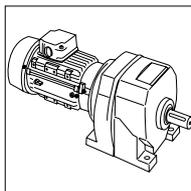
**HTP**  
High torque planetary gear units



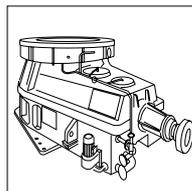
**Series J**  
Shaft mounted helical speed reducers



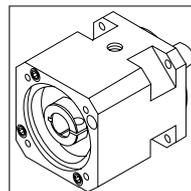
**Series K**  
Right angle helical bevel helical geared motors & reducers



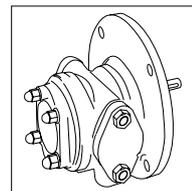
**Series M**  
In-line helical geared motors & reducers



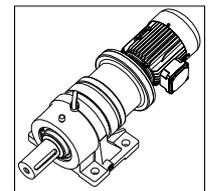
**Mill Drives**  
Bevel planetary vertical mill drives



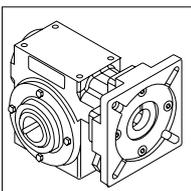
**Series P**  
Precision planetary servo gearboxes



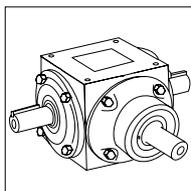
**Pumps**  
Double helical gear pumps



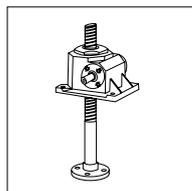
**Series Q**  
In-line planetary geared motors & reducers



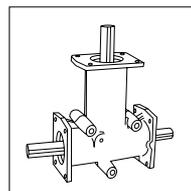
**Model RG**  
Right angle gearhead in two precision levels



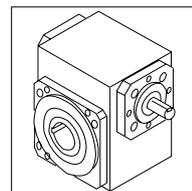
**Series R**  
Right angle spiral bevel gear unit



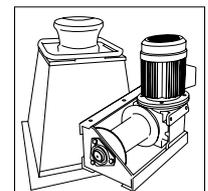
**Series S**  
Screwjack worm gear units



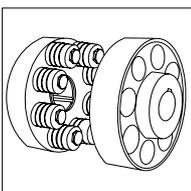
**Series T**  
Right angle straight bevel gear unit



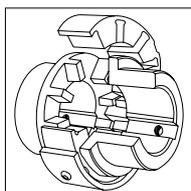
**Series W**  
Precision right angle servo gearboxes



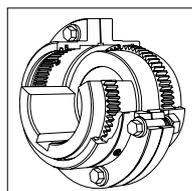
**Winches & Capstans**  
Custom engineered solutions



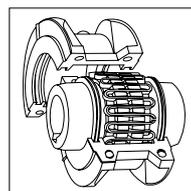
**Series X Cone Ring**  
Pin and bush elastomer coupling



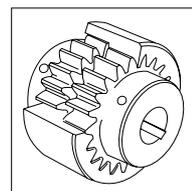
**Series X Flexiwrap**  
Double flexing elastomer coupling



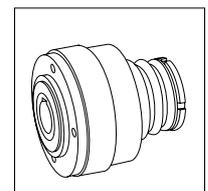
**Series X Gear**  
Torsionally rigid, high torque coupling



**Series X Grid**  
Double flexing steel grid coupling



**Series X Nylicon**  
Gear coupling with nylon sleeve



**Series X Torque Limiter**  
Overload protection device

We can create custom engineered transmission solutions of any size and configuration.

# SERIES A

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9701

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# SERIES A

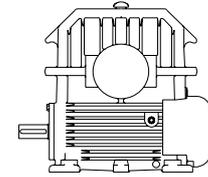
## GENERAL DESCRIPTION

9611

### Single Reduction Units (worm)

This range is offered in 3 basic unit types. Under-driven worm, over-driven worm and vertically mounted with output shaft. The units provide power capacity up to 839 kW in 6 sizes from size 10 to size 24 with worm gear centres from 254mm to 609mm. All are offered with a choice of 14 standard ratios from 5:1 to 70:1. Motorised versions of all units are also available.

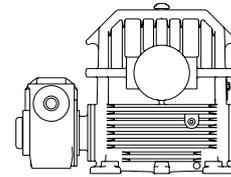
All units are fitted with high capacity taper roller bearings for generous overhung loads, position action oil seals, oil level sight glass and drain holes. Flange mounted units with vertical downshaft have drywells fitted as standard to eliminate a head of oil on the low speed shaft seal and prevent oil leakage. Upper and lower speed shaft bearings are grease lubricated when drywells are fitted. All units can be supplied with holdbacks. Shaft extensions can be supplied with metric or inch dimensions.



Single Reduction Units (worm)

### Double Reduction Units (worm/worm)

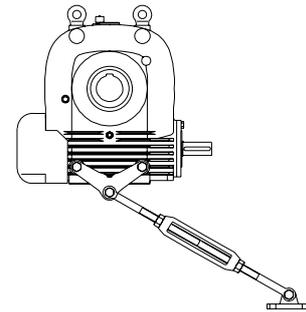
Double reduction worm units are constructed using two single reduction worm gear units connected together. All options of unit type and variant are available in double reduction with standard ratios extended to 4,200:1.



Double Reduction Units (worm/worm)

### Shaft Mounted Single Reduction Worm Gear Units

Shaft mounted units can be mounted directly on to the driven shaft dispensing with connecting couplings and baseplates along with alignment of the unit and motor. Motorised units are available. Standard and special torque arms are available on request.



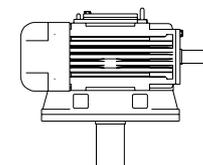
Shaft Mounted Unit with Torque Arm

### Single Reduction Stirrer Units

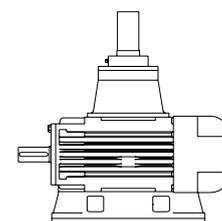
Stirrer units are offered in standard and heavy duty versions. The heavy duty version incorporating an extended bearing housing to accommodate a larger lower bearing and increased shaft size thus adding extra unit capacity to absorb higher shaft and bearing loads imposed during stirrer applications. Standard features also include top motor mount plate and brackets for V-belt drive, motor flange for direct drive. Drywells are fitted as standard to all units.

### Single Reduction Cooling Tower Units

Standard cooling tower fan drives are available in 5 sizes. Size 10 to size 20. The design includes an extended wheelshaft and housing with the wheelshaft supported by standard taper roller bearings. Wheelshaft extensions are manufactured to suit customer requirements and fan hubs. Non standard ratios are available. Lubrication is entirely self contained. Gears and lower bearings dip in the oil bath. Oil is pumped to the top wheelshaft bearings by means of a built in mechanical oil pump. Two oilseals are fitted on both the wheelshaft and wormshaft and wheelshaft extensions incorporate a grease chamber. All exposed parts other than the shaft extensions are fitted with corrosion resistant paint. Units are supplied with BSP plugs fitted to oil filler drain and ventilator points suitable for connections to the outsides of the towers. If necessary David Brown Radicon can supply the necessary piping required by customers.



Heavy Duty Stirrer Unit



Cooling Tower Unit

*As improvements in design are being made continually this specification is not to be regarded as binding in detail and drawings and capacities are subject to alteration without notice. Certified drawings will be sent on request.*

# SERIES A

## UNIT DESIGNATIONS

9810

EXAMPLES

|    |   |    |     |     |   |    |
|----|---|----|-----|-----|---|----|
| N  | U |    | 10" | 10  | - | L  |
| CN | O |    | 14" | 20  | - | R  |
| CN | V | S  | 10" | 30  | - |    |
| CN | U | DM | 20" | 150 | - | LR |

**TYPE** \_\_\_\_\_

- CN - METRIC SHAFT EXTENSIONS AND KEYWAYS
- N - IMPERIAL SHAFT EXTENSIONS AND KEYWAYS
- A - AMERICAN INCH SHAFT EXTENSIONS AND KEYWAYS

**MOUNTING POSITION** \_\_\_\_\_

- U - UNDERDRIVEN
- O - OVERDRIVEN
- V - VERTICAL OUTPUT SHAFT

**VERSION** \_\_\_\_\_

- S - SHAFT MOUNT ( STATE IF TORQUE ARM IS REQUIRED )
- D - DOUBLE REDUCTION ( WORM/WORM )
- M - MOTORIZED FITTED WITH FLANGE ADAPTER FOR UNITS MOUNTING POSITION V
- HDST - HEAVY DUTY STIRRER UNIT
- CT - COOLING TOWER UNIT

**UNIT SIZE (centres)** \_\_\_\_\_

- 10 ( 254.0 mm 10" )
- 12 ( 304.8 mm 12" )
- 14 ( 355.6 mm 14" )
- 17 ( 431.8 mm 17" )
- 20 ( 508.0 mm 20" )
- 24 ( 609.6 mm 24" )

**RATIO** \_\_\_\_\_

SINGLE REDUCTION UNITS 5/1 THROUGH 70/1  
 DOUBLE REDUCTION WORM / WORM 75/1 THROUGH 4200/1  
 See Page 14 for exact ratios or use nominal ratings from selection tables

**SHAFTHANDING** \_\_\_\_\_

- R - RIGHT HAND
- L - LEFT HAND
- D - DOUBLE EXTENSION
- X - VERTICALLY UP
- Y - VERTICALLY DOWN

See Page 12 for illustrations of shaft handings and rotations

# SERIES A

## EXPLANATION & USE OF RATINGS & SERVICE FACTORS

9612

Gear unit selection is made by comparing actual loads with catalogue ratings. Catalogue ratings are based on a standard set of loading conditions, whereas actual load conditions vary according to type of application. Service Factors are therefore used to calculate an equivalent load to compare with catalogue ratings. i.e. Equivalent Load = Actual Load x Service Factor

Two types of Service Factor must be considered:- Mechanical Service Factor Fm and Thermal Service Factors Ft, Fp and Fd

### Mechanical ratings and service factor Fm

Mechanical ratings measure capacity in terms of life and/or strength, assuming 10 hr/day continuous running under uniform load conditions.

Catalogue ratings allow 100% overload at starting, braking or momentarily during operation up to 10 times per day.

The unit selected must therefore have a catalogue rating at least equal to half maximum overload.

Mechanical Service Factor Fm (Table 1) is used to modify the actual load according to daily operating time, and type of loading.

Load characteristics for a wide range of applications are detailed in Table 5 opposite, which are used in deciding the appropriate Service Factor Fm from Table 1.

If overloads can be calculated, or accurately assessed, actual loads should be used instead of Fm.

For units subject to frequent stop/start overloads in excess of 10 times per day, refer to David Brown Radicon.

For applications where high inertia loads are involved e.g. crane travel drives, slewing motion etc., unit selection should be referred to David Brown engineers.

### Thermal ratings and service factors

The Thermal ratings are a measure of the gear units ability to dissipate heat. If they are exceeded the lubricant may overheat and breakdown, resulting in gear failure.

Thermal factors are for units with fans fitted, un-fanned units to be referred to DB Radicon Applications department.

To select motorised units the reducer rating tables should be used, pages 17 - 59, referring to the relevant input speed equivalent to motor speed

Catalogue thermal limitations are based on the unit operating continuously in an environment with an ambient temperature equal to 20°C and in mounting position CNU. The thermal rating is affected by ambient temperature, duration of running per hour and mounting position. To account for these varying conditions, the service factors given in tables 2, 3 and 4 should be applied to the catalogue thermal ratings as follows:-

$$T_{\text{therm}} = T_t \times F_t \times F_p \times F_d$$

- Tt = Catalogue output torque thermal rating (Nm)
- Ttherm = Allowable output torque thermal rating (Nm)
- Ft = Service factor for ambient temperature (see Table 2)
- Fp = Service factor for different mounting positions (see Table 3)
- Fd = Thermal service factor for duration of running (see Table 4)

### Double Reduction Units

For double reduction units the factors given in tables 2, 3 and 4 apply. The input shaft speed referred to in table 4 should now be the input speed of the primary unit.

### General

When selecting units, use actual load required to be transmitted, not rating of prime mover. Wherever possible use required output torque (Nm).

Catalogue also gives input power rating (kW), being power required from mover allowing for gear unit efficiency. When units transmit less than rated output torque, required input power may be reduced pro-rata to decide capacity of prime mover.

Table 1. Mechanical service factor Fm

| Prime mover                                      | Duration of service-hrs per day | Load classification-driven machine |                |             |
|--|---------------------------------|------------------------------------|----------------|-------------|
|  |                                 | Uniform                            | Moderate Shock | Heavy Shock |
| Electric motor, steam turbine or hydraulic motor | Under 3                         | 0.80                               | 1.00           | 1.50        |
|  | 3 to 10                         | 1.00                               | 1.25           | 1.75        |
|  | Over 10                         | 1.25                               | 1.50           | 2.00        |
| Multi-cylinder internal combustion engine        | Under 3                         | 1.00                               | 1.25           | 1.75        |
|  | 3 to 10                         | 1.25                               | 1.50           | 2.00        |
|  | Over 10                         | 1.50                               | 1.75           | 2.25        |
| Single cylinder internal combustion engine       | Under 3                         | 1.25                               | 1.50           | 2.00        |
|  | 3 to 10                         | 1.50                               | 1.75           | 2.25        |
|  | Over 10                         | 1.75                               | 2.00           | 2.50        |

Table 2. Thermal service factor Ft

| Ambient temperature °C | -30  | -20  | -10  | 0    | 10   | 20  | 30   | 40   | 50   |
|------------------------|------|------|------|------|------|-----|------|------|------|
| Factor Ft              | 1.65 | 1.52 | 1.39 | 1.26 | 1.14 | 1.0 | 0.86 | 0.73 | 0.60 |

Table 3. Thermal service factor Fp (Single Reduction units)

| Output Speed (Rev / min) | Mounting Position |      |      |      |      |
|--------------------------|-------------------|------|------|------|------|
|                          | CNU               | CNV  | CNO  |      |      |
|                          |                   |      | 10   | 12   | 14   |
| 0 to 10                  | 1.00              | 0.90 | 1.00 | 0.97 | 0.84 |
| 12.5 & 15                | 1.00              | 0.90 | 0.97 | 0.89 | 0.76 |
| 20                       | 1.00              | 0.90 | 0.90 | 0.82 | 0.72 |
| 25 & 30                  | 1.00              | 0.90 | 0.82 | 0.75 | 0.68 |
| 40                       | 1.00              | 0.90 | 0.75 | 0.69 | 0.64 |
| 50                       | 1.00              | 0.90 | 0.69 | 0.63 | 0.59 |
| 60                       | 1.00              | 0.90 | 0.63 | 0.59 | 0.53 |
| >60                      | 1.00              | 0.90 | 0.58 | 0.52 | 0.48 |

Table 4. Thermal service factor Fd

| Input shaft speed (Rev/min) | Unit Size | % Running time per hour |          |          |          |          |      |
|-----------------------------|-----------|-------------------------|----------|----------|----------|----------|------|
|                             |           | >60                     | >50 - 60 | >40 - 50 | >30 - 40 | >20 - 30 | <20  |
| 250                         | 10 & 12   | 1.00                    | 1.39     | 1.61     | 1.77     | 2.04     | 2.43 |
|                             | 14 - 24   | 1.00                    | 1.37     | 1.54     | 1.72     | 1.96     | 2.33 |
| 480                         | 10 & 12   | 1.00                    | 1.34     | 1.50     | 1.66     | 1.88     | 2.21 |
|                             | 14 - 24   | 1.00                    | 1.31     | 1.45     | 1.59     | 1.79     | 2.10 |
| 725                         | 10 & 12   | 1.00                    | 1.29     | 1.41     | 1.55     | 1.72     | 2.02 |
|                             | 14 - 24   | 1.00                    | 1.26     | 1.37     | 1.49     | 1.65     | 1.92 |
| 960                         | 10 & 12   | 1.00                    | 1.25     | 1.36     | 1.47     | 1.63     | 1.89 |
|                             | 14 - 24   | 1.00                    | 1.22     | 1.31     | 1.40     | 1.54     | 1.77 |
| 1160                        | 10 & 12   | 1.00                    | 1.22     | 1.31     | 1.40     | 1.54     | 1.77 |
|                             | 14 - 24   | 1.00                    | 1.20     | 1.27     | 1.34     | 1.47     | 1.65 |
| 1450                        | 10 & 12   | 1.00                    | 1.20     | 1.27     | 1.34     | 1.47     | 1.65 |
|                             | 14 - 24   | 1.00                    | 1.16     | 1.20     | 1.27     | 1.37     | 1.51 |
| 1750                        | 10 & 12   | 1.00                    | 1.16     | 1.20     | 1.27     | 1.37     | 1.51 |
|                             | 14 - 24   | 1.00                    | 1.12     | 1.15     | 1.19     | 1.29     | 1.38 |
| 2900                        | 10 & 12   | 1.00                    | 1.03     | 1.04     | 1.05     | 1.07     | 1.09 |
|                             | 14 - 24   | 1.00                    | 1.02     | 1.02     | 1.02     | 1.03     | 1.04 |

# SERIES A

## LOAD CLASSIFICATION BY APPLICATIONS

9608

**Table 5**

U = Uniform load

M = Moderate shock load

H = Heavy shock load

† = Refer to David Brown

| Driven Machine                                | type of load | Driven Machine                                 | type of load | Driven Machine                        | type of load |
|---|--------------|--|--------------|---------------------------------------|--------------|
| <b>Agitators</b>                              |              | <b>Cranes</b>                                  |              | <b>log haul</b>                       | H            |
| pure liquids                                  | U            | main hoists                                    | U            | presses                               | M            |
| liquids and solids                            | M            | bridge travel                                  | †            | pulp machine reel                     | M            |
| liquids-variable density                      | M            | trolley travel                                 | †            | stock chest                           | M            |
| <b>Blowers</b>                                |              | <b>Crusher</b>                                 |              | suction roll                          | M            |
| centrifugal                                   | U            | ore  | H            | washers and thickeners                | M            |
| lobe  | M            | stone  | H            | winders                               | M            |
| vane  | U            | sugar  | H            | <b>Printing presses</b>               | †            |
| <b>Brewing and distilling</b>                 |              | <b>Dredges</b>                                 |              | <b>Pullers</b>                        |              |
| bottling machinery                            | U            | cable reels                                    | M            | barge haul                            | H            |
| brew kettles-continuous duty                  | U            | conveyors                                      | M            | <b>Pumps</b>                          |              |
| cookers-continuous duty                       | U            | cutter head drives                             | H            | centrifugal                           | U            |
| mash tubs-continuous duty                     | U            | jig drives                                     | H            | proportioning                         | M            |
| scale hopper-frequent starts                  | M            | manoeuvring winches                            | M            | reciprocating                         |              |
| <b>Can filling machines</b>                   | U            | pumps  | M            | single acting; 3 or more cylinders    | M            |
| <b>Cane knives</b>                            | M            | screen drive                                   | H            | double acting; 2 or more cylinders    | M            |
| <b>Car dumpers</b>                            | H            | stackers                                       | M            | single acting; 1 or 2 cylinders       | M            |
| <b>Car pullers</b>                            | M            | utility winches                                | M            | double acting; single cylinder        | †            |
| <b>Clarifiers</b>                             | U            | <b>Dry dock cranes</b>                         |              | rotary                                |              |
| <b>Classifiers</b>                            | M            | main hoist                                     | †            | gear type                             | U            |
| <b>Clay working machinery</b>                 |              | auxiliary hoist                                | †            | lobe, vane                            | U            |
| brick press                                   | H            | boom, luffing                                  | †            | <b>Rubber and plastics industries</b> |              |
| briquette machine                             | H            | rotating, swing or slew tracking, drive wheels | †            | crackers                              | H            |
| clay working machinery                        | M            | <b>Elevators</b>                               |              | laboratory equipment                  | M            |
| pug mill                                      | M            | bucket-uniform load                            | U            | mixed mills                           | H            |
| <b>Compressors</b>                            |              | bucket-heavy load                              | M            | refiners                              | M            |
| centrifugal                                   | U            | bucket-continuous                              | U            | rubber calenders                      | M            |
| lobe  | M            | centrifugal discharge                          | U            | rubber mill-2 on line                 | M            |
| reciprocating                                 |              | escalators                                     | U            | rubber mill-3 on line                 | M            |
| multi-cylinder                                | M            | freight  | M            | sheeter                               | M            |
| single cylinder                               | H            | gravity discharge                              | U            | tire building machines                | †            |
| <b>Conveyors-uniformly loaded or fed</b>      |              | man lifts                                      | †            | tire and tube press                   |              |
| apron   | U            | passenger                                      | †            | openers                               | †            |
| assembly                                      | U            | <b>Fans</b>                                    |              | tubers and strainers                  | M            |
| belt  | U            | centrifugal                                    | U            | warming mills                         | M            |
| bucket  | U            | cooling towers                                 |              | <b>Sand muller</b>                    | M            |
| chain   | U            | cooling towers induced draft                   | †            | <b>Sewage disposal equipment</b>      |              |
| flight  | U            | cooling towers forced draft                    | †            | bar screens                           | U            |
| oven  | U            | induced draft                                  | M            | chemical feeders                      | U            |
| screw   | U            | large, mine, etc                               | M            | collectors                            | U            |
| <b>Conveyors-heavy duty not uniformly fed</b> |              | large, industrial                              | M            | dewatering screws                     | M            |
| apron   | M            | light, small diameter                          | U            | scum breakers                         | M            |
| assembly                                      | M            | <b>Feeders</b>                                 |              | slow or rapid mixers                  | M            |
| belt  | M            | apron  | M            | thickeners                            | M            |
| bucket  | M            | belt   | M            | vacuum filters                        | M            |
| chain   | M            | disc   | U            | <b>Screens</b>                        |              |
| flight  | M            | reciprocating                                  | H            | air washing                           | U            |
| live roll                                     | †            | screw  | M            | rotary-stone or gravel                | M            |
| oven  | M            | <b>Food industry</b>                           |              | travelling water intake               | U            |
| reciprocating                                 | H            | beef slicer                                    | M            | <b>Slab pushers</b>                   | M            |
| screw   | M            | cereal cooker                                  | U            | <b>Steering gear</b>                  | †            |
| shaker  | H            | dough mixer                                    | M            | <b>Stokers</b>                        | U            |
|   |              | meat grinders                                  | M            | <b>Sugar industry</b>                 |              |
|   |              | <b>Generators-not welding</b>                  | U            | cane knives                           | M            |
|   |              | <b>Hammer mills</b>                            | H            | crushers                              | M            |
|   |              | <b>Hoists</b>                                  |              | mills                                 | M            |
|   |              | heavy duty                                     | H            | <b>Textile industry</b>               |              |
|   |              | medium duty                                    | M            | batchers                              | M            |
|   |              | skip hoist                                     | M            | calenders                             | M            |
|   |              | <b>Laundry washers</b>                         |              | cards                                 | M            |
|   |              | reversing                                      | M            | dry cans                              | M            |
|   |              | <b>Laundry tumblers</b>                        | M            | dryers                                | M            |
|   |              | <b>Line shafts</b>                             |              | dyeing machinery                      | M            |
|   |              | driving processing equipment                   | M            | knitting machines                     | †            |
|   |              | light  | U            | looms                                 | M            |
|   |              | other line shafts                              | U            | mangles                               | M            |
|   |              | <b>Lumber industry</b>                         |              | nappers                               | M            |
|   |              | barkers-hydraulic-mechanical                   | M            | pads                                  | M            |
|   |              | burner conveyor                                | M            | range drives                          | †            |
|   |              | chain saw and drag saw                         | H            | slashes                               | M            |
|   |              | chain transfer                                 | H            | soapers                               | M            |
|   |              | craneway transfer                              | H            | spinners                              | M            |
|   |              | de-barking drum                                | H            | tenter frames                         | M            |
|   |              | edger feed                                     | M            | washers                               | M            |
|   |              | gang feed                                      | M            | winders                               | M            |
|   |              | green chain                                    | M            | <b>Windlass</b>                       | †            |
|   |              | live rolls                                     | H            |                                       |              |
|   |              | log deck                                       | H            |                                       |              |
|   |              | <b>Machine tools</b>                           |              |                                       |              |
|   |              | bending roll                                   | M            |                                       |              |
|   |              | punch press-gear driven                        | H            |                                       |              |
|   |              | notching press- belt driven                    | †            |                                       |              |
|   |              | plate planers                                  | H            |                                       |              |
|   |              | tapping machine                                | H            |                                       |              |
|   |              | other machine tools                            |              |                                       |              |
|   |              | main drives                                    | M            |                                       |              |
|   |              | auxiliary drives                               | U            |                                       |              |
|   |              | <b>Metal mills</b>                             |              |                                       |              |
|   |              | draw bench carriage and main drive             | M            |                                       |              |
|   |              | pinch, dryer and scrubber rolls-reversing      | †            |                                       |              |
|   |              | slitters                                       | M            |                                       |              |
|   |              | table conveyors                                |              |                                       |              |
|   |              | non-reversing                                  |              |                                       |              |
|   |              | group drives                                   | M            |                                       |              |
|   |              | individual drives                              | H            |                                       |              |
|   |              | reversing                                      |              |                                       |              |
|   |              | wire drawing and flattening machine            | M            |                                       |              |
|   |              | wire winding machine                           | M            |                                       |              |
|   |              | <b>Mill-rotary type ball</b>                   | H            |                                       |              |
|   |              | cement kilns                                   | H            |                                       |              |
|   |              | dryers and coolers                             | H            |                                       |              |
|   |              | kilns, other than cement                       | H            |                                       |              |
|   |              | pebble   | H            |                                       |              |
|   |              | rod  |              |                                       |              |
|   |              | plain  | H            |                                       |              |
|   |              | wedge bar                                      | H            |                                       |              |
|   |              | tumbling barrels                               | H            |                                       |              |
|   |              | <b>Mixers</b>                                  |              |                                       |              |
|   |              | concrete mixers                                |              |                                       |              |
|   |              | -continuous                                    | M            |                                       |              |
|   |              | concrete mixers                                |              |                                       |              |
|   |              | -intermittent                                  | M            |                                       |              |
|   |              | constant density                               | U            |                                       |              |
|   |              | variable density                               | M            |                                       |              |
|   |              | <b>Oil industry</b>                            |              |                                       |              |
|   |              | chillers                                       | M            |                                       |              |
|   |              | oil well pumping                               | †            |                                       |              |
|   |              | paraffin filter press                          | M            |                                       |              |
|   |              | rotary kilns                                   | M            |                                       |              |
|   |              | <b>Paper mills</b>                             |              |                                       |              |
|   |              | agitators, (mixers)                            | M            |                                       |              |
|   |              | barker-auxiliaries-                            |              |                                       |              |
|   |              | hydraulic                                      | M            |                                       |              |
|   |              | barker-mechanical                              | H            |                                       |              |
|   |              | barking drum                                   | H            |                                       |              |
|   |              | beater and pulper                              | M            |                                       |              |
|   |              | bleacher                                       | U            |                                       |              |
|   |              | calenders                                      | M            |                                       |              |
|   |              | calenders-super                                | H            |                                       |              |
|   |              | converting machine, except cutters, platers    | M            |                                       |              |
|   |              | conveyors                                      | U            |                                       |              |
|   |              | couch  | M            |                                       |              |
|   |              | cutters-plates                                 | H            |                                       |              |
|   |              | cylinders                                      | M            |                                       |              |
|   |              | dryers   | M            |                                       |              |
|   |              | felt stretcher                                 | M            |                                       |              |
|   |              | felt whipper                                   | H            |                                       |              |
|   |              | jordans  | M            |                                       |              |

# SERIES A

## MOMENTS OF INERTIA

9611

MOMENTS OF INERTIA (Kg cm<sup>2</sup>) Referred to Input Shaft

### SINGLE REDUCTION

| RATIO | 10     | 12      | 14      | 17      | 20       | 24       |
|-------|--------|---------|---------|---------|----------|----------|
| 5.00  | 683.67 | 1573.31 | 3303.47 | 9153.25 | 20099.78 | 33676.06 |
| 7.50  | 385.95 | 885.42  | 1780.01 | 4900.61 | 10301.27 | 19384.07 |
| 10.00 | 290.11 | 651.43  | 1261.85 | 3356.83 | 7010.82  | 12976.47 |
| 12.50 | 227.78 | 499.49  | 1038.09 | 2642.77 | 4935.10  | 9317.53  |
| 15.00 | 201.45 | 458.70  | 887.14  | 2148.56 | 4393.73  | 7767.24  |
| 20.00 | 162.58 | 373.49  | 678.69  | 1782.87 | 3303.90  | 5706.66  |
| 25.00 | 161.11 | 350.06  | 650.69  | 1624.45 | 3159.80  | 5353.98  |
| 30.00 | 149.87 | 326.85  | 562.61  | 1495.44 | 2815.65  | 4368.50  |
| 40.00 | 146.04 | 318.27  | 614.08  | 1200.42 | 2346.30  | 3371.96  |
| 50.00 | 140.16 | 313.16  | 601.95  | 1296.92 | 2117.51  | 3010.05  |
| 60.00 | 137.96 | 308.87  | 510.22  | 1200.96 | 3030.54  | 4201.59  |
| 70.00 | 122.10 | 275.36  | 547.69  | 1137.80 | 2794.46  | 3350.14  |

### DOUBLE REDUCTION

| RATIO   | 10    | 12     | 14     | 17     | 20     | 24      |
|---------|-------|--------|--------|--------|--------|---------|
| 75.00   | 61.20 | 116.99 | 133.24 | 333.28 | 855.16 | 1865.96 |
| 100.00  | 59.72 | 113.75 | 125.31 | 319.22 | 811.57 | 1783.54 |
| 125.00  | 59.67 | 112.86 | 124.24 | 313.13 | 805.81 | 1769.43 |
| 150.00  | 59.24 | 111.97 | 120.89 | 308.17 | 792.04 | 1730.01 |
| 200.00  | 33.35 | 60.68  | 63.84  | 151.04 | 323.74 | 684.03  |
| 225.00  | 42.31 | 71.53  | 75.61  | 186.02 | 422.56 | 917.28  |
| 250.00  | 33.33 | 60.44  | 63.55  | 149.39 | 322.23 | 680.36  |
| 300.00  | 33.21 | 60.19  | 62.63  | 148.05 | 318.61 | 670.10  |
| 350.00  | 58.18 | 110.01 | 120.32 | 294.42 | 791.19 | 1689.28 |
| 375.00  | 26.03 | 51.75  | 53.14  | 104.80 | 215.64 | 481.49  |
| 400.00  | 23.95 | 51.32  | 52.04  | 98.83  | 167.61 | 378.57  |
| 450.00  | 25.98 | 51.64  | 52.73  | 104.25 | 214.05 | 476.91  |
| 500.00  | 23.94 | 51.26  | 51.98  | 98.45  | 167.24 | 377.66  |
| 600.00  | 33.09 | 60.01  | 62.09  | 144.99 | 320.87 | 668.36  |
| 625.00  | 24.35 | 46.25  | 46.75  | 88.42  | 165.11 | 354.50  |
| 700.00  | 32.92 | 59.66  | 62.48  | 144.33 | 318.38 | 659.49  |
| 750.00  | 24.33 | 46.21  | 46.60  | 88.21  | 164.54 | 352.92  |
| 800.00  | 23.90 | 51.19  | 51.89  | 97.44  | 165.13 | 372.53  |
| 900.00  | 25.93 | 51.56  | 52.48  | 103.00 | 215.04 | 476.13  |
| 1000.00 | 21.02 | 46.40  | 46.59  | 83.07  | 147.95 | 321.33  |
| 1200.00 | 23.88 | 51.17  | 51.64  | 97.45  | 166.90 | 374.68  |
| 1250.00 | 20.42 | 41.39  | 41.51  | 75.24  | 141.12 | 314.27  |
| 1400.00 | 23.84 | 51.09  | 51.73  | 97.30  | 166.29 | 372.48  |
| 1500.00 | 20.41 | 41.39  | 41.48  | 75.19  | 140.99 | 313.88  |
| 1600.00 | 21.01 | 46.38  | 46.57  | 82.81  | 147.44 | 320.09  |
| 1750.00 | 19.26 | 42.88  | 42.94  | 68.35  | 122.46 | 275.69  |
| 1800.00 | 19.69 | 40.04  | 40.11  | 70.95  | 138.36 | 309.04  |
| 2000.00 | 20.41 | 41.38  | 41.50  | 75.07  | 140.80 | 313.48  |
| 2100.00 | 23.46 | 52.79  | 53.09  | 100.36 | 151.51 | 326.40  |
| 2400.00 | 21.00 | 46.38  | 46.50  | 82.81  | 147.87 | 320.61  |
| 2500.00 | 20.41 | 41.38  | 41.49  | 75.11  | 140.71 | 313.33  |
| 2800.00 | 20.99 | 46.36  | 46.53  | 82.77  | 147.72 | 320.08  |
| 3000.00 | 20.41 | 41.38  | 41.46  | 75.07  | 141.07 | 313.81  |
| 3500.00 | 20.40 | 41.36  | 41.47  | 75.04  | 140.98 | 313.47  |
| 3600.00 | 19.68 | 40.04  | 40.09  | 70.86  | 138.42 | 309.00  |
| 4200.00 | 19.68 | 40.03  | 40.10  | 70.85  | 138.35 | 308.76  |

$GD^2 \text{ (Kg cm}^2\text{)} = 4 \times \text{Moment of Inertia (Kg cm}^2\text{)}$

# SERIES A

## LUBRICATION

9806

Radicon Heavy Duty Units are despatched without oil. The David Brown oil grade is stamped on the nameplate and the oil level should be taken to the middle of the sight glass. These are determined from the operating speed of the gearbox and the ambient temperature which if not given when ordering will be assumed to be 1450 rev/min input and 0 to 30°C ambient temperature using a polyglycol synthetic oil. Oil grades and oil levels should therefore always be checked before installation, instructions are provided with each unit despatched. Details of David Brown approved lubricants, synthetic and mineral, are given in the David Brown Approved Lubricants brochure available on request. To determine the David Brown oil grade refer to Table 1

**TABLE 1 OIL GRADES**

| Unit Size    | Ambient Temperature °C | Input Speeds (Rev/min) |              |             |              |             |              |              |              |
|--------------|------------------------|------------------------|--------------|-------------|--------------|-------------|--------------|--------------|--------------|
|              |                        | Below 200              |              | 201 to 500  |              | 501 to 1000 |              | 1001 to 1750 |              |
|              |                        | Ratio Range            |              |             |              |             |              |              |              |
|              |                        | 5/1 to 15/1            | 20/1 to 70/1 | 5/1 to 15/1 | 20/1 to 70/1 | 5/1 to 15/1 | 20/1 to 70/1 | 5/1 to 15/1  | 20/1 to 70/1 |
| SIZE 10 - 14 | -30°C to 10°C          | 7 (9)                  | 6 (9)        | 5 (7)       | 6 (8)        | 3 (5)       | 4 (6)        | 3 (5)        | 3 (5)        |
|              | -10°C to 30°C          | 8 (9)                  | 8 (9)        | 6 (8)       | 7 (8)        | 5 (6)       | 5 (7)        | 4 (6)        | 4 (6)        |
|              | 20°C to 50°C           | 9 (9)                  | 9 (9)        | 7 (9)       | 8 (9)        | 5 (7)       | 6 (8)        | 5 (7)        | 5 (7)        |
| SIZE 17 - 24 | -30°C to 10°C          | 9 (9)                  | 7 (9)        | 5 (7)       | 5 (7)        | 4 (6)       | 4 (6)        | 4 (6)        | 4 (6)        |
|              | -10°C to 30°C          | 8 (9)                  | 8 (9)        | 5 (7)       | 6 (7)        | 4 (6)       | 4 (6)        | 4 (6)        | 4 (6)        |
|              | 20°C to 50°C           | 9 (9)                  | 9 (9)        | 6 (8)       | 7 (8)        | 5 (7)       | 5 (7)        | 5 (7)        | 5 (7)        |

Mineral oil grades are given in brackets.

**OIL CAPACITY (Litres)**

To determine the oil capacity refer to the appropriate table 2, 3 or 4. Oil capacities are only approximate and units should be filled to the middle of the sight glass. Please see dimension pages for sight glass positions. Do not overfill as excess will cause overheating and leakage.

**TABLE 2 LUBRICANT QUANTITY Litres SINGLE REDUCTION**

Oil capacities given are for units running above 300 rev/min input, figures in brackets are for units running at 300 rev/min and below.

| Unit Type | Size of Unit |         |         |            |           |           |
|-----------|--------------|---------|---------|------------|-----------|-----------|
|           | 10           | 12      | 14      | 17         | 20        | 24        |
| CNU       | 18 (30)      | 30 (43) | 41 (75) | 56.8 (102) | 68 (155)  | 105 (273) |
| CNO       | 10 (16)      | 15 (24) | 24 (39) | -          | -         | -         |
| CNV       | 18 (24)      | 30 (39) | 50 (61) | 109 (127)  | 146 (160) | -         |

**TABLE 3 LUBRICANT QUANTITY Litres DOUBLE REDUCTION**

The lubricant grade used in the primary unit should be that selected for the secondary unit. See exact ratios for primary ratio, to calculate oil grade. Oil capacities are for overdriven primary units running above 100 rev/min, Figures in brackets are for units running at 100 rev/min and below. Secondary unit oil capacities for CNU, CNO and CNV are for secondary units running at 300 rev/min input and below.

| Unit Type | Unit stage | Size of Unit |        |        |         |         |         |
|-----------|------------|--------------|--------|--------|---------|---------|---------|
|           |            | 10           | 12     | 14     | 17      | 20      | 24      |
| CNUD      | Primary    | 4 (6.6)      | 7 (13) | 7 (13) | 11 (22) | 11 (22) | 15 (24) |
|           | Secondary  | 30           | 43     | 75     | 102     | 155     | 273     |
| CNOD      | Primary    | 4 (6.6)      | 7 (13) | 7 (13) | -       | -       | -       |
|           | Secondary  | 16           | 24     | 39     | -       | -       | -       |
| CNVD      | Primary    | 4 (6.6)      | 7 (13) | 7 (13) | 11 (22) | 11 (22) | -       |
|           | Secondary  | 24           | 39     | 61     | 127     | 160     | -       |

**TABLE 4 MOTORISED UNITS LUBRICANT QUANTITY Litres TRIPLE REDUCTION**

Motorised triple reduction worm units use a helical-worm primary unit. Oil capacities are given for underdriven primary units running at all input speeds. Secondary unit oil capacities can be taken from table 3.

| Unit Type | Unit stage | Size of Unit |     |     |    |    |    |
|-----------|------------|--------------|-----|-----|----|----|----|
|           |            | 10           | 12  | 14  | 17 | 20 | 24 |
| CNUD      | Primary    | 4.6          | 6.0 | 6.0 | 12 | -  | -  |
| CNOD      | Primary    | 4.6          | 6.0 | 6.0 | -  | -  | -  |
| CNVD      | Primary    | 4.6          | 6.0 | 6.0 | 12 | -  | -  |

# SERIES A

## SELECTION PROCEDURE

9701

**EXAMPLE APPLICATION DETAILS**

Absorbed power of driven machine = 27 kW  
 Output speed of gearbox or Input speed of machine = 20 rev/min  
 Application = Heavy duty, non uniformly fed bucket conveyor  
 Duration of service (hours per day) = 10 hrs  
 Motor speed = 3 phase electric motor, 4 pole, 1450 rev/min  
 David Brown mounting position = Underdriven type CNU  
 Ambient temperature = 20°C  
 Running time (%) = 100%

**1 DETERMINE RATIO OF GEARBOX REQUIRED**

$$\frac{\text{Motor speed}}{\text{Gearbox output speed}} = \frac{1450}{20} = 72$$

Refer to exact ratios (page 14) for nearest standard ratio = 70:1

**3 DETERMINE REQUIRED MECHANICAL OUTPUT TORQUE CAPACITY OF GEARBOX**

$$\text{Absorbed output torque} = \frac{\text{Absorbed power} \times 9550}{\text{Gearbox output speed}}$$

$$\frac{27 \times 9550}{20} = 12893 \text{ Nm}$$

$$\text{Required mechanical output torque} = \text{Absorbed output} \times F_m \text{ torque}$$

$$12893 \times 1.25 = 16116 \text{ Nm}$$

**2 DETERMINE MECHANICAL SERVICE FACTOR (Fm)**

Refer to Load Classification by Application, table 5, page 4

Application = Heavy duty, non uniformly fed, bucket conveyor

|   |   |                            |
|---|---|----------------------------|
| <b>Conveyors-heavy duty not uniformly fed</b> |   |                            |
| apron   | M | M = Moderate shock loading |
| assembly                                      | M |                            |
| belt  | M |                            |
| bucket  | M |                            |
| chain   | M |                            |

Refer to mechanical service factor (Fm), table 1, page 3

Duration of service (hours per day) = 10hrs

| Prime mover                                      | Duration of service-hrs per day | Load classification-drive |                |
|--|---------------------------------|---------------------------|----------------|
|  |                                 | Uniform                   | Moderate Shock |
| Electric motor, steam turbine or hydraulic motor | Under 3                         | 0.80                      | 1.00           |
|  | 3 to 10                         | 1.00                      | 1.25           |
|  | Over 10                         | 1.25                      | 1.50           |

Therefore mechanical service factor (Fm) = 1.25

**4 DETERMINE SIZE OF GEAR BOX REQUIRED**

Refer to ratings tables, Input speed = 1450 rev/min (synthetic oil), therefore refer to page 21.

| NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY     | SIZE OF UNIT     |       |       |       |       |
|---------------|--------------------------------|--------------|------------------|-------|-------|-------|-------|
|               |                                |              | 10               | 12    | 14    | 17    |       |
| 70.0          | 20.71                          | Mechanical   | Input Power kW   | 21.60 | 34.70 | 48.60 | 83.40 |
|               |                                |              | Output Torque Nm | 8100  | 13200 | 18400 | 32100 |
|               |                                | Thermal      | Input Power kW   | 20.80 | 31.00 | 43.50 | 63.70 |
|               |                                |              | Output Torque Nm | 7800  | 11800 | 16400 | 24200 |
|               |                                | Efficiency % |                  | 81    | 83    | 82    | 82    |

Mechanical output torque capacity must be equal or more than required mechanical output torque capacity of gear box. Required mechanical output torque capacity = 16116 Nm. At a 70:1 ratio, nominal output speed 20.71 a CNU14 unit has a mechanical output torque capacity of 18400 Nm. Therefore the unit is acceptable

**5 DETERMINE EXACT RATIO OF GEARBOX**

Refer to exact ratios table, page 14

| Nominal Ratio | Size 10     | Size 12     | Size 14     | Size 17     |
|---------------|-------------|-------------|-------------|-------------|
|               | Exact Ratio | Exact Ratio | Exact Ratio | Exact Ratio |

|    |    |    |    |    |
|----|----|----|----|----|
| 70 | 70 | 70 | 70 | 70 |
|----|----|----|----|----|

Exact ratio = 70.0:1

**6 CHECK THERMAL CAPACITY OF GEARBOX SELECTED DETERMINE THERMAL OUTPUT TORQUE CAPACITY (Tt)**

Refer to ratings tables

| NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY     | SIZE OF UNIT     |       |       |       |       |
|---------------|--------------------------------|--------------|------------------|-------|-------|-------|-------|
|               |                                |              | 10               | 12    | 14    | 17    |       |
| 70.0          | 20.71                          | Mechanical   | Input Power kW   | 21.60 | 34.70 | 48.60 | 83.40 |
|               |                                |              | Output Torque Nm | 8100  | 13200 | 18400 | 32100 |
|               |                                | Thermal      | Input Power kW   | 20.80 | 31.00 | 43.50 | 63.70 |
|               |                                |              | Output Torque Nm | 7800  | 11800 | 16400 | 24200 |
|               |                                | Efficiency % |                  | 81    | 83    | 82    | 82    |

Tt = 16400 Nm

Go to point 7

# SERIES A

## SELECTION PROCEDURE

9701

### 7 DETERMINE THERMAL SERVICE FACTOR (Ft)

Refer to table 2, page 3  
Ambient temperature = 20°C

|                        |      |      |      |      |      |     |
|------------------------|------|------|------|------|------|-----|
| Ambient temperature °C | -30  | -20  | -10  | 0    | 10   | 20  |
| Factor Ft              | 1.65 | 1.52 | 1.39 | 1.26 | 1.14 | 1.0 |

Ft = 1.0

### 8 DETERMINE THERMAL SERVICE FACTOR (Fp)

Refer to table 3, page 3

Mounting position = D

Nominal output speed (rev/min) = 20.71

|                                     |          |      |
|-------------------------------------|----------|------|
| Unit Output Shaft Speed (Rev / min) | Mounting |      |
|                                     | CNU      | CNV  |
| 0 to 100                            | 1.0      | 0.90 |
| 12.5 & 15                           | 1.0      | 0.90 |
| 20                                  | 1.0      | 0.90 |

Fp = 1.0

### 9 DETERMINE THERMAL SERVICE FACTOR (Fd)

Refer to table 4, page 3

|                               |           |                         |          |
|-------------------------------|-----------|-------------------------|----------|
| Input shaft speed (Rev / min) | Unit Size | % Running time per hour |          |
|                               |           | >60                     | >50 - 60 |
| 1450                          | 10 & 12   | 1.00                    | 1.20     |
|                               | 14 - 24   | 1.00                    | 1.16     |

Fd = 1.00

### 10 DETERMINE ALLOWABLE OUTPUT TORQUE THERMAL RATING (T<sub>therm</sub>)

$$T_{therm} = T_t \times F_t \times F_p \times F_d$$

$$= 16400 \times 1.0 \times 1.00 \times 1.0$$

$$= 16400 \text{ Nm}$$

Thermal output torque capacity (T<sub>therm</sub>) must be equal or more than absorbed output torque to drive machine

Absorbed output torque = 12893 Nm (see step 3) T<sub>therm</sub> = 16400 Nm

Therefore unit is acceptable

### 11 DETERMINE REQUIRED POWER OF ELECTRIC MOTOR

Refer to ratings tables to determine gear unit efficiency

| NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY     |                  | SIZE OF UNIT |       |       |       |
|---------------|--------------------------------|--------------|------------------|--------------|-------|-------|-------|
|               |                                |              |                  | 10           | 12    | 14    | 17    |
| 70.0          | 20.71                          | Mechanical   | Input Power kW   | 21.60        | 34.70 | 48.60 | 83.40 |
|               |                                |              | Output Torque Nm | 8100         | 13200 | 18400 | 32100 |
|               |                                | Thermal      | Input Power kW   | 20.80        | 31.00 | 43.50 | 63.70 |
|               |                                |              | Output Torque Nm | 7800         | 11800 | 16400 | 24200 |
|               |                                | Efficiency % | 81               | 83           | 82    | 82    |       |

$$\text{Efficiency \%} = 75 \quad \text{Required motor power} = \frac{\text{Absorbed power of driven machine} \times 100}{\text{Efficiency}} = \frac{27 \times 100}{82} = 32.93 \text{ kW}$$

The next largest standard motor power available is selected 37 kW

### 12 CHECK OVERHUNG LOADS

If sprocket, gear, etc is mounted on the input or output shaft then refer to Overhung loads procedure, page 16

NOTE: If any of the following conditions occur then consult David Brown Radicon Application Engineers:-

- Inertia of the Driven Machine (Referred to motor speed) > 1.0  
Inertia of Gear Unit plus Motor
- Ambient temperature is above 50°C

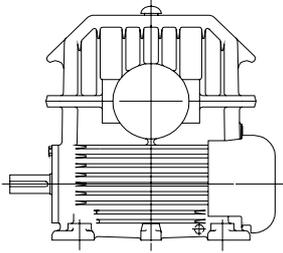
or c) The unit is required without a fan

# SERIES A

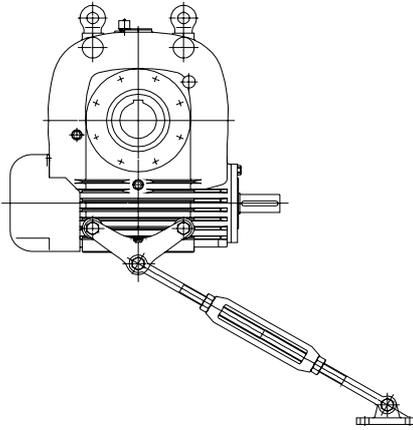
## UNIT TYPES

9610

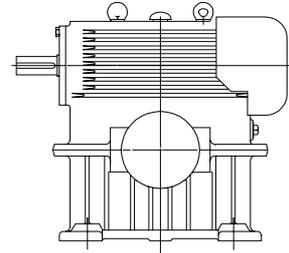
### SINGLE REDUCTION UNITS



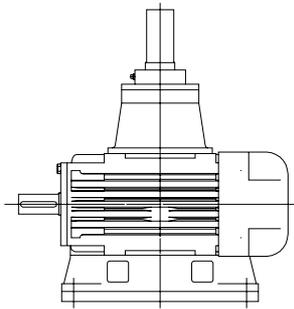
**CNU**  
UNDERDRIVEN



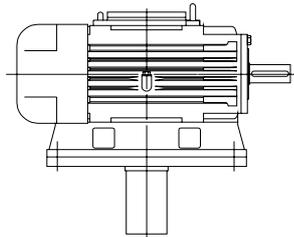
**CNUS**  
UNDERDRIVEN  
SHAFT MOUNT (WITH TORQUE  
ARM)



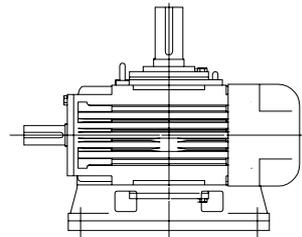
**CNO**  
OVERDRIVEN



**CNV-CT**  
VERTICAL OUTPUT SHAFT  
COOLING TOWER UNIT

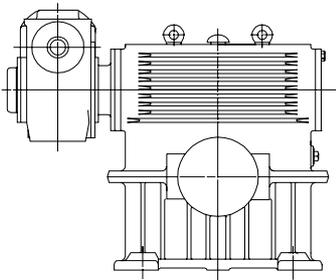


**V-HDST**  
VERTICAL OUTPUT SHAFT  
HEAVY DUTY STIRRER UNIT

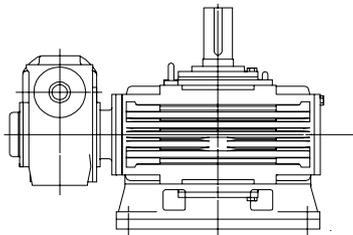


**CNV**  
VERTICAL OUTPUT SHAFT

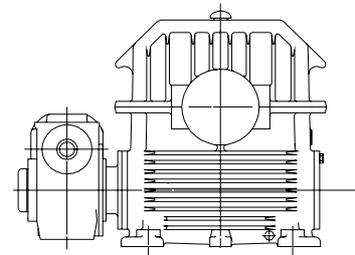
### DOUBLE REDUCTION UNITS



**CNOD**  
OVERDRIVEN  
DOUBLE REDUCTION (WORM/  
WORM)



**CNVD**  
VERTICAL OUTPUT SHAFT  
DOUBLE REDUCTION (WORM/  
WORM)

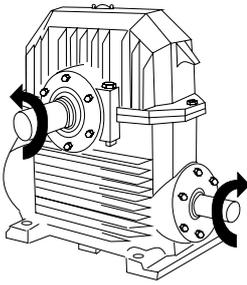


**CNUD**  
UNDERDRIVEN  
DOUBLE REDUCTION (WORM/  
WORM)

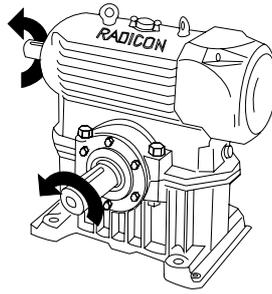
# SERIES A

## SHAFT HANDINGS & ROTATIONS

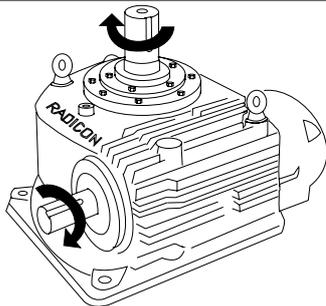
9611



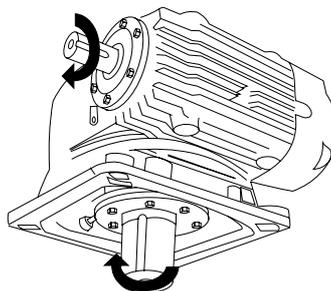
U Type, Shaft Handing L



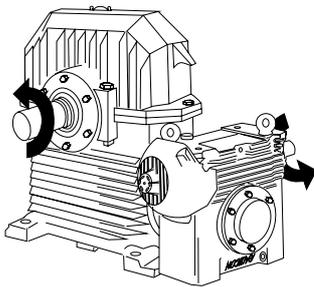
O Type, Shaft Handing R



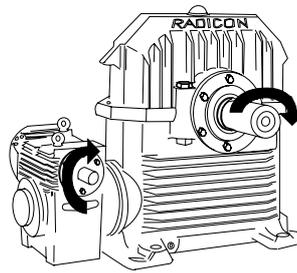
V Type, Shaft Handing LX



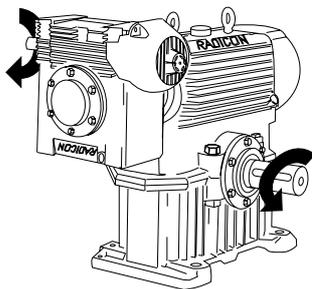
V Type, Shaft Handing LY



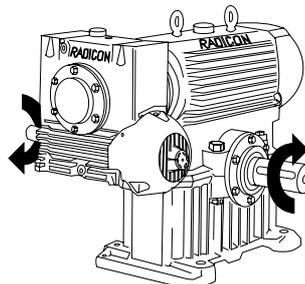
UD Type, Shaft Handing R/L



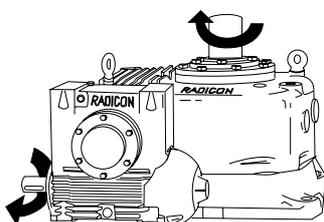
UD Type, Shaft Handing R/R



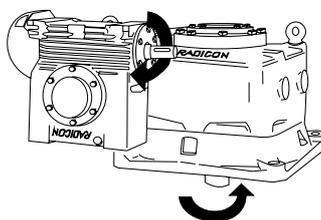
OD Type, Shaft Handing L/R



OD Type, Shaft Handing 2L/R



VD Type, Shaft Handing 2L/RX



VD Type, Shaft Handing R/R/Y

### SINGLE REDUCTION UNITS

Shaft handing is determined by considering the unit in its correct U, O or V mount position, then looking at the end of the input shaft, or at the motor if motorised. The relative position of the output shaft decides the shaft handing ie R or L (right hand side or left hand side respectively)

For V type units with output shaft upwards a suffix is introduced ie RX or LX. Similarly with output shaft downwards a suffix Y is introduced ie RY or LY. Output shafts for units handed LX and LY rotate in the opposite directions to those shown for units handed RX and RY, relative to the input shaft rotation indicated

### DOUBLE REDUCTION UNITS (worm/worm)

Shaft handing is determined by considering the unit in its correct U, O or V mount position, then looking directly at the primary unit which will have its input shaft to either right or left. The positions of first the input shaft and then the output shaft relative to the viewed position decide the handing ie R/R, L/R, R/L or L/L. Shaft mount units should be specified R/S or L/S.

Double worm reduction units are usually assembled with the primary unit in the O position to ensure clearance underneath. However the primary unit can be assembled in the U position, and the handing is prefixed by 2 eg 2R/R, 2L/R, 2R/L or 2L/L; with the output shafts rotating in the opposite direction relative to the input shaft rotation indicated.

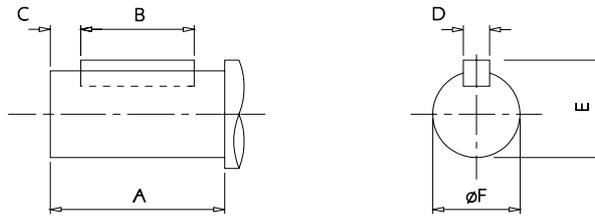
For V type units with output shaft upwards a suffix is introduced eg R/RX, L/RX, R/LX or L/LX. Similarly with output shaft downwards a suffix Y is introduced eg R/R/Y, L/R/Y, R/L/Y or L/L/Y rotate in the opposite direction to those shown for units handed RX and RY, relative to the input shaft rotation indicated.

# SERIES A

## OUTPUT OPTIONS

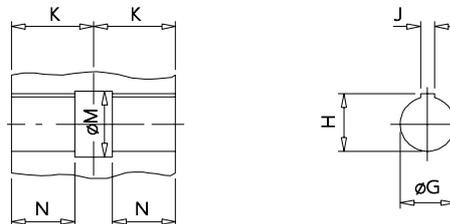
9610

### OUTPUTSHAFT OPTIONS



| SIZE OF UNIT | TYPE OF OUTPUTSHAFT | DIMENSIONS IN MM (IMPERIAL & AMERICAN SHAFTS IN INCHES) |         |      |                  |                    |                    |
|--------------|---------------------|---|---------|------|------------------|--------------------|--------------------|
|              |                     | A   | B       | C    | D                | E                  | øF                 |
| 10           | CN - Metric         | 152   | 118     | 16   | 22.000<br>21.948 | 94.500<br>94.148   | 85.035<br>85.013   |
|              | N - Imperial        | 6.00"   | 5.06"   | -    | 0.877"<br>0.875" | 3.509"<br>3.499"   | 3.2500"<br>3.2491" |
|              | A - American        | 6.00"   | 5.375"  | -    | 0.752"<br>0.750" | 3.578"<br>3.570"   | 3.2500"<br>3.2491" |
| 12           | CN - Metric         | 171   | 135     | 17.5 | 25.000<br>24.948 | 105.500<br>105.148 | 95.035<br>95.013   |
|              | N - Imperial        | 6.75"   | 5.75"   | -    | 1.003"<br>1.000" | 4.063"<br>4.053"   | 3.7500"<br>3.7491" |
|              | A - American        | 6.75"   | 5.8125" | -    | 0.877"<br>0.875" | 4.132"<br>4.124"   | 3.7500"<br>3.7491" |
| 14           | CN - Metric         | 191   | 148     | 21   | 32.000<br>31.938 | 134.000<br>133.638 | 120.035<br>120.013 |
|              | N - Imperial        | 7.50"   | 7.63"   | -    | 1.253"<br>1.250" | 4.860"<br>4.850"   | 4.5000"<br>4.4991" |
|              | A - American        | 7.50"   | 7.75"   | -    | 1.003"<br>1.000" | 4.937"<br>4.928"   | 4.5000"<br>4.4991" |
| 17           | CN - Metric         | 203   | 144     | 23   | 36.000<br>35.938 | 155.500<br>155.138 | 140.040<br>140.015 |
|              | N - Imperial        | 8.00"   | 8.00"   | -    | 1.503"<br>1.500" | 5.904"<br>5.894"   | 5.5000"<br>5.4990" |
|              | A - American        | 8.00"   | 8.125"  | -    | 1.253"<br>1.250" | 6.046"<br>6.037"   | 5.5000"<br>5.4990" |
| 20           | CN - Metric         | 241   | 180     | 25   | 40.000<br>39.938 | 187.500<br>187.138 | 170.040<br>170.015 |
|              | N - Imperial        | 9.50"   | 9.50"   | -    | 1.753"<br>1.750" | 7.013"<br>7.003"   | 6.5000"<br>6.4990" |
|              | A - American        | 9.50"   | 9.625"  | -    | 1.504"<br>1.500" | 7.156"<br>7.146"   | 6.5000"<br>6.4990" |
| 24           | CN - Metric         | 355   | 235     | 27.5 | 45.000<br>44.938 | 210.000<br>209.638 | 190.046<br>190.017 |
|              | N - Imperial        | 14.0"   | 12.500" | -    | 2.003"<br>2.000" | 8.060"<br>8.050"   | 7.5000"<br>7.4988" |
|              | A - American        | 14.0"   | 12.625" | -    | 1.754"<br>1.750" | 8.514"<br>8.504"   | 7.5000"<br>7.4988" |

### OUTPUTBORE OPTIONS



| SIZE OF UNIT | TYPE OF OUTPUTBORE | DIMENSIONS IN MM (AMERICAN SHAFTS IN INCHES) |                |                  |         |        |      |
|--------------|--------------------|--|----------------|------------------|---------|--------|------|
|              |                    | G  | H              | J                | K       | M      | N    |
| 10           | CN - Metric        | 110.071<br>110.035                           | 116.6<br>116.4 | 28.026<br>27.972 | 165     | 133.3  | 127  |
|              | A - American       | 4.3335"                                      | 4.59"          | 1.103"           | 6.5"    | 5.25"  | 5.0" |
| 12           | CN - Metric        | 130.083<br>130.043                           | 137.6<br>137.4 | 32.032<br>31.970 | 185     | 152.0  | 152  |
|              | A - American       | 5.1214"                                      | 5.417"         | 1.261"           | 7.25"   | 6.00"  | 6.0" |
| 14           | CN - Metric        | 160.084<br>160.043                           | 169.7<br>169.4 | 40.030<br>39.970 | 220     | 187.0  | 178  |
|              | A - American       | 6.3025"                                      | 6.681"         | 1.576"           | 8.6875" | 7.375" | 7.0" |

# SERIES A

## EXACT RATIOS

9611

### SINGLE REDUCTION (worm)

| Nominal Ratio | 10    | 12    | 14    | 17    | 20    | 24    |
|---------------|-------|-------|-------|-------|-------|-------|
| 5 . 0         | 5.000 | 5.000 | 4.909 | 5.000 | 5.000 | 5.083 |
| 7 . 5         | 7.500 | 7.500 | 7.500 | 7.500 | 7.500 | 7.500 |
| 1 0 .         | 9.750 | 9.800 | 9.800 | 10.00 | 9.833 | 9.833 |
| 1 2 .         | 12.75 | 12.50 | 12.75 | 12.50 | 12.75 | 12.60 |
| 1 5 .         | 14.67 | 14.67 | 14.75 | 14.75 | 14.75 | 14.75 |
| 2 0 .         | 19.67 | 19.67 | 19.67 | 19.67 | 19.67 | 19.67 |
| 2 5 .         | 24.50 | 25.00 | 24.50 | 24.67 | 24.67 | 25.00 |
| 3 0 .         | 29.50 | 29.50 | 30.50 | 29.50 | 29.50 | 29.50 |
| 4 0 .         | 40.00 | 40.00 | 40.00 | 40.00 | 40.00 | 39.50 |
| 5 0 .         | 50.00 | 50.00 | 50.00 | 50.00 | 49.50 | 49.50 |
| 6 0 .         | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 | 60.00 |
| 7 0 .         | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 | 70.00 |

### DOUBLE REDUCTION (worm/worm) \*

| Nominal Ratio | Primary & Secondary Nominal Ratio | 10    | 12    | 14    | 17    | 20    | 24    |
|---------------|-----------------------------------|-------|-------|-------|-------|-------|-------|
| 75.00         | 5 x 15                            | 75.17 | 75.17 | 75.59 | 75.22 | 73.75 | 73.75 |
| 100.00        | 5 x 20                            | 100.8 | 100.8 | 100.8 | 100.3 | 98.33 | 98.33 |
| 125.00        | 5 x 25                            | 125.6 | 128.1 | 125.6 | 125.8 | 123.3 | 125.0 |
| 150.00        | 5 x 30                            | 151.2 | 151.2 | 156.3 | 150.4 | 147.5 | 147.5 |
| 200.00        | 10 x 20                           | 191.8 | 192.7 | 192.7 | 192.7 | 191.8 | 192.7 |
| 225.00        | 7.5 x 30                          | 218.3 | 223.4 | 230.9 | 223.4 | 221.3 | 221.3 |
| 250.00        | 10 x 25                           | 238.9 | 245.0 | 240.1 | 241.7 | 240.5 | 245.0 |
| 300.00        | 10 x 30                           | 287.6 | 289.1 | 298.9 | 289.1 | 287.6 | 289.1 |
| 350.00        | 5 x 70                            | 358.8 | 358.8 | 358.8 | 357.0 | 350.0 | 350.0 |
| 375.00        | 15 x 25                           | 379.8 | 366.7 | 359.3 | 378.2 | 361.8 | 366.7 |
| 400.00        | 20 x 20                           | 383.5 | 403.2 | 403.2 | 403.2 | 386.8 | 386.8 |
| 450.00        | 15 x 30                           | 457.3 | 432.7 | 447.3 | 452.3 | 432.7 | 432.7 |
| 500.00        | 20 x 25                           | 477.8 | 512.5 | 502.3 | 505.7 | 485.1 | 491.7 |
| 600.00        | 10 x 60                           | 585.0 | 588.0 | 588.0 | 588.0 | 585.0 | 588.0 |
| 625.00        | 25 x 25                           | 612.5 | 612.5 | 600.3 | 604.3 | 604.3 | 625.0 |
| 700.00        | 10 x 70                           | 682.5 | 686.0 | 686.0 | 686.0 | 682.5 | 686.0 |
| 750.00        | 25 x 30                           | 737.5 | 722.8 | 747.3 | 722.8 | 722.8 | 737.5 |
| 800.00        | 20 x 40                           | 780.0 | 820.0 | 820.0 | 820.0 | 786.7 | 776.8 |
| 900.00        | 15 x 60                           | 930.0 | 880.0 | 880.0 | 920.0 | 880.0 | 880.0 |
| 1000.00       | 40 x 25                           | 980.0 | 1000. | 980.0 | 986.7 | 986.7 | 1000. |
| 1200.00       | 20 x 60                           | 1170. | 1230. | 1230. | 1230. | 1180. | 1180. |
| 1250.00       | 50 x 25                           | 1225. | 1250. | 1225. | 1233. | 1233. | 1250. |
| 1400.00       | 20 x 70                           | 1365. | 1435. | 1435. | 1435. | 1377. | 1377. |
| 1500.00       | 50 x 30                           | 1475. | 1475. | 1525. | 1475. | 1475. | 1475. |
| 1600.00       | 40 x 40                           | 1600. | 1600. | 1600. | 1600. | 1600. | 1580. |
| 1750.00       | 70 x 25                           | 1715. | 1750. | 1715. | 1727. | 1727. | 1750. |
| 1800.00       | 60 x 30                           | 1770. | 1770. | 1830. | 1770. | 1770. | 1770. |
| 2000.00       | 50 x 40                           | 2000. | 2000. | 2000. | 2000. | 2000. | 1975. |
| 2100.00       | 30 x 70                           | 2100. | 2100. | 2100. | 2100. | 2065. | 2065. |
| 2400.00       | 40 x 60                           | 2400. | 2400. | 2400. | 2400. | 2400. | 2400. |
| 2500.00       | 50 x 50                           | 2500. | 2500. | 2500. | 2500. | 2475. | 2475. |
| 2800.00       | 40 x 70                           | 2800. | 2800. | 2800. | 2800. | 2800. | 2800. |
| 3000.00       | 50 x 60                           | 3000. | 3000. | 3000. | 3000. | 3000. | 3000. |
| 3500.00       | 50 x 70                           | 3500. | 3500. | 3500. | 3500. | 3500. | 3500. |
| 3600.00       | 60 x 60                           | 3600. | 3600. | 3600. | 3600. | 3600. | 3600. |
| 4200.00       | 60 x 70                           | 4200. | 4200. | 4200. | 4200. | 4200. | 4200. |

\* Refer to page 80 for triple reduction motorised units (helical worm / worm)

# SERIES A

## OVERHUNG LOADS (NEWTONS) ON OUTPUT SHAFTS

9610

### Maximum permissible overhung loads

When a sprocket, gear etc. is mounted on the shaft a calculation, as below, must be made to determine the overhung load on the shaft, and the results compared to the maximum permissible overhung loads tabulated. Overhung loads can be reduced by increasing the diameter to the sprocket, gear, etc. If the maximum permissible overhung load is exceeded, the sprocket, gear, etc. should be mounted on a separate shaft, flexibly coupled and supported in its own bearings, or the gear unit shaft should be extended to run in an outboard bearing. Alternatively, a larger gear is often a less expensive solution.

Permissible overhung loads vary according to the direction of rotation. The values tabulated are for the most unfavourable direction with the unit transmitting full rated power and the load P applied midway along the shaft extension. Hence they can sometimes be increased for a more favourable direction of rotation, or if the power transmitted is less than the rated capacity of the gear unit, or if the load is applied nearer to the gear unit case. Refer to David Brown for further details. In any event, the sprocket, gear etc. should be positioned as close as possible to the gear unit case in order to reduce bearing loads and shaft stresses, and to prolong life.

### Overhung load (Newtons)

$$P = \frac{\text{kW} \times 9,500,000 \times K}{N \times R}$$

where

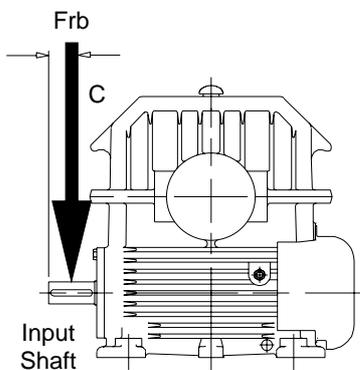
- P = equivalent overhung load (Newtons)  
 kW = power transmitted by the shaft (kilowatts)  
 N = speed of shaft (rev/min)  
 R = pitch radius of sprocket, etc. (mm)  
 K = factor

### Overhung member

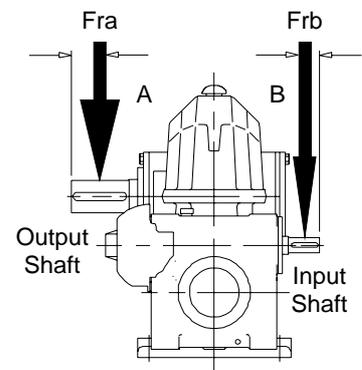
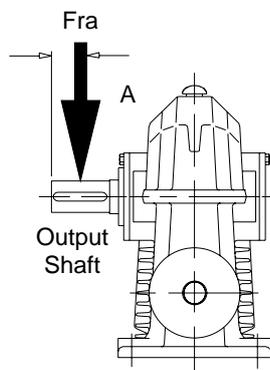
| Overhung member        | K (factor) |
|------------------------|------------|
| Chain sprocket*        | 1.00       |
| Spur or helical pinion | 1.25       |
| Vee belt sheave        | 1.50       |
| Flat belt pulley       | 2.00       |

\* If multistrand chain drives are equally loaded and the outer stand is further than dimension A output or B input refer to David Brown Radicon.

Note: 1 Newton = 0.10197 kg = 0.2248 lbs.



Single reduction  
(worm)



Double reduction  
(worm/worm)

### Distance midway along the shaft extension

| Size of unit | Dimension A |            | Dimension B |            | Dimension C |            |
|--------------|-------------|------------|-------------|------------|-------------|------------|
|              | CN (mm)     | N (inches) | CN (mm)     | N (inches) | CN (mm)     | N (inches) |
| 10           | 76          | 3          | 41          | 1.615      | 53.5        | 2.105      |
| 12           | 85.5        | 3.375      | 41          | 1.615      | 60.5        | 2.380      |
| 14           | 95.5        | 3.75       | 41          | 1.615      | 68.5        | 2.695      |
| 17           | 101.5       | 4          | 41          | 1.615      | 91.5        | 3.600      |
| 20           | 120.5       | 4.75       | 41          | 1.615      | 105         | 4.135      |
| 24           | 177.5       | 7.0        | 60.5        | 2.380      | 118         | 4.645      |

# SERIES A

## OVERHUNG LOADS (NEWTONS) & AXIAL THRUSTS (NEWTONS)

9701

### SINGLEREDUCTION OVERHUNG LOADS (Fra) & AXIAL THRUST CAPACITIES ON OUTPUT SHAFT at 1450 - 960 rev/min

|    |           | OUTPUT REV / MIN |       |        |        |        |        |        |        |
|----|-----------|------------------|-------|--------|--------|--------|--------|--------|--------|
|    |           | 290              | 190   | 145    | 96     | 75     | 48     | 24     | 13     |
| 10 | OHL (Fra) | 37700            | 42500 | 47600  | 48600  | 49200  | 48700  | 50100  | 50500  |
|    | THRUST    | 24500            | 29600 | 36300  | 44600  | 51700  | 64300  | 68500  | 68500  |
| 12 | OHL (Fra) | 37300            | 40900 | 46700  | 52900  | 56400  | 64200  | 63800  | 63400  |
|    | THRUST    | 27800            | 30100 | 39600  | 49900  | 59100  | 73500  | 81500  | 81500  |
| 14 | OHL (Fra) | 74500            | 83300 | 90400  | 95400  | 97700  | 96900  | 101000 | 101000 |
|    | THRUST    | 63100            | 72900 | 78700  | 100200 | 99100  | 99100  | 99300  | 99300  |
| 17 | OHL (Fra) | 80100            | 87000 | 98200  | 110000 | 118000 | 141000 | 148000 | 149000 |
|    | THRUST    | 74400            | 77400 | 94500  | 112000 | 127200 | 130400 | 134300 | 135500 |
| 20 | OHL (Fra) | 88400            | 98200 | 109000 | 123000 | 138000 | 140100 | 153000 | 160860 |
|    | THRUST    | 50700            | 63000 | 67800  | 100000 | 113000 | 148000 | 157000 | 160000 |
| 24 | OHL (Fra) | 75300            | 78900 | 83100  | 91800  | 106000 | 119350 | 128170 | 140100 |
|    | THRUST    | 86900            | 85300 | 89600  | 12600  | 150000 | 193000 | 207500 | 207500 |

### DOUBLEREDUCTION OVERHUNG LOADS (Fra) & AXIAL THRUST CAPACITIES ON OUTPUT SHAFT at 1450 - 960 rev/min

| RATIO |           | UNIT SIZE |       |        |        |        |        |
|-------|-----------|-----------|-------|--------|--------|--------|--------|
|       |           | 10        | 12    | 14     | 17     | 20     | 24     |
| 75    | OHL (Fra) | 54400     | 69200 | 112000 | 165000 | 160000 | 120000 |
|       | THRUST    | 56400     | 64260 | 94100  | 113000 | 120000 | 163000 |
| 150   | OHL (Fra) | 57300     | 73400 | 116000 | 171000 | 162000 | 124500 |
|       | THRUST    | 65200     | 78000 | 94100  | 113000 | 120000 | 163000 |
| 200   | OHL (Fra) | 49200     | 66200 | 107000 | 160000 | 142700 | 129700 |
|       | THRUST    | 62260     | 74260 | 88900  | 113000 | 120000 | 163000 |
| 300   | OHL (Fra) | 54200     | 68200 | 110000 | 164000 | 143700 | 103780 |
|       | THRUST    | 62260     | 74260 | 88900  | 111300 | 113000 | 126000 |
| 400   | OHL (Fra) | 46500     | 60500 | 95100  | 145000 | 102300 | 77840  |
|       | THRUST    | 62260     | 84000 | 87460  | 83000  | 111300 | 126000 |
| 600   | OHL (Fra) | 53800     | 72300 | 113000 | 167000 | 130700 | 93400  |
|       | THRUST    | 61600     | 72060 | 87460  | 83000  | 100600 | 126000 |
| 800   | OHL (Fra) | 50100     | 64500 | 111000 | 153000 | 162000 | 129700 |
|       | THRUST    | 61600     | 71100 | 86000  | 89000  | 130000 | 166000 |
| 1200  | OHL (Fra) | 50900     | 65700 | 103000 | 153000 | 150480 | 124500 |
|       | THRUST    | 61600     | 71100 | 81500  | 89000  | 115300 | 166000 |
| 1600  | OHL (Fra) | 50000     | 64300 | 96200  | 146000 | 149450 | 121900 |
|       | THRUST    | 61600     | 71100 | 80000  | 94800  | 112600 | 166000 |
| 2400  | OHL (Fra) | 50800     | 65500 | 98700  | 149000 | 162000 | 129700 |
|       | THRUST    | 61600     | 71100 | 80000  | 109000 | 130400 | 170000 |
| 3000  | OHL (Fra) | 50700     | 65400 | 98700  | 149000 | 162000 | 129700 |
|       | THRUST    | 61600     | 71100 | 80000  | 109000 | 130400 | 170000 |
| 4200  | OHL (Fra) | 51000     | 65800 | 97600  | 150000 | 162000 | 129700 |
|       | THRUST    | 61600     | 71100 | 80000  | 109000 | 130400 | 170000 |

### Use Synthetic ratings:

**when** using **synthetic** lubricant type **G**  
**or when** using **synthetic** lubricant type **H** apply a  
**factor** of 0.9 to the Mechanical & thermal ratings  
shown.

***Important Note:*** Integral backstop cannot be used with the type **G**  
synthetic lubricant ( refer to Approved Lubricants  
Brochure for details of suitable type **H** lubricants)

### Use Mineral ratings:

**when** using **mineral** lubricant type **M**  
**or when** using **mineral** lubricant type **A**

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 290.00                         | Mechanical       | Input Power kW   | 139.00       | 206.00 | 286.00 | 516.00 | 718.00 | 993.00 |
|                  |               |                                |                  | Output Torque Nm | 4430         | 6570   | 8950   | 16400  | 22800  | 32200  |
|                  |               |                                | Thermal          | Input Power kW   | 113.00       | 160.00 | 227.00 | 297.00 | 418.00 | 562.00 |
|                  |               |                                |                  | Output Torque Nm | 3590         | 5070   | 7080   | 9420   | 13300  | 18200  |
|                  |               |                                |                  | Efficiency %     | 96           | 96     | 96     | 96     | 97     | 97     |
|                  | 7.5           | 193.33                         | Mechanical       | Input Power kW   | 102.00       | 157.00 | 213.00 | 441.00 | 658.00 | 902.00 |
|                  |               |                                |                  | Output Torque Nm | 4830         | 7470   | 10100  | 21000  | 31400  | 43100  |
|                  |               |                                | Thermal          | Input Power kW   | 95.60        | 138.00 | 199.00 | 268.00 | 421.00 | 530.00 |
|                  |               |                                |                  | Output Torque Nm | 4530         | 6570   | 9420   | 12700  | 20000  | 25200  |
|                  |               |                                |                  | Efficiency %     | 96           | 96     | 96     | 96     | 96     | 96     |
|                  | 10.0          | 145.00                         | Mechanical       | Input Power kW   | 71.10        | 129.00 | 174.00 | 365.00 | 514.00 | 703.00 |
|                  |               |                                |                  | Output Torque Nm | 4350         | 7960   | 10700  | 23100  | 32100  | 43900  |
|                  |               |                                | Thermal          | Input Power kW   | 85.70        | 125.00 | 186.00 | 246.00 | 403.00 | 509.00 |
|                  |               |                                |                  | Output Torque Nm | 5250         | 7690   | 11500  | 15500  | 25100  | 31700  |
|                  |               |                                |                  | Efficiency %     | 95           | 95     | 95     | 96     | 96     | 96     |
|                  | 12.5          | 116.00                         | Mechanical       | Input Power kW   | 78.40        | 104.00 | 160.00 | 271.00 | 362.00 | 572.00 |
|                  |               |                                |                  | Output Torque Nm | 6240         | 8120   | 12800  | 21200  | 29100  | 45500  |
|                  |               |                                | Thermal          | Input Power kW   | 74.10        | 116.00 | 159.00 | 227.00 | 364.00 | 463.00 |
|                  |               |                                |                  | Output Torque Nm | 5900         | 9060   | 12700  | 17700  | 29300  | 36700  |
|                  |               |                                |                  | Efficiency %     | 95           | 95     | 95     | 95     | 96     | 96     |
| 15.0             | 96.67         | Mechanical                     | Input Power kW   | 63.30            | 90.60        | 167.00 | 276.00 | 405.00 | 493.00 |        |
|                  |               |                                | Output Torque Nm | 5760             | 8280         | 15300  | 25500  | 37600  | 45800  |        |
|                  |               | Thermal                        | Input Power kW   | 68.60            | 103.00       | 146.00 | 209.00 | 328.00 | 426.00 |        |
|                  |               |                                | Output Torque Nm | 6250             | 9410         | 13400  | 19200  | 30400  | 39400  |        |
|                  |               |                                | Efficiency %     | 94               | 95           | 94     | 95     | 95     | 95     |        |
| 20.0             | 72.50         | Mechanical                     | Input Power kW   | 60.10            | 93.90        | 134.00 | 234.00 | 282.00 | 384.00 |        |
|                  |               |                                | Output Torque Nm | 7260             | 11400        | 16300  | 28400  | 34600  | 47100  |        |
|                  |               | Thermal                        | Input Power kW   | 57.50            | 84.80        | 127.00 | 166.00 | 290.00 | 367.00 |        |
|                  |               |                                | Output Torque Nm | 6940             | 10300        | 15400  | 20100  | 35600  | 45000  |        |
|                  |               |                                | Efficiency %     | 93               | 94           | 94     | 93     | 95     | 95     |        |
| 25.0             | 58.00         | Mechanical                     | Input Power kW   | 49.40            | 73.80        | 106.00 | 173.00 | 257.00 | 307.00 |        |
|                  |               |                                | Output Torque Nm | 7300             | 11200        | 15800  | 25900  | 39100  | 47200  |        |
|                  |               | Thermal                        | Input Power kW   | 45.80            | 68.40        | 104.00 | 137.00 | 215.00 | 281.00 |        |
|                  |               |                                | Output Torque Nm | 6760             | 10400        | 15500  | 20400  | 32500  | 43100  |        |
|                  |               |                                | Efficiency %     | 91               | 92           | 92     | 92     | 93     | 93     |        |
| 30.0             | 48.33         | Mechanical                     | Input Power kW   | 42.00            | 67.60        | 96.40  | 168.00 | 219.00 | 267.00 |        |
|                  |               |                                | Output Torque Nm | 7360             | 12000        | 17700  | 29900  | 39400  | 48100  |        |
|                  |               | Thermal                        | Input Power kW   | 39.50            | 61.40        | 90.10  | 121.00 | 205.00 | 264.00 |        |
|                  |               |                                | Output Torque Nm | 6920             | 10900        | 16500  | 21300  | 36800  | 47600  |        |
|                  |               |                                | Efficiency %     | 90               | 91           | 91     | 91     | 92     | 93     |        |
| 40.0             | 36.25         | Mechanical                     | Input Power kW   | 36.60            | 51.50        | 78.50  | 116.00 | 162.00 | 202.00 |        |
|                  |               |                                | Output Torque Nm | 8440             | 12000        | 18300  | 27200  | 38800  | 47900  |        |
|                  |               | Thermal                        | Input Power kW   | 30.50            | 46.30        | 67.40  | 102.00 | 148.00 | 233.00 |        |
|                  |               |                                | Output Torque Nm | 7010             | 10800        | 15700  | 23900  | 35300  | 55600  |        |
|                  |               |                                | Efficiency %     | 87               | 89           | 88     | 89     | 91     | 91     |        |
| 50.0             | 29.00         | Mechanical                     | Input Power kW   | 30.60            | 46.70        | 65.00  | 114.00 | 108.00 | 158.00 |        |
|                  |               |                                | Output Torque Nm | 8580             | 13200        | 18500  | 32800  | 31300  | 46100  |        |
|                  |               | Thermal                        | Input Power kW   | 25.60            | 38.50        | 55.90  | 79.50  | 153.00 | 199.00 |        |
|                  |               |                                | Output Torque Nm | 7140             | 10900        | 15800  | 22500  | 45000  | 58400  |        |
|                  |               |                                | Efficiency %     | 85               | 86           | 86     | 86     | 89     | 90     |        |
| 60.0             | 24.17         | Mechanical                     | Input Power kW   | 25.90            | 41.20        | 55.10  | 97.00  | 114.00 | 139.00 |        |
|                  |               |                                | Output Torque Nm | 8480             | 13700        | 18500  | 32600  | 38500  | 47000  |        |
|                  |               | Thermal                        | Input Power kW   | 22.20            | 33.10        | 51.70  | 70.70  | 94.20  | 128.00 |        |
|                  |               |                                | Output Torque Nm | 7250             | 10900        | 17300  | 23500  | 31500  | 43200  |        |
|                  |               |                                | Efficiency %     | 83               | 83           | 85     | 84     | 85     | 85     |        |
| 70.0             | 20.71         | Mechanical                     | Input Power kW   | 21.60            | 34.70        | 48.60  | 83.40  | 100.00 | 123.00 |        |
|                  |               |                                | Output Torque Nm | 8100             | 13200        | 18400  | 32100  | 38600  | 48100  |        |
|                  |               | Thermal                        | Input Power kW   | 20.80            | 31.00        | 43.50  | 63.70  | 83.40  | 126.00 |        |
|                  |               |                                | Output Torque Nm | 7800             | 11800        | 16400  | 24200  | 31900  | 49500  |        |
|                  |               |                                | Efficiency %     | 81               | 83           | 82     | 82     | 83     | 85     |        |

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |               |                |                 |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|---------------|----------------|-----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20            | 24             |                 |
| DOUBLE REDUCTION | 75.0          | 19.33                | Mechanical       | Input Power kW   | 23.90         | 34.10         | 48.50         | 83.10         | 139.00         | 182.00 (194.00) |
|                  |               |                      |                  | Output Torque Nm | 10300         | 15000         | 21500         | 37000         | 61100          | 80800 (85900)   |
|                  |               |                      | Thermal          | Input Power kW   | 22.80         | 35.00         | 50.50         | 81.70         | 113.00         | 140.00          |
|                  |               |                      |                  | Output Torque Nm | 9880          | 15400         | 22400         | 36400         | 49700          | 61900           |
|                  | 100.          | 14.50                | Mechanical       | Efficiency %     | 88            | 89            | 89            | 90            | 91             | 91              |
|                  |               |                      |                  | Input Power kW   | 20.90 (22.40) | 32.50 (34.80) | 46.20         | 82.30 (83.10) | 81.80          | 138.00 (141.00) |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (12800) | 18800 (20100) | 27000         | 48100 (48500) | 47300          | 80800 (82100)   |
|                  |               |                      |                  | Input Power kW   | 19.20         | 28.90         | 43.30         | 65.50         | 105.00         | 119.00          |
|                  | 125.          | 11.60                | Mechanical       | Output Torque Nm | 10900         | 16700         | 25200         | 38200         | 60800          | 69100           |
|                  |               |                      |                  | Efficiency %     | 86            | 87            | 88            | 88            | 89             | 90              |
|                  |               |                      | Thermal          | Input Power kW   | 17.20 (18.30) | 26.30 (27.30) | 39.00         | 64.00         | 91.80 (102.00) | 111.00 (158.00) |
|                  |               |                      |                  | Output Torque Nm | 11900 (12700) | 18800 (19500) | 27700         | 46000         | 65500 (72600)  | 80800 (115000)  |
|                  | 150.          | 9.67                 | Mechanical       | Input Power kW   | 15.50         | 23.60         | 35.30         | 50.50         | 76.40          | 94.90           |
|                  |               |                      |                  | Output Torque Nm | 10700         | 16800         | 25100         | 36100         | 54400          | 68900           |
|                  |               |                      | Thermal          | Efficiency %     | 83            | 84            | 86            | 86            | 88             | 88              |
|                  |               |                      |                  | Input Power kW   | 14.70 (15.50) | 22.60 (24.80) | 30.30         | 56.90 (61.70) | 74.30          | 95.10 (105.00)  |
|                  | 200.          | 7.25                 | Mechanical       | Output Torque Nm | 11900 (12600) | 18800 (20600) | 26300         | 48100 (52100) | 62500          | 80800 (89300)   |
|                  |               |                      |                  | Input Power kW   | 13.50         | 21.20         | 30.40         | 46.80         | 70.90          | 87.30           |
|                  |               |                      | Thermal          | Output Torque Nm | 10900         | 17600         | 26400         | 39400         | 59600          | 74100           |
|                  |               |                      |                  | Efficiency %     | 81            | 83            | 84            | 85            | 87             | 87              |
|                  | 225.          | 6.44                 | Mechanical       | Input Power kW   | 11.50 (13.50) | 17.70 (18.50) | 28.30         | 44.50 (47.30) | 48.80          | 72.70 (83.50)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (14000) | 18800 (19600) | 30300         | 48100 (51200) | 53400          | 80800 (92900)   |
|                  |               |                      | Thermal          | Input Power kW   | 14.40         | 21.20         | 29.30         | 43.50         | 65.90          | 80.90           |
|                  |               |                      |                  | Output Torque Nm | 15000         | 22500         | 31500         | 47000         | 72400          | 90000           |
|                  | 250.          | 5.80                 | Mechanical       | Efficiency %     | 82            | 84            | 84            | 85            | 87             | 88              |
|                  |               |                      |                  | Input Power kW   | 10.50 (12.10) | 15.80 (18.70) | 22.70         | 39.40 (47.20) | 53.10 (54.80)  | 64.60 (77.20)   |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (13800) | 18800 (22400) | 28300         | 48100 (57800) | 65500 (67600)  | 80800 (96600)   |
|                  |               |                      |                  | Input Power kW   | 11.40         | 17.40         | 23.80         | 35.90         | 53.50          | 67.00           |
| 300.             | 4.83          | Mechanical           | Output Torque Nm | 13000            | 20800         | 29700         | 43800         | 66000         | 83800          |                 |
|                  |               |                      | Efficiency %     | 79               | 81            | 82            | 83            | 85            | 86             |                 |
|                  |               | Thermal              | Input Power kW   | 9.54 (11.80)     | 14.40 (17.10) | 24.80         | 36.30 (36.90) | 48.80 (58.50) | 58.60 (92.70)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (14800)    | 18800 (22400) | 32400         | 48100 (48900) | 65500 (78600) | 80800 (128000) |                 |
| 350.             | 4.14          | Mechanical           | Input Power kW   | 11.70            | 17.00         | 23.60         | 33.00         | 47.60         | 61.00          |                 |
|                  |               |                      | Output Torque Nm | 14700            | 22200         | 30700         | 43600         | 63800         | 84100          |                 |
|                  |               | Thermal              | Efficiency %     | 79               | 81            | 82            | 83            | 85            | 85             |                 |
|                  |               |                      | Input Power kW   | 8.16 (9.87)      | 12.40 (14.80) | 18.70         | 31.00 (39.30) | 41.50 (44.80) | 50.20 (62.70)  |                 |
| 400.             | 3.63          | Mechanical           | Output Torque Nm | 11900 (14500)    | 18800 (22400) | 29600         | 48100 (61100) | 65500 (70700) | 80800 (101000) |                 |
|                  |               |                      | Input Power kW   | 10.20            | 15.10         | 20.50         | 30.90         | 45.20         | 56.80          |                 |
|                  |               | Thermal              | Output Torque Nm | 15000            | 22900         | 32500         | 48000         | 71300         | 91500          |                 |
|                  |               |                      | Efficiency %     | 77               | 80            | 80            | 82            | 83            | 85             |                 |
| 450.             | 3.22          | Mechanical           | Input Power kW   | 7.03             | 11.20 (11.30) | 18.40         | 25.50         | 37.90 (46.20) | 44.80 (53.10)  |                 |
|                  |               |                      | Output Torque Nm | 11500            | 18800 (19000) | 31400         | 44800         | 65500 (80300) | 80800 (96100)  |                 |
|                  |               | Thermal              | Input Power kW   | 7.50             | 11.30         | 14.70         | 22.40         | 31.20         | 43.30          |                 |
|                  |               |                      | Output Torque Nm | 12300            | 18900         | 24900         | 39300         | 53600         | 78100          |                 |
| 500.             | 2.90          | Mechanical           | Efficiency %     | 69               | 71            | 72            | 75            | 75            | 78             |                 |
|                  |               |                      | Input Power kW   | 6.28 (8.47)      | 9.97 (11.80)  | 18.10 (18.30) | 24.00 (25.20) | 33.40 (41.10) | 40.20 (63.50)  |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (34400) | 48100 (50400) | 65500 (80800) | 80800 (128000) |                 |
|                  |               |                      | Input Power kW   | 9.74             | 13.90         | 19.30         | 25.70         | 37.40         | 48.20          |                 |
| 600.             | 2.42          | Mechanical           | Output Torque Nm | 18600            | 26400         | 36300         | 51400         | 73300         | 97100          |                 |
|                  |               |                      | Efficiency %     | 76               | 78            | 80            | 80            | 82            | 83             |                 |
|                  |               | Thermal              | Input Power kW   | 6.12 (7.53)      | 9.10 (9.27)   | 15.50         | 22.60 (23.40) | 27.10         | 37.80 (46.40)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (14700)    | 18800 (19100) | 32500         | 48100 (49900) | 57300         | 80800 (99500)  |                 |
| 625.             | 2.32          | Mechanical           | Input Power kW   | 11.30            | 15.20         | 20.80         | 29.80         | 44.90         | 54.80          |                 |
|                  |               |                      | Output Torque Nm | 22200            | 31600         | 43600         | 63800         | 95300         | 118000         |                 |
|                  |               | Thermal              | Efficiency %     | 77               | 78            | 79            | 80            | 83            | 84             |                 |
|                  |               |                      | Input Power kW   | 5.39 (6.70)      | 8.63 (10.30)  | 13.80         | 20.60 (27.90) | 28.40 (32.60) | 34.40 (45.70)  |                 |
| 700.             | 2.07          | Mechanical           | Output Torque Nm | 11900 (14900)    | 18800 (22400) | 31500         | 48100 (65500) | 65500 (75200) | 80800 (108000) |                 |
|                  |               |                      | Input Power kW   | 8.51             | 12.40         | 16.90         | 24.20         | 35.70         | 44.80          |                 |
|                  |               | Thermal              | Output Torque Nm | 19000            | 27200         | 38700         | 56800         | 82300         | 105000         |                 |
|                  |               |                      | Efficiency %     | 73               | 76            | 77            | 78            | 81            | 82             |                 |
| 750.             | 1.93          | Mechanical           | Input Power kW   | 5.13 (6.91)      | 7.44 (8.84)   | 13.50 (13.70) | 18.50 (19.70) | 25.50 (31.90) | 30.70 (48.50)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (34700) | 48100 (51200) | 65500 (82200) | 80800 (128000) |                 |
|                  |               | Thermal              | Input Power kW   | 8.90             | 12.30         | 16.70         | 22.40         | 32.00         | 41.20          |                 |
|                  |               |                      | Output Torque Nm | 20900            | 31300         | 42300         | 58200         | 82300         | 109000         |                 |
| 800.             | 1.81          | Mechanical           | Efficiency %     | 74               | 75            | 77            | 78            | 80            | 81             |                 |
|                  |               |                      | Input Power kW   | 4.72 (6.04)      | 7.15 (8.49)   | 11.40         | 17.20 (18.40) | 23.60 (34.30) | 28.00 (44.10)  |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (15300)    | 18800 (22400) | 31300         | 48100 (51500) | 65500 (95700) | 80800 (128000) |                 |
|                  |               |                      | Input Power kW   | 6.04             | 8.38          | 11.90         | 17.90         | 22.60         | 29.30          |                 |
| 850.             | 1.71          | Mechanical           | Output Torque Nm | 15400            | 22100         | 32700         | 50000         | 62600         | 84800          |                 |
|                  |               |                      | Efficiency %     | 65               | 68            | 71            | 72            | 72            | 75             |                 |
|                  |               | Thermal              | Input Power kW   | 4.17 (5.61)      | 6.36 (7.55)   | 11.50 (11.70) | 15.80 (17.00) | 21.00 (26.60) | 24.70 (39.10)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (34600) | 48100 (51800) | 65500 (83200) | 80800 (128000) |                 |
| 900.             | 1.61          | Mechanical           | Input Power kW   | 8.37             | 11.50         | 15.50         | 20.70         | 28.90         | 36.80          |                 |
|                  |               |                      | Output Torque Nm | 24300            | 34500         | 46200         | 63200         | 90500         | 121000         |                 |
|                  |               | Thermal              | Efficiency %     | 71               | 73            | 75            | 76            | 78            | 79             |                 |
|                  |               |                      | Input Power kW   | 4.16 (4.16)      | 6.30 (6.80)   | 10.80         | 15.30 (16.10) | 20.90 (29.50) | 24.30 (32.60)  |                 |
| 950.             | 1.51          | Mechanical           | Output Torque Nm | 11900 (11900)    | 18800 (20300) | 32700         | 48100 (50700) | 65500 (93100) | 80800 (109000) |                 |
|                  |               |                      | Input Power kW   | 5.78             | 8.00          | 10.20         | 15.10         | 20.00         | 28.30          |                 |
|                  |               | Thermal              | Output Torque Nm | 16700            | 24000         | 30700         | 47700         | 62800         | 94400          |                 |
|                  |               |                      | Efficiency %     | 64               | 66            | 67            | 70            | 70            | 74             |                 |
| 1000.            | 1.41          | Mechanical           | Input Power kW   | 3.59 (4.57)      | 5.52 (6.55)   | 8.85          | 13.60 (18.40) | 17.90 (20.70) | 21.20 (28.30)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (15300)    | 18800 (22400) | 31700         | 48100 (65400) | 65500 (75600) | 80800 (108000) |                 |
|                  |               | Thermal              | Input Power kW   | 7.34             | 10.30         | 13.70         | 19.60         | 27.80         | 34.40          |                 |
|                  |               |                      | Output Torque Nm | 24800            | 35600         | 49500         | 70100         | 102000        | 132000         |                 |
| 1100.            | 1.31          | Mechanical           | Efficiency %     | 68               | 72            | 73            | 74            | 77            | 78             |                 |
|                  |               |                      | Input Power kW   | 3.50 (4.60)      | 5.12 (5.52)   | 9.09          | 12.00         | 16.40         | 20.10          |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (15800)    | 18800 (20300) | 34100         | 47300         | 64600         | 80500          |                 |
|                  |               |                      | Input Power kW   | 6.08             | 8.47          | 10.80         | 16.10         | 22.00         | 33.90          |                 |
| 1200.            | 1.21          | Mechanical           | Output Torque Nm | 21000            | 31500         | 40800         | 63800         | 87100         | 137000         |                 |
|                  |               |                      | Efficiency %     | 66               | 68            | 69            | 73            | 76            | 78             |                 |
|                  |               | Thermal              | Input Power kW   | 3.50             | 5.12          | 9.09          | 12.00         | 16.40         | 20.10          |                 |
|                  |               |                      | Output Torque Nm | 11900 (15800)    | 18800 (20300) | 34100         | 47300         | 64600         | 80500          |                 |

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 1.61                 | Mechanical       | Input Power kW   | 3.17 (4.14)   | 5.05 (5.99)   | 8.55          | 11.60 (13.30)  | 16.40 (25.80)  | 19.50 (30.70)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15700) | 18800 (22400) | 33300         | 48100 (55300)  | 65500 (104000) | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 4.97          | 7.05          | 9.86          | 14.30          | 17.90          | 23.30          |
|                  |               |                      |                  | Output Torque Nm | 18900         | 26500         | 38600         | 59500          | 71500          | 96900          |
|                  | 1000.         | 1.45                 | Mechanical       | Efficiency %     | 61            | 64            | 67            | 68             | 69             | 71             |
|                  |               |                      |                  | Input Power kW   | 2.81 (3.76)   | 4.25 (5.04)   | 7.67 (7.72)   | 10.40 (11.40)  | 13.70 (17.80)  | 16.40 (25.80)  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34500) | 48100 (53000)  | 65500 (85300)  | 80800 (128000) |
|                  |               |                      |                  | Input Power kW   | 7.38          | 10.10         | 13.50         | 17.50          | 23.90          | 30.30          |
|                  | 1200.         | 1.21                 | Mechanical       | Output Torque Nm | 32100         | 45800         | 60600         | 81500          | 115000         | 151000         |
|                  |               |                      |                  | Efficiency %     | 66            | 67            | 69            | 71             | 74             | 75             |
|                  |               |                      | Thermal          | Input Power kW   | 2.62 (3.45)   | 3.83 (4.54)   | 6.51          | 9.04 (10.40)   | 12.70 (19.90)  | 15.10 (23.70)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15900) | 18800 (22400) | 33600         | 48100 (55400)  | 65500 (104000) | 80800 (128000) |
|                  | 1250.         | 1.16                 | Mechanical       | Input Power kW   | 4.63          | 6.22          | 8.66          | 12.60          | 15.50          | 20.10          |
|                  |               |                      |                  | Output Torque Nm | 21500         | 31000         | 45100         | 67600          | 80100          | 109000         |
|                  |               |                      | Thermal          | Efficiency %     | 59            | 61            | 64            | 66             | 66             | 69             |
|                  |               |                      |                  | Input Power kW   | 2.35 (3.14)   | 3.53 (4.18)   | 6.34 (6.38)   | 8.58 (9.53)    | 11.40 (14.90)  | 13.60 (21.30)  |
|                  | 1400.         | 1.04                 | Mechanical       | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34400) | 48100 (53500)  | 65500 (86100)  | 80800 (128000) |
|                  |               |                      |                  | Input Power kW   | 7.05          | 9.58          | 11.60         | 16.30          | 22.40          | 28.20          |
|                  |               |                      | Thermal          | Output Torque Nm | 36900         | 52400         | 63200         | 92400          | 131000         | 170000         |
|                  |               |                      |                  | Efficiency %     | 63            | 65            | 67            | 69             | 71             | 72             |
|                  | 1500.         | 0.97                 | Mechanical       | Input Power kW   | 2.32 (2.39)   | 3.39 (3.77)   | 5.98          | 8.05 (9.09)    | 11.30 (16.90)  | 13.10 (18.80)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12300) | 18800 (21000) | 33800         | 48100 (54500)  | 65500 (98500)  | 80800 (117000) |
|                  |               |                      | Thermal          | Input Power kW   | 4.47          | 6.02          | 7.40          | 10.70          | 13.80          | 19.70          |
|                  |               |                      |                  | Output Torque Nm | 23600         | 34100         | 42100         | 64500          | 80600          | 123000         |
| 1600.            | 0.91          | Mechanical           | Efficiency %     | 57               | 59            | 60            | 63            | 64             | 68             |                |
|                  |               |                      | Input Power kW   | 2.03 (2.66)      | 3.08 (3.64)   | 4.86          | 7.39 (9.92)   | 9.73 (11.10)   | 11.70 (15.40)  |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15800)    | 18800 (22400) | 31500         | 48100 (65000) | 65500 (75100)  | 80800 (107000) |                |
|                  |               |                      | Input Power kW   | 6.21             | 8.59          | 11.30         | 15.60         | 21.80          | 26.70          |                |
| 1750.            | 0.83          | Mechanical           | Output Torque Nm | 37700            | 54100         | 74500         | 103000        | 149000         | 188000         |                |
|                  |               |                      | Efficiency %     | 60               | 63            | 65            | 67            | 69             | 71             |                |
|                  |               | Thermal              | Input Power kW   | 1.95 (2.53)      | 2.97 (3.19)   | 5.21          | 6.88 (6.99)   | 8.84           | 10.70          |                |
|                  |               |                      | Output Torque Nm | 11900 (15700)    | 18800 (20200) | 33900         | 48100 (48800) | 64100          | 79900          |                |
| 1800.            | 0.81          | Mechanical           | Input Power kW   | 5.09             | 7.06          | 8.81          | 12.70         | 16.70          | 25.60          |                |
|                  |               |                      | Output Torque Nm | 32300            | 46000         | 58100         | 90300         | 123000         | 194000         |                |
|                  |               | Thermal              | Efficiency %     | 58               | 60            | 62            | 66            | 69             | 72             |                |
|                  |               |                      | Input Power kW   | 1.80 (2.40)      | 2.77 (3.27)   | 4.94 (4.95)   | 6.50 (7.35)   | 8.56 (11.40)   | 10.20 (16.00)  |                |
| 2000.            | 0.73          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (34300) | 48100 (54600) | 65500 (87800)  | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 5.37             | 7.66          | 7.66          | 14.40         | 20.40          | 25.60          |                |
|                  |               | Thermal              | Output Torque Nm | 37000            | 53900         | 53600         | 108000        | 158000         | 206000         |                |
|                  |               |                      | Efficiency %     | 59               | 59            | 61            | 65            | 67             | 69             |                |
| 2100.            | 0.69          | Mechanical           | Input Power kW   | 1.76 (2.33)      | 2.68 (3.16)   | 4.20          | 6.36 (8.50)   | 8.38 (9.56)    | 10.00 (13.20)  |                |
|                  |               |                      | Output Torque Nm | 11900 (16000)    | 18800 (22400) | 31400         | 48100 (64900) | 65500 (74900)  | 80800 (107000) |                |
|                  |               | Thermal              | Input Power kW   | 5.99             | 8.30          | 9.49          | 14.90         | 20.80          | 25.40          |                |
|                  |               |                      | Output Torque Nm | 42400            | 60600         | 72500         | 115000        | 166000         | 208000         |                |
| 2400.            | 0.60          | Mechanical           | Efficiency %     | 58               | 60            | 62            | 65            | 67             | 69             |                |
|                  |               |                      | Input Power kW   | 1.64 (2.13)      | 2.48 (2.65)   | 4.33          | 5.71 (5.88)   | 7.33           | 8.88           |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15700)    | 18800 (20200) | 33900         | 48100 (49600) | 64000          | 79700          |                |
|                  |               |                      | Input Power kW   | 4.88             | 6.68          | 8.30          | 11.90         | 15.70          | 24.00          |                |
| 2500.            | 0.58          | Mechanical           | Output Torque Nm | 37100            | 52700         | 66200         | 103000        | 140000         | 220000         |                |
|                  |               |                      | Efficiency %     | 55               | 58            | 59            | 64            | 66             | 69             |                |
|                  |               | Thermal              | Input Power kW   | 1.66 (1.75)      | 2.52 (2.87)   | 4.47 (4.53)   | 5.91 (6.65)   | 8.08 (12.30)   | 9.24 (13.20)   |                |
|                  |               |                      | Output Torque Nm | 11900 (12700)    | 18800 (21600) | 34200 (34700) | 48100 (54300) | 65500 (101000) | 80800 (117000) |                |
| 2800.            | 0.52          | Mechanical           | Input Power kW   | 4.05             | 5.47          | 6.58          | 9.42          | 11.80          | 16.60          |                |
|                  |               |                      | Output Torque Nm | 30400            | 42300         | 51000         | 77700         | 96500          | 148000         |                |
|                  |               | Thermal              | Efficiency %     | 52               | 54            | 55            | 59            | 60             | 64             |                |
|                  |               |                      | Input Power kW   | 1.49 (1.98)      | 2.26 (2.67)   | 3.77          | 5.20 (5.93)   | 7.08 (11.00)   | 8.28 (13.00)   |                |
| 3000.            | 0.48          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33500         | 48100 (55100) | 65500 (104000) | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 3.89             | 5.24          | 7.15          | 10.10         | 11.90          | 15.20          |                |
|                  |               | Thermal              | Output Torque Nm | 32700            | 45300         | 64800         | 95700         | 112000         | 151000         |                |
|                  |               |                      | Efficiency %     | 51               | 53            | 56            | 59            | 59             | 62             |                |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 1.41 (1.88)      | 2.13 (2.51)   | 3.73 (4.68)   | 4.96 (5.66)   | 4.99           | 7.13           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (43200) | 48100 (55200) | 51600          | 76800          |                |
|                  |               | Thermal              | Input Power kW   | 4.21             | 5.64          | 7.01          | 11.00         | 17.20          | 21.00          |                |
|                  |               |                      | Output Torque Nm | 37500            | 52100         | 65600         | 110000        | 185000         | 232000         |                |
| 3600.            | 0.40          | Mechanical           | Efficiency %     | 51               | 54            | 56            | 59            | 63             | 66             |                |
|                  |               |                      | Input Power kW   | 1.32 (1.42)      | 2.01 (2.33)   | 3.55 (3.67)   | 4.65 (5.22)   | 6.33 (9.82)    | 7.20 (10.30)   |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (12900)    | 18800 (22000) | 34200 (35400) | 48100 (54200) | 65500 (103000) | 80800 (117000) |                |
|                  |               |                      | Input Power kW   | 3.79             | 5.12          | 6.12          | 8.64          | 10.70          | 15.00          |                |
| 4200.            | 0.35          | Mechanical           | Output Torque Nm | 36300            | 50200         | 60100         | 91200         | 113000         | 172000         |                |
|                  |               |                      | Efficiency %     | 49               | 51            | 52            | 56            | 56             | 61             |                |
|                  |               | Thermal              | Input Power kW   | 1.26 (1.67)      | 1.90 (2.24)   | 3.15          | 4.33 (4.93)   | 5.93 (9.23)    | 6.92 (10.80)   |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33400         | 48100 (55000) | 65500 (104000) | 80800 (128000) |                |
| 3000.            | 0.48          | Mechanical           | Input Power kW   | 3.74             | 4.98          | 6.77          | 9.55          | 11.20          | 14.20          |                |
|                  |               |                      | Output Torque Nm | 37500            | 51800         | 73900         | 109000        | 126000         | 170000         |                |
|                  |               | Thermal              | Efficiency %     | 48               | 50            | 54            | 56            | 56             | 59             |                |
|                  |               |                      | Input Power kW   | 1.12 (1.22)      | 1.69 (1.98)   | 2.97 (3.11)   | 3.89 (4.35)   | 5.31 (8.25)    | 6.02 (8.55)    |                |
| 3500.            | 0.41          | Mechanical           | Output Torque Nm | 11900 (13100)    | 18800 (22300) | 34200 (35900) | 48100 (54100) | 65500 (104000) | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 3.65             | 4.87          | 5.79          | 8.13          | 10.10          | 14.10          |                |
|                  |               | Thermal              | Output Torque Nm | 41700            | 57600         | 68500         | 104000        | 127000         | 195000         |                |
|                  |               |                      | Efficiency %     | 46               | 48            | 50            | 54            | 54             | 58             |                |
| 3600.            | 0.40          | Mechanical           | Input Power kW   | 1.10 (1.45)      | 1.67 (1.96)   | 2.74          | 3.75 (4.26)   | 5.15 (8.00)    | 6.00 (9.36)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33400         | 48100 (55000) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 3.62             | 4.83          | 6.55          | 9.15          | 10.70          | 13.60          |                |
|                  |               |                      | Output Torque Nm | 42100            | 57900         | 82700         | 121000        | 140000         | 188000         |                |
| 4200.            | 0.35          | Mechanical           | Efficiency %     | 46               | 47            | 51            | 54            | 54             | 57             |                |
|                  |               |                      | Input Power kW   | 0.98 (1.08)      | 1.48 (1.74)   | 2.59 (2.74)   | 3.37 (3.76)   | 4.62 (7.16)    | 5.23 (7.40)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36300) | 48100 (54100) | 65500 (104000) | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 3.54             | 4.73          | 5.61          | 7.80          | 9.66           | 13.50          |                |
| 4200.            | 0.35          | Thermal              | Output Torque Nm | 46900            | 64600         | 76500         | 115000        | 141000         | 216000         |                |
|                  |               |                      | Efficiency %     | 44               | 46            | 48            | 52            | 51             | 56             |                |

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 192.00                         | Mechanical       | Input Power kW   | 111.00       | 165.00 | 230.00 | 416.00 | 537.00 | 805.00 |
|                  |               |                                |                  | Output Torque Nm | 5350         | 7950   | 10900  | 20000  | 25800  | 39500  |
|                  |               |                                | Thermal          | Input Power kW   | 86.40        | 126.00 | 182.00 | 252.00 | 333.00 | 472.00 |
|                  |               |                                |                  | Output Torque Nm | 4150         | 6030   | 8580   | 12100  | 16000  | 23100  |
|                  |               |                                |                  | Efficiency %     | 97           | 96     | 97     | 97     | 97     | 97     |
|                  | 7.5           | 128.00                         | Mechanical       | Input Power kW   | 80.60        | 124.00 | 169.00 | 350.00 | 524.00 | 677.00 |
|                  |               |                                |                  | Output Torque Nm | 5760         | 8910   | 12100  | 25100  | 37700  | 48800  |
|                  |               |                                | Thermal          | Input Power kW   | 70.90        | 104.00 | 152.00 | 215.00 | 319.00 | 422.00 |
|                  |               |                                |                  | Output Torque Nm | 5060         | 7470   | 10900  | 15400  | 22900  | 30400  |
|                  |               |                                |                  | Efficiency %     | 96           | 96     | 96     | 96     | 96     | 97     |
|                  | 10.0          | 96.00                          | Mechanical       | Input Power kW   | 55.80        | 101.00 | 137.00 | 288.00 | 406.00 | 528.00 |
|                  |               |                                |                  | Output Torque Nm | 5150         | 9430   | 12700  | 27400  | 38200  | 49700  |
|                  |               |                                | Thermal          | Input Power kW   | 63.20        | 93.70  | 141.00 | 197.00 | 303.00 | 402.00 |
|                  |               |                                |                  | Output Torque Nm | 5840         | 8720   | 13200  | 18700  | 28500  | 37800  |
|                  |               |                                |                  | Efficiency %     | 95           | 95     | 95     | 95     | 96     | 96     |
|                  | 12.5          | 76.80                          | Mechanical       | Input Power kW   | 61.30        | 81.00  | 125.00 | 212.00 | 284.00 | 430.00 |
|                  |               |                                |                  | Output Torque Nm | 7340         | 9560   | 15100  | 25100  | 34500  | 51700  |
|                  |               |                                | Thermal          | Input Power kW   | 54.70        | 86.20  | 121.00 | 180.00 | 273.00 | 365.00 |
|                  |               |                                |                  | Output Torque Nm | 6550         | 10200  | 14500  | 21300  | 33100  | 43800  |
|                  |               |                                |                  | Efficiency %     | 94           | 95     | 94     | 95     | 96     | 96     |
|                  | 15.0          | 64.00                          | Mechanical       | Input Power kW   | 49.40        | 70.70  | 130.00 | 216.00 | 309.00 | 371.00 |
|                  |               |                                |                  | Output Torque Nm | 6770         | 9730   | 18100  | 30100  | 43300  | 52000  |
|                  |               |                                | Thermal          | Input Power kW   | 50.40        | 76.90  | 111.00 | 165.00 | 247.00 | 335.00 |
|                  |               |                                |                  | Output Torque Nm | 6900         | 10600  | 15300  | 23000  | 34500  | 46900  |
|                  |               |                                |                  | Efficiency %     | 94           | 94     | 94     | 95     | 95     | 95     |
|                  | 20.0          | 48.00                          | Mechanical       | Input Power kW   | 46.80        | 73.10  | 104.00 | 182.00 | 207.00 | 289.00 |
|                  |               |                                |                  | Output Torque Nm | 8500         | 13400  | 19100  | 33400  | 38300  | 53500  |
|                  |               |                                | Thermal          | Input Power kW   | 42.10        | 63.10  | 95.40  | 132.00 | 216.00 | 288.00 |
| Output Torque Nm |               |                                |                  | 7630             | 11500        | 17400  | 24100  | 40000  | 53300  |        |
|                  |               |                                | Efficiency %     | 93               | 93           | 93     | 93     | 95     | 95     |        |
| 25.0             | 38.40         | Mechanical                     | Input Power kW   | 38.50            | 57.40        | 82.30  | 135.00 | 194.00 | 232.00 |        |
|                  |               |                                | Output Torque Nm | 8540             | 13100        | 18500  | 30500  | 44400  | 53700  |        |
|                  |               | Thermal                        | Input Power kW   | 33.60            | 51.00        | 78.40  | 109.00 | 166.00 | 223.00 |        |
|                  |               |                                | Output Torque Nm | 7450             | 11600        | 17600  | 24500  | 37900  | 51700  |        |
|                  |               |                                | Efficiency %     | 91               | 91           | 92     | 92     | 93     | 93     |        |
| 30.0             | 32.00         | Mechanical                     | Input Power kW   | 32.60            | 52.50        | 74.10  | 131.00 | 165.00 | 201.00 |        |
|                  |               |                                | Output Torque Nm | 8580             | 14000        | 20400  | 35100  | 44800  | 54800  |        |
|                  |               | Thermal                        | Input Power kW   | 29.00            | 45.70        | 67.50  | 95.70  | 153.00 | 208.00 |        |
|                  |               |                                | Output Torque Nm | 7620             | 12200        | 18600  | 25500  | 41400  | 56600  |        |
|                  |               |                                | Efficiency %     | 90               | 91           | 91     | 91     | 92     | 93     |        |
| 40.0             | 24.00         | Mechanical                     | Input Power kW   | 28.40            | 38.10        | 59.50  | 89.30  | 119.00 | 148.00 |        |
|                  |               |                                | Output Torque Nm | 9800             | 13300        | 20800  | 31800  | 42900  | 53000  |        |
|                  |               | Thermal                        | Input Power kW   | 22.50            | 34.50        | 50.90  | 78.90  | 113.00 | 181.00 |        |
|                  |               |                                | Output Torque Nm | 7720             | 12000        | 17800  | 28000  | 40700  | 65300  |        |
|                  |               |                                | Efficiency %     | 86               | 87           | 88     | 89     | 91     | 91     |        |
| 50.0             | 19.20         | Mechanical                     | Input Power kW   | 23.70            | 36.10        | 49.40  | 84.20  | 78.90  | 116.00 |        |
|                  |               |                                | Output Torque Nm | 9910             | 15300        | 21100  | 36300  | 34600  | 51100  |        |
|                  |               | Thermal                        | Input Power kW   | 18.90            | 28.80        | 42.30  | 62.80  | 114.00 | 154.00 |        |
|                  |               |                                | Output Torque Nm | 7860             | 12200        | 18000  | 26900  | 50400  | 68400  |        |
|                  |               |                                | Efficiency %     | 84               | 85           | 86     | 86     | 89     | 89     |        |
| 60.0             | 16.00         | Mechanical                     | Input Power kW   | 20.00            | 31.80        | 42.00  | 71.40  | 86.70  | 105.00 |        |
|                  |               |                                | Output Torque Nm | 9760             | 15800        | 21100  | 36200  | 43900  | 53800  |        |
|                  |               | Thermal                        | Input Power kW   | 16.40            | 24.80        | 38.90  | 55.60  | 73.10  | 101.00 |        |
|                  |               |                                | Output Torque Nm | 7970             | 12200        | 19500  | 28000  | 36900  | 51800  |        |
|                  |               |                                | Efficiency %     | 81               | 82           | 84     | 84     | 85     | 86     |        |
| 70.0             | 13.71         | Mechanical                     | Input Power kW   | 16.60            | 26.50        | 37.10  | 61.40  | 76.20  | 92.90  |        |
|                  |               |                                | Output Torque Nm | 9280             | 15100        | 21100  | 35500  | 44200  | 55200  |        |
|                  |               | Thermal                        | Input Power kW   | 15.30            | 23.10        | 33.00  | 49.20  | 64.50  | 98.70  |        |
|                  |               |                                | Output Torque Nm | 8530             | 13100        | 18700  | 28200  | 37200  | 58700  |        |
|                  |               |                                | Efficiency %     | 80               | 81           | 81     | 82     | 83     | 85     |        |

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Synthetic Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                 |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|-----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24              |
| 75.0          | 12.80                | Mechanical | Input Power kW   | 18.00         | 23.10         | 38.70         | 59.50         | 99.70 (111.00) | 122.00 (128.00) |
|               |                      |            | Output Torque Nm | 11600         | 15100         | 25500         | 39500         | 65500 (72900)  | 80800 (85000)   |
|               |                      | Thermal    | Input Power kW   | 18.60         | 28.30         | 39.90         | 65.00         | 86.40          | 113.00          |
|               |                      |            | Output Torque Nm | 12000         | 18500         | 26300         | 43200         | 56700          | 74500           |
| 100.          | 9.60                 | Mechanical | Input Power kW   | 14.10 (16.30) | 21.90 (23.10) | 33.70         | 55.50 (59.50) | 59.30          | 92.80 (102.00)  |
|               |                      |            | Output Torque Nm | 11900 (13700) | 18800 (19800) | 29100         | 48100 (51600) | 51200          | 80800 (88900)   |
|               |                      | Thermal    | Input Power kW   | 15.70         | 23.50         | 33.50         | 50.30         | 77.50          | 95.70           |
|               |                      |            | Output Torque Nm | 13300         | 20100         | 29000         | 43500         | 67000          | 83400           |
| 125.          | 7.68                 | Mechanical | Input Power kW   | 11.70 (13.80) | 17.80 (20.50) | 29.30         | 45.10         | 61.90 (72.70)  | 74.70 (118.00)  |
|               |                      |            | Output Torque Nm | 11900 (14100) | 18800 (21600) | 30800         | 48000         | 65500 (77000)  | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 12.70         | 19.20         | 26.90         | 38.10         | 56.20          | 72.30           |
|               |                      |            | Output Torque Nm | 13000         | 20300         | 28300         | 40400         | 59400          | 78200           |
| 150.          | 6.40                 | Mechanical | Input Power kW   | 9.98 (11.60)  | 15.30 (18.20) | 22.20         | 38.60 (46.40) | 52.50 (54.30)  | 63.90 (76.40)   |
|               |                      |            | Output Torque Nm | 11900 (13900) | 18800 (22400) | 28400         | 48100 (58000) | 65500 (67700)  | 80800 (96800)   |
|               |                      | Thermal    | Input Power kW   | 11.10         | 17.00         | 23.40         | 35.30         | 53.10          | 66.40           |
|               |                      |            | Output Torque Nm | 13300         | 20900         | 29900         | 44000         | 66100          | 83900           |
| 200.          | 4.80                 | Mechanical | Input Power kW   | 7.77 (9.39)   | 12.00 (12.30) | 20.30         | 30.00 (31.50) | 34.90          | 48.90 (59.80)   |
|               |                      |            | Output Torque Nm | 11900 (14400) | 18800 (19300) | 32300         | 48100 (50400) | 56800          | 80800 (98900)   |
|               |                      | Thermal    | Input Power kW   | 12.40         | 17.10         | 23.60         | 34.60         | 51.90          | 63.00           |
|               |                      |            | Output Torque Nm | 19100         | 26900         | 37600         | 55400         | 84600          | 104000          |
| 225.          | 4.27                 | Mechanical | Input Power kW   | 7.14 (8.72)   | 10.70 (12.70) | 16.50         | 26.70 (34.70) | 35.90 (39.70)  | 43.60 (55.80)   |
|               |                      |            | Output Torque Nm | 11900 (14600) | 18800 (22400) | 30400         | 48100 (62700) | 65500 (72400)  | 80800 (104000)  |
|               |                      | Thermal    | Input Power kW   | 9.68          | 13.80         | 18.90         | 28.10         | 41.00          | 51.70           |
|               |                      |            | Output Torque Nm | 16200         | 24400         | 34900         | 50700         | 74900          | 96000           |
| 250.          | 3.84                 | Mechanical | Input Power kW   | 6.48 (8.74)   | 9.73 (11.60)  | 17.80 (17.90) | 24.60 (25.70) | 33.00 (40.70)  | 39.60 (62.60)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34500) | 48100 (50300) | 65500 (80800)  | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 9.83          | 13.70         | 19.00         | 25.90         | 37.00          | 47.60           |
|               |                      |            | Output Torque Nm | 18200         | 26500         | 36500         | 50700         | 73400          | 97300           |
| 300.          | 3.20                 | Mechanical | Input Power kW   | 5.55 (6.90)   | 8.42 (10.00)  | 13.50         | 21.00 (28.40) | 28.10 (32.20)  | 33.90 (45.10)   |
|               |                      |            | Output Torque Nm | 11900 (14800) | 18800 (22400) | 31500         | 48100 (65100) | 65500 (75300)  | 80800 (108000)  |
|               |                      | Thermal    | Input Power kW   | 8.58          | 12.20         | 16.60         | 24.50         | 35.30          | 44.30           |
|               |                      |            | Output Torque Nm | 18500         | 27400         | 38900         | 56000         | 82500          | 106000          |
| 350.          | 2.74                 | Mechanical | Input Power kW   | 4.96          | 7.66 (8.18)   | 13.00         | 18.80 (19.00) | 26.00 (34.90)  | 30.50 (39.30)   |
|               |                      |            | Output Torque Nm | 11800         | 18800 (20100) | 32300         | 48100 (48600) | 65500 (88300)  | 80800 (104000)  |
|               |                      | Thermal    | Input Power kW   | 6.29          | 8.90          | 11.40         | 17.20         | 23.30          | 32.90           |
|               |                      |            | Output Torque Nm | 15000         | 21900         | 28300         | 44000         | 58500          | 87200           |
| 375.          | 2.56                 | Mechanical | Input Power kW   | 4.27 (5.77)   | 6.76 (8.04)   | 12.30 (12.50) | 16.30 (17.50) | 22.60 (28.50)  | 27.20 (43.00)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34700) | 48100 (51600) | 65500 (82800)  | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 8.25          | 11.70         | 15.80         | 20.80         | 29.80          | 38.30           |
|               |                      |            | Output Torque Nm | 23200         | 32600         | 44000         | 61500         | 86600          | 114000          |
| 400.          | 2.40                 | Mechanical | Input Power kW   | 4.16 (5.24)   | 6.17 (6.20)   | 10.50         | 15.30 (15.60) | 18.20          | 25.50 (31.20)   |
|               |                      |            | Output Torque Nm | 11900 (15100) | 18800 (18900) | 32300         | 48100 (49200) | 56900          | 80800 (99000)   |
|               |                      | Thermal    | Input Power kW   | 9.84          | 13.00         | 16.30         | 24.70         | 36.70          | 44.60           |
|               |                      |            | Output Torque Nm | 28400         | 39900         | 50500         | 78100         | 115000         | 142000          |
| 450.          | 2.13                 | Mechanical | Input Power kW   | 3.67 (4.67)   | 5.86 (6.97)   | 9.45          | 14.00 (19.00) | 19.20 (22.20)  | 23.30 (31.10)   |
|               |                      |            | Output Torque Nm | 11900 (15200) | 18800 (22400) | 31700         | 48100 (65500) | 65500 (75700)  | 80800 (108000)  |
|               |                      | Thermal    | Input Power kW   | 7.27          | 10.40         | 13.90         | 19.70         | 28.70          | 35.80           |
|               |                      |            | Output Torque Nm | 23800         | 33600         | 47000         | 68200         | 97800          | 125000          |
| 500.          | 1.92                 | Mechanical | Input Power kW   | 3.50 (4.72)   | 5.06 (6.01)   | 9.19 (9.29)   | 12.60 (13.70) | 17.30 (22.10)  | 20.70 (32.80)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34600) | 48100 (52400) | 65500 (84100)  | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 7.76          | 10.50         | 14.00         | 18.50         | 26.00          | 33.40           |
|               |                      |            | Output Torque Nm | 26700         | 39400         | 52300         | 70900         | 98900          | 130000          |
| 600.          | 1.60                 | Mechanical | Input Power kW   | 3.25 (4.24)   | 4.91 (5.83)   | 8.35          | 11.80 (13.50) | 16.20 (25.50)  | 19.10 (30.20)   |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (22400) | 33400         | 48100 (55000) | 65500 (104000) | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 4.99          | 6.89          | 9.67          | 14.30         | 17.70          | 23.00           |
|               |                      |            | Output Torque Nm | 18500         | 26500         | 38700         | 58600         | 71600          | 97300           |
| 625.          | 1.54                 | Mechanical | Input Power kW   | 2.85 (3.84)   | 4.33 (5.14)   | 7.85 (7.92)   | 10.70 (11.80) | 14.20 (18.40)  | 16.70 (26.50)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34500) | 48100 (52800) | 65500 (85000)  | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 7.31          | 9.95          | 13.20         | 17.40         | 23.90          | 30.20           |
|               |                      |            | Output Torque Nm | 31000         | 43700         | 57900         | 78200         | 111000         | 147000          |
| 700.          | 1.37                 | Mechanical | Input Power kW   | 2.86 (2.92)   | 4.32 (4.76)   | 7.59          | 10.50 (11.80) | 14.40 (21.20)  | 16.60 (23.80)   |
|               |                      |            | Output Torque Nm | 11900 (12200) | 18800 (20700) | 33400         | 48100 (54100) | 65500 (97300)  | 80800 (116000)  |
|               |                      | Thermal    | Input Power kW   | 4.81          | 6.63          | 8.25          | 12.20         | 15.80          | 22.40           |
|               |                      |            | Output Torque Nm | 20300         | 29100         | 36300         | 55900         | 72000          | 109000          |
| 750.          | 1.28                 | Mechanical | Input Power kW   | 2.46 (3.19)   | 3.76 (4.47)   | 6.01          | 9.23 (12.50)  | 12.10 (14.00)  | 14.40 (19.10)   |
|               |                      |            | Output Torque Nm | 11900 (15600) | 18800 (22400) | 31600         | 48100 (65200) | 65500 (75300)  | 80800 (108000)  |
|               |                      | Thermal    | Input Power kW   | 6.42          | 8.90          | 11.80         | 16.60         | 23.20          | 28.50           |
|               |                      |            | Output Torque Nm | 31700         | 45100         | 62300         | 86900         | 126000         | 161000          |
| 800.          | 1.20                 | Mechanical | Input Power kW   | 2.40 (3.15)   | 3.50 (3.76)   | 6.20          | 8.29 (8.30)   | 11.10          | 13.60           |
|               |                      |            | Output Torque Nm | 11900 (15800) | 18800 (20200) | 34000         | 48100 (48200) | 64300          | 80100           |
|               |                      | Thermal    | Input Power kW   | 5.32          | 7.27          | 9.13          | 13.40         | 18.00          | 27.90           |
|               |                      |            | Output Torque Nm | 26900         | 39600         | 50300         | 78200         | 105000         | 166000          |
|               |                      |            | Efficiency %     | 64            | 66            | 67            | 71            | 74             | 76              |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |    |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|----|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |    |
| DOUBLE REDUCTION | 900.          | 1.07                 | Mechanical       | Input Power kW   | 2.19 (2.91)   | 3.47 (4.11)   | 5.91          | 7.94 (9.12)    | 11.30 (17.70)  | 13.30 (21.00)  |    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16000) | 18800 (22400) | 33600         | 48100 (55300)  | 65500 (104000) | 80800 (128000) |    |
|                  |               |                      | Thermal          | Input Power kW   | 4.29          | 5.89          | 8.19          | 11.80          | 14.40          | 18.80          |    |
|                  |               |                      |                  | Output Torque Nm | 23800         | 32300         | 46800         | 71700          | 84100          | 114000         |    |
|                  |               |                      |                  |                  | Efficiency %  | 59            | 62            | 65             | 66             | 66             | 69 |
|                  | 1000.         | 0.96                 | Mechanical       | Input Power kW   | 1.92 (2.58)   | 2.91 (3.45)   | 5.25 (5.27)   | 7.10 (7.96)    | 9.32 (12.30)   | 11.10 (17.50)  |    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34300) | 48100 (54000)  | 65500 (86900)  | 80800 (128000) |    |
|                  |               |                      | Thermal          | Input Power kW   | 6.48          | 8.94          | 9.58          | 15.10          | 20.50          | 25.80          |    |
|                  |               |                      |                  | Output Torque Nm | 41200         | 58900         | 62900         | 103000         | 145000         | 189000         |    |
|                  |               |                      |                  |                  | Efficiency %  | 64            | 65            | 67             | 69             | 72             | 73 |
|                  | 1200.         | 0.80                 | Mechanical       | Input Power kW   | 1.81 (2.42)   | 2.63 (3.12)   | 4.46          | 6.20 (7.10)    | 8.73 (13.70)   | 10.30 (16.20)  |    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33500         | 48100 (55200)  | 65500 (104000) | 80800 (128000) |    |
|                  |               |                      | Thermal          | Input Power kW   | 4.03          | 5.36          | 7.35          | 10.60          | 12.70          | 16.50          |    |
|                  |               |                      |                  | Output Torque Nm | 27200         | 39000         | 55900         | 83000          | 96000          | 130000         |    |
|                  |               |                      |                  |                  | Efficiency %  | 56            | 58            | 61             | 63             | 64             | 67 |
|                  | 1250.         | 0.77                 | Mechanical       | Input Power kW   | 1.62 (2.16)   | 2.42 (2.87)   | 4.36 (4.37)   | 5.88 (6.69)    | 7.75 (10.40)   | 9.22 (14.40)   |    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34300) | 48100 (54900)  | 65500 (88200)  | 80800 (127000) |    |
|                  |               |                      | Thermal          | Input Power kW   | 5.33          | 8.33          | 8.33          | 14.20          | 18.90          | 24.30          |    |
|                  |               |                      |                  | Output Torque Nm | 40500         | 66400         | 66100         | 118000         | 161000         | 215000         |    |
|                  |               |                      |                  |                  | Efficiency %  | 60            | 62            | 64             | 67             | 69             | 70 |
|                  | 1400.         | 0.69                 | Mechanical       | Input Power kW   | 1.60 (1.69)   | 2.32 (2.66)   | 4.17 (4.24)   | 5.53 (6.23)    | 7.78 (11.90)   | 8.94 (12.80)   |    |
|                  |               |                      |                  | Output Torque Nm | 11900 (12600) | 18800 (21600) | 34200 (34800) | 48100 (54300)  | 65500 (101000) | 80800 (117000) |    |
|                  |               |                      | Thermal          | Input Power kW   | 3.91          | 5.21          | 6.27          | 9.01           | 11.40          | 16.20          |    |
|                  |               |                      |                  | Output Torque Nm | 30000         | 43100         | 51900         | 79100          | 96800          | 148000         |    |
|                  |               |                      |                  | Efficiency %     | 55            | 57            | 57            | 61             | 61             | 66             |    |
| 1500.            | 0.64          | Mechanical           | Input Power kW   | 1.40 (1.87)      | 2.11 (2.50)   | 3.33          | 5.07 (6.78)   | 6.63 (7.55)    | 7.92 (10.40)   |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31400         | 48100 (64700) | 65500 (74800)  | 80800 (107000) |                |    |
|                  |               | Thermal              | Input Power kW   | 5.33             | 7.65          | 8.33          | 13.70         | 18.90          | 23.10          |                |    |
|                  |               |                      | Output Torque Nm | 47000            | 70100         | 79800         | 132000        | 189000         | 238000         |                |    |
|                  |               |                      |                  | Efficiency %     | 58            | 61            | 62            | 65             | 67             | 70             |    |
| 1600.            | 0.60          | Mechanical           | Input Power kW   | 1.34 (1.74)      | 2.04 (2.18)   | 3.58          | 4.71 (4.91)   | 5.99           | 7.25           |                |    |
|                  |               |                      | Output Torque Nm | 11900 (15700)    | 18800 (20100) | 33800         | 48100 (50200) | 63900          | 79500          |                |    |
|                  |               | Thermal              | Input Power kW   | 4.54             | 6.24          | 7.73          | 11.10         | 14.40          | 22.10          |                |    |
|                  |               |                      | Output Torque Nm | 41900            | 59300         | 74200         | 115000        | 156000         | 246000         |                |    |
|                  |               |                      |                  | Efficiency %     | 56            | 58            | 59            | 64             | 67             | 70             |    |
| 1750.            | 0.55          | Mechanical           | Input Power kW   | 1.24 (1.66)      | 1.91 (2.23)   | 3.42          | 4.47 (5.19)   | 5.86 (8.02)    | 6.96 (10.80)   |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22100) | 34200         | 48100 (56100) | 65500 (90200)  | 80800 (126000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.88             | 5.59          | 5.59          | 10.40         | 15.30          | 22.30          |                |    |
|                  |               |                      | Output Torque Nm | 38600            | 56800         | 56500         | 113000        | 174000         | 263000         |                |    |
|                  |               |                      |                  | Efficiency %     | 56            | 57            | 59            | 63             | 65             | 67             |    |
| 1800.            | 0.53          | Mechanical           | Input Power kW   | 1.22 (1.62)      | 1.84 (2.18)   | 2.89          | 4.37 (5.83)   | 5.73 (6.51)    | 6.83 (8.96)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31300         | 48100 (64600) | 65500 (74600)  | 80800 (107000) |                |    |
|                  |               | Thermal              | Input Power kW   | 4.51             | 6.80          | 6.80          | 12.00         | 16.40          | 22.10          |                |    |
|                  |               |                      | Output Torque Nm | 46000            | 72000         | 75100         | 135000        | 191000         | 266000         |                |    |
|                  |               |                      |                  | Efficiency %     | 55            | 58            | 59            | 63             | 65             | 67             |    |
| 2000.            | 0.48          | Mechanical           | Input Power kW   | 1.13 (1.47)      | 1.70 (1.82)   | 2.98          | 3.91 (4.14)   | 4.98           | 6.01           |                |    |
|                  |               |                      | Output Torque Nm | 11900 (15700)    | 18800 (20100) | 33800         | 48100 (51000) | 63700          | 79300          |                |    |
|                  |               | Thermal              | Input Power kW   | 4.39             | 5.96          | 7.37          | 10.50         | 13.70          | 20.90          |                |    |
|                  |               |                      | Output Torque Nm | 48400            | 68200         | 85200         | 131000        | 178000         | 282000         |                |    |
|                  |               |                      |                  | Efficiency %     | 53            | 56            | 57            | 62             | 64             | 67             |    |
| 2100.            | 0.46          | Mechanical           | Input Power kW   | 1.14 (1.24)      | 1.73 (2.02)   | 3.09 (3.22)   | 4.07 (4.56)   | 5.56 (8.71)    | 6.31 (9.03)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (13000)    | 18800 (22200) | 34200 (35700) | 48100 (54200) | 65500 (104000) | 80800 (117000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.60             | 4.81          | 5.75          | 8.14          | 10.00          | 14.10          |                |    |
|                  |               |                      | Output Torque Nm | 39200            | 54100         | 64600         | 97800         | 119000         | 183000         |                |    |
|                  |               |                      |                  | Efficiency %     | 50            | 52            | 53            | 57             | 57             | 62             |    |
| 2400.            | 0.40          | Mechanical           | Input Power kW   | 1.03 (1.37)      | 1.56 (1.84)   | 2.60          | 3.58 (4.07)   | 4.87 (7.61)    | 5.67 (8.90)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33400         | 48100 (55000) | 65500 (104000) | 80800 (128000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.47             | 4.64          | 6.32          | 8.86          | 10.20          | 13.00          |                |    |
|                  |               |                      | Output Torque Nm | 42300            | 58200         | 83100         | 122000        | 140000         | 189000         |                |    |
|                  |               |                      |                  | Efficiency %     | 48            | 50            | 54            | 56             | 56             | 60             |    |
| 2500.            | 0.38          | Mechanical           | Input Power kW   | 0.98 (1.30)      | 1.47 (1.73)   | 2.58 (3.23)   | 3.41 (3.89)   | 3.39           | 4.83           |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (43100) | 48100 (55000) | 51400          | 76500          |                |    |
|                  |               | Thermal              | Input Power kW   | 3.79             | 5.03          | 6.22          | 9.73          | 15.10          | 18.30          |                |    |
|                  |               |                      | Output Torque Nm | 48900            | 67400         | 84300         | 140000        | 238000         | 298000         |                |    |
|                  |               |                      |                  | Efficiency %     | 49            | 51            | 53            | 57             | 62             | 64             |    |
| 2800.            | 0.34          | Mechanical           | Input Power kW   | 0.91 (1.00)      | 1.38 (1.63)   | 2.46 (2.60)   | 3.20 (3.59)   | 4.36 (6.80)    | 4.92 (7.02)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36300) | 48100 (54100) | 65500 (104000) | 80800 (116000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.40             | 4.55          | 5.40          | 7.55          | 9.24           | 12.90          |                |    |
|                  |               |                      | Output Torque Nm | 47100            | 64900         | 76900         | 116000        | 142000         | 217000         |                |    |
|                  |               |                      |                  | Efficiency %     | 47            | 49            | 50            | 54             | 54             | 59             |    |
| 3000.            | 0.32          | Mechanical           | Input Power kW   | 0.87 (1.16)      | 1.31 (1.55)   | 2.17          | 2.98 (3.39)   | 4.08 (6.37)    | 4.74 (7.43)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33400         | 48100 (54900) | 65500 (104000) | 80800 (128000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.37             | 4.45          | 6.04          | 8.42          | 9.74           | 12.30          |                |    |
|                  |               |                      | Output Torque Nm | 48900            | 67000         | 95600         | 139000        | 160000         | 215000         |                |    |
|                  |               |                      |                  | Efficiency %     | 46            | 48            | 52            | 54             | 54             | 57             |    |
| 3500.            | 0.27          | Mechanical           | Input Power kW   | 0.77 (0.86)      | 1.16 (1.37)   | 2.06 (2.21)   | 2.68 (2.99)   | 3.66 (5.70)    | 4.12 (5.85)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (13400)    | 18800 (22400) | 34200 (36800) | 48100 (54000) | 65500 (104000) | 80800 (116000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.30             | 4.36          | 5.16          | 7.18          | 8.79           | 12.30          |                |    |
|                  |               |                      | Output Torque Nm | 54500            | 74800         | 88200         | 133000        | 161000         | 247000         |                |    |
|                  |               |                      |                  | Efficiency %     | 44            | 47            | 48            | 52             | 51             | 56             |    |
| 3600.            | 0.27          | Mechanical           | Input Power kW   | 0.76 (1.01)      | 1.15 (1.35)   | 1.89          | 2.58 (2.93)   | 3.55 (5.53)    | 4.11 (6.44)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33300         | 48100 (54800) | 65500 (104000) | 80800 (128000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.28             | 4.35          | 5.89          | 8.12          | 9.40           | 11.90          |                |    |
|                  |               |                      | Output Torque Nm | 55100            | 75400         | 107000        | 156000        | 178000         | 239000         |                |    |
|                  |               |                      |                  | Efficiency %     | 44            | 46            | 49            | 52             | 52             | 55             |    |
| 4200.            | 0.23          | Mechanical           | Input Power kW   | 0.68 (0.76)      | 1.02 (1.20)   | 1.80 (1.95)   | 2.32 (2.59)   | 3.19 (4.95)    | 3.58 (5.07)    |                |    |
|                  |               |                      | Output Torque Nm | 11900 (13600)    | 18800 (22400) | 34200 (37200) | 48100 (53900) | 65500 (104000) | 80800 (116000) |                |    |
|                  |               | Thermal              | Input Power kW   | 3.23             | 4.27          | 5.04          | 6.92          | 8.48           | 11.80          |                |    |
|                  |               |                      | Output Torque Nm | 61600            | 84300         | 99000         | 148000        | 180000         | 276000         |                |    |
|                  |               |                      |                  | Efficiency %     | 42            | 44            | 45            | 50             | 49             | 54             |    |

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

# SERIES A

## RATINGS AT 725 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 145.00                         | Mechanical       | Input Power kW   | 95.10        | 141.00 | 197.00 | 356.00 | 441.00 | 691.00 |
|                  |               |                                |                  | Output Torque Nm | 6030         | 8980   | 12300  | 22700  | 28100  | 44900  |
|                  |               |                                | Thermal          | Input Power kW   | 69.20        | 103.00 | 151.00 | 276.00 | 341.00 | 530.00 |
|                  |               |                                |                  | Output Torque Nm | 4390         | 6540   | 9450   | 17300  | 21600  | 33500  |
|                  | 7.5           | 96.67                          | Mechanical       | Input Power kW   | 68.20        | 105.00 | 143.00 | 297.00 | 445.00 | 558.00 |
|                  |               |                                |                  | Output Torque Nm | 6430         | 9970   | 13500  | 28200  | 42400  | 53100  |
|                  |               |                                | Thermal          | Input Power kW   | 56.90        | 84.40  | 124.00 | 179.00 | 259.00 | 353.00 |
|                  |               |                                |                  | Output Torque Nm | 5360         | 7980   | 11700  | 17000  | 24600  | 33500  |
|                  | 10.0          | 72.50                          | Mechanical       | Input Power kW   | 47.10        | 85.50  | 115.00 | 243.00 | 334.00 | 434.00 |
|                  |               |                                |                  | Output Torque Nm | 5730         | 10500  | 14200  | 30700  | 41600  | 54100  |
|                  |               |                                | Thermal          | Input Power kW   | 50.50        | 75.70  | 114.00 | 164.00 | 245.00 | 334.00 |
|                  |               |                                |                  | Output Torque Nm | 6150         | 9300   | 14100  | 20600  | 30400  | 41500  |
|                  | 12.5          | 58.00                          | Mechanical       | Input Power kW   | 51.70        | 68.20  | 106.00 | 179.00 | 240.00 | 354.00 |
|                  |               |                                |                  | Output Torque Nm | 8160         | 10600  | 16800  | 28000  | 38500  | 56300  |
|                  |               |                                | Thermal          | Input Power kW   | 43.70        | 69.20  | 97.90  | 150.00 | 220.00 | 302.00 |
|                  |               |                                |                  | Output Torque Nm | 6890         | 10800  | 15600  | 23400  | 35300  | 48000  |
|                  | 15.0          | 48.33                          | Mechanical       | Input Power kW   | 41.60        | 59.60  | 110.00 | 182.00 | 255.00 | 306.00 |
|                  |               |                                |                  | Output Torque Nm | 7510         | 10800  | 20100  | 33500  | 47100  | 56600  |
|                  |               |                                | Thermal          | Input Power kW   | 40.10        | 61.80  | 89.50  | 137.00 | 199.00 | 277.00 |
|                  |               |                                |                  | Output Torque Nm | 7250         | 11200  | 16400  | 25100  | 36700  | 51300  |
|                  | 20.0          | 36.25                          | Mechanical       | Input Power kW   | 39.40        | 61.60  | 87.90  | 154.00 | 167.00 | 238.00 |
|                  |               |                                |                  | Output Torque Nm | 9420         | 14800  | 21200  | 37200  | 40700  | 58300  |
|                  |               |                                | Thermal          | Input Power kW   | 33.40        | 50.70  | 76.70  | 109.00 | 173.00 | 237.00 |
|                  |               |                                |                  | Output Torque Nm | 7980         | 12200  | 18500  | 26300  | 42300  | 58000  |
|                  | 25.0          | 29.00                          | Mechanical       | Input Power kW   | 32.40        | 48.30  | 69.20  | 113.00 | 160.00 | 191.00 |
|                  |               |                                |                  | Output Torque Nm | 9450         | 14500  | 20500  | 33900  | 48300  | 58500  |
|                  |               |                                | Thermal          | Input Power kW   | 26.80        | 41.00  | 63.20  | 90.10  | 136.00 | 186.00 |
|                  |               |                                |                  | Output Torque Nm | 7820         | 12300  | 18700  | 26800  | 41100  | 57000  |
| 30.0             | 24.17         | Mechanical                     | Input Power kW   | 27.40            | 44.10        | 61.10  | 110.00 | 136.00 | 166.00 |        |
|                  |               |                                | Output Torque Nm | 9480             | 15500        | 22200  | 38800  | 48800  | 59700  |        |
|                  |               | Thermal                        | Input Power kW   | 23.20            | 36.70        | 54.30  | 79.20  | 123.00 | 173.00 |        |
|                  |               |                                | Output Torque Nm | 7980             | 12800        | 19700  | 27900  | 43900  | 62100  |        |
| 40.0             | 18.13         | Mechanical                     | Input Power kW   | 23.80            | 30.80        | 49.30  | 74.60  | 96.00  | 119.00 |        |
|                  |               |                                | Output Torque Nm | 10800            | 14100        | 22700  | 35000  | 45700  | 56400  |        |
|                  |               | Thermal                        | Input Power kW   | 18.00            | 27.80        | 41.10  | 64.70  | 92.00  | 149.00 |        |
|                  |               |                                | Output Torque Nm | 8090             | 12700        | 18900  | 30200  | 43700  | 71000  |        |
| 50.0             | 14.50         | Mechanical                     | Input Power kW   | 19.90            | 29.10        | 41.10  | 68.10  | 93.70  | 119.00 |        |
|                  |               |                                | Output Torque Nm | 10900            | 16200        | 23000  | 38600  | 52800  | 74100  |        |
|                  |               | Thermal                        | Input Power kW   | 15.10            | 23.20        | 34.30  | 51.90  | 73.00  | 100.00 |        |
|                  |               |                                | Output Torque Nm | 8230             | 12900        | 19100  | 29300  | 42000  | 60400  |        |
| 60.0             | 12.08         | Mechanical                     | Input Power kW   | 16.70            | 25.00        | 35.00  | 57.80  | 80.00  | 107.00 |        |
|                  |               |                                | Output Torque Nm | 10700            | 16200        | 23100  | 38500  | 52800  | 74100  |        |
|                  |               | Thermal                        | Input Power kW   | 13.20            | 20.00        | 31.40  | 46.00  | 64.00  | 88.00  |        |
|                  |               |                                | Output Torque Nm | 8350             | 12900        | 20700  | 30400  | 43000  | 60400  |        |
| 70.0             | 10.36         | Mechanical                     | Input Power kW   | 13.90            | 21.60        | 31.00  | 49.80  | 68.00  | 92.00  |        |
|                  |               |                                | Output Torque Nm | 10100            | 16000        | 23000  | 37800  | 52000  | 71000  |        |
|                  |               | Thermal                        | Input Power kW   | 12.30            | 18.60        | 26.80  | 40.40  | 56.00  | 77.00  |        |
|                  |               |                                | Output Torque Nm | 8890             | 13800        | 19900  | 30500  | 42000  | 58300  |        |
|                  |               |                                | Efficiency %     | 78               | 80           | 81     | 82     | 82     | 85     |        |

# SERIES A

## RATINGS AT 725 REV/MIN INPUT (Synthetic Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 75.0          | 9.67                 | Mechanical | Input Power kW   | 14.20 (14.80) | 17.50         | 33.00         | 45.20         | 76.10 (84.00)  | 93.10 (97.10)  |
|               |                      |            | Output Torque Nm | 11900 (12400) | 14900         | 28400         | 39200         | 65500 (72300)  | 80800 (84300)  |
|               |                      | Thermal    | Input Power kW   | 16.50         | 24.90         | 31.70         | 55.50         | 69.20          | 97.20          |
|               |                      |            | Output Torque Nm | 13900         | 21300         | 27300         | 48300         | 59500          | 84400          |
| 100.          | 7.25                 | Mechanical | Input Power kW   | 10.80 (12.80) | 16.80 (17.50) | 27.10         | 42.50 (45.20) | 47.50          | 70.80 (81.70)  |
|               |                      |            | Output Torque Nm | 11900 (14100) | 18800 (19600) | 30600         | 48100 (51100) | 53600          | 80800 (93200)  |
|               |                      | Thermal    | Input Power kW   | 14.00         | 20.50         | 28.40         | 42.10         | 64.50          | 79.30          |
|               |                      |            | Output Torque Nm | 15400         | 22900         | 32000         | 47700         | 73000          | 90500          |
| 125.          | 5.80                 | Mechanical | Input Power kW   | 9.00 (11.30)  | 13.60 (16.20) | 23.80         | 34.70 (35.40) | 47.40 (56.90)  | 57.10 (90.40)  |
|               |                      |            | Output Torque Nm | 11900 (15000) | 18800 (22400) | 32600         | 48100 (49000) | 65500 (78700)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 11.40         | 16.40         | 22.80         | 31.90         | 46.60          | 59.90          |
|               |                      |            | Output Torque Nm | 15100         | 22600         | 31300         | 44200         | 64300          | 84800          |
| 150.          | 4.83                 | Mechanical | Input Power kW   | 7.69 (9.34)   | 11.80 (14.00) | 17.90         | 29.60 (37.90) | 40.20 (43.60)  | 48.90 (61.30)  |
|               |                      |            | Output Torque Nm | 11900 (14500) | 18800 (22400) | 29800         | 48100 (61500) | 65500 (71000)  | 80800 (101000) |
|               |                      | Thermal    | Input Power kW   | 9.94          | 14.60         | 19.90         | 29.90         | 44.20          | 55.60          |
|               |                      |            | Output Torque Nm | 15400         | 23300         | 33100         | 48600         | 71900          | 92000          |
| 200.          | 3.63                 | Mechanical | Input Power kW   | 5.96 (7.34)   | 9.17 (9.35)   | 15.70         | 23.00 (23.90) | 26.90          | 37.40 (46.00)  |
|               |                      |            | Output Torque Nm | 11900 (14700) | 18800 (19100) | 32500         | 48100 (49900) | 57300          | 80800 (99500)  |
|               |                      | Thermal    | Input Power kW   | 11.00         | 15.00         | 20.60         | 29.80         | 44.50          | 54.20          |
|               |                      |            | Output Torque Nm | 22200         | 30700         | 42700         | 62500         | 95000          | 117000         |
| 225.          | 3.22                 | Mechanical | Input Power kW   | 5.50 (6.84)   | 8.20 (9.76)   | 13.20         | 20.50 (27.80) | 27.50 (31.70)  | 33.40 (44.60)  |
|               |                      |            | Output Torque Nm | 11900 (14900) | 18800 (22400) | 31700         | 48100 (65400) | 65500 (75500)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 8.53          | 12.10         | 16.40         | 24.10         | 34.90          | 43.90          |
|               |                      |            | Output Torque Nm | 18600         | 27700         | 39300         | 56500         | 83100          | 106000         |
| 250.          | 2.90                 | Mechanical | Input Power kW   | 4.98 (6.73)   | 7.48 (8.90)   | 13.70 (13.90) | 18.90 (20.10) | 25.30 (31.70)  | 30.30 (48.00)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34700) | 48100 (51100) | 65500 (82200)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 8.69          | 12.10         | 16.50         | 22.40         | 31.60          | 40.70          |
|               |                      |            | Output Torque Nm | 20900         | 30600         | 41400         | 57000         | 82000          | 109000         |
| 300.          | 2.42                 | Mechanical | Input Power kW   | 4.27 (5.39)   | 6.48 (7.71)   | 10.50         | 16.20 (22.00) | 21.50 (24.90)  | 26.00 (34.80)  |
|               |                      |            | Output Torque Nm | 11900 (15100) | 18800 (22400) | 31800         | 48100 (65600) | 65500 (75800)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 7.60          | 10.80         | 14.60         | 21.20         | 30.30          | 38.00          |
|               |                      |            | Output Torque Nm | 21300         | 31500         | 44300         | 63200         | 92400          | 119000         |
| 350.          | 2.07                 | Mechanical | Input Power kW   | 3.90 (3.91)   | 5.95 (6.44)   | 10.30         | 14.60 (15.40) | 20.20 (28.70)  | 23.60 (31.80)  |
|               |                      |            | Output Torque Nm | 11900 (12000) | 18800 (20400) | 32800         | 48100 (51000) | 65500 (93600)  | 80800 (109000) |
|               |                      | Thermal    | Input Power kW   | 5.56          | 7.71          | 9.81          | 14.60         | 19.50          | 27.70          |
|               |                      |            | Output Torque Nm | 17100         | 24500         | 31300         | 48400         | 63200          | 95000          |
| 375.          | 1.93                 | Mechanical | Input Power kW   | 3.29 (4.44)   | 5.20 (6.19)   | 9.48 (9.58)   | 12.50 (13.60) | 17.30 (22.20)  | 20.80 (33.00)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34600) | 48100 (52400) | 65500 (84000)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 7.54          | 10.50         | 14.00         | 18.30         | 26.00          | 33.30          |
|               |                      |            | Output Torque Nm | 27600         | 38200         | 50800         | 70600         | 98300          | 130000         |
| 400.          | 1.81                 | Mechanical | Input Power kW   | 3.20 (4.09)   | 4.74          | 8.03          | 11.80 (11.90) | 13.90          | 19.50 (23.80)  |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18700         | 32200         | 48100 (48700) | 56800          | 80800 (98600)  |
|               |                      | Thermal    | Input Power kW   | 8.59          | 11.80         | 12.70         | 22.20         | 32.70          | 39.30          |
|               |                      |            | Output Torque Nm | 32300         | 47200         | 51000         | 91300         | 134000         | 163000         |
| 450.          | 1.61                 | Mechanical | Input Power kW   | 2.83 (3.65)   | 4.51 (5.37)   | 7.26          | 10.70 (14.60) | 14.80 (17.00)  | 17.80 (23.80)  |
|               |                      |            | Output Torque Nm | 11900 (15400) | 18800 (22400) | 31600         | 48100 (65300) | 65500 (75500)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 6.62          | 9.39          | 12.40         | 17.50         | 25.10          | 31.30          |
|               |                      |            | Output Torque Nm | 28200         | 39400         | 54500         | 78500         | 111000         | 142000         |
| 500.          | 1.45                 | Mechanical | Input Power kW   | 2.70 (3.64)   | 3.90 (4.64)   | 7.09 (7.15)   | 9.70 (10.70)  | 13.30 (17.20)  | 15.90 (25.20)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34500) | 48100 (53100) | 65500 (85200)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 7.08          | 9.55          | 12.70         | 16.60         | 23.00          | 29.40          |
|               |                      |            | Output Torque Nm | 31600         | 46400         | 61400         | 82600         | 114000         | 150000         |
| 600.          | 1.21                 | Mechanical | Input Power kW   | 2.52 (3.33)   | 3.80 (4.52)   | 6.52          | 9.14 (10.50)  | 12.60 (19.80)  | 14.80 (23.40)  |
|               |                      |            | Output Torque Nm | 11900 (15900) | 18800 (22400) | 33600         | 48100 (55400) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 4.49          | 6.10          | 8.52          | 12.60         | 15.30          | 19.80          |
|               |                      |            | Output Torque Nm | 21500         | 30400         | 44100         | 66300         | 79900          | 109000         |
| 625.          | 1.16                 | Mechanical | Input Power kW   | 2.20 (2.97)   | 3.34 (3.97)   | 6.07 (6.10)   | 8.29 (9.21)   | 10.90 (14.30)  | 12.90 (20.30)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34400) | 48100 (53500) | 65500 (86000)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 6.72          | 9.10          | 11.40         | 15.70         | 21.50          | 27.00          |
|               |                      |            | Output Torque Nm | 36900         | 51800         | 64400         | 91400         | 129000         | 170000         |
| 700.          | 1.04                 | Mechanical | Input Power kW   | 2.22 (2.29)   | 3.35 (3.73)   | 5.97          | 8.13 (9.19)   | 11.10 (16.70)  | 12.80 (18.50)  |
|               |                      |            | Output Torque Nm | 11900 (12300) | 18800 (21000) | 33800         | 48100 (54500) | 65500 (98500)  | 80800 (117000) |
|               |                      | Thermal    | Input Power kW   | 4.33          | 5.88          | 7.26          | 10.60         | 13.60          | 19.40          |
|               |                      |            | Output Torque Nm | 23600         | 33300         | 41200         | 63200         | 80300          | 123000         |
| 750.          | 0.97                 | Mechanical | Input Power kW   | 1.90 (2.50)   | 2.91 (3.45)   | 4.63          | 7.12 (9.59)   | 9.35 (10.70)   | 11.00 (14.60)  |
|               |                      |            | Output Torque Nm | 11900 (15800) | 18800 (22400) | 31500         | 48100 (65000) | 65500 (75100)  | 80800 (107000) |
|               |                      | Thermal    | Input Power kW   | 5.91          | 8.16          | 10.70         | 15.00         | 20.90          | 25.50          |
|               |                      |            | Output Torque Nm | 37700         | 53500         | 73600         | 102000        | 147000         | 188000         |
| 800.          | 0.91                 | Mechanical | Input Power kW   | 1.85 (2.43)   | 2.70 (2.90)   | 4.80          | 6.39 (6.50)   | 8.50           | 10.40          |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (20200) | 33900         | 48100 (48900) | 64100          | 79900          |
|               |                      | Thermal    | Input Power kW   | 4.87          | 6.63          | 8.28          | 12.10         | 16.10          | 24.80          |
|               |                      |            | Output Torque Nm | 31800         | 46700         | 59000         | 91500         | 122000         | 192000         |
|               |                      | Mechanical | Input Power kW   | 1.85 (2.43)   | 2.70 (2.90)   | 4.80          | 6.39 (6.50)   | 8.50           | 10.40          |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (20200) | 33900         | 48100 (48900) | 64100          | 79900          |
|               |                      | Thermal    | Input Power kW   | 4.87          | 6.63          | 8.28          | 12.10         | 16.10          | 24.80          |
|               |                      |            | Output Torque Nm | 31800         | 46700         | 59000         | 91500         | 122000         | 192000         |
|               |                      | Mechanical | Input Power kW   | 1.85 (2.43)   | 2.70 (2.90)   | 4.80          | 6.39 (6.50)   | 8.50           | 10.40          |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (20200) | 33900         | 48100 (48900) | 64100          | 79900          |
|               |                      | Thermal    | Input Power kW   | 4.87          | 6.63          | 8.28          | 12.10         | 16.10          | 24.80          |
|               |                      |            | Output Torque Nm | 31800         | 46700         | 59000         | 91500         | 122000         | 192000         |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 725 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 0.81                 | Mechanical       | Input Power kW   | 1.70 (2.28)   | 2.69 (3.19)   | 4.58          | 6.15 (7.05)    | 8.75 (13.80)   | 10.30 (16.30)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33600         | 48100 (55200)  | 65500 (104000) | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.92          | 5.34          | 7.34          | 10.50          | 12.70          | 16.40          |
|                  |               |                      |                  | Output Torque Nm | 28000         | 37800         | 54200         | 82600          | 95400          | 130000         |
|                  | 1000.         | 0.73                 | Mechanical       | Efficiency %     | 57            | 60            | 63            | 65             | 65             | 68             |
|                  |               |                      |                  | Input Power kW   | 1.49 (2.01)   | 2.26 (2.67)   | 4.08 (4.09)   | 5.50 (6.28)    | 7.20 (9.70)    | 8.57 (13.40)   |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (16100) | 18800 (22300) | 34200 (34300) | 48100 (55100)  | 65500 (88600)  | 80800 (127000) |
|                  |               |                      |                  | Input Power kW   | 5.07          | 7.50          | 7.50          | 13.80          | 18.00          | 23.40          |
|                  | 1200.         | 0.60                 | Mechanical       | Output Torque Nm | 41400         | 63700         | 63400         | 122000         | 165000         | 223000         |
|                  |               |                      |                  | Efficiency %     | 62            | 63            | 65            | 67             | 70             | 72             |
|                  |               |                      | Thermal          | Input Power kW   | 1.40 (1.88)   | 2.04 (2.42)   | 3.46          | 4.81 (5.49)    | 6.77 (10.60)   | 7.97 (12.60)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33500         | 48100 (55100)  | 65500 (104000) | 80800 (128000) |
|                  | 1250.         | 0.58                 | Mechanical       | Input Power kW   | 3.70          | 4.90          | 6.71          | 9.59           | 11.40          | 14.60          |
|                  |               |                      |                  | Output Torque Nm | 32200         | 45900         | 65700         | 97000          | 111000         | 149000         |
|                  |               |                      | Thermal          | Efficiency %     | 55            | 57            | 60            | 62             | 62             | 65             |
|                  |               |                      |                  | Input Power kW   | 1.26 (1.69)   | 1.88 (2.20)   | 3.38          | 4.56 (5.29)    | 5.99 (8.19)    | 7.12 (11.10)   |
|                  | 1400.         | 0.52                 | Mechanical       | Output Torque Nm | 11900 (16100) | 18800 (22200) | 34200         | 48100 (55900)  | 65500 (89900)  | 80800 (126000) |
|                  |               |                      |                  | Input Power kW   | 4.22          | 6.72          | 6.72          | 11.50          | 15.10          | 22.20          |
|                  |               |                      | Thermal          | Output Torque Nm | 41100         | 69000         | 68700         | 123000         | 167000         | 254000         |
|                  |               |                      |                  | Efficiency %     | 59            | 61            | 63            | 65             | 67             | 69             |
|                  | 1500.         | 0.48                 | Mechanical       | Input Power kW   | 1.24 (1.34)   | 1.81 (2.10)   | 3.25 (3.36)   | 4.29 (4.83)    | 6.04 (9.44)    | 6.91 (9.92)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (12900) | 18800 (22000) | 34200 (35500) | 48100 (54200)  | 65500 (103000) | 80800 (117000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.61          | 4.78          | 5.73          | 8.17           | 10.20          | 14.40          |
|                  |               |                      |                  | Output Torque Nm | 35700         | 51000         | 61000         | 92500          | 112000         | 171000         |
| 1600.            | 0.45          | Mechanical           | Efficiency %     | 53               | 55            | 56            | 59            | 60             | 64             |                |
|                  |               |                      | Input Power kW   | 1.09 (1.46)      | 1.64 (1.94)   | 2.58          | 3.94 (5.26)   | 5.13 (5.83)    | 6.11 (8.02)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31300         | 48100 (64600) | 65500 (74600)  | 80800 (106000) |                |
|                  |               |                      | Input Power kW   | 4.22             | 6.72          | 6.72          | 11.50         | 15.10          | 21.10          |                |
| 1750.            | 0.41          | Mechanical           | Output Torque Nm | 47600            | 79500         | 82900         | 143000        | 195000         | 282000         |                |
|                  |               |                      | Efficiency %     | 56               | 59            | 60            | 63            | 66             | 68             |                |
|                  |               | Thermal              | Input Power kW   | 1.04 (1.36)      | 1.59 (1.69)   | 2.78          | 3.65 (3.88)   | 4.62           | 5.57           |                |
|                  |               |                      | Output Torque Nm | 11900 (15700)    | 18800 (20100) | 33800         | 48100 (51100) | 63700          | 79300          |                |
| 1800.            | 0.40          | Mechanical           | Input Power kW   | 4.24             | 5.80          | 7.16          | 10.20         | 13.20          | 20.20          |                |
|                  |               |                      | Output Torque Nm | 50200            | 70800         | 88200         | 136000        | 185000         | 292000         |                |
|                  |               | Thermal              | Efficiency %     | 54               | 56            | 58            | 63            | 65             | 68             |                |
|                  |               |                      | Input Power kW   | 0.97 (1.30)      | 1.49 (1.73)   | 2.66          | 3.47 (4.07)   | 4.55 (6.35)    | 5.39 (8.28)    |                |
| 2000.            | 0.36          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (22000) | 34100         | 48100 (56600) | 65500 (91900)  | 80800 (125000) |                |
|                  |               |                      | Input Power kW   | 3.11             | 4.54          | 4.54          | 8.39          | 12.30          | 18.60          |                |
|                  |               | Thermal              | Output Torque Nm | 39500            | 59100         | 58900         | 118000        | 179000         | 283000         |                |
|                  |               |                      | Efficiency %     | 54               | 55            | 57            | 61            | 63             | 65             |                |
| 2100.            | 0.35          | Mechanical           | Input Power kW   | 0.95 (1.27)      | 1.43 (1.69)   | 2.24          | 3.39 (4.51)   | 4.44 (5.04)    | 5.28 (6.91)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31300         | 48100 (64500) | 65500 (74400)  | 80800 (106000) |                |
|                  |               | Thermal              | Input Power kW   | 3.56             | 5.49          | 5.49          | 9.70          | 13.20          | 20.00          |                |
|                  |               |                      | Output Torque Nm | 46500            | 74700         | 77900         | 140000        | 197000         | 311000         |                |
| 2400.            | 0.30          | Mechanical           | Efficiency %     | 54               | 56            | 58            | 61            | 63             | 66             |                |
|                  |               |                      | Input Power kW   | 0.88 (1.14)      | 1.32 (1.41)   | 2.31          | 3.04 (3.25)   | 3.85           | 4.63           |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15600)    | 18800 (20100) | 33700         | 48100 (51500) | 63600          | 79100          |                |
|                  |               |                      | Input Power kW   | 4.12             | 5.56          | 6.72          | 9.68          | 12.60          | 19.30          |                |
| 2500.            | 0.29          | Mechanical           | Output Torque Nm | 58200            | 81900         | 99900         | 156000        | 212000         | 336000         |                |
|                  |               |                      | Efficiency %     | 51               | 54            | 55            | 60            | 63             | 66             |                |
|                  |               | Thermal              | Input Power kW   | 0.89 (0.98)      | 1.35 (1.59)   | 2.41 (2.56)   | 3.16 (3.54)   | 4.32 (6.77)    | 4.89 (6.98)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36300) | 48100 (54100) | 65500 (104000) | 80800 (116000) |                |
| 2800.            | 0.26          | Mechanical           | Input Power kW   | 3.35             | 4.46          | 5.31          | 7.46          | 9.09           | 12.70          |                |
|                  |               |                      | Output Torque Nm | 46900            | 64600         | 76500         | 115000        | 140000         | 214000         |                |
|                  |               | Thermal              | Efficiency %     | 48               | 50            | 51            | 55            | 56             | 61             |                |
|                  |               |                      | Input Power kW   | 0.80 (1.07)      | 1.22 (1.44)   | 2.02          | 2.78 (3.16)   | 3.79 (5.93)    | 4.40 (6.91)    |                |
| 3000.            | 0.24          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33300         | 48100 (54900) | 65500 (104000) | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 3.25             | 4.33          | 5.88          | 8.18          | 9.38           | 11.90          |                |
|                  |               | Thermal              | Output Torque Nm | 50800            | 69600         | 99000         | 144000        | 165000         | 222000         |                |
|                  |               |                      | Efficiency %     | 47               | 49            | 52            | 55            | 55             | 58             |                |
| 3500.            | 0.21          | Mechanical           | Input Power kW   | 0.76 (1.02)      | 1.14 (1.35)   | 2.01 (2.52)   | 2.66 (3.02)   | 2.61           | 3.72           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (43100) | 48100 (54900) | 51300          | 76300          |                |
|                  |               | Thermal              | Input Power kW   | 3.57             | 4.70          | 5.79          | 9.02          | 14.00          | 16.90          |                |
|                  |               |                      | Output Torque Nm | 58800            | 80900         | 101000        | 167000        | 284000         | 355000         |                |
| 3600.            | 0.20          | Mechanical           | Efficiency %     | 47               | 50            | 52            | 55            | 60             | 63             |                |
|                  |               |                      | Input Power kW   | 0.71 (0.80)      | 1.08 (1.27)   | 1.92 (2.07)   | 2.50 (2.79)   | 3.39 (5.30)    | 3.81 (5.43)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13500)    | 18800 (22400) | 34200 (36900) | 48100 (54000) | 65500 (104000) | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 3.19             | 4.25          | 5.03          | 6.97          | 8.47           | 11.80          |                |
| 4200.            | 0.17          | Mechanical           | Output Torque Nm | 56700            | 77600         | 91400         | 137000        | 167000         | 256000         |                |
|                  |               |                      | Efficiency %     | 45               | 47            | 48            | 52            | 52             | 58             |                |
|                  |               | Thermal              | Input Power kW   | 0.68 (0.91)      | 1.02 (1.20)   | 1.69          | 2.33 (2.64)   | 3.18 (4.97)    | 3.68 (5.77)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33300         | 48100 (54800) | 65500 (104000) | 80800 (128000) |                |
| 3500.            | 0.21          | Mechanical           | Input Power kW   | 3.17             | 4.15          | 5.64          | 7.82          | 8.96           | 11.30          |                |
|                  |               |                      | Output Torque Nm | 58800            | 80300         | 114000        | 166000        | 189000         | 254000         |                |
|                  |               | Thermal              | Efficiency %     | 44               | 47            | 50            | 52            | 52             | 56             |                |
|                  |               |                      | Input Power kW   | 0.61 (0.69)      | 0.91 (1.07)   | 1.61 (1.75)   | 2.09 (2.33)   | 2.85 (4.45)    | 3.19 (4.53)    |                |
| 3600.            | 0.20          | Mechanical           | Output Torque Nm | 11900 (13600)    | 18800 (22400) | 34200 (37400) | 48100 (53900) | 65500 (104000) | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 3.12             | 4.09          | 4.82          | 6.66          | 8.10           | 11.30          |                |
|                  |               | Thermal              | Output Torque Nm | 65800            | 90000         | 105000        | 158000        | 191000         | 294000         |                |
|                  |               |                      | Efficiency %     | 43               | 45            | 46            | 50            | 50             | 55             |                |
| 3600.            | 0.20          | Mechanical           | Input Power kW   | 0.60 (0.79)      | 0.90 (1.06)   | 1.48          | 2.01 (2.28)   | 2.77 (4.32)    | 3.20 (5.01)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33300         | 48100 (54700) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 3.11             | 4.08          | 5.49          | 7.56          | 8.69           | 11.00          |                |
|                  |               |                      | Output Torque Nm | 66600            | 90700         | 128000        | 187000        | 211000         | 284000         |                |
| 4200.            | 0.17          | Mechanical           | Efficiency %     | 42               | 44            | 47            | 50            | 50             | 53             |                |
|                  |               |                      | Input Power kW   | 0.53 (0.61)      | 0.80 (0.94)   | 1.41 (1.55)   | 1.81 (2.02)   | 2.49 (3.87)    | 2.78 (3.93)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13800)    | 18800 (22400) | 34200 (37800) | 48100 (53900) | 65500 (104000) | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 3.06             | 4.02          | 4.73          | 6.44          | 7.86           | 11.00          |                |
| 4200.            | 0.17          | Thermal              | Output Torque Nm | 74600            | 102000        | 119000        | 177000        | 213000         | 329000         |                |
|                  |               |                      | Efficiency %     | 41               | 43            | 44            | 48            | 48             | 53             |                |

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 96.00                          | Mechanical       | Input Power kW   | 74.60        | 111.00 | 155.00 | 280.00 | 330.00 | 545.00 |
|                  |               |                                |                  | Output Torque Nm | 7100         | 10600  | 14500  | 26800  | 31600  | 53400  |
|                  |               |                                | Thermal          | Input Power kW   | 47.60        | 72.20  | 109.00 | 164.00 | 204.00 | 317.00 |
|                  |               |                                |                  | Output Torque Nm | 4520         | 6890   | 10300  | 15700  | 19500  | 31000  |
|                  | 7.5           | 64.00                          | Mechanical       | Input Power kW   | 53.10        | 82.10  | 111.00 | 230.00 | 340.00 | 419.00 |
|                  |               |                                |                  | Output Torque Nm | 7510         | 11700  | 15900  | 32800  | 48800  | 60100  |
|                  |               |                                | Thermal          | Input Power kW   | 40.30        | 60.40  | 89.50  | 133.00 | 187.00 | 262.00 |
|                  |               |                                |                  | Output Torque Nm | 5700         | 8580   | 12700  | 18900  | 26700  | 37600  |
|                  | 10.0          | 48.00                          | Mechanical       | Input Power kW   | 36.60        | 66.50  | 89.60  | 189.00 | 241.00 | 327.00 |
|                  |               |                                |                  | Output Torque Nm | 6680         | 12300  | 16600  | 35900  | 45000  | 61300  |
|                  |               |                                | Thermal          | Input Power kW   | 35.60        | 54.10  | 81.70  | 121.00 | 174.00 | 246.00 |
|                  |               |                                |                  | Output Torque Nm | 6500         | 9970   | 15100  | 22900  | 32600  | 46000  |
|                  | 12.5          | 38.40                          | Mechanical       | Input Power kW   | 40.10        | 52.90  | 82.20  | 139.00 | 186.00 | 266.00 |
|                  |               |                                |                  | Output Torque Nm | 9490         | 12400  | 19600  | 32700  | 45000  | 63700  |
|                  |               |                                | Thermal          | Input Power kW   | 30.80        | 49.00  | 70.00  | 110.00 | 157.00 | 222.00 |
|                  |               |                                |                  | Output Torque Nm | 7270         | 11500  | 16700  | 25800  | 37700  | 53100  |
|                  | 15.0          | 32.00                          | Mechanical       | Input Power kW   | 32.20        | 46.20  | 85.10  | 134.00 | 192.00 | 230.00 |
|                  |               |                                |                  | Output Torque Nm | 8710         | 12600  | 23400  | 37100  | 53400  | 64100  |
|                  |               |                                | Thermal          | Input Power kW   | 28.70        | 43.80  | 63.80  | 100.00 | 142.00 | 203.00 |
|                  |               |                                |                  | Output Torque Nm | 7760         | 11900  | 17500  | 27600  | 39300  | 56600  |
| 20.0             | 24.00         | Mechanical                     | Input Power kW   | 30.40            | 45.00        | 67.90  | 119.00 | 120.00 | 180.00 |        |
|                  |               |                                | Output Torque Nm | 10900            | 16200        | 24600  | 43100  | 44000  | 66000  |        |
|                  |               | Thermal                        | Input Power kW   | 23.90            | 35.90        | 54.40  | 79.90  | 122.00 | 173.00 |        |
|                  |               |                                | Output Torque Nm | 8530             | 12900        | 19600  | 28900  | 44800  | 63600  |        |
| 25.0             | 19.20         | Mechanical                     | Input Power kW   | 25.00            | 36.20        | 53.30  | 87.40  | 121.00 | 144.00 |        |
|                  |               |                                | Output Torque Nm | 10900            | 16200        | 23600  | 39100  | 54800  | 66400  |        |
|                  |               | Thermal                        | Input Power kW   | 19.30            | 29.10        | 44.90  | 66.20  | 97.60  | 137.00 |        |
|                  |               |                                | Output Torque Nm | 8370             | 13000        | 19900  | 29500  | 44100  | 63100  |        |
| 30.0             | 16.00         | Mechanical                     | Input Power kW   | 21.10            | 31.00        | 44.40  | 84.50  | 103.00 | 126.00 |        |
|                  |               |                                | Output Torque Nm | 10800            | 16200        | 24100  | 44600  | 55300  | 67700  |        |
|                  |               | Thermal                        | Input Power kW   | 16.70            | 26.50        | 38.50  | 58.20  | 87.10  | 127.00 |        |
|                  |               |                                | Output Torque Nm | 8540             | 13800        | 20800  | 30600  | 46500  | 68700  |        |
| 40.0             | 12.00         | Mechanical                     | Input Power kW   | 17.40            | 22.50        | 37.50  | 56.50  | 69.60  | 86.10  |        |
|                  |               |                                | Output Torque Nm | 11600            | 15300        | 25700  | 39500  | 49400  | 61100  |        |
|                  |               | Thermal                        | Input Power kW   | 13.00            | 20.20        | 29.40  | 46.90  | 65.60  | 109.00 |        |
|                  |               |                                | Output Torque Nm | 8660             | 13700        | 20100  | 32800  | 46600  | 77300  |        |
| 50.0             | 9.60          | Mechanical                     | Input Power kW   | 14.40            | 19.70        | 31.50  | 49.70  | 46.30  | 67.50  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 26100  | 41900  | 39900  | 58800  |        |
|                  |               | Thermal                        | Input Power kW   | 11.00            | 16.90        | 24.60  | 38.20  | 63.80  | 91.90  |        |
|                  |               |                                | Output Torque Nm | 8810             | 13900        | 20300  | 32100  | 55200  | 80400  |        |
| 60.0             | 8.00          | Mechanical                     | Input Power kW   | 12.40            | 16.90        | 26.00  | 42.30  | 55.10  | 66.40  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 25300  | 41700  | 54500  | 66900  |        |
|                  |               | Thermal                        | Input Power kW   | 9.59             | 14.60        | 22.40  | 33.80  | 44.50  | 63.20  |        |
|                  |               |                                | Output Torque Nm | 8930             | 14000        | 21800  | 33300  | 43900  | 63600  |        |
| 70.0             | 6.86          | Mechanical                     | Input Power kW   | 10.40            | 14.80        | 23.90  | 36.50  | 48.60  | 59.00  |        |
|                  |               |                                | Output Torque Nm | 11100            | 16200        | 26200  | 41000  | 54800  | 68700  |        |
|                  |               | Thermal                        | Input Power kW   | 8.93             | 13.50        | 19.30  | 29.60  | 39.30  | 60.70  |        |
|                  |               |                                | Output Torque Nm | 9500             | 14800        | 21100  | 33100  | 44100  | 70700  |        |
|                  |               |                                | Efficiency %     | 76               | 79           | 79     | 80     | 81     | 84     |        |

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Synthetic Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 75.0          | 6.40                 | Mechanical | Input Power kW   | 9.60 (10.60)  | 11.70         | 25.80         | 30.10         | 51.30 (56.00)  | 62.70 (64.70)  |
|               |                      |            | Output Torque Nm | 11900 (13200) | 14700         | 32900         | 38700         | 65500 (71400)  | 80800 (83300)  |
|               |                      | Thermal    | Input Power kW   | 13.20         | 21.10         | 21.30         | 37.20         | 47.60          | 72.20          |
|               |                      |            | Output Torque Nm | 16400         | 26600         | 27100         | 47900         | 60600          | 93100          |
| 100.          | 4.80                 | Mechanical | Input Power kW   | 7.34 (8.91)   | 11.40 (11.70) | 19.50         | 28.80 (30.10) | 34.10          | 47.80 (58.60)  |
|               |                      |            | Output Torque Nm | 11900 (14500) | 18800 (19300) | 32500         | 48100 (50400) | 57100          | 80800 (99200)  |
|               |                      | Thermal    | Input Power kW   | 12.10         | 16.60         | 21.30         | 33.70         | 47.60          | 62.20          |
|               |                      |            | Output Torque Nm | 19700         | 27400         | 35500         | 56300         | 79700          | 105000         |
| 125.          | 3.84                 | Mechanical | Input Power kW   | 6.12 (8.28)   | 9.27 (11.00)  | 17.00 (17.20) | 23.60 (24.70) | 32.10 (39.60)  | 38.70 (61.20)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34800) | 48100 (50400) | 65500 (80900)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 9.54          | 13.30         | 18.40         | 25.30         | 36.30          | 46.90          |
|               |                      |            | Output Torque Nm | 18600         | 27000         | 37200         | 51500         | 74100          | 98100          |
| 150.          | 3.20                 | Mechanical | Input Power kW   | 5.24 (6.54)   | 8.01 (9.54)   | 13.00         | 20.20 (27.40) | 27.30 (31.50)  | 33.10 (44.20)  |
|               |                      |            | Output Torque Nm | 11900 (14900) | 18800 (22400) | 31800         | 48100 (65600) | 65500 (75600)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 8.32          | 12.00         | 16.20         | 23.90         | 34.70          | 43.60          |
|               |                      |            | Output Torque Nm | 19000         | 28100         | 39700         | 57000         | 83300          | 107000         |
| 200.          | 2.40                 | Mechanical | Input Power kW   | 4.05 (5.10)   | 6.21 (6.25)   | 10.60         | 15.60 (15.90) | 18.10          | 25.20 (30.90)  |
|               |                      |            | Output Torque Nm | 11900 (15100) | 18800 (18900) | 32300         | 48100 (49200) | 57000          | 80800 (99000)  |
|               |                      | Thermal    | Input Power kW   | 9.56          | 12.80         | 15.90         | 24.70         | 35.60          | 44.20          |
|               |                      |            | Output Torque Nm | 28300         | 38900         | 48800         | 76200         | 112000         | 142000         |
| 225.          | 2.13                 | Mechanical | Input Power kW   | 3.75 (4.77)   | 5.58 (6.64)   | 9.01          | 13.90 (18.90) | 18.70 (21.60)  | 22.60 (30.30)  |
|               |                      |            | Output Torque Nm | 11900 (15200) | 18800 (22400) | 31700         | 48100 (65500) | 65500 (75700)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 7.20          | 10.10         | 13.50         | 19.60         | 28.10          | 35.20          |
|               |                      |            | Output Torque Nm | 23000         | 34200         | 47800         | 67800         | 98800          | 126000         |
| 250.          | 1.92                 | Mechanical | Input Power kW   | 3.39 (4.59)   | 5.08 (6.05)   | 9.28 (9.37)   | 12.80 (13.90) | 17.20 (22.00)  | 20.50 (32.50)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34600) | 48100 (52300) | 65500 (84000)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 7.56          | 10.30         | 13.80         | 18.40         | 25.80          | 33.00          |
|               |                      |            | Output Torque Nm | 26700         | 38400         | 51000         | 69300         | 98500          | 130000         |
| 300.          | 1.60                 | Mechanical | Input Power kW   | 2.92 (3.76)   | 4.41 (5.24)   | 7.09          | 11.00 (14.90) | 14.60 (16.90)  | 17.60 (23.50)  |
|               |                      |            | Output Torque Nm | 11900 (15400) | 18800 (22400) | 31600         | 48100 (65300) | 65500 (75500)  | 80800 (108000) |
|               |                      | Thermal    | Input Power kW   | 6.63          | 9.24          | 12.20         | 17.60         | 24.90          | 31.00          |
|               |                      |            | Output Torque Nm | 27300         | 39600         | 54800         | 77000         | 112000         | 143000         |
| 350.          | 1.37                 | Mechanical | Input Power kW   | 2.69 (2.75)   | 4.10 (4.53)   | 7.25          | 10.00 (11.30) | 13.90 (20.70)  | 16.20 (23.30)  |
|               |                      |            | Output Torque Nm | 11900 (12200) | 18800 (20800) | 33400         | 48100 (54400) | 65500 (97400)  | 80800 (117000) |
|               |                      | Thermal    | Input Power kW   | 4.66          | 6.44          | 8.00          | 11.90         | 15.50          | 22.00          |
|               |                      |            | Output Torque Nm | 20800         | 29700         | 37000         | 56900         | 72700          | 110000         |
| 375.          | 1.28                 | Mechanical | Input Power kW   | 2.25 (3.03)   | 3.54 (4.21)   | 6.45 (6.50)   | 8.53 (9.46)   | 11.80 (15.40)  | 14.10 (22.40)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34400) | 48100 (53400) | 65500 (85700)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 6.61          | 9.11          | 12.00         | 15.60         | 21.80          | 27.70          |
|               |                      |            | Output Torque Nm | 35400         | 48700         | 63900         | 88500         | 122000         | 159000         |
| 400.          | 1.20                 | Mechanical | Input Power kW   | 2.19 (2.84)   | 3.19          | 5.46          | 8.00          | 9.37           | 13.20 (16.00)  |
|               |                      |            | Output Torque Nm | 11900 (15500) | 18500         | 32100         | 48100         | 56500          | 80800 (98100)  |
|               |                      | Thermal    | Input Power kW   | 6.05          | 8.94          | 8.94          | 17.00         | 23.90          | 33.50          |
|               |                      |            | Output Torque Nm | 33300         | 52200         | 52800         | 103000        | 145000         | 206000         |
| 450.          | 1.07                 | Mechanical | Input Power kW   | 1.94 (2.55)   | 3.08 (3.66)   | 4.93          | 7.33 (9.88)   | 10.00 (11.50)  | 12.10 (16.10)  |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (22400) | 31500         | 48100 (65000) | 65500 (75200)  | 80800 (107000) |
|               |                      | Thermal    | Input Power kW   | 5.81          | 8.17          | 10.80         | 15.00         | 21.20          | 26.20          |
|               |                      |            | Output Torque Nm | 36200         | 50300         | 69300         | 98700         | 139000         | 175000         |
| 500.          | 0.96                 | Mechanical | Input Power kW   | 1.85 (2.49)   | 2.67 (3.17)   | 4.85 (4.87)   | 6.62 (7.44)   | 9.01 (11.90)   | 10.80 (17.10)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34300) | 48100 (54100) | 65500 (86800)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 6.05          | 8.40          | 8.94          | 14.30         | 19.70          | 25.00          |
|               |                      |            | Output Torque Nm | 39600         | 59900         | 63400         | 105000        | 144000         | 187000         |
| 600.          | 0.80                 | Mechanical | Input Power kW   | 1.74 (2.34)   | 2.62 (3.11)   | 4.47          | 6.27 (7.20)   | 8.65 (13.60)   | 10.20 (16.10)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33600         | 48100 (55200) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 3.92          | 5.24          | 7.21          | 10.50         | 12.60          | 16.30          |
|               |                      |            | Output Torque Nm | 27200         | 38000         | 54400         | 81000         | 95600          | 130000         |
| 625.          | 0.77                 | Mechanical | Input Power kW   | 1.51 (2.04)   | 2.29 (2.72)   | 4.15 (4.16)   | 5.66 (6.44)   | 7.46 (10.00)   | 8.77 (13.80)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34300) | 48100 (54800) | 65500 (88100)  | 80800 (127000) |
|               |                      | Thermal    | Input Power kW   | 4.80          | 8.05          | 8.05          | 13.60         | 18.50          | 23.20          |
|               |                      |            | Output Torque Nm | 38400         | 67000         | 66700         | 116000        | 164000         | 215000         |
| 700.          | 0.69                 | Mechanical | Input Power kW   | 1.53 (1.62)   | 2.31 (2.64)   | 4.17 (4.23)   | 5.59 (6.31)   | 7.69 (11.80)   | 8.80 (12.70)   |
|               |                      |            | Output Torque Nm | 11900 (12600) | 18800 (21500) | 34200 (34700) | 48100 (54300) | 65500 (101000) | 80800 (117000) |
|               |                      | Thermal    | Input Power kW   | 3.80          | 5.09          | 6.14          | 8.92          | 11.30          | 16.00          |
|               |                      |            | Output Torque Nm | 30000         | 42000         | 50600         | 77200         | 96400          | 148000         |
| 750.          | 0.64                 | Mechanical | Input Power kW   | 1.31 (1.76)   | 1.99 (2.36)   | 3.16          | 4.87 (6.54)   | 6.38 (7.27)    | 7.52 (9.92)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 31400         | 48100 (64800) | 65500 (74800)  | 80800 (107000) |
|               |                      | Thermal    | Input Power kW   | 4.80          | 7.22          | 8.05          | 13.10         | 18.10          | 22.00          |
|               |                      |            | Output Torque Nm | 44600         | 69200         | 80500         | 130000        | 188000         | 238000         |
| 800.          | 0.60                 | Mechanical | Input Power kW   | 1.28 (1.67)   | 1.86 (1.99)   | 3.29          | 4.37 (4.57)   | 5.77           | 7.03           |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (20100) | 33800         | 48100 (50300) | 63900          | 79500          |
|               |                      | Thermal    | Input Power kW   | 4.33          | 5.86          | 7.27          | 10.50         | 13.80          | 21.40          |
|               |                      |            | Output Torque Nm | 41200         | 60200         | 75300         | 116000        | 155000         | 244000         |
|               |                      |            | Efficiency %     | 60            | 62            | 63            | 67            | 71             | 73             |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 0.53                 | Mechanical       | Input Power kW   | 1.17 (1.57)   | 1.85 (2.20)   | 3.14          | 4.23 (4.83)    | 6.02 (9.48)    | 7.08 (11.20)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33500         | 48100 (55100)  | 65500 (104000) | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.47          | 4.67          | 6.41          | 9.07           | 10.80          | 13.80          |
|                  |               |                      |                  | Output Torque Nm | 36000         | 48100         | 68800         | 104000         | 118000         | 159000         |
|                  |               |                      |                  | Efficiency %     | 55            | 58            | 61            | 62             | 62             | 65             |
|                  | 1000.         | 0.48                 | Mechanical       | Input Power kW   | 1.03 (1.39)   | 1.56 (1.82)   | 2.81          | 3.78 (4.44)    | 4.93 (6.83)    | 5.86 (9.06)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22100) | 34100         | 48100 (56600)  | 65500 (91000)  | 80800 (125000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.63          | 5.36          | 5.36          | 10.20          | 13.00          | 20.20          |
|                  |               |                      |                  | Output Torque Nm | 42900         | 65900         | 65600         | 131000         | 174000         | 281000         |
|                  |               |                      |                  | Efficiency %     | 59            | 61            | 62            | 65             | 68             | 69             |
|                  | 1200.         | 0.40                 | Mechanical       | Input Power kW   | 0.97 (1.30)   | 1.41 (1.67)   | 2.38          | 3.31 (3.77)    | 4.67 (7.34)    | 5.48 (8.64)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33400         | 48100 (55000)  | 65500 (104000) | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.30          | 4.35          | 5.93          | 8.41           | 9.81           | 12.60          |
|                  |               |                      |                  | Output Torque Nm | 41600         | 59100         | 84300         | 124000         | 139000         | 187000         |
|                  |               |                      |                  | Efficiency %     | 53            | 54            | 57            | 59             | 60             | 63             |
|                  | 1250.         | 0.38                 | Mechanical       | Input Power kW   | 0.87 (1.17)   | 1.30 (1.51)   | 2.34          | 3.15 (3.69)    | 4.12 (5.79)    | 4.88 (7.49)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (21900) | 34100         | 48100 (56500)  | 65500 (92300)  | 80800 (125000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.08          | 4.79          | 4.79          | 8.35           | 11.00          | 16.90          |
|                  |               |                      |                  | Output Torque Nm | 43200         | 70700         | 70400         | 129000         | 176000         | 283000         |
|                  |               |                      |                  | Efficiency %     | 56            | 58            | 60            | 62             | 65             | 67             |
|                  | 1400.         | 0.34                 | Mechanical       | Input Power kW   | 0.86 (0.95)   | 1.25 (1.48)   | 2.25 (2.39)   | 2.96 (3.32)    | 4.17 (6.55)    | 4.75 (6.80)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (13200) | 18800 (22400) | 34200 (36400) | 48100 (54100)  | 65500 (104000) | 80800 (116000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.23          | 4.26          | 5.07          | 7.15           | 8.83           | 12.50          |
|                  |               |                      |                  | Output Torque Nm | 46400         | 65900         | 78000         | 118000         | 140000         | 215000         |
|                  |               |                      | Efficiency %     | 51               | 53            | 53            | 57            | 57             | 62             |                |
| 1500.            | 0.32          | Mechanical           | Input Power kW   | 0.76 (1.01)      | 1.14 (1.35)   | 1.79          | 2.72 (3.62)   | 3.53 (4.00)    | 4.19 (5.48)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31200         | 48100 (64400) | 65500 (74300)  | 80800 (106000) |                |
|                  |               | Thermal              | Input Power kW   | 3.08             | 4.79          | 4.79          | 8.35          | 11.00          | 16.90          |                |
|                  |               |                      | Output Torque Nm | 50100            | 81300         | 84900         | 150000        | 206000         | 330000         |                |
|                  |               |                      | Efficiency %     | 54               | 56            | 57            | 60            | 63             | 66             |                |
| 1600.            | 0.30          | Mechanical           | Input Power kW   | 0.72 (0.94)      | 1.10 (1.17)   | 1.93          | 2.52 (2.69)   | 3.16           | 3.79           |                |
|                  |               |                      | Output Torque Nm | 11900 (15600)    | 18800 (20000) | 33700         | 48100 (51400) | 63400          | 78900          |                |
|                  |               | Thermal              | Input Power kW   | 3.63             | 5.26          | 5.36          | 9.08          | 11.70          | 17.90          |                |
|                  |               |                      | Output Torque Nm | 62000            | 92800         | 95100         | 176000        | 238000         | 378000         |                |
|                  |               |                      | Efficiency %     | 52               | 54            | 55            | 60            | 63             | 66             |                |
| 1750.            | 0.27          | Mechanical           | Input Power kW   | 0.68 (0.91)      | 1.04 (1.20)   | 1.86          | 2.41 (2.80)   | 3.15 (4.50)    | 3.72 (5.64)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (21700) | 34000         | 48100 (56000) | 65500 (94200)  | 80800 (123000) |                |
|                  |               | Thermal              | Input Power kW   | 2.31             | 3.28          | 3.28          | 6.01          | 8.93           | 13.50          |                |
|                  |               |                      | Output Torque Nm | 42000            | 60800         | 60600         | 121000        | 188000         | 298000         |                |
|                  |               |                      | Efficiency %     | 52               | 52            | 54            | 58            | 61             | 62             |                |
| 1800.            | 0.27          | Mechanical           | Input Power kW   | 0.66 (0.88)      | 1.00 (1.18)   | 1.56          | 2.35 (3.12)   | 3.07 (3.47)    | 3.63 (4.74)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31200         | 48100 (64300) | 65500 (74200)  | 80800 (106000) |                |
|                  |               | Thermal              | Input Power kW   | 2.62             | 3.96          | 3.96          | 6.92          | 9.59           | 14.60          |                |
|                  |               |                      | Output Torque Nm | 49200            | 77100         | 80500         | 144000        | 208000         | 330000         |                |
|                  |               |                      | Efficiency %     | 51               | 54            | 55            | 58            | 61             | 63             |                |
| 2000.            | 0.24          | Mechanical           | Input Power kW   | 0.61 (0.79)      | 0.92 (0.98)   | 1.61          | 2.10 (2.24)   | 2.64           | 3.16           |                |
|                  |               |                      | Output Torque Nm | 11900 (15600)    | 18800 (20000) | 33600         | 48100 (51300) | 63300          | 78800          |                |
|                  |               | Thermal              | Input Power kW   | 3.08             | 4.79          | 4.79          | 8.35          | 11.00          | 16.90          |                |
|                  |               |                      | Output Torque Nm | 62400            | 101000        | 102000        | 195000        | 268000         | 430000         |                |
|                  |               |                      | Efficiency %     | 49               | 51            | 52            | 58            | 60             | 63             |                |
| 2100.            | 0.23          | Mechanical           | Input Power kW   | 0.62 (0.70)      | 0.93 (1.10)   | 1.68 (1.82)   | 2.19 (2.45)   | 2.99 (4.69)    | 3.36 (4.79)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13600)    | 18800 (22400) | 34200 (37200) | 48100 (53900) | 65500 (104000) | 80800 (116000) |                |
|                  |               | Thermal              | Input Power kW   | 3.06             | 4.04          | 4.77          | 6.63          | 7.99           | 11.20          |                |
|                  |               |                      | Output Torque Nm | 61600            | 84300         | 99000         | 148000        | 178000         | 273000         |                |
|                  |               |                      | Efficiency %     | 46               | 48            | 49            | 53            | 53             | 59             |                |
| 2400.            | 0.20          | Mechanical           | Input Power kW   | 0.56 (0.74)      | 0.85 (1.00)   | 1.40          | 1.93 (2.19)   | 2.62 (4.11)    | 3.03 (4.77)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33300         | 48100 (54700) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.98             | 3.94          | 5.34          | 7.36          | 8.34           | 10.50          |                |
|                  |               |                      | Output Torque Nm | 66900            | 91100         | 130000        | 188000        | 212000         | 285000         |                |
|                  |               |                      | Efficiency %     | 45               | 47            | 50            | 52            | 52             | 56             |                |
| 2500.            | 0.19          | Mechanical           | Input Power kW   | 0.53 (0.71)      | 0.80 (0.94)   | 1.41 (1.76)   | 1.84 (2.09)   | 1.79           | 2.54           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (43000) | 48100 (54800) | 51100          | 76000          |                |
|                  |               | Thermal              | Input Power kW   | 3.08             | 4.32          | 4.79          | 8.17          | 11.00          | 15.10          |                |
|                  |               |                      | Output Torque Nm | 72900            | 106000        | 119000        | 218000        | 323000         | 464000         |                |
|                  |               |                      | Efficiency %     | 45               | 47            | 49            | 53            | 58             | 61             |                |
| 2800.            | 0.17          | Mechanical           | Input Power kW   | 0.49 (0.57)      | 0.75 (0.88)   | 1.34 (1.48)   | 1.73 (1.93)   | 2.35 (3.68)    | 2.63 (3.74)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13800)    | 18800 (22400) | 34200 (37800) | 48100 (53900) | 65500 (104000) | 80800 (116000) |                |
|                  |               | Thermal              | Input Power kW   | 2.94             | 3.88          | 4.57          | 6.26          | 7.54           | 10.50          |                |
|                  |               |                      | Output Torque Nm | 74900            | 102000        | 119000        | 178000        | 214000         | 330000         |                |
|                  |               |                      | Efficiency %     | 43               | 45            | 46            | 50            | 50             | 55             |                |
| 3000.            | 0.16          | Mechanical           | Input Power kW   | 0.48 (0.63)      | 0.71 (0.84)   | 1.18          | 1.61 (1.83)   | 2.21 (3.46)    | 2.54 (4.00)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33200         | 48100 (54700) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.93             | 3.82          | 4.79          | 7.08          | 8.05           | 10.10          |                |
|                  |               |                      | Output Torque Nm | 77900            | 106000        | 139000        | 217000        | 244000         | 327000         |                |
|                  |               |                      | Efficiency %     | 42               | 44            | 47            | 50            | 50             | 53             |                |
| 3500.            | 0.14          | Mechanical           | Input Power kW   | 0.42 (0.49)      | 0.63 (0.75)   | 1.13 (1.26)   | 1.45 (1.62)   | 1.98 (3.10)    | 2.21 (3.13)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13900)    | 18800 (22400) | 34200 (38200) | 48100 (53800) | 65500 (104000) | 80800 (116000) |                |
|                  |               | Thermal              | Input Power kW   | 2.89             | 3.78          | 4.43          | 6.04          | 7.28           | 10.10          |                |
|                  |               |                      | Output Torque Nm | 87500            | 119000        | 138000        | 206000        | 247000         | 381000         |                |
|                  |               |                      | Efficiency %     | 41               | 43            | 43            | 48            | 48             | 53             |                |
| 3600.            | 0.13          | Mechanical           | Input Power kW   | 0.42 (0.55)      | 0.63 (0.74)   | 1.03          | 1.40 (1.59)   | 1.93 (3.02)    | 2.22 (3.48)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33200         | 48100 (54600) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.62             | 3.78          | 3.96          | 6.92          | 7.86           | 9.85           |                |
|                  |               |                      | Output Torque Nm | 80300            | 120000        | 131000        | 245000        | 274000         | 368000         |                |
|                  |               |                      | Efficiency %     | 40               | 42            | 45            | 48            | 47             | 51             |                |
| 4200.            | 0.11          | Mechanical           | Input Power kW   | 0.37 (0.43)      | 0.56 (0.66)   | 0.99 (1.11)   | 1.26 (1.40)   | 1.73 (2.70)    | 1.92 (2.72)    |                |
|                  |               |                      | Output Torque Nm | 11900 (14100)    | 18800 (22400) | 34200 (38600) | 48100 (53700) | 65500 (104000) | 80800 (115000) |                |
|                  |               | Thermal              | Input Power kW   | 2.62             | 3.74          | 3.96          | 5.89          | 7.12           | 9.90           |                |
|                  |               |                      | Output Torque Nm | 91300            | 135000        | 141000        | 232000        | 277000         | 429000         |                |
|                  |               |                      | Efficiency %     | 38               | 40            | 41            | 46            | 45             | 50             |                |

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |       |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|-------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12    | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 50.00                          | Mechanical       | Input Power kW   | 50.10        | 74.70 | 104.00 | 189.00 | 209.00 | 366.00 |
|                  |               |                                |                  | Output Torque Nm | 9030         | 13500 | 18600  | 34400  | 38000  | 68400  |
|                  |               |                                | Thermal          | Input Power kW   | 32.20        | 48.60 | 72.70  | 114.00 | 150.00 | 199.00 |
|                  |               |                                |                  | Output Torque Nm | 5790         | 8790  | 13000  | 20900  | 27200  | 37100  |
|                  | 7.5           | 33.33                          | Mechanical       | Input Power kW   | 35.30        | 54.70 | 74.40  | 135.00 | 218.00 | 268.00 |
|                  |               |                                |                  | Output Torque Nm | 9460         | 14700 | 20100  | 36700  | 59200  | 73100  |
|                  |               |                                | Thermal          | Input Power kW   | 28.60        | 42.80 | 63.40  | 97.50  | 143.00 | 164.00 |
|                  |               |                                |                  | Output Torque Nm | 7670         | 11500 | 17100  | 26400  | 38800  | 44900  |
|                  | 10.0          | 25.00                          | Mechanical       | Input Power kW   | 24.20        | 44.10 | 59.40  | 126.00 | 142.00 | 209.00 |
|                  |               |                                |                  | Output Torque Nm | 8350         | 15400 | 20800  | 45200  | 50400  | 74500  |
|                  |               |                                | Thermal          | Input Power kW   | 25.50        | 38.50 | 57.70  | 88.70  | 134.00 | 151.00 |
|                  |               |                                |                  | Output Torque Nm | 8810         | 13400 | 20200  | 31900  | 47400  | 53800  |
|                  | 12.5          | 20.00                          | Mechanical       | Input Power kW   | 26.00        | 34.80 | 54.20  | 91.20  | 123.00 | 171.00 |
|                  |               |                                |                  | Output Torque Nm | 11600        | 15400 | 24500  | 40700  | 56300  | 77500  |
|                  |               |                                | Thermal          | Input Power kW   | 22.20        | 35.10 | 49.60  | 80.30  | 120.00 | 136.00 |
|                  |               |                                |                  | Output Torque Nm | 9900         | 15500 | 22400  | 35800  | 54800  | 61900  |
|                  | 15.0          | 16.67                          | Mechanical       | Input Power kW   | 21.10        | 30.20 | 55.60  | 79.30  | 123.00 | 148.00 |
|                  |               |                                |                  | Output Torque Nm | 10700        | 15500 | 28800  | 41500  | 64900  | 78000  |
|                  |               |                                | Thermal          | Input Power kW   | 20.50        | 31.50 | 45.30  | 73.20  | 109.00 | 124.00 |
|                  |               |                                |                  | Output Torque Nm | 10400        | 16200 | 23500  | 38300  | 57100  | 65700  |
| 20.0             | 12.50         | Mechanical                     | Input Power kW   | 17.30            | 23.90        | 40.60 | 70.30  | 71.30  | 115.00 |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 27600 | 48100  | 49300  | 80400  |        |
|                  |               | Thermal                        | Input Power kW   | 17.20            | 26.00        | 38.90 | 58.70  | 90.50  | 107.00 |        |
|                  |               |                                | Output Torque Nm | 11500            | 17600        | 26500 | 40100  | 62700  | 74600  |        |
| 25.0             | 10.00         | Mechanical                     | Input Power kW   | 14.30            | 19.30        | 34.50 | 55.80  | 77.00  | 93.10  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 28600 | 46900  | 65500  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 13.90            | 21.20        | 31.20 | 44.20  | 65.70  | 84.70  |        |
|                  |               |                                | Output Torque Nm | 11300            | 17700        | 25900 | 37200  | 55800  | 73500  |        |
| 30.0             | 8.33          | Mechanical                     | Input Power kW   | 12.20            | 16.60        | 26.60 | 48.60  | 64.90  | 79.60  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 26900 | 48100  | 65100  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 12.10            | 19.10        | 26.90 | 41.20  | 61.20  | 77.30  |        |
|                  |               |                                | Output Torque Nm | 11500            | 18600        | 27300 | 40700  | 61300  | 78400  |        |
| 40.0             | 6.25          | Mechanical                     | Input Power kW   | 9.44             | 12.90        | 22.70 | 33.60  | 41.90  | 51.40  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 28800 | 43800  | 55400  | 68400  |        |
|                  |               | Thermal                        | Input Power kW   | 9.53             | 14.60        | 19.80 | 30.70  | 43.30  | 65.70  |        |
|                  |               |                                | Output Torque Nm | 11700            | 18400        | 25100 | 40000  | 57400  | 87600  |        |
| 50.0             | 5.00          | Mechanical                     | Input Power kW   | 7.89             | 10.70        | 20.90 | 30.20  | 27.90  | 40.40  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 31800 | 47000  | 44700  | 65900  |        |
|                  |               | Thermal                        | Input Power kW   | 8.11             | 12.20        | 16.40 | 27.40  | 44.70  | 55.60  |        |
|                  |               |                                | Output Torque Nm | 11900            | 18400        | 25000 | 42600  | 71800  | 90900  |        |
| 60.0             | 4.17          | Mechanical                     | Input Power kW   | 6.85             | 9.32         | 15.90 | 25.80  | 36.10  | 43.30  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 28400 | 46800  | 65500  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 7.14             | 10.50        | 15.20 | 23.20  | 30.40  | 39.30  |        |
|                  |               |                                | Output Torque Nm | 12100            | 18300        | 27200 | 42100  | 54900  | 73200  |        |
| 70.0             | 3.57          | Mechanical                     | Input Power kW   | 6.00             | 8.17         | 15.90 | 22.30  | 31.80  | 37.50  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 31800 | 46000  | 65500  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 6.72             | 9.97         | 12.90 | 19.70  | 26.70  | 37.40  |        |
|                  |               |                                | Output Torque Nm | 13000            | 19800        | 25700 | 40500  | 54900  | 80500  |        |
|                  |               |                                | Efficiency %     | 72               | 74           | 75    | 77     | 77     | 80     |        |

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Synthetic Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 75.0          | 3.33                 | Mechanical       | Input Power kW   | 5.18 (5.62)   | 6.19          | 14.50 (14.80) | 15.90          | 27.60 (29.60)  | 33.70 (34.10)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12900) | 14500         | 34200 (34900) | 38000          | 65500 (70100)  | 80800 (81800)  |
|                  |               |                      | Thermal          | Input Power kW   | 8.51          | 13.60         | 13.60         | 23.20          | 32.20          | 48.60          |
|                  |               |                      |                  | Output Torque Nm | 19600         | 31900         | 32100         | 55300          | 76200          | 117000         |
|                  | 100.          | 2.50                 | Mechanical       | Input Power kW   | 3.97 (5.01)   | 6.15 (6.19)   | 10.50         | 15.60 (15.90)  | 18.40          | 25.70 (31.50)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15100) | 18800 (18900) | 32300         | 48100 (49200)  | 57000          | 80800 (99000)  |
|                  |               |                      | Thermal          | Input Power kW   | 8.51          | 12.80         | 13.60         | 23.20          | 32.20          | 44.60          |
|                  |               |                      |                  | Output Torque Nm | 25600         | 39000         | 42000         | 71600          | 100000         | 140000         |
|                  | 125.          | 2.00                 | Mechanical       | Input Power kW   | 3.33 (4.50)   | 5.03 (5.99)   | 9.20 (9.29)   | 12.80 (13.90)  | 17.40 (22.30)  | 20.90 (33.20)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34600) | 48100 (52300)  | 65500 (84000)  | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 7.47          | 10.30         | 13.60         | 18.40          | 25.90          | 33.40          |
|                  |               |                      |                  | Output Torque Nm | 26900         | 38500         | 50600         | 69200          | 97800          | 129000         |
|                  | 150.          | 1.67                 | Mechanical       | Input Power kW   | 2.86 (3.69)   | 4.36 (5.19)   | 7.03          | 11.00 (14.90)  | 14.80 (17.10)  | 17.90 (23.90)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15400) | 18800 (22400) | 31600         | 48100 (65300)  | 65500 (75500)  | 80800 (108000) |
|                  |               |                      | Thermal          | Input Power kW   | 6.55          | 9.18          | 12.20         | 17.50          | 25.00          | 31.30          |
|                  |               |                      |                  | Output Torque Nm | 27400         | 39700         | 54900         | 77000          | 111000         | 141000         |
|                  | 200.          | 1.25                 | Mechanical       | Input Power kW   | 2.19 (2.85)   | 3.32          | 5.68          | 8.44 (8.46)    | 9.68           | 13.60 (16.50)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15500) | 18500         | 32100         | 48100 (48200)  | 56500          | 80800 (98200)  |
|                  |               |                      | Thermal          | Input Power kW   | 6.31          | 10.30         | 10.40         | 18.10          | 25.50          | 33.70          |
|                  |               |                      |                  | Output Torque Nm | 34500         | 57600         | 59100         | 103000         | 150000         | 200000         |
|                  | 225.          | 1.11                 | Mechanical       | Input Power kW   | 2.04 (2.68)   | 3.03 (3.61)   | 4.87          | 7.59 (10.30)   | 10.10 (11.60)  | 12.20 (16.30)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15700) | 18800 (22400) | 31500         | 48100 (65100)  | 65500 (75200)  | 80800 (107000) |
|                  |               |                      | Thermal          | Input Power kW   | 5.84          | 8.04          | 10.60         | 15.10          | 21.20          | 26.20          |
|                  |               |                      |                  | Output Torque Nm | 34300         | 50000         | 68900         | 95800          | 138000         | 174000         |
|                  | 250.          | 1.00                 | Mechanical       | Input Power kW   | 1.85 (2.50)   | 2.76 (3.29)   | 5.04 (5.06)   | 6.97 (7.80)    | 9.29 (12.30)   | 11.10 (17.60)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (34400) | 48100 (53800)  | 65500 (86600)  | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 6.14          | 8.29          | 10.40         | 14.40          | 19.80          | 25.10          |
|                  |               |                      |                  | Output Torque Nm | 39900         | 56700         | 71000         | 99600          | 140000         | 183000         |
| 300.             | 0.83          | Mechanical           | Input Power kW   | 1.59 (2.12)      | 2.40 (2.85)   | 3.84          | 5.99 (8.07)   | 7.93 (9.08)    | 9.53 (12.60)   |                |
|                  |               |                      | Output Torque Nm | 11900 (15900)    | 18800 (22400) | 31500         | 48100 (64900) | 65500 (75000)  | 80800 (107000) |                |
|                  |               | Thermal              | Input Power kW   | 5.40             | 7.43          | 9.80          | 13.80         | 19.30          | 23.80          |                |
|                  |               |                      | Output Torque Nm | 40800            | 58600         | 80700         | 111000        | 160000         | 202000         |                |
| 350.             | 0.71          | Mechanical           | Input Power kW   | 1.49 (1.58)      | 2.27 (2.60)   | 4.13 (4.19)   | 5.57 (6.28)   | 7.78 (12.00)   | 8.95 (12.90)   |                |
|                  |               |                      | Output Torque Nm | 11900 (12700)    | 18800 (21600) | 34200 (34700) | 48100 (54300) | 65500 (101000) | 80800 (117000) |                |
|                  |               | Thermal              | Input Power kW   | 3.75             | 5.05          | 6.10          | 8.90          | 11.30          | 16.20          |                |
|                  |               |                      | Output Torque Nm | 30200            | 42100         | 50700         | 77100         | 95700          | 147000         |                |
| 375.             | 0.67          | Mechanical           | Input Power kW   | 1.23 (1.66)      | 1.93 (2.29)   | 3.52 (3.52)   | 4.65 (5.36)   | 6.39 (8.67)    | 7.66 (12.00)   |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22300) | 34200 (34200) | 48100 (55500) | 65500 (89000)  | 80800 (127000) |                |
|                  |               | Thermal              | Input Power kW   | 4.79             | 7.48          | 7.96          | 12.50         | 17.30          | 21.80          |                |
|                  |               |                      | Output Torque Nm | 47000            | 73300         | 77700         | 130000        | 178000         | 231000         |                |
| 400.             | 0.63          | Mechanical           | Input Power kW   | 1.19 (1.54)      | 1.72          | 2.97          | 4.29          | 5.04           | 7.16 (8.62)    |                |
|                  |               |                      | Output Torque Nm | 11900 (15400)    | 18100         | 31900         | 47200         | 56100          | 80800 (97400)  |                |
|                  |               | Thermal              | Input Power kW   | 4.09             | 5.97          | 5.97          | 11.10         | 17.20          | 25.30          |                |
|                  |               |                      | Output Torque Nm | 41200            | 63700         | 64300         | 123000        | 192000         | 287000         |                |
| 450.             | 0.56          | Mechanical           | Input Power kW   | 1.06 (1.43)      | 1.68 (2.00)   | 2.68          | 4.00 (5.37)   | 5.46 (6.22)    | 6.57 (8.66)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31300         | 48100 (64600) | 65500 (74700)  | 80800 (107000) |                |
|                  |               | Thermal              | Input Power kW   | 4.79             | 6.71          | 7.96          | 12.10         | 16.90          | 20.70          |                |
|                  |               |                      | Output Torque Nm | 54600            | 75800         | 93800         | 146000        | 204000         | 256000         |                |
| 500.             | 0.50          | Mechanical           | Input Power kW   | 1.01 (1.36)      | 1.46 (1.72)   | 2.66          | 3.62 (4.26)   | 4.90 (6.78)    | 5.88 (9.13)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22100) | 34100         | 48100 (56500) | 65500 (90700)  | 80800 (126000) |                |
|                  |               | Thermal              | Input Power kW   | 4.09             | 5.97          | 5.97          | 11.10         | 15.90          | 20.00          |                |
|                  |               |                      | Output Torque Nm | 48800            | 77400         | 77000         | 148000        | 213000         | 276000         |                |
| 600.             | 0.42          | Mechanical           | Input Power kW   | 0.96 (1.30)      | 1.45 (1.72)   | 2.46          | 3.47 (3.96)   | 4.79 (7.55)    | 5.61 (8.87)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33400         | 48100 (55000) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 3.23             | 4.27          | 5.84          | 8.40          | 9.82           | 12.60          |                |
|                  |               |                      | Output Torque Nm | 40500            | 56100         | 80000         | 117000        | 135000         | 182000         |                |
| 625.             | 0.40          | Mechanical           | Input Power kW   | 0.84 (1.13)      | 1.26 (1.47)   | 2.28          | 3.11 (3.65)   | 4.08 (5.72)    | 4.79 (7.37)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (21900) | 34100         | 48100 (56600) | 65500 (92000)  | 80800 (125000) |                |
|                  |               | Thermal              | Input Power kW   | 3.26             | 5.41          | 5.41          | 9.58          | 13.90          | 18.90          |                |
|                  |               |                      | Output Torque Nm | 47200            | 81900         | 81500         | 149000        | 225000         | 320000         |                |
| 700.             | 0.36          | Mechanical           | Input Power kW   | 0.85 (0.94)      | 1.28 (1.52)   | 2.32 (2.45)   | 3.10 (3.48)   | 4.27 (6.73)    | 4.85 (6.97)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36200) | 48100 (54100) | 65500 (104000) | 80800 (116000) |                |
|                  |               | Thermal              | Input Power kW   | 3.16             | 4.18          | 4.98          | 7.14          | 8.84           | 12.50          |                |
|                  |               |                      | Output Torque Nm | 45200            | 62400         | 74000         | 112000        | 136000         | 209000         |                |
| 750.             | 0.33          | Mechanical           | Input Power kW   | 0.72 (0.97)      | 1.10 (1.30)   | 1.73          | 2.68 (3.58)   | 3.49 (3.96)    | 4.11 (5.38)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 31200         | 48100 (64400) | 65500 (74300)  | 80800 (106000) |                |
|                  |               | Thermal              | Input Power kW   | 3.26             | 5.41          | 5.41          | 9.58          | 13.90          | 18.00          |                |
|                  |               |                      | Output Torque Nm | 54700            | 94100         | 98200         | 174000        | 263000         | 357000         |                |
| 800.             | 0.31          | Mechanical           | Input Power kW   | 0.70 (0.92)      | 1.03 (1.09)   | 1.81          | 2.40 (2.57)   | 3.13           | 3.80           |                |
|                  |               |                      | Output Torque Nm | 11900 (15600)    | 18800 (20000) | 33700         | 48100 (51400) | 63500          | 79000          |                |
|                  |               | Thermal              | Input Power kW   | 3.66             | 4.93          | 5.97          | 8.64          | 11.30          | 17.40          |                |
|                  |               |                      | Output Torque Nm | 63300            | 91800         | 112000        | 175000        | 230000         | 364000         |                |
|                  |               |                      | Efficiency %     | 57               | 58            | 59            | 64            | 68             | 70             |                |

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Synthetic Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 900.          | 0.28                 | Mechanical | Input Power kW   | 0.65 (0.87)   | 1.03 (1.22)   | 1.73          | 2.34 (2.66)   | 3.34 (5.26)    | 3.91 (6.18)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33300         | 48100 (54800) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.92          | 3.89          | 5.29          | 7.42          | 8.67           | 11.10          |
|               |                      |            | Output Torque Nm | 54800         | 72400         | 103000        | 154000        | 171000         | 230000         |
| 1000.         | 0.25                 | Mechanical | Input Power kW   | 0.57 (0.77)   | 0.87 (1.00)   | 1.56          | 2.10 (2.44)   | 2.73 (3.94)    | 3.24 (4.91)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21700) | 34000         | 48100 (55800) | 65500 (94700)  | 80800 (123000) |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.66          | 3.66          | 6.63          | 9.32           | 13.50          |
|               |                      |            | Output Torque Nm | 53400         | 80500         | 80100         | 153000        | 225000         | 341000         |
| 1200.         | 0.21                 | Mechanical | Input Power kW   | 0.54 (0.72)   | 0.79 (0.93)   | 1.32          | 1.84 (2.08)   | 2.59 (4.08)    | 3.03 (4.78)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33300         | 48100 (54700) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.81          | 3.68          | 5.01          | 6.99          | 8.01           | 10.20          |
|               |                      |            | Output Torque Nm | 63900         | 90100         | 128000        | 186000        | 204000         | 275000         |
| 1250.         | 0.20                 | Mechanical | Input Power kW   | 0.49 (0.65)   | 0.73 (0.83)   | 1.31          | 1.76 (2.02)   | 2.30 (3.35)    | 2.72 (4.10)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21500) | 33900         | 48100 (55500) | 65500 (95900)  | 80800 (122000) |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.44          | 7.85           | 11.20          |
|               |                      |            | Output Torque Nm | 52400         | 84000         | 83600         | 151000        | 226000         | 337000         |
| 1400.         | 0.18                 | Mechanical | Input Power kW   | 0.48 (0.55)   | 0.69 (0.82)   | 1.26 (1.39)   | 1.65 (1.84)   | 2.32 (3.64)    | 2.62 (3.74)    |
|               |                      |            | Output Torque Nm | 11900 (13700) | 18800 (22400) | 34200 (37800) | 48100 (53900) | 65500 (104000) | 80800 (116000) |
|               |                      | Thermal    | Input Power kW   | 2.77          | 3.63          | 4.28          | 5.95          | 7.23           | 10.20          |
|               |                      |            | Output Torque Nm | 71600         | 101000        | 118000        | 176000        | 207000         | 319000         |
| 1500.         | 0.17                 | Mechanical | Input Power kW   | 0.42 (0.57)   | 0.64 (0.76)   | 1.00          | 1.52 (2.01)   | 1.97 (2.22)    | 2.33 (3.03)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 31100         | 48100 (64000) | 65500 (73900)  | 80800 (105000) |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.44          | 7.85           | 11.20          |
|               |                      |            | Output Torque Nm | 60600         | 96400         | 101000        | 175000        | 264000         | 393000         |
| 1600.         | 0.16                 | Mechanical | Input Power kW   | 0.40 (0.52)   | 0.62 (0.65)   | 1.08          | 1.40 (1.49)   | 1.75           | 2.09           |
|               |                      |            | Output Torque Nm | 11900 (15600) | 18800 (20000) | 33600         | 48100 (51200) | 63100          | 78500          |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.66          | 3.66          | 6.63          | 9.32           | 13.50          |
|               |                      |            | Output Torque Nm | 76800         | 115000        | 115000        | 231000        | 343000         | 517000         |
| 1750.         | 0.14                 | Mechanical | Input Power kW   | 0.38 (0.51)   | 0.59 (0.67)   | 1.06          | 1.36 (1.55)   | 1.77 (2.57)    | 2.09 (3.12)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21400) | 33800         | 48100 (55000) | 65500 (95900)  | 80800 (121000) |
|               |                      | Thermal    | Input Power kW   | 1.58          | 2.20          | 2.20          | 3.96          | 6.48           | 9.14           |
|               |                      |            | Output Torque Nm | 51400         | 71400         | 71100         | 143000        | 243000         | 359000         |
| 1800.         | 0.14                 | Mechanical | Input Power kW   | 0.37 (0.50)   | 0.56 (0.66)   | 0.88          | 1.32 (1.74)   | 1.72 (1.94)    | 2.03 (2.64)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 31000         | 48100 (64000) | 65500 (73800)  | 80800 (105000) |
|               |                      | Thermal    | Input Power kW   | 1.80          | 2.66          | 2.66          | 4.53          | 6.82           | 9.69           |
|               |                      |            | Output Torque Nm | 60400         | 91900         | 95900         | 168000        | 263000         | 390000         |
| 2000.         | 0.13                 | Mechanical | Input Power kW   | 0.34 (0.44)   | 0.52 (0.55)   | 0.91          | 1.17 (1.25)   | 1.47           | 1.75           |
|               |                      |            | Output Torque Nm | 11900 (15500) | 18800 (19900) | 33500         | 48100 (51100) | 63000          | 78300          |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.44          | 7.85           | 11.20          |
|               |                      |            | Output Torque Nm | 75200         | 120000        | 120000        | 227000        | 344000         | 510000         |
| 2100.         | 0.12                 | Mechanical | Input Power kW   | 0.35 (0.41)   | 0.52 (0.62)   | 0.95 (1.06)   | 1.23 (1.37)   | 1.67 (2.63)    | 1.86 (2.65)    |
|               |                      |            | Output Torque Nm | 11900 (14000) | 18800 (22400) | 34200 (38500) | 48100 (53700) | 65500 (104000) | 80800 (116000) |
|               |                      | Thermal    | Input Power kW   | 2.68          | 3.53          | 4.13          | 5.66          | 6.71           | 9.37           |
|               |                      |            | Output Torque Nm | 96500         | 131000        | 152000        | 226000        | 267000         | 413000         |
| 2400.         | 0.10                 | Mechanical | Input Power kW   | 0.31 (0.42)   | 0.48 (0.56)   | 0.79          | 1.08 (1.22)   | 1.48 (2.31)    | 1.70 (2.67)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33200         | 48100 (54500) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.47          | 3.66          | 6.36          | 7.12           | 8.93           |
|               |                      |            | Output Torque Nm | 100000        | 142000        | 157000        | 289000        | 322000         | 432000         |
| 2500.         | 0.10                 | Mechanical | Input Power kW   | 0.30 (0.40)   | 0.45 (0.53)   | 0.80 (0.99)   | 1.04 (1.17)   | 1.00           | 1.41           |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (42800) | 48100 (54600) | 50800          | 75600          |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.44          | 7.85           | 11.20          |
|               |                      |            | Output Torque Nm | 87500         | 139000        | 140000        | 259000        | 413000         | 615000         |
| 2800.         | 0.09                 | Mechanical | Input Power kW   | 0.28 (0.33)   | 0.42 (0.50)   | 0.76 (0.87)   | 0.97 (1.08)   | 1.32 (2.08)    | 1.47 (2.08)    |
|               |                      |            | Output Torque Nm | 11900 (14200) | 18800 (22400) | 34200 (39100) | 48100 (53700) | 65500 (104000) | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.44          | 3.66          | 5.42          | 6.45           | 8.99           |
|               |                      |            | Output Torque Nm | 114000        | 160000        | 169000        | 274000        | 326000         | 505000         |
| 3000.         | 0.08                 | Mechanical | Input Power kW   | 0.27 (0.36)   | 0.40 (0.48)   | 0.66          | 0.91 (1.03)   | 1.25 (1.96)    | 1.43 (2.25)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33100         | 48100 (54500) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.44          | 6.97           | 8.70           |
|               |                      |            | Output Torque Nm | 98200         | 156000        | 163000        | 296000        | 374000         | 501000         |
| 3500.         | 0.07                 | Mechanical | Input Power kW   | 0.24 (0.28)   | 0.36 (0.42)   | 0.64 (0.74)   | 0.82 (0.91)   | 1.12 (1.76)    | 1.24 (1.75)    |
|               |                      |            | Output Torque Nm | 11900 (14400) | 18800 (22400) | 34200 (39500) | 48100 (53600) | 65500 (104000) | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.09          | 3.19          | 3.19          | 5.28          | 6.32           | 8.78           |
|               |                      |            | Output Torque Nm | 112000        | 177000        | 175000        | 320000        | 378000         | 586000         |
| 3600.         | 0.07                 | Mechanical | Input Power kW   | 0.24 (0.31)   | 0.36 (0.42)   | 0.58          | 0.79 (0.89)   | 1.10 (1.72)    | 1.26 (1.97)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33100         | 48100 (54400) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 1.80          | 2.66          | 2.66          | 4.53          | 6.82           | 8.59           |
|               |                      |            | Output Torque Nm | 97500         | 148000        | 155000        | 283000        | 418000         | 567000         |
| 4200.         | 0.06                 | Mechanical | Input Power kW   | 0.21 (0.25)   | 0.32 (0.37)   | 0.56 (0.65)   | 0.71 (0.79)   | 0.99 (1.54)    | 1.09 (1.53)    |
|               |                      |            | Output Torque Nm | 11900 (14500) | 18800 (22400) | 34200 (39800) | 48100 (53500) | 65500 (104000) | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 1.80          | 2.66          | 2.66          | 4.53          | 6.26           | 8.69           |
|               |                      |            | Output Torque Nm | 111000        | 168000        | 166000        | 315000        | 428000         | 665000         |
|               |                      |            | Efficiency %     | 36            | 37            | 38            | 42            | 41             | 46             |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 290.00                         | Mechanical       | Input Power kW   | 117.00       | 174.00 | 241.00 | 434.00 | 718.00 | 835.00 |
|                  |               |                                |                  | Output Torque Nm | 3690         | 5470   | 7460   | 13700  | 22600  | 26800  |
|                  |               |                                | Thermal          | Input Power kW   | 85.30        | 120.00 | 171.00 | 225.00 | 315.00 | 425.00 |
|                  |               |                                |                  | Output Torque Nm | 2680         | 3790   | 5280   | 7030   | 9870   | 13600  |
|                  |               |                                |                  | Efficiency %     | 95           | 96     | 96     | 95     | 95     | 96     |
|                  | 7.5           | 193.33                         | Mechanical       | Input Power kW   | 86.00        | 133.00 | 180.00 | 372.00 | 554.00 | 825.00 |
|                  |               |                                |                  | Output Torque Nm | 4030         | 6220   | 8420   | 17500  | 26100  | 39000  |
|                  |               |                                | Thermal          | Input Power kW   | 72.30        | 105.00 | 150.00 | 203.00 | 318.00 | 400.00 |
|                  |               |                                |                  | Output Torque Nm | 3380         | 4900   | 7030   | 9460   | 14900  | 18800  |
|                  |               |                                |                  | Efficiency %     | 95           | 94     | 95     | 94     | 95     | 95     |
|                  | 10.0          | 145.00                         | Mechanical       | Input Power kW   | 60.20        | 109.00 | 147.00 | 308.00 | 433.00 | 622.00 |
|                  |               |                                |                  | Output Torque Nm | 3630         | 6630   | 8940   | 19200  | 26700  | 38400  |
|                  |               |                                | Thermal          | Input Power kW   | 65.00        | 94.50  | 141.00 | 187.00 | 305.00 | 385.00 |
|                  |               |                                |                  | Output Torque Nm | 3920         | 5750   | 8590   | 11600  | 18800  | 23700  |
|                  |               |                                | Efficiency %     | 94               | 94           | 94     | 94     | 95     | 95     |        |
| 12.5             | 116.00        | Mechanical                     | Input Power kW   | 66.40            | 87.60        | 136.00 | 229.00 | 305.00 | 534.00 |        |
|                  |               |                                | Output Torque Nm | 5200             | 6760         | 10700  | 17700  | 24200  | 42000  |        |
|                  |               | Thermal                        | Input Power kW   | 56.40            | 87.70        | 121.00 | 172.00 | 276.00 | 351.00 |        |
|                  |               |                                | Output Torque Nm | 4410             | 6770         | 9490   | 13300  | 21900  | 27500  |        |
|                  |               |                                | Efficiency %     | 93               | 94           | 93     | 94     | 94     | 94     |        |
| 15.0             | 96.67         | Mechanical                     | Input Power kW   | 53.70            | 76.80        | 141.00 | 234.00 | 342.00 | 464.00 |        |
|                  |               |                                | Output Torque Nm | 4800             | 6900         | 12800  | 21200  | 31300  | 42500  |        |
|                  |               | Thermal                        | Input Power kW   | 52.30            | 78.40        | 111.00 | 159.00 | 246.00 | 322.00 |        |
|                  |               |                                | Output Torque Nm | 4680             | 7040         | 10100  | 14300  | 22400  | 29400  |        |
|                  |               |                                | Efficiency %     | 93               | 93           | 94     | 93     | 94     | 94     |        |
| 20.0             | 72.50         | Mechanical                     | Input Power kW   | 51.10            | 79.80        | 114.00 | 199.00 | 259.00 | 372.00 |        |
|                  |               |                                | Output Torque Nm | 6050             | 9490         | 13600  | 23700  | 31200  | 45000  |        |
|                  |               | Thermal                        | Input Power kW   | 44.00            | 64.80        | 96.90  | 127.00 | 212.00 | 264.00 |        |
|                  |               |                                | Output Torque Nm | 5190             | 7690         | 11500  | 15000  | 25500  | 31800  |        |
|                  |               |                                | Efficiency %     | 91               | 92           | 92     | 91     | 93     | 93     |        |
| 25.0             | 58.00         | Mechanical                     | Input Power kW   | 42.10            | 62.80        | 90.00  | 147.00 | 229.00 | 313.00 |        |
|                  |               |                                | Output Torque Nm | 6070             | 9290         | 13100  | 21600  | 34100  | 47200  |        |
|                  |               | Thermal                        | Input Power kW   | 35.20            | 52.60        | 76.90  | 101.00 | 150.00 | 196.00 |        |
|                  |               |                                | Output Torque Nm | 5060             | 7760         | 11200  | 14600  | 22100  | 29300  |        |
|                  |               |                                | Efficiency %     | 89               | 90           | 90     | 89     | 91     | 91     |        |
| 30.0             | 48.33         | Mechanical                     | Input Power kW   | 35.70            | 57.30        | 81.60  | 143.00 | 211.00 | 272.00 |        |
|                  |               |                                | Output Torque Nm | 6080             | 9890         | 14600  | 24700  | 37200  | 48100  |        |
|                  |               | Thermal                        | Input Power kW   | 30.60            | 47.40        | 67.00  | 93.40  | 142.00 | 184.00 |        |
|                  |               |                                | Output Torque Nm | 5180             | 8140         | 11900  | 16000  | 24800  | 32300  |        |
|                  |               |                                | Efficiency %     | 87               | 88           | 88     | 88     | 90     | 90     |        |
| 40.0             | 36.25         | Mechanical                     | Input Power kW   | 30.80            | 48.20        | 67.70  | 96.70  | 142.00 | 205.00 |        |
|                  |               |                                | Output Torque Nm | 6830             | 10900        | 15200  | 22000  | 33200  | 47700  |        |
|                  |               | Thermal                        | Input Power kW   | 23.80            | 36.00        | 48.20  | 71.90  | 102.00 | 163.00 |        |
|                  |               |                                | Output Torque Nm | 5250             | 8060         | 10700  | 16200  | 23600  | 37800  |        |
|                  |               |                                | Efficiency %     | 84               | 85           | 84     | 86     | 88     | 89     |        |
| 50.0             | 29.00         | Mechanical                     | Input Power kW   | 25.70            | 39.10        | 55.00  | 106.00 | 110.00 | 161.00 |        |
|                  |               |                                | Output Torque Nm | 6880             | 10600        | 15000  | 29100  | 31100  | 45900  |        |
|                  |               | Thermal                        | Input Power kW   | 20.20            | 30.00        | 39.70  | 62.40  | 108.00 | 140.00 |        |
|                  |               |                                | Output Torque Nm | 5350             | 8100         | 10700  | 16800  | 30500  | 39700  |        |
|                  |               |                                | Efficiency %     | 80               | 82           | 82     | 82     | 87     | 87     |        |
| 60.0             | 24.17         | Mechanical                     | Input Power kW   | 21.80            | 34.50        | 50.90  | 86.50  | 119.00 | 144.00 |        |
|                  |               |                                | Output Torque Nm | 6750             | 10900        | 16300  | 27900  | 38500  | 47000  |        |
|                  |               | Thermal                        | Input Power kW   | 17.60            | 25.80        | 37.40  | 54.10  | 67.60  | 91.40  |        |
|                  |               |                                | Output Torque Nm | 5430             | 8070         | 11800  | 17000  | 21400  | 29300  |        |
|                  |               |                                | Efficiency %     | 78               | 79           | 80     | 80     | 80     | 81     |        |
| 70.0             | 20.71         | Mechanical                     | Input Power kW   | 17.90            | 28.70        | 42.40  | 71.70  | 104.00 | 127.00 |        |
|                  |               |                                | Output Torque Nm | 6340             | 10400        | 15200  | 26200  | 38300  | 48200  |        |
|                  |               | Thermal                        | Input Power kW   | 16.60            | 24.50        | 31.30  | 45.70  | 60.10  | 90.10  |        |
|                  |               |                                | Output Torque Nm | 5850             | 8790         | 11100  | 16200  | 21700  | 33600  |        |
|                  |               |                                | Efficiency %     | 76               | 78           | 77     | 77     | 78     | 81     |        |

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Mineral Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |       |               |               |                 |
|---------------|----------------------|------------|------------------|---------------|---------------|-------|---------------|---------------|-----------------|
|               |                      |            |                  | 10            | 12            | 14    | 17            | 20            | 24              |
| 75.0          | 19.33                | Mechanical | Input Power kW   | 20.70         | 29.50         | 40.90 | 70.00         | 117.00        | 173.00          |
|               |                      |            | Output Torque Nm | 8620          | 12500         | 17500 | 30200         | 49900         | 74600           |
|               |                      | Thermal    | Input Power kW   | 17.80         | 27.20         | 37.40 | 62.40         | 85.30         | 108.00          |
|               |                      |            | Output Torque Nm | 7380          | 11500         | 15900 | 26900         | 36300         | 46300           |
| 100.          | 14.50                | Mechanical | Efficiency %     | 84            | 85            | 85    | 87            | 88            | 88              |
|               |                      |            | Input Power kW   | 19.50         | 30.40         | 40.90 | 70.00         | 83.70         | 143.00 (144.00) |
|               |                      | Thermal    | Output Torque Nm | 10600         | 16800         | 22900 | 39300         | 46900         | 80800 (81200)   |
|               |                      |            | Input Power kW   | 15.00         | 22.30         | 31.20 | 47.40         | 73.90         | 89.20           |
| 125.          | 11.60                | Mechanical | Output Torque Nm | 8160          | 12300         | 17400 | 26600         | 41300         | 50200           |
|               |                      |            | Efficiency %     | 82            | 83            | 84    | 85            | 86            | 87              |
|               |                      | Thermal    | Input Power kW   | 16.10         | 23.80         | 33.90 | 55.60         | 87.90         | 115.00 (136.00) |
|               |                      |            | Output Torque Nm | 10500         | 16200         | 23000 | 38200         | 60300         | 80800 (95600)   |
| 150.          | 9.67                 | Mechanical | Input Power kW   | 12.30         | 17.90         | 25.40 | 36.10         | 53.90         | 67.80           |
|               |                      |            | Output Torque Nm | 8000          | 12100         | 17200 | 24600         | 36700         | 47200           |
|               |                      | Thermal    | Efficiency %     | 79            | 80            | 82    | 82            | 84            | 85              |
|               |                      |            | Input Power kW   | 13.60         | 21.60         | 30.40 | 53.50         | 76.90         | 98.80 (108.00)  |
| 200.          | 7.25                 | Mechanical | Output Torque Nm | 10400         | 17000         | 25100 | 43100         | 62000         | 80800 (88600)   |
|               |                      |            | Input Power kW   | 10.80         | 15.90         | 22.00 | 33.80         | 50.80         | 62.00           |
|               |                      | Thermal    | Output Torque Nm | 8190          | 12400         | 18100 | 27000         | 40700         | 50400           |
|               |                      |            | Efficiency %     | 76            | 78            | 80    | 81            | 82            | 84              |
| 225.          | 6.44                 | Mechanical | Input Power kW   | 12.10 (12.70) | 18.70 (18.80) | 26.90 | 46.60 (47.20) | 50.30         | 75.70 (85.90)   |
|               |                      |            | Output Torque Nm | 11900 (12500) | 18800 (18900) | 27400 | 48100 (48600) | 52800         | 80800 (91800)   |
|               |                      | Thermal    | Input Power kW   | 11.10         | 15.20         | 21.10 | 31.20         | 46.90         | 57.80           |
|               |                      |            | Output Torque Nm | 10800         | 15300         | 21500 | 32100         | 49200         | 61500           |
| 250.          | 5.80                 | Mechanical | Efficiency %     | 77            | 79            | 80    | 81            | 83            | 84              |
|               |                      |            | Input Power kW   | 10.70         | 16.70         | 23.50 | 41.30         | 55.80 (57.00) | 67.60 (80.00)   |
|               |                      | Thermal    | Output Torque Nm | 11400         | 18700         | 27600 | 47700         | 65500 (66900) | 80800 (95700)   |
|               |                      |            | Input Power kW   | 8.88          | 12.70         | 17.30 | 26.00         | 38.20         | 48.10           |
| 300.          | 4.83                 | Mechanical | Output Torque Nm | 9390          | 14200         | 20300 | 29900         | 44600         | 57300           |
|               |                      |            | Efficiency %     | 74            | 76            | 77    | 78            | 80            | 82              |
|               |                      | Thermal    | Input Power kW   | 10.20 (10.50) | 15.30 (15.40) | 22.00 | 36.10         | 51.30 (56.30) | 61.40 (86.90)   |
|               |                      |            | Output Torque Nm | 11900 (12300) | 18800 (19000) | 27100 | 45200         | 65500 (71800) | 80800 (115000)  |
| 350.          | 4.14                 | Mechanical | Input Power kW   | 8.82          | 12.40         | 17.10 | 23.50         | 33.80         | 43.80           |
|               |                      |            | Output Torque Nm | 10300         | 15200         | 20900 | 29300         | 42900         | 57300           |
|               |                      | Thermal    | Efficiency %     | 74            | 76            | 77    | 78            | 80            | 81              |
|               |                      |            | Input Power kW   | 8.77 (8.88)   | 13.30 (14.00) | 19.70 | 32.90 (34.70) | 43.80 (46.80) | 52.70 (65.20)   |
| 400.          | 3.63                 | Mechanical | Output Torque Nm | 11900 (12100) | 18800 (19800) | 29200 | 48100 (50700) | 65500 (69900) | 80800 (100000)  |
|               |                      |            | Input Power kW   | 7.71          | 11.10         | 15.00 | 22.30         | 32.30         | 40.50           |
|               |                      | Thermal    | Output Torque Nm | 10500         | 15600         | 22200 | 32400         | 48100         | 61800           |
|               |                      |            | Efficiency %     | 72            | 74            | 75    | 76            | 79            | 80              |
| 450.          | 3.22                 | Mechanical | Input Power kW   | 6.77          | 10.80         | 15.80 | 26.20         | 39.20         | 47.80 (56.40)   |
|               |                      |            | Output Torque Nm | 10100         | 16500         | 24600 | 42600         | 62800         | 80800 (95700)   |
|               |                      | Thermal    | Input Power kW   | 6.05          | 8.50          | 11.00 | 16.50         | 23.00         | 32.00           |
|               |                      |            | Output Torque Nm | 8940          | 12900         | 17000 | 26500         | 36200         | 53500           |
| 500.          | 2.90                 | Mechanical | Efficiency %     | 63            | 64            | 65    | 68            | 68            | 73              |
|               |                      |            | Input Power kW   | 6.78 (7.69)   | 10.70 (11.70) | 16.70 | 25.60 (26.50) | 35.40 (42.40) | 42.40 (65.60)   |
|               |                      | Thermal    | Output Torque Nm | 11900 (13500) | 18800 (20600) | 29500 | 48100 (49800) | 65500 (78600) | 80800 (125000)  |
|               |                      |            | Input Power kW   | 7.23          | 10.30         | 13.90 | 18.40         | 26.60         | 34.40           |
| 600.          | 2.42                 | Mechanical | Output Torque Nm | 12700         | 18000         | 24500 | 34500         | 49100         | 65400           |
|               |                      |            | Efficiency %     | 70            | 72            | 74    | 75            | 77            | 79              |
|               |                      | Thermal    | Input Power kW   | 6.59 (7.96)   | 9.52 (9.43)   | 16.30 | 23.90         | 28.20         | 39.80 (48.20)   |
|               |                      |            | Output Torque Nm | 11900 (14400) | 18300         | 32000 | 47800         | 56400         | 80800 (98000)   |
| 700.          | 2.07                 | Mechanical | Input Power kW   | 8.33          | 11.10         | 15.00 | 21.50         | 31.90         | 39.00           |
|               |                      |            | Output Torque Nm | 15100         | 21400         | 29300 | 42800         | 63900         | 79200           |
|               |                      | Thermal    | Efficiency %     | 71            | 72            | 74    | 75            | 79            | 80              |
|               |                      |            | Input Power kW   | 5.86 (6.49)   | 9.30 (10.60)  | 14.70 | 22.00 (25.40) | 30.20 (34.30) | 36.40 (47.80)   |
| 750.          | 1.93                 | Mechanical | Output Torque Nm | 11900 (13200) | 18800 (21500) | 31100 | 48100 (55600) | 65500 (74300) | 80800 (106000)  |
|               |                      |            | Input Power kW   | 6.37          | 9.18          | 12.30 | 17.60         | 25.60         | 32.00           |
|               |                      | Thermal    | Output Torque Nm | 13000         | 18500         | 26100 | 38200         | 55300         | 70900           |
|               |                      |            | Efficiency %     | 67            | 71            | 72    | 73            | 76            | 78              |
| 800.          | 1.81                 | Mechanical | Input Power kW   | 5.58 (6.60)   | 8.07 (9.43)   | 13.40 | 19.90 (21.20) | 27.20 (34.00) | 32.60 (51.50)   |
|               |                      |            | Output Torque Nm | 11900 (14100) | 18800 (22000) | 31400 | 48100 (51200) | 65500 (82200) | 80800 (128000)  |
|               |                      | Thermal    | Input Power kW   | 6.65          | 9.03          | 12.20 | 16.20         | 22.90         | 29.50           |
|               |                      |            | Output Torque Nm | 14200         | 21100         | 28400 | 39000         | 55100         | 73100           |
| 850.          | 1.73                 | Mechanical | Efficiency %     | 68            | 69            | 70    | 72            | 75            | 77              |
|               |                      |            | Input Power kW   | 5.25 (5.47)   | 7.89 (8.51)   | 12.20 | 18.80 (20.00) | 25.70 (29.90) | 30.30 (43.10)   |
|               |                      | Thermal    | Output Torque Nm | 11900 (12400) | 18800 (20300) | 30500 | 48100 (51200) | 65500 (76200) | 80800 (116000)  |
|               |                      |            | Input Power kW   | 4.65          | 6.38          | 8.91  | 13.30         | 16.70         | 21.60           |
| 900.          | 1.63                 | Mechanical | Output Torque Nm | 10500         | 15100         | 22100 | 33700         | 42100         | 57200           |
|               |                      |            | Efficiency %     | 59            | 61            | 64    | 65            | 65            | 68              |
|               |                      | Thermal    | Input Power kW   | 4.58 (5.66)   | 6.92 (8.10)   | 11.90 | 17.10 (18.30) | 22.50 (28.60) | 26.50 (41.30)   |
|               |                      |            | Output Torque Nm | 11900 (14800) | 18800 (22000) | 32500 | 48100 (51800) | 65500 (83200) | 80800 (127000)  |
| 950.          | 1.53                 | Mechanical | Input Power kW   | 6.24          | 8.50          | 11.40 | 15.00         | 20.80         | 26.50           |
|               |                      |            | Output Torque Nm | 16400         | 23100         | 31000 | 42200         | 60400         | 80800           |
|               |                      | Thermal    | Efficiency %     | 64            | 67            | 69    | 71            | 73            | 74              |
|               |                      |            | Input Power kW   | 4.46          | 6.99 (7.03)   | 10.30 | 16.80 (17.10) | 22.90 (25.50) | 26.30 (35.20)   |
| 1000.         | 1.43                 | Mechanical | Output Torque Nm | 11400         | 18800 (18900) | 28200 | 48100 (48900) | 65500 (72900) | 80800 (108000)  |
|               |                      |            | Input Power kW   | 4.48          | 6.13          | 7.68  | 11.30         | 14.90         | 20.90           |
|               |                      | Thermal    | Output Torque Nm | 11500         | 16400         | 20700 | 32100         | 42100         | 63700           |
|               |                      |            | Efficiency %     | 57            | 59            | 60    | 63            | 63            | 67              |
| 1100.         | 1.33                 | Mechanical | Input Power kW   | 3.97 (4.79)   | 6.04 (7.17)   | 9.54  | 14.70 (18.60) | 19.30 (21.90) | 22.70 (29.90)   |
|               |                      |            | Output Torque Nm | 11900 (14500) | 18800 (22400) | 31300 | 48100 (60800) | 65500 (74600) | 80800 (107000)  |
|               |                      | Thermal    | Input Power kW   | 5.52          | 7.64          | 10.10 | 14.40         | 20.20         | 24.90           |
|               |                      |            | Output Torque Nm | 16700         | 23900         | 33200 | 46900         | 68500         | 88400           |
| 1200.         | 1.23                 | Mechanical | Efficiency %     | 62            | 65            | 67    | 68            | 71            | 73              |
|               |                      |            | Input Power kW   | 3.88 (4.85)   | 5.66 (6.04)   | 9.94  | 13.00         | 17.50         | 21.30           |
|               |                      | Thermal    | Output Torque Nm | 11900 (15000) | 18800 (20100) | 33800 | 47300         | 63700         | 79400           |
|               |                      |            | Input Power kW   | 4.64          | 6.36          | 8.08  | 11.80         | 15.90         | 24.60           |
| 1300.         | 1.13                 | Mechanical | Output Torque Nm | 14300         | 21200         | 27300 | 42600         | 58000         | 91800           |
|               |                      |            | Efficiency %     | 60            | 62            | 63    | 67            | 70            | 73              |
|               |                      | Thermal    | Input Power kW   | 3.88          | 5.66          | 8.08  | 11.80         | 15.90         | 24.60           |
|               |                      |            | Output Torque Nm | 14300         | 21200         | 27300 | 42600         | 58000         | 91800           |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 1450 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 1.61                 | Mechanical       | Input Power kW   | 3.57 (4.05)   | 5.64 (6.55)   | 9.38          | 12.80 (14.60)  | 18.10 (22.80)  | 21.30 (32.80)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (13600) | 18800 (21900) | 33000         | 48100 (54900)  | 65500 (82600)  | 80800 (125000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.87          | 5.37          | 7.43          | 10.70          | 13.40          | 17.30          |
|                  |               |                      |                  | Output Torque Nm | 12900         | 17800         | 26000         | 40000          | 48000          | 65300          |
|                  | 1000.         | 1.45                 | Mechanical       | Efficiency %     | 54            | 57            | 60            | 62             | 62             | 65             |
|                  |               |                      |                  | Input Power kW   | 3.13 (4.19)   | 4.72 (5.39)   | 8.42          | 11.40 (12.60)  | 14.90 (19.40)  | 17.80 (27.10)  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (16100) | 18800 (21500) | 33900         | 48100 (53000)  | 65500 (85300)  | 80800 (124000) |
|                  |               |                      |                  | Input Power kW   | 5.57          | 7.60          | 9.67          | 12.80          | 17.50          | 22.10          |
|                  | 1200.         | 1.21                 | Mechanical       | Output Torque Nm | 21500         | 30600         | 39000         | 54200          | 76600          | 101000         |
|                  |               |                      |                  | Efficiency %     | 59            | 60            | 62            | 65             | 68             | 69             |
|                  |               |                      | Thermal          | Input Power kW   | 2.97 (3.51)   | 4.33 (5.13)   | 7.24          | 10.10 (11.50)  | 14.10 (18.70)  | 16.60 (26.10)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (14100) | 18800 (22400) | 33300         | 48100 (54900)  | 65500 (87300)  | 80800 (128000) |
|                  | 1250.         | 1.16                 | Mechanical       | Input Power kW   | 3.59          | 4.79          | 6.58          | 9.51           | 11.60          | 15.00          |
|                  |               |                      |                  | Output Torque Nm | 14500         | 20900         | 30200         | 45300          | 53600          | 73000          |
|                  |               |                      | Thermal          | Efficiency %     | 52            | 54            | 57            | 59             | 59             | 63             |
|                  |               |                      |                  | Input Power kW   | 2.64 (3.54)   | 3.95 (4.46)   | 7.00          | 9.51 (10.60)   | 12.50 (16.40)  | 14.80 (22.40)  |
|                  | 1400.         | 1.04                 | Mechanical       | Output Torque Nm | 11900 (16100) | 18800 (21300) | 33800         | 48100 (53500)  | 65500 (86100)  | 80800 (123000) |
|                  |               |                      |                  | Input Power kW   | 5.15          | 7.22          | 8.06          | 12.10          | 16.40          | 20.70          |
|                  |               |                      | Thermal          | Output Torque Nm | 23700         | 34900         | 39100         | 61300          | 86500          | 113000         |
|                  |               |                      |                  | Efficiency %     | 56            | 58            | 60            | 62             | 65             | 66             |
|                  | 1500.         | 0.97                 | Mechanical       | Input Power kW   | 2.64 (2.72)   | 3.84 (4.28)   | 6.49          | 9.04 (10.10)   | 12.70 (16.00)  | 14.40 (20.60)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12300) | 18800 (21000) | 32300         | 48100 (54000)  | 65500 (83300)  | 80800 (116000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.49          | 4.65          | 5.69          | 8.13           | 10.50          | 14.70          |
|                  |               |                      |                  | Output Torque Nm | 15900         | 22900         | 28200         | 43100          | 53900          | 82300          |
| 1600.            | 0.91          | Mechanical           | Efficiency %     | 50               | 52            | 52            | 56            | 57             | 62             |                |
|                  |               |                      | Input Power kW   | 2.31 (3.02)      | 3.46 (4.10)   | 5.38          | 8.24 (10.90)  | 10.70 (12.10)  | 12.80 (16.60)  |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15800)    | 18800 (22400) | 31000         | 48100 (64000) | 65500 (73800)  | 80800 (105000) |                |
|                  |               |                      | Input Power kW   | 4.76             | 6.51          | 8.06          | 11.70         | 16.10          | 19.60          |                |
| 1750.            | 0.83          | Mechanical           | Output Torque Nm | 25200            | 36100         | 46900         | 68500         | 98900          | 125000         |                |
|                  |               |                      | Efficiency %     | 53               | 56            | 57            | 60            | 63             | 65             |                |
|                  |               | Thermal              | Input Power kW   | 2.22 (2.86)      | 3.37 (3.57)   | 5.84          | 7.68 (7.79)   | 9.61           | 11.60          |                |
|                  |               |                      | Output Torque Nm | 11900 (15500)    | 18800 (19900) | 33500         | 48100 (48800) | 63100          | 78500          |                |
| 1800.            | 0.81          | Mechanical           | Input Power kW   | 3.94             | 5.41          | 6.72          | 9.49          | 12.30          | 18.90          |                |
|                  |               |                      | Output Torque Nm | 21700            | 30700         | 38700         | 59800         | 81400          | 129000         |                |
|                  |               | Thermal              | Efficiency %     | 51               | 53            | 54            | 59            | 62             | 65             |                |
|                  |               |                      | Input Power kW   | 2.05 (2.74)      | 3.15 (3.51)   | 5.53          | 7.29 (8.22)   | 9.53 (12.70)   | 11.30 (16.80)  |                |
| 2000.            | 0.73          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (21000) | 33600         | 48100 (54400) | 65500 (87800)  | 80800 (121000) |                |
|                  |               |                      | Input Power kW   | 3.75             | 5.38          | 5.38          | 9.89          | 15.10          | 18.90          |                |
|                  |               | Thermal              | Output Torque Nm | 22300            | 32700         | 32700         | 65700         | 105000         | 137000         |                |
|                  |               |                      | Efficiency %     | 51               | 52            | 54            | 58            | 60             | 62             |                |
| 2100.            | 0.69          | Mechanical           | Input Power kW   | 2.01 (2.66)      | 3.03 (3.58)   | 4.68          | 7.13 (9.34)   | 9.34 (10.50)   | 11.10 (14.30)  |                |
|                  |               |                      | Output Torque Nm | 11900 (16000)    | 18800 (22400) | 30900         | 48100 (63400) | 65500 (73600)  | 80800 (105000) |                |
|                  |               | Thermal              | Input Power kW   | 4.34             | 6.34          | 6.60          | 11.20         | 15.50          | 18.80          |                |
|                  |               |                      | Output Torque Nm | 26500            | 40400         | 44000         | 76200         | 110000         | 138000         |                |
| 2400.            | 0.60          | Mechanical           | Efficiency %     | 51               | 53            | 55            | 58            | 60             | 62             |                |
|                  |               |                      | Input Power kW   | 1.89 (2.42)      | 2.83 (2.99)   | 4.88          | 6.41 (6.60)   | 8.04           | 9.63           |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15500)    | 18800 (19900) | 33500         | 48100 (49600) | 62900          | 78200          |                |
|                  |               |                      | Input Power kW   | 3.81             | 5.16          | 6.37          | 8.95          | 11.70          | 17.80          |                |
| 2500.            | 0.58          | Mechanical           | Output Torque Nm | 24800            | 35100         | 44000         | 67800         | 92200          | 147000         |                |
|                  |               |                      | Efficiency %     | 48               | 50            | 52            | 57            | 59             | 62             |                |
|                  |               | Thermal              | Input Power kW   | 1.92 (2.03)      | 2.90 (3.30)   | 5.16 (5.20)   | 6.74 (7.50)   | 9.18 (12.40)   | 10.30 (14.70)  |                |
|                  |               |                      | Output Torque Nm | 11900 (12700)    | 18800 (21600) | 34200 (34500) | 48100 (53800) | 65500 (89500)  | 80800 (116000) |                |
| 2800.            | 0.52          | Mechanical           | Input Power kW   | 3.20             | 4.29          | 5.14          | 7.23          | 9.02           | 12.50          |                |
|                  |               |                      | Output Torque Nm | 20400            | 28300         | 34100         | 51700         | 64300          | 98700          |                |
|                  |               | Thermal              | Efficiency %     | 45               | 47            | 48            | 52            | 52             | 58             |                |
|                  |               |                      | Input Power kW   | 1.73 (2.28)      | 2.62 (3.09)   | 4.30          | 5.93 (6.70)   | 8.08 (12.10)   | 9.35 (14.70)   |                |
| 3000.            | 0.48          | Mechanical           | Output Torque Nm | 11900 (16000)    | 18800 (22400) | 33100         | 48100 (54500) | 65500 (98900)  | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 3.08             | 4.12          | 5.56          | 7.79          | 9.12           | 11.60          |                |
|                  |               | Thermal              | Output Torque Nm | 21900            | 30200         | 43100         | 63700         | 74200          | 101000         |                |
|                  |               |                      | Efficiency %     | 44               | 45            | 49            | 51            | 51             | 55             |                |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 1.64 (2.18)      | 2.46 (2.90)   | 4.32 (4.85)   | 5.66 (6.39)   | 5.49           | 7.80           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (38600) | 48100 (54500) | 50700          | 75500          |                |
|                  |               | Thermal              | Input Power kW   | 3.33             | 4.42          | 5.46          | 8.47          | 12.90          | 15.70          |                |
|                  |               |                      | Output Torque Nm | 25100            | 34700         | 43600         | 72900         | 123000         | 155000         |                |
| 3600.            | 0.40          | Mechanical           | Efficiency %     | 44               | 46            | 48            | 52            | 57             | 59             |                |
|                  |               |                      | Input Power kW   | 1.54 (1.66)      | 2.33 (2.71)   | 4.14 (4.28)   | 5.35 (5.94)   | 7.27 (10.30)   | 8.14 (11.50)   |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (12900)    | 18800 (22000) | 34200 (35400) | 48100 (53600) | 65500 (94200)  | 80800 (115000) |                |
|                  |               |                      | Input Power kW   | 3.02             | 4.04          | 4.82          | 6.68          | 8.26           | 11.40          |                |
| 4200.            | 0.35          | Mechanical           | Output Torque Nm | 24300            | 33500         | 40000         | 60500         | 74700          | 115000         |                |
|                  |               |                      | Efficiency %     | 42               | 44            | 45            | 49            | 49             | 54             |                |
|                  |               | Thermal              | Input Power kW   | 1.48 (1.96)      | 2.22 (2.61)   | 3.61          | 4.98 (5.61)   | 6.83 (10.60)   | 7.88 (12.30)   |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33000         | 48100 (54400) | 65500 (103000) | 80800 (128000) |                |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 2.99             | 3.94          | 5.30          | 7.38          | 8.66           | 10.90          |                |
|                  |               |                      | Output Torque Nm | 25100            | 34500         | 49200         | 72300         | 83700          | 113000         |                |
|                  |               | Thermal              | Efficiency %     | 41               | 43            | 46            | 49            | 49             | 52             |                |
|                  |               |                      | Input Power kW   | 1.32 (1.44)      | 1.98 (2.32)   | 3.49 (3.66)   | 4.50 (4.98)   | 6.15 (9.06)    | 6.86 (9.66)    |                |
| 3600.            | 0.40          | Mechanical           | Output Torque Nm | 11900 (13100)    | 18800 (22300) | 34200 (35900) | 48100 (53500) | 65500 (97800)  | 80800 (115000) |                |
|                  |               |                      | Input Power kW   | 2.94             | 3.88          | 4.60          | 6.33          | 7.84           | 10.80          |                |
|                  |               | Thermal              | Output Torque Nm | 27900            | 38400         | 45500         | 68600         | 84200          | 129000         |                |
|                  |               |                      | Efficiency %     | 39               | 41            | 43            | 46            | 46             | 51             |                |
| 3600.            | 0.40          | Mechanical           | Input Power kW   | 1.30 (1.72)      | 1.95 (2.30)   | 3.17          | 4.34 (4.87)   | 5.98 (9.31)    | 6.89 (10.80)   |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33000         | 48100 (54300) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.91             | 3.85          | 5.17          | 7.12          | 8.34           | 10.50          |                |
|                  |               |                      | Output Torque Nm | 28100            | 38500         | 54900         | 80400         | 92400          | 125000         |                |
| 4200.            | 0.35          | Mechanical           | Efficiency %     | 39               | 41            | 44            | 47            | 46             | 49             |                |
|                  |               |                      | Input Power kW   | 1.16 (1.28)      | 1.74 (2.05)   | 3.07 (3.25)   | 3.92 (4.34)   | 5.40 (8.16)    | 6.00 (8.42)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36300) | 48100 (53400) | 65500 (101000) | 80800 (115000) |                |
|                  |               |                      | Input Power kW   | 2.87             | 3.79          | 4.49          | 6.10          | 7.58           | 10.40          |                |
| 4200.            | 0.35          | Thermal              | Output Torque Nm | 31300            | 43000         | 50800         | 76300         | 93200          | 143000         |                |
|                  |               |                      | Efficiency %     | 37               | 39            | 40            | 44            | 44             | 49             |                |

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |        |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|--------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12     | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 192.00                         | Mechanical       | Input Power kW   | 93.90        | 139.00 | 194.00 | 350.00 | 537.00 | 678.00 |
|                  |               |                                |                  | Output Torque Nm | 4460         | 6630   | 9070   | 16700  | 25600  | 32900  |
|                  |               |                                | Thermal          | Input Power kW   | 65.20        | 94.80  | 137.00 | 190.00 | 251.00 | 356.00 |
|                  |               |                                |                  | Output Torque Nm | 3090         | 4500   | 6400   | 9010   | 11900  | 17200  |
|                  | 7.5           | 128.00                         | Mechanical       | Input Power kW   | 68.10        | 105.00 | 142.00 | 295.00 | 441.00 | 659.00 |
|                  |               |                                |                  | Output Torque Nm | 4800         | 7430   | 10100  | 21000  | 31400  | 47000  |
|                  |               |                                | Thermal          | Input Power kW   | 53.70        | 79.00  | 115.00 | 163.00 | 241.00 | 319.00 |
|                  |               |                                |                  | Output Torque Nm | 3780         | 5570   | 8130   | 11500  | 17100  | 22600  |
|                  | 10.0          | 96.00                          | Mechanical       | Input Power kW   | 47.20        | 85.60  | 115.00 | 243.00 | 342.00 | 493.00 |
|                  |               |                                |                  | Output Torque Nm | 4290         | 7860   | 10600  | 22900  | 31800  | 45900  |
|                  |               |                                | Thermal          | Input Power kW   | 48.00        | 71.10  | 107.00 | 149.00 | 229.00 | 304.00 |
|                  |               |                                |                  | Output Torque Nm | 4360         | 6520   | 9840   | 14000  | 21300  | 28200  |
|                  | 12.5          | 76.80                          | Mechanical       | Input Power kW   | 52.00        | 68.50  | 106.00 | 179.00 | 240.00 | 420.00 |
|                  |               |                                |                  | Output Torque Nm | 6120         | 7970   | 12600  | 20900  | 28700  | 49900  |
|                  |               |                                | Thermal          | Input Power kW   | 41.60        | 65.50  | 91.90  | 137.00 | 207.00 | 277.00 |
|                  |               |                                |                  | Output Torque Nm | 4890         | 7610   | 10900  | 15900  | 24800  | 32700  |
|                  | 15.0          | 64.00                          | Mechanical       | Input Power kW   | 41.90        | 60.00  | 110.00 | 183.00 | 269.00 | 365.00 |
|                  |               |                                |                  | Output Torque Nm | 5640         | 8110   | 15100  | 25100  | 37000  | 50400  |
|                  |               |                                | Thermal          | Input Power kW   | 38.40        | 58.60  | 84.30  | 126.00 | 187.00 | 254.00 |
|                  |               |                                |                  | Output Torque Nm | 5160         | 7920   | 11500  | 17200  | 25800  | 35100  |
|                  | 20.0          | 48.00                          | Mechanical       | Input Power kW   | 39.90        | 62.30  | 88.80  | 155.00 | 202.00 | 291.00 |
|                  |               |                                |                  | Output Torque Nm | 7080         | 11100  | 15900  | 27900  | 36800  | 53200  |
|                  |               |                                | Thermal          | Input Power kW   | 32.20        | 48.30  | 72.90  | 101.00 | 163.00 | 209.00 |
|                  |               |                                |                  | Output Torque Nm | 5710         | 8610   | 13100  | 18000  | 29500  | 37900  |
|                  | 25.0          | 38.40                          | Mechanical       | Input Power kW   | 32.90        | 48.90  | 70.10  | 115.00 | 179.00 | 236.00 |
|                  |               |                                |                  | Output Torque Nm | 7100         | 10900  | 15400  | 25400  | 40100  | 53700  |
|                  |               |                                | Thermal          | Input Power kW   | 25.90        | 39.30  | 58.50  | 78.80  | 116.00 | 156.00 |
|                  |               |                                |                  | Output Torque Nm | 5580         | 8700   | 12800  | 17300  | 25900  | 35200  |
| 30.0             | 32.00         | Mechanical                     | Input Power kW   | 27.90            | 44.60        | 63.50  | 111.00 | 165.00 | 205.00 |        |
|                  |               |                                | Output Torque Nm | 7090             | 11600        | 17000  | 29000  | 43700  | 54700  |        |
|                  |               | Thermal                        | Input Power kW   | 22.50            | 35.30        | 50.70  | 73.70  | 109.00 | 145.00 |        |
|                  |               |                                | Output Torque Nm | 5710             | 9110         | 13500  | 19100  | 28800  | 38600  |        |
| 40.0             | 24.00         | Mechanical                     | Input Power kW   | 24.00            | 37.50        | 52.50  | 74.70  | 110.00 | 150.00 |        |
|                  |               |                                | Output Torque Nm | 7930             | 12600        | 17800  | 25700  | 38800  | 52800  |        |
|                  |               | Thermal                        | Input Power kW   | 17.60            | 26.90        | 36.80  | 55.80  | 78.50  | 127.00 |        |
|                  |               |                                | Output Torque Nm | 5790             | 9020         | 12400  | 19000  | 27400  | 44500  |        |
| 50.0             | 19.20         | Mechanical                     | Input Power kW   | 20.00            | 30.30        | 42.60  | 81.70  | 80.90  | 118.00 |        |
|                  |               |                                | Output Torque Nm | 7960             | 12300        | 17400  | 33900  | 34500  | 50800  |        |
|                  |               | Thermal                        | Input Power kW   | 14.90            | 22.60        | 30.40  | 49.20  | 81.30  | 109.00 |        |
|                  |               |                                | Output Torque Nm | 5890             | 9130         | 12300  | 20100  | 34700  | 46600  |        |
| 60.0             | 16.00         | Mechanical                     | Input Power kW   | 16.90            | 26.70        | 39.30  | 66.70  | 90.60  | 109.00 |        |
|                  |               |                                | Output Torque Nm | 7770             | 12600        | 18900  | 32300  | 43900  | 53800  |        |
|                  |               | Thermal                        | Input Power kW   | 13.10            | 19.50        | 28.40  | 41.90  | 52.60  | 72.30  |        |
|                  |               |                                | Output Torque Nm | 5980             | 9110         | 13500  | 20000  | 25200  | 35200  |        |
| 70.0             | 13.71         | Mechanical                     | Input Power kW   | 13.90            | 22.20        | 32.60  | 55.00  | 79.90  | 96.80  |        |
|                  |               |                                | Output Torque Nm | 7270             | 11900        | 17500  | 30200  | 44200  | 55200  |        |
|                  |               | Thermal                        | Input Power kW   | 12.20            | 18.40        | 23.90  | 35.60  | 46.70  | 70.70  |        |
|                  |               |                                | Output Torque Nm | 6390             | 9800         | 12700  | 19200  | 25400  | 39900  |        |
|                  |               |                                | Efficiency %     | 75               | 76           | 76     | 77     | 78     | 81     |        |

Where selections appear in shaded area forced lubrication is required for the unit, therefore thermal ratings can be ignored

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         |                  | SIZE OF UNIT  |               |               |               |                |                 |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|---------------|----------------|-----------------|
|                  |               |                      |                  |                  | 10            | 12            | 14            | 17            | 20             | 24              |
| DOUBLE REDUCTION | 75.0          | 12.80                | Mechanical       | Input Power kW   | 15.80         | 22.50         | 32.70         | 56.00         | 93.80          | 126.00 (130.00) |
|                  |               |                      |                  | Output Torque Nm | 9680          | 14000         | 20700         | 35800         | 59500          | 80800 (83100)   |
|                  |               |                      | Thermal          | Input Power kW   | 14.60         | 21.80         | 28.30         | 46.80         | 65.20          | 84.00           |
|                  |               |                      |                  | Output Torque Nm | 8930          | 13600         | 17800         | 29900         | 41300          | 53700           |
|                  | 100.          | 9.60                 | Mechanical       | Efficiency %     | 82            | 83            | 84            | 85            | 86             | 87              |
|                  |               |                      |                  | Input Power kW   | 14.80         | 23.00         | 32.70         | 56.00         | 61.00          | 96.20 (105.00)  |
|                  |               |                      | Thermal          | Output Torque Nm | 11800         | 18800         | 27000         | 46500         | 50600          | 80800 (88000)   |
|                  |               |                      |                  | Input Power kW   | 12.40         | 17.20         | 24.00         | 36.00         | 55.10          | 67.60           |
|                  | 125.          | 7.68                 | Mechanical       | Output Torque Nm | 9890          | 14000         | 19800         | 29800         | 45700          | 56700           |
|                  |               |                      |                  | Efficiency %     | 80            | 81            | 82            | 83            | 85             | 86              |
|                  |               |                      | Thermal          | Input Power kW   | 12.20         | 18.00         | 25.70         | 42.20         | 64.70 (66.60)  | 77.90 (103.00)  |
|                  |               |                      |                  | Output Torque Nm | 11700         | 18000         | 25600         | 42600         | 65500 (67500)  | 80800 (107000)  |
|                  | 150.          | 6.40                 | Mechanical       | Input Power kW   | 9.82          | 13.80         | 19.40         | 27.10         | 39.70          | 51.70           |
|                  |               |                      |                  | Output Torque Nm | 9390          | 13800         | 19300         | 27300         | 40000          | 53500           |
|                  |               |                      | Thermal          | Efficiency %     | 77            | 78            | 80            | 81            | 82             | 83              |
|                  |               |                      |                  | Input Power kW   | 10.30         | 16.30 (16.30) | 23.00         | 40.50         | 55.10 (56.40)  | 66.80 (79.10)   |
|                  | 200.          | 4.80                 | Mechanical       | Output Torque Nm | 11500         | 18800 (18800) | 27700         | 47900         | 65500 (67000)  | 80800 (95800)   |
|                  |               |                      |                  | Input Power kW   | 8.57          | 12.40         | 17.00         | 25.50         | 37.80          | 47.50           |
|                  |               |                      | Thermal          | Output Torque Nm | 9550          | 14300         | 20400         | 30000         | 44700          | 57300           |
|                  |               |                      |                  | Efficiency %     | 74            | 77            | 77            | 79            | 81             | 82              |
|                  | 225.          | 4.27                 | Mechanical       | Input Power kW   | 8.28 (9.48)   | 12.50         | 20.80         | 31.70 (32.00) | 36.10          | 51.20 (61.80)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (13700) | 18500         | 31300         | 48100 (48500) | 56000          | 80800 (97500)   |
|                  |               |                      | Thermal          | Input Power kW   | 9.05          | 12.40         | 16.90         | 24.60         | 36.70          | 44.90           |
|                  |               |                      |                  | Output Torque Nm | 13000         | 18300         | 25300         | 37300         | 56900          | 70800           |
| 250.             | 3.84          | Mechanical           | Efficiency %     | 75               | 77            | 78            | 79            | 81            | 82             |                 |
|                  |               |                      | Input Power kW   | 7.69 (8.01)      | 11.40 (12.40) | 17.40         | 28.40 (30.90) | 37.90 (41.50) | 45.90 (58.10)  |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (12400)    | 18800 (20500) | 30000         | 48100 (52400) | 65500 (71600) | 80800 (102000) |                 |
|                  |               |                      | Input Power kW   | 7.16             | 10.10         | 13.70         | 20.20         | 29.30         | 36.80          |                 |
| 300.             | 3.20          | Mechanical           | Output Torque Nm | 11100            | 16600         | 23500         | 34100         | 50400         | 64700          |                 |
|                  |               |                      | Efficiency %     | 71               | 74            | 75            | 76            | 78            | 80             |                 |
|                  |               | Thermal              | Input Power kW   | 6.98 (7.84)      | 10.40 (11.50) | 16.40         | 26.20 (26.90) | 34.90 (41.90) | 41.70 (64.80)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (13400)    | 18800 (20700) | 29500         | 48100 (49400) | 65500 (78600) | 80800 (126000) |                 |
| 350.             | 2.74          | Mechanical           | Input Power kW   | 7.27             | 10.00         | 13.70         | 18.60         | 26.30         | 34.00          |                 |
|                  |               |                      | Output Torque Nm | 12400            | 18100         | 24600         | 34000         | 49200         | 65600          |                 |
|                  |               | Thermal              | Efficiency %     | 72               | 74            | 75            | 76            | 78            | 79             |                 |
|                  |               |                      | Input Power kW   | 6.02 (6.61)      | 9.06 (10.40)  | 14.30         | 22.50 (25.80) | 29.80 (33.80) | 35.80 (47.10)  |                 |
| 400.             | 2.40          | Mechanical           | Output Torque Nm | 11900 (13100)    | 18800 (21500) | 31200         | 48100 (55300) | 65500 (74300) | 80800 (106000) |                 |
|                  |               |                      | Input Power kW   | 6.38             | 8.98          | 12.10         | 17.60         | 25.30         | 31.60          |                 |
|                  |               | Thermal              | Output Torque Nm | 12600            | 18600         | 26200         | 37700         | 55400         | 71100          |                 |
|                  |               |                      | Efficiency %     | 69               | 72            | 73            | 74            | 77            | 78             |                 |
| 450.             | 2.13          | Mechanical           | Input Power kW   | 5.12             | 8.12          | 12.00         | 19.90         | 28.40 (29.90) | 32.90 (42.10)  |                 |
|                  |               |                      | Output Torque Nm | 10900            | 18000         | 26900         | 46600         | 65500 (69100) | 80800 (104000) |                 |
|                  |               | Thermal              | Input Power kW   | 4.85             | 6.77          | 8.58          | 12.70         | 17.30         | 24.20          |                 |
|                  |               |                      | Output Torque Nm | 10400            | 15000         | 19100         | 29600         | 39400         | 59000          |                 |
| 500.             | 1.92          | Mechanical           | Efficiency %     | 60               | 62            | 62            | 66            | 65            | 70             |                 |
|                  |               |                      | Input Power kW   | 4.66 (5.70)      | 7.31 (8.60)   | 12.40         | 17.50 (18.80) | 24.10 (30.40) | 28.90 (45.40)  |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (14600)    | 18800 (22100) | 31900         | 48100 (51600) | 65500 (82800) | 80800 (128000) |                 |
|                  |               |                      | Input Power kW   | 6.13             | 8.52          | 11.50         | 15.00         | 21.30         | 27.50          |                 |
| 600.             | 1.60          | Mechanical           | Output Torque Nm | 15800            | 21900         | 29500         | 41200         | 57800         | 76800          |                 |
|                  |               |                      | Efficiency %     | 68               | 71            | 72            | 73            | 75            | 77             |                 |
|                  |               | Thermal              | Input Power kW   | 4.52 (5.70)      | 6.40          | 11.10         | 16.00         | 19.00         | 27.00 (32.50)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (15100)    | 18000         | 31700         | 46900         | 56000         | 80800 (97300)  |                 |
| 700.             | 1.37          | Mechanical           | Input Power kW   | 7.22             | 9.50          | 12.30         | 17.80         | 26.20         | 31.80          |                 |
|                  |               |                      | Output Torque Nm | 19100            | 26800         | 35100         | 52200         | 77200         | 95200          |                 |
|                  |               | Thermal              | Efficiency %     | 69               | 70            | 71            | 73            | 77            | 78             |                 |
|                  |               |                      | Input Power kW   | 4.03 (4.82)      | 6.37 (7.57)   | 10.10         | 15.10 (18.80) | 20.60 (23.50) | 24.80 (32.70)  |                 |
| 750.             | 1.28          | Mechanical           | Output Torque Nm | 11900 (14300)    | 18800 (22400) | 31300         | 48100 (60200) | 65500 (74700) | 80800 (107000) |                 |
|                  |               |                      | Input Power kW   | 5.41             | 7.65          | 10.20         | 14.30         | 20.60         | 25.70          |                 |
|                  |               | Thermal              | Output Torque Nm | 16100            | 22600         | 31600         | 45700         | 65500         | 83900          |                 |
|                  |               |                      | Efficiency %     | 65               | 69            | 70            | 71            | 74            | 76             |                 |
| 800.             | 1.20          | Mechanical           | Input Power kW   | 3.84 (4.90)      | 5.53 (6.40)   | 9.94          | 13.60 (14.90) | 18.50 (23.70) | 22.20 (34.40)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (15300)    | 18800 (21800) | 33900         | 48100 (52400) | 65500 (84100) | 80800 (126000) |                 |
|                  |               | Thermal              | Input Power kW   | 5.76             | 7.74          | 10.20         | 13.40         | 18.70         | 24.00          |                 |
|                  |               |                      | Output Torque Nm | 18000            | 26400         | 35000         | 47300         | 66000         | 87400          |                 |
| 850.             | 1.15          | Mechanical           | Efficiency %     | 65               | 67            | 68            | 70            | 73            | 74             |                 |
|                  |               |                      | Input Power kW   | 3.65 (4.10)      | 5.47 (6.37)   | 9.15          | 13.00 (14.70) | 17.80 (22.50) | 20.90 (32.40)  |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (13400)    | 18800 (21900) | 33000         | 48100 (54500) | 65500 (82700) | 80800 (126000) |                 |
|                  |               |                      | Input Power kW   | 3.86             | 5.22          | 7.25          | 10.70         | 13.20         | 17.00          |                 |
| 900.             | 1.10          | Mechanical           | Output Torque Nm | 12600            | 17900         | 26100         | 39400         | 48100         | 65500          |                 |
|                  |               |                      | Efficiency %     | 56               | 59            | 62            | 63            | 63            | 66             |                 |
|                  |               | Thermal              | Input Power kW   | 3.16 (4.21)      | 4.75 (5.45)   | 8.54          | 11.70 (12.80) | 15.40 (19.90) | 18.00 (27.60)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (16000)    | 18800 (21600) | 33900         | 48100 (52800) | 65500 (85000) | 80800 (124000) |                 |
| 950.             | 1.05          | Mechanical           | Input Power kW   | 5.47             | 7.35          | 9.70          | 12.60         | 17.30         | 21.80          |                 |
|                  |               |                      | Output Torque Nm | 20800            | 29200         | 38600         | 51900         | 73500         | 98000          |                 |
|                  |               | Thermal              | Efficiency %     | 62               | 65            | 66            | 68            | 71            | 72             |                 |
|                  |               |                      | Input Power kW   | 3.23 (3.29)      | 4.84 (5.25)   | 7.77          | 11.60 (12.80) | 15.90 (19.20) | 18.20 (25.90)  |                 |
| 1000.            | 1.00          | Mechanical           | Output Torque Nm | 11900 (12200)    | 18800 (20400) | 30400         | 48100 (52900) | 65500 (79000) | 80800 (115000) |                 |
|                  |               |                      | Input Power kW   | 3.74             | 5.05          | 6.26          | 9.11          | 11.80         | 16.60          |                 |
|                  |               | Thermal              | Output Torque Nm | 13900            | 19600         | 24400         | 37500         | 48300         | 73500          |                 |
|                  |               |                      | Efficiency %     | 54               | 57            | 57            | 60            | 60            | 65             |                 |
| 1100.            | 0.90          | Mechanical           | Input Power kW   | 2.74 (3.57)      | 4.15 (4.93)   | 6.53          | 10.10 (13.50) | 13.20 (14.90) | 15.50 (20.30)  |                 |
|                  |               |                      | Output Torque Nm | 11900 (15600)    | 18800 (22400) | 31100         | 48100 (64200) | 65500 (74100) | 80800 (106000) |                 |
|                  |               | Thermal              | Input Power kW   | 4.84             | 6.62          | 8.70          | 12.20         | 16.80         | 20.60          |                 |
|                  |               |                      | Output Torque Nm | 21300            | 30200         | 41600         | 58000         | 83800         | 108000         |                 |
| 1200.            | 0.80          | Mechanical           | Efficiency %     | 59               | 63            | 64            | 66            | 69            | 71             |                 |
|                  |               |                      | Input Power kW   | 2.69 (3.49)      | 3.90 (4.15)   | 6.84          | 9.11 (9.12)   | 11.90         | 14.40          |                 |
|                  |               | Thermal              | Output Torque Nm | 11900 (15600)    | 18800 (20000) | 33600         | 48100 (48200) | 63300         | 78900          |                 |
|                  |               |                      | Input Power kW   | 4.04             | 5.47          | 6.83          | 9.83          | 13.10         | 20.20          |                 |
| 1300.            | 0.75          | Mechanical           | Output Torque Nm | 18100            | 26500         | 33600         | 52000         | 69900         | 111000         |                 |
|                  |               |                      | Efficiency %     | 57               | 59            | 60            | 65            | 68            | 71             |                 |
|                  |               | Thermal              | Input Power kW   | 2.69 (3.49)      | 3.90 (4.15)   | 6.84          | 9.11 (9.12)   | 11.90         | 14.40          |                 |
|                  |               |                      | Output Torque Nm | 11900 (15600)    | 18800 (20000) | 33600         | 48100 (48200) | 63300         | 78900          |                 |

# SERIES A

## RATINGS AT 960 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 1.07                 | Mechanical       | Input Power kW   | 2.49 (3.03)   | 3.91 (4.64)   | 6.57          | 8.85 (10.10)   | 12.60 (17.10)  | 14.70 (23.20)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (14600) | 18800 (22400) | 33300         | 48100 (54800)  | 65500 (89200)  | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.32          | 4.50          | 6.19          | 8.84           | 10.80          | 14.00          |
|                  |               |                      |                  | Output Torque Nm | 16000         | 21700         | 31400         | 48000          | 56300          | 76600          |
|                  | 1000.         | 0.96                 | Mechanical       | Efficiency %     | 52            | 55            | 58            | 59             | 60             | 63             |
|                  |               |                      |                  | Input Power kW   | 2.17 (2.91)   | 3.26 (3.66)   | 5.80          | 7.88 (8.84)    | 10.30 (13.60)  | 12.20 (18.20)  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (16100) | 18800 (21100) | 33700         | 48100 (54000)  | 65500 (86900)  | 80800 (121000) |
|                  |               |                      |                  | Input Power kW   | 4.74          | 6.73          | 7.04          | 11.10          | 15.00          | 18.80          |
|                  | 1200.         | 0.80                 | Mechanical       | Output Torque Nm | 26500         | 39300         | 41100         | 68300          | 96300          | 126000         |
|                  |               |                      |                  | Efficiency %     | 56            | 58            | 60            | 62             | 65             | 67             |
|                  |               |                      | Thermal          | Input Power kW   | 2.07 (2.62)   | 3.00 (3.56)   | 5.01          | 6.98 (7.91)    | 9.81 (14.00)   | 11.50 (18.10)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (15200) | 18800 (22400) | 33200         | 48100 (54600)  | 65500 (94000)  | 80800 (128000) |
|                  | 1250.         | 0.77                 | Mechanical       | Input Power kW   | 3.14          | 4.14          | 5.61          | 8.01           | 9.60           | 12.30          |
|                  |               |                      |                  | Output Torque Nm | 18300         | 26100         | 37300         | 55400          | 64100          | 87100          |
|                  |               |                      | Thermal          | Efficiency %     | 49            | 51            | 54            | 56             | 57             | 60             |
|                  |               |                      |                  | Input Power kW   | 1.84 (2.47)   | 2.74 (3.04)   | 4.84          | 6.58 (7.40)    | 8.60 (11.50)   | 10.20 (15.10)  |
|                  | 1400.         | 0.69                 | Mechanical       | Output Torque Nm | 11900 (16100) | 18800 (20900) | 33600         | 48100 (54200)  | 65500 (88200)  | 80800 (120000) |
|                  |               |                      |                  | Input Power kW   | 3.74          | 5.85          | 5.85          | 10.10          | 13.90          | 17.90          |
|                  |               |                      | Thermal          | Output Torque Nm | 24700         | 40900         | 40800         | 74500          | 107000         | 143000         |
|                  |               |                      |                  | Efficiency %     | 53            | 55            | 57            | 60             | 62             | 64             |
|                  | 1500.         | 0.64                 | Mechanical       | Input Power kW   | 1.84 (1.95)   | 2.66 (3.05)   | 4.79 (4.86)   | 6.27 (7.00)    | 8.80 (12.00)   | 9.96 (14.20)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (12600) | 18800 (21600) | 34200 (34700) | 48100 (53800)  | 65500 (89600)  | 80800 (116000) |
|                  |               |                      | Thermal          | Input Power kW   | 3.06          | 4.04          | 4.85          | 6.85           | 8.68           | 12.20          |
|                  |               |                      |                  | Output Torque Nm | 20200         | 28800         | 34700         | 52600          | 64500          | 99100          |
| 1600.            | 0.60          | Mechanical           | Efficiency %     | 48               | 50            | 50            | 54            | 54             | 59             |                |
|                  |               |                      | Input Power kW   | 1.60 (2.15)      | 2.40 (2.85)   | 3.72          | 5.71 (7.40)   | 7.40 (8.28)    | 8.77 (11.30)   |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 30800         | 48100 (62700) | 65500 (73400)  | 80800 (105000) |                |
|                  |               |                      | Input Power kW   | 3.74             | 5.83          | 5.85          | 10.10         | 13.90          | 17.00          |                |
| 1750.            | 0.55          | Mechanical           | Output Torque Nm | 28500            | 46600         | 48900         | 86100         | 124000         | 158000         |                |
|                  |               |                      | Efficiency %     | 51               | 53            | 55            | 57            | 60             | 63             |                |
|                  |               | Thermal              | Input Power kW   | 1.54 (1.98)      | 2.34 (2.47)   | 4.05          | 5.30 (5.53)   | 6.57           | 7.86           |                |
|                  |               |                      | Output Torque Nm | 11900 (15500)    | 18800 (19800) | 33400         | 48100 (50200) | 62700          | 78000          |                |
| 1800.            | 0.53          | Mechanical           | Input Power kW   | 3.53             | 4.81          | 5.93          | 8.28          | 10.70          | 16.30          |                |
|                  |               |                      | Output Torque Nm | 27900            | 39400         | 49300         | 75700         | 103000         | 163000         |                |
|                  |               | Thermal              | Efficiency %     | 49               | 50            | 52            | 57            | 60             | 63             |                |
|                  |               |                      | Input Power kW   | 1.44 (1.92)      | 2.20 (2.41)   | 3.86          | 5.07 (5.62)   | 6.59 (9.03)    | 7.78 (11.40)   |                |
| 2000.            | 0.48          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (20600) | 33500         | 48100 (53500) | 65500 (90200)  | 80800 (119000) |                |
|                  |               |                      | Input Power kW   | 2.73             | 3.96          | 3.96          | 7.18          | 11.40          | 16.30          |                |
|                  |               | Thermal              | Output Torque Nm | 23200            | 34400         | 34400         | 68600         | 114000         | 171000         |                |
|                  |               |                      | Efficiency %     | 48               | 49            | 51            | 55            | 58             | 60             |                |
| 2100.            | 0.46          | Mechanical           | Input Power kW   | 1.40 (1.88)      | 2.11 (2.50)   | 3.25          | 4.95 (6.37)   | 6.44 (7.19)    | 7.62 (9.81)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 30700         | 48100 (62200) | 65500 (73200)  | 80800 (104000) |                |
|                  |               | Thermal              | Input Power kW   | 3.15             | 4.79          | 4.79          | 8.28          | 12.10          | 16.40          |                |
|                  |               |                      | Output Torque Nm | 27500            | 43800         | 45800         | 81200         | 124000         | 176000         |                |
| 2400.            | 0.40          | Mechanical           | Efficiency %     | 48               | 51            | 52            | 55            | 58             | 60             |                |
|                  |               |                      | Input Power kW   | 1.32 (1.69)      | 1.97 (2.07)   | 3.40          | 4.44 (4.68)   | 5.51           | 6.56           |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (15400)    | 18800 (19800) | 33300         | 48100 (50700) | 62500          | 77800          |                |
|                  |               |                      | Input Power kW   | 3.44             | 4.62          | 5.69          | 7.89          | 10.20          | 15.50          |                |
| 2500.            | 0.38          | Mechanical           | Output Torque Nm | 32200            | 45300         | 56400         | 86500         | 117000         | 187000         |                |
|                  |               |                      | Efficiency %     | 45               | 48            | 49            | 54            | 57             | 60             |                |
|                  |               | Thermal              | Input Power kW   | 1.34 (1.46)      | 2.01 (2.36)   | 3.61 (3.76)   | 4.68 (5.20)   | 6.38 (9.28)    | 7.12 (10.10)   |                |
|                  |               |                      | Output Torque Nm | 11900 (13000)    | 18800 (22200) | 34200 (35700) | 48100 (53600) | 65500 (95900)  | 80800 (115000) |                |
| 2800.            | 0.34          | Mechanical           | Input Power kW   | 2.86             | 3.78          | 4.51          | 6.28          | 7.69           | 10.60          |                |
|                  |               |                      | Output Torque Nm | 26200            | 36100         | 43000         | 64900         | 79200          | 122000         |                |
|                  |               | Thermal              | Efficiency %     | 43               | 45            | 45            | 49            | 50             | 55             |                |
|                  |               |                      | Input Power kW   | 1.21 (1.61)      | 1.83 (2.16)   | 2.99          | 4.13 (4.64)   | 5.62 (8.80)    | 6.47 (10.20)   |                |
| 3000.            | 0.32          | Mechanical           | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 33000         | 48100 (54300) | 65500 (104000) | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 2.77             | 3.67          | 4.94          | 6.84          | 7.90           | 9.94           |                |
|                  |               | Thermal              | Output Torque Nm | 28200            | 38700         | 55100         | 80700         | 92800          | 125000         |                |
|                  |               |                      | Efficiency %     | 41               | 43            | 46            | 49            | 49             | 52             |                |
| 3500.            | 0.27          | Mechanical           | Input Power kW   | 1.15 (1.53)      | 1.71 (2.03)   | 3.02 (3.61)   | 3.94 (4.43)   | 3.76           | 5.32           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (41100) | 48100 (54300) | 50400          | 75100          |                |
|                  |               | Thermal              | Input Power kW   | 3.02             | 3.96          | 4.88          | 7.51          | 11.40          | 13.70          |                |
|                  |               |                      | Output Torque Nm | 32600            | 44700         | 55900         | 93000         | 158000         | 197000         |                |
| 3600.            | 0.27          | Mechanical           | Efficiency %     | 42               | 44            | 46            | 49            | 54             | 57             |                |
|                  |               |                      | Input Power kW   | 1.07 (1.19)      | 1.62 (1.92)   | 2.91 (3.08)   | 3.73 (4.12)   | 5.06 (7.70)    | 5.62 (7.92)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13200)    | 18800 (22400) | 34200 (36300) | 48100 (53400) | 65500 (101000) | 80800 (115000) |                |
|                  |               |                      | Input Power kW   | 2.72             | 3.61          | 4.28          | 5.86          | 7.17           | 9.89           |                |
| 4200.            | 0.23          | Mechanical           | Output Torque Nm | 31400            | 43100         | 51000         | 76600         | 93600          | 144000         |                |
|                  |               |                      | Efficiency %     | 40               | 42            | 42            | 46            | 46             | 52             |                |
|                  |               | Thermal              | Input Power kW   | 1.03 (1.38)      | 1.55 (1.83)   | 2.52          | 3.47 (3.90)   | 4.76 (7.44)    | 5.46 (8.56)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 32900         | 48100 (54200) | 65500 (104000) | 80800 (128000) |                |
| 3500.            | 0.27          | Mechanical           | Input Power kW   | 2.71             | 3.54          | 4.76          | 6.54          | 7.57           | 9.49           |                |
|                  |               |                      | Output Torque Nm | 32500            | 44500         | 63300         | 92200         | 105000         | 142000         |                |
|                  |               | Thermal              | Efficiency %     | 39               | 41            | 44            | 46            | 46             | 50             |                |
|                  |               |                      | Input Power kW   | 0.92 (1.03)      | 1.38 (1.62)   | 2.45 (2.63)   | 3.14 (3.47)   | 4.29 (6.70)    | 4.74 (6.66)    |                |
| 3600.            | 0.27          | Mechanical           | Output Torque Nm | 11900 (13400)    | 18800 (22400) | 34200 (36800) | 48100 (53300) | 65500 (104000) | 80800 (115000) |                |
|                  |               |                      | Input Power kW   | 2.67             | 3.49          | 4.13          | 5.61          | 6.88           | 9.46           |                |
|                  |               | Thermal              | Output Torque Nm | 36300            | 49600         | 58400         | 87500         | 106000         | 164000         |                |
|                  |               |                      | Efficiency %     | 37               | 39            | 40            | 44            | 44             | 49             |                |
| 3600.            | 0.27          | Mechanical           | Input Power kW   | 0.91 (1.21)      | 1.37 (1.61)   | 2.21          | 3.03 (3.39)   | 4.17 (6.51)    | 4.78 (7.49)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 32900         | 48100 (54100) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.66             | 3.49          | 4.67          | 6.36          | 7.36           | 9.19           |                |
|                  |               |                      | Output Torque Nm | 36600            | 50000         | 70900         | 103000        | 117000         | 158000         |                |
| 4200.            | 0.23          | Mechanical           | Efficiency %     | 36               | 38            | 42            | 44            | 44             | 47             |                |
|                  |               |                      | Input Power kW   | 0.81 (0.92)      | 1.22 (1.43)   | 2.16 (2.35)   | 2.74 (3.02)   | 3.77 (5.87)    | 4.15 (5.81)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13600)    | 18800 (22400) | 34200 (37200) | 48100 (53200) | 65500 (104000) | 80800 (114000) |                |
|                  |               |                      | Input Power kW   | 2.63             | 3.45          | 4.06          | 5.45          | 6.70           | 9.19           |                |
| 4200.            | 0.23          | Mechanical           | Output Torque Nm | 40900            | 55900         | 65400         | 97800         | 118000         | 183000         |                |
|                  |               |                      | Efficiency %     | 35               | 37            | 38            | 42            | 42             | 47             |                |

# SERIES A

## RATINGS AT 725 REV/MIN INPUT

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY   |                  | SIZE OF UNIT (Mineral Oil) |        |        |        |        |        |
|---------------|--------------------------------|------------|------------------|----------------------------|--------|--------|--------|--------|--------|
|               |                                |            |                  | 10                         | 12     | 14     | 17     | 20     | 24     |
| 5.0           | 145.00                         | Mechanical | Input Power kW   | 80.20                      | 119.00 | 166.00 | 299.00 | 441.00 | 582.00 |
|               |                                |            | Output Torque Nm | 5030                       | 7480   | 10300  | 18900  | 27800  | 37400  |
|               |                                | Thermal    | Input Power kW   | 52.30                      | 77.80  | 114.00 | 163.00 | 209.00 | 308.00 |
|               |                                |            | Output Torque Nm | 3270                       | 4880   | 7050   | 10300  | 13100  | 19700  |
|               |                                |            | Efficiency %     | 95                         | 95     | 96     | 96     | 95     | 96     |
| 7.5           | 96.67                          | Mechanical | Input Power kW   | 57.70                      | 89.10  | 121.00 | 251.00 | 375.00 | 561.00 |
|               |                                |            | Output Torque Nm | 5360                       | 8310   | 11300  | 23500  | 35300  | 52900  |
|               |                                | Thermal    | Input Power kW   | 43.10                      | 63.90  | 93.90  | 135.00 | 196.00 | 266.00 |
|               |                                |            | Output Torque Nm | 4000                       | 5950   | 8760   | 12600  | 18400  | 25000  |
|               |                                |            | Efficiency %     | 94                         | 94     | 94     | 94     | 95     | 95     |
| 10.0          | 72.50                          | Mechanical | Input Power kW   | 39.90                      | 72.40  | 97.50  | 206.00 | 290.00 | 418.00 |
|               |                                |            | Output Torque Nm | 4780                       | 8760   | 11800  | 25500  | 35600  | 51400  |
|               |                                | Thermal    | Input Power kW   | 38.40                      | 57.50  | 86.70  | 124.00 | 185.00 | 252.00 |
|               |                                |            | Output Torque Nm | 4590                       | 6950   | 10500  | 15400  | 22700  | 31000  |
|               |                                |            | Efficiency %     | 93                         | 94     | 94     | 94     | 95     | 95     |
| 12.5          | 58.00                          | Mechanical | Input Power kW   | 43.90                      | 57.80  | 89.70  | 152.00 | 203.00 | 356.00 |
|               |                                |            | Output Torque Nm | 6800                       | 8870   | 14000  | 23400  | 32100  | 55800  |
|               |                                | Thermal    | Input Power kW   | 33.30                      | 52.60  | 74.50  | 114.00 | 167.00 | 229.00 |
|               |                                |            | Output Torque Nm | 5150                       | 8060   | 11600  | 17500  | 26400  | 35900  |
|               |                                |            | Efficiency %     | 92                         | 93     | 93     | 93     | 94     | 94     |
| 15.0          | 48.33                          | Mechanical | Input Power kW   | 35.40                      | 50.60  | 93.20  | 154.00 | 227.00 | 308.00 |
|               |                                |            | Output Torque Nm | 6260                       | 9020   | 16800  | 27900  | 41300  | 56400  |
|               |                                | Thermal    | Input Power kW   | 30.70                      | 47.10  | 68.20  | 104.00 | 151.00 | 210.00 |
|               |                                |            | Output Torque Nm | 5420                       | 8390   | 12200  | 18800  | 27500  | 38400  |
|               |                                |            | Efficiency %     | 91                         | 92     | 92     | 93     | 94     | 94     |
| 20.0          | 36.25                          | Mechanical | Input Power kW   | 33.70                      | 52.50  | 74.80  | 131.00 | 168.00 | 242.00 |
|               |                                |            | Output Torque Nm | 7850                       | 12400  | 17700  | 31000  | 40400  | 58200  |
|               |                                | Thermal    | Input Power kW   | 25.70                      | 38.80  | 58.70  | 83.50  | 132.00 | 174.00 |
|               |                                |            | Output Torque Nm | 5970                       | 9110   | 13900  | 19700  | 31600  | 41700  |
|               |                                |            | Efficiency %     | 90                         | 91     | 91     | 91     | 92     | 93     |
| 25.0          | 29.00                          | Mechanical | Input Power kW   | 27.70                      | 41.20  | 59.00  | 96.60  | 151.00 | 195.00 |
|               |                                |            | Output Torque Nm | 7850                       | 12000  | 17000  | 28100  | 44600  | 58500  |
|               |                                | Thermal    | Input Power kW   | 20.70                      | 31.60  | 47.50  | 65.30  | 94.80  | 129.00 |
|               |                                |            | Output Torque Nm | 5850                       | 9200   | 13700  | 18900  | 27900  | 38600  |
|               |                                |            | Efficiency %     | 88                         | 88     | 89     | 89     | 91     | 91     |
| 30.0          | 24.17                          | Mechanical | Input Power kW   | 23.50                      | 37.60  | 53.30  | 93.40  | 139.00 | 170.00 |
|               |                                |            | Output Torque Nm | 7830                       | 12800  | 18800  | 32100  | 48400  | 59700  |
|               |                                | Thermal    | Input Power kW   | 18.00                      | 28.40  | 41.00  | 60.90  | 89.60  | 121.00 |
|               |                                |            | Output Torque Nm | 5980                       | 9620   | 14400  | 20800  | 31200  | 42300  |
|               |                                |            | Efficiency %     | 86                         | 87     | 87     | 88     | 90     | 90     |
| 40.0          | 18.13                          | Mechanical | Input Power kW   | 20.20                      | 31.50  | 44.10  | 62.60  | 92.50  | 121.00 |
|               |                                |            | Output Torque Nm | 8720                       | 13900  | 19600  | 28300  | 42700  | 56100  |
|               |                                | Thermal    | Input Power kW   | 14.10                      | 21.70  | 30.00  | 45.80  | 64.20  | 104.00 |
|               |                                |            | Output Torque Nm | 6060                       | 9530   | 13200  | 20600  | 29500  | 48100  |
|               |                                |            | Efficiency %     | 82                         | 83     | 84     | 85     | 87     | 89     |
| 50.0          | 14.50                          | Mechanical | Input Power kW   | 16.80                      | 25.50  | 35.70  | 68.40  | 65.40  | 95.40  |
|               |                                |            | Output Torque Nm | 8720                       | 13500  | 19100  | 37200  | 36600  | 54000  |
|               |                                | Thermal    | Input Power kW   | 12.00                      | 18.30  | 24.80  | 40.70  | 66.10  | 89.40  |
|               |                                |            | Output Torque Nm | 6170                       | 9650   | 13200  | 21900  | 37000  | 50500  |
|               |                                |            | Efficiency %     | 78                         | 80     | 81     | 82     | 86     | 87     |
| 60.0          | 12.08                          | Mechanical | Input Power kW   | 14.20                      | 22.40  | 32.90  | 55.70  | 75.50  | 90.70  |
|               |                                |            | Output Torque Nm | 8480                       | 13700  | 20600  | 35400  | 48000  | 58800  |
|               |                                | Thermal    | Input Power kW   | 10.50                      | 15.90  | 23.10  | 34.50  | 43.70  | 60.60  |
|               |                                |            | Output Torque Nm | 6260                       | 9660   | 14400  | 21600  | 27400  | 38900  |
|               |                                |            | Efficiency %     | 75                         | 77     | 79     | 79     | 79     | 81     |
| 70.0          | 10.36                          | Mechanical | Input Power kW   | 11.60                      | 18.60  | 27.30  | 45.90  | 66.70  | 80.60  |
|               |                                |            | Output Torque Nm | 7910                       | 13000  | 19100  | 33000  | 48300  | 60400  |
|               |                                | Thermal    | Input Power kW   | 9.84                       | 14.80  | 19.50  | 29.40  | 38.70  | 58.90  |
|               |                                |            | Output Torque Nm | 6660                       | 10300  | 13600  | 20800  | 27600  | 43800  |
|               |                                |            | Efficiency %     | 73                         | 75     | 76     | 77     | 77     | 81     |

# SERIES A

## RATINGS AT 725 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         |                  | SIZE OF UNIT  |               |               |               |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|                  |               |                      |                  |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| DOUBLE REDUCTION | 75.0          | 9.67                 | Mechanical       | Input Power kW   | 13.00         | 17.80         | 27.90         | 45.80         | 79.00 (80.10)  | 96.40 (98.20)  |
|                  |               |                      |                  | Output Torque Nm | 10400         | 14500         | 22900         | 38100         | 65500 (66400)  | 80800 (82300)  |
|                  |               |                      | Thermal          | Input Power kW   | 13.00         | 18.60         | 24.00         | 39.60         | 52.30          | 69.30          |
|                  |               |                      |                  | Output Torque Nm | 10400         | 15100         | 19700         | 32900         | 43200          | 58000          |
|                  |               |                      |                  | Efficiency %     | 81            | 82            | 82            | 84            | 85             | 86             |
|                  | 100.          | 7.25                 | Mechanical       | Input Power kW   | 11.50 (12.20) | 17.70 (17.80) | 26.90         | 44.60 (45.80) | 48.90          | 73.70 (84.00)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12600) | 18800 (18800) | 28900         | 48100 (49400) | 53000          | 80800 (92100)  |
|                  |               |                      | Thermal          | Input Power kW   | 10.70         | 14.70         | 20.40         | 30.20         | 45.80          | 56.50          |
|                  |               |                      |                  | Output Torque Nm | 11100         | 15600         | 21900         | 32500         | 49600          | 61900          |
|                  |               |                      |                  | Efficiency %     | 78            | 80            | 81            | 81            | 84             | 85             |
|                  | 125.          | 5.80                 | Mechanical       | Input Power kW   | 9.61 (10.00)  | 14.50 (14.80) | 21.10         | 34.80         | 49.70 (54.90)  | 59.80 (85.10)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12400) | 18800 (19200) | 27300         | 45600         | 65500 (72200)  | 80800 (115000) |
|                  |               |                      | Thermal          | Input Power kW   | 8.47          | 12.00         | 16.50         | 22.80         | 33.00          | 42.80          |
|                  |               |                      |                  | Output Torque Nm | 10500         | 15500         | 21200         | 29700         | 43200          | 57700          |
|                  |               |                      |                  | Efficiency %     | 75            | 77            | 78            | 79            | 81             | 82             |
|                  | 150.          | 4.83                 | Mechanical       | Input Power kW   | 8.26 (8.46)   | 12.60 (13.40) | 18.90         | 31.40 (33.40) | 42.40 (45.50)  | 51.30 (63.70)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (12200) | 18800 (20000) | 29500         | 48100 (51100) | 65500 (70200)  | 80800 (100000) |
|                  |               |                      | Thermal          | Input Power kW   | 7.42          | 10.70         | 14.50         | 21.50         | 31.50          | 39.60          |
|                  |               |                      |                  | Output Torque Nm | 10700         | 15900         | 22600         | 32800         | 48400          | 62200          |
|                  |               |                      |                  | Efficiency %     | 72            | 75            | 76            | 77            | 79             | 81             |
|                  | 200.          | 3.63                 | Mechanical       | Input Power kW   | 6.38 (7.72)   | 9.54          | 16.40         | 24.30         | 27.90          | 39.30 (47.60)  |
|                  |               |                      |                  | Output Torque Nm | 11900 (14400) | 18300         | 32000         | 47900         | 56400          | 80800 (98000)  |
|                  |               |                      | Thermal          | Input Power kW   | 8.08          | 10.90         | 14.70         | 21.30         | 31.50          | 38.50          |
|                  |               |                      |                  | Output Torque Nm | 15100         | 20900         | 28700         | 42000         | 63700          | 79100          |
|                  |               |                      | Efficiency %     | 74               | 76            | 77            | 78            | 80            | 81             |                |
| 225.             | 3.22          | Mechanical           | Input Power kW   | 5.96 (6.55)      | 8.82 (10.20)  | 14.00         | 21.90 (25.30) | 29.20 (33.30) | 35.30 (46.50)  |                |
|                  |               |                      | Output Torque Nm | 11900 (13100)    | 18800 (21600) | 31300         | 48100 (55500) | 65500 (74600) | 80800 (107000) |                |
|                  |               | Thermal              | Input Power kW   | 6.34             | 8.84          | 11.90         | 17.40         | 25.00         | 31.30          |                |
|                  |               |                      | Output Torque Nm | 12700            | 18800         | 26500         | 38000         | 55800         | 71500          |                |
|                  |               |                      | Efficiency %     | 69               | 72            | 73            | 74            | 77            | 78             |                |
| 250.             | 2.90          | Mechanical           | Input Power kW   | 5.39 (6.39)      | 8.05 (9.34)   | 13.30         | 20.20 (21.50) | 26.90 (33.70) | 32.10 (50.90)  |                |
|                  |               |                      | Output Torque Nm | 11900 (14100)    | 18800 (21800) | 31200         | 48100 (51100) | 65500 (82200) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 6.44             | 8.83          | 11.90         | 16.10         | 22.60         | 29.10          |                |
|                  |               |                      | Output Torque Nm | 14200            | 20600         | 27800         | 38200         | 54900         | 73000          |                |
|                  |               |                      | Efficiency %     | 70               | 72            | 74            | 75            | 77            | 78             |                |
| 300.             | 2.42          | Mechanical           | Input Power kW   | 4.66 (5.39)      | 7.00 (8.34)   | 11.20         | 17.40 (21.10) | 23.00 (26.30) | 27.60 (36.50)  |                |
|                  |               |                      | Output Torque Nm | 11900 (13800)    | 18800 (22400) | 31300         | 48100 (58300) | 65500 (74800) | 80800 (107000) |                |
|                  |               | Thermal              | Input Power kW   | 5.66             | 7.91          | 10.60         | 15.30         | 21.80         | 27.20          |                |
|                  |               |                      | Output Torque Nm | 14500            | 21200         | 29800         | 42400         | 61900         | 79600          |                |
|                  |               |                      | Efficiency %     | 67               | 71            | 71            | 73            | 75            | 77             |                |
| 350.             | 2.07          | Mechanical           | Input Power kW   | 4.23             | 6.60 (6.69)   | 9.90          | 16.00 (16.40) | 22.20 (24.80) | 25.60 (34.30)  |                |
|                  |               |                      | Output Torque Nm | 11500            | 18800 (19000) | 28400         | 48100 (49300) | 65500 (73200) | 80800 (109000) |                |
|                  |               | Thermal              | Input Power kW   | 4.29             | 5.89          | 7.39          | 10.90         | 14.50         | 20.40          |                |
|                  |               |                      | Output Torque Nm | 11700            | 16700         | 21100         | 32500         | 42500         | 64100          |                |
|                  |               |                      | Efficiency %     | 58               | 60            | 60            | 63            | 64            | 68             |                |
| 375.             | 1.93          | Mechanical           | Input Power kW   | 3.61 (4.65)      | 5.66 (6.57)   | 10.10         | 13.50 (14.70) | 18.60 (23.80) | 22.20 (34.50)  |                |
|                  |               |                      | Output Torque Nm | 11900 (15400)    | 18800 (21800) | 33600         | 48100 (52400) | 65500 (84000) | 80800 (126000) |                |
|                  |               | Thermal              | Input Power kW   | 5.58             | 7.69          | 10.20         | 13.20         | 18.60         | 23.90          |                |
|                  |               |                      | Output Torque Nm | 18500            | 25600         | 33900         | 47000         | 65600         | 86900          |                |
|                  |               |                      | Efficiency %     | 66               | 69            | 70            | 71            | 74            | 75             |                |
| 400.             | 1.81          | Mechanical           | Input Power kW   | 3.50 (4.47)      | 4.90          | 8.57          | 12.30         | 14.60         | 20.80 (24.90)  |                |
|                  |               |                      | Output Torque Nm | 11900 (15300)    | 17700         | 31600         | 46400         | 55700         | 80800 (96800)  |                |
|                  |               | Thermal              | Input Power kW   | 6.61             | 8.65          | 9.70          | 16.00         | 23.40         | 28.00          |                |
|                  |               |                      | Output Torque Nm | 22700            | 31500         | 35800         | 60800         | 89500         | 109000         |                |
|                  |               |                      | Efficiency %     | 67               | 68            | 69            | 71            | 75            | 76             |                |
| 450.             | 1.61          | Mechanical           | Input Power kW   | 3.13 (3.93)      | 4.93 (5.87)   | 7.80          | 11.70 (15.40) | 15.90 (18.10) | 19.10 (25.10)  |                |
|                  |               |                      | Output Torque Nm | 11900 (15000)    | 18800 (22400) | 31200         | 48100 (63400) | 65500 (74400) | 80800 (106000) |                |
|                  |               | Thermal              | Input Power kW   | 4.93             | 6.91          | 9.10          | 12.70         | 18.10         | 22.50          |                |
|                  |               |                      | Output Torque Nm | 18900            | 26400         | 36400         | 52500         | 74500         | 95200          |                |
|                  |               |                      | Efficiency %     | 63               | 67            | 68            | 69            | 72            | 74             |                |
| 500.             | 1.45          | Mechanical           | Input Power kW   | 2.98 (3.99)      | 4.29 (4.90)   | 7.71          | 10.60 (11.70) | 14.30 (18.60) | 17.10 (26.20)  |                |
|                  |               |                      | Output Torque Nm | 11900 (16000)    | 18800 (21500) | 33900         | 48100 (53100) | 65500 (85200) | 80800 (124000) |                |
|                  |               | Thermal              | Input Power kW   | 5.26             | 7.06          | 9.30          | 12.10         | 16.60         | 21.10          |                |
|                  |               |                      | Output Torque Nm | 21200            | 31100         | 41000         | 54900         | 75900         | 99800          |                |
|                  |               |                      | Efficiency %     | 63               | 65            | 66            | 68            | 72            | 73             |                |
| 600.             | 1.21          | Mechanical           | Input Power kW   | 2.85 (3.37)      | 4.27 (5.08)   | 7.20          | 10.10 (11.60) | 13.90 (18.50) | 16.30 (25.70)  |                |
|                  |               |                      | Output Torque Nm | 11900 (14100)    | 18800 (22400) | 33300         | 48100 (54900) | 65500 (87100) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 3.45             | 4.63          | 6.40          | 9.37          | 11.40         | 14.70          |                |
|                  |               |                      | Output Torque Nm | 14500            | 20400         | 29600         | 44400         | 53400         | 72900          |                |
|                  |               |                      | Efficiency %     | 54               | 57            | 60            | 61            | 61            | 64             |                |
| 625.             | 1.16          | Mechanical           | Input Power kW   | 2.46 (3.31)      | 3.69 (4.19)   | 6.61          | 9.08 (10.10)  | 11.90 (15.60) | 13.90 (21.10)  |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (21300) | 33800         | 48100 (53500) | 65500 (86000) | 80800 (123000) |                |
|                  |               | Thermal              | Input Power kW   | 5.04             | 6.74          | 8.13          | 11.40         | 15.50         | 19.50          |                |
|                  |               |                      | Output Torque Nm | 24700            | 34500         | 41700         | 60600         | 85600         | 113000         |                |
|                  |               |                      | Efficiency %     | 60               | 63            | 65            | 67            | 69            | 71             |                |
| 700.             | 1.04          | Mechanical           | Input Power kW   | 2.52 (2.60)      | 3.78 (4.21)   | 6.39          | 9.08 (10.20)  | 12.50 (15.80) | 14.10 (20.30)  |                |
|                  |               |                      | Output Torque Nm | 11900 (12300)    | 18800 (21000) | 32000         | 48100 (54000) | 65500 (83200) | 80800 (116000) |                |
|                  |               | Thermal              | Input Power kW   | 3.35             | 4.50          | 5.53          | 7.99          | 10.20         | 14.40          |                |
|                  |               |                      | Output Torque Nm | 15900            | 22400         | 27600         | 42200         | 53700         | 82200          |                |
|                  |               |                      | Efficiency %     | 53               | 55            | 55            | 58            | 59            | 63             |                |
| 750.             | 0.97          | Mechanical           | Input Power kW   | 2.14 (2.81)      | 3.23 (3.84)   | 5.06          | 7.85 (10.40)  | 10.20 (11.50) | 12.00 (15.60)  |                |
|                  |               |                      | Output Torque Nm | 11900 (15800)    | 18800 (22400) | 31000         | 48100 (64000) | 65500 (73800) | 80800 (105000) |                |
|                  |               | Thermal              | Input Power kW   | 4.47             | 6.07          | 7.97          | 11.00         | 15.20         | 18.50          |                |
|                  |               |                      | Output Torque Nm | 25200            | 35600         | 49000         | 67800         | 97700         | 125000         |                |
|                  |               |                      | Efficiency %     | 57               | 61            | 62            | 64            | 67            | 69             |                |
| 800.             | 0.91          | Mechanical           | Input Power kW   | 2.09 (2.72)      | 3.04 (3.22)   | 5.32          | 7.07 (7.19)   | 9.14          | 11.10          |                |
|                  |               |                      | Output Torque Nm | 11900 (15500)    | 18800 (19900) | 33500         | 48100 (48900) | 63100         | 78500          |                |
|                  |               | Thermal              | Input Power kW   | 3.71             | 5.00          | 6.23          | 8.89          | 11.70         | 18.00          |                |
|                  |               |                      | Output Torque Nm | 21300            | 31200         | 39300         | 60600         | 80700         | 128000         |                |
|                  |               |                      | Efficiency %     | 55               | 57            | 58            | 63            | 67            | 69             |                |

# SERIES A

## RATINGS AT 725 REV/MIN INPUT (Mineral Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 900.          | 0.81                 | Mechanical | Input Power kW   | 1.94 (2.49)   | 3.05 (3.63)   | 5.11          | 6.90 (7.83)   | 9.81 (14.00)   | 11.50 (18.10)  |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18800 (22400) | 33200         | 48100 (54600) | 65500 (93800)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 3.04          | 4.09          | 5.56          | 7.89          | 9.55           | 12.30          |
|               |                      |            | Output Torque Nm | 18800         | 25300         | 36200         | 55100         | 63700          | 86600          |
| 1000.         | 0.73                 | Mechanical | Input Power kW   | 1.70 (2.28)   | 2.55 (2.83)   | 4.53          | 6.15 (6.91)   | 7.97 (10.70)   | 9.43 (14.00)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20900) | 33600         | 48100 (54100) | 65500 (88600)  | 80800 (120000) |
|               |                      | Thermal    | Input Power kW   | 3.76          | 5.59          | 5.59          | 9.96          | 13.40          | 17.10          |
|               |                      |            | Output Torque Nm | 26800         | 41700         | 41600         | 78400         | 111000         | 148000         |
| 1200.         | 0.60                 | Mechanical | Input Power kW   | 1.62 (2.15)   | 2.35 (2.79)   | 3.91          | 5.45 (6.16)   | 7.66 (11.50)   | 8.92 (14.10)   |
|               |                      |            | Output Torque Nm | 11900 (15900) | 18800 (22400) | 33100         | 48100 (54500) | 65500 (98600)  | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.89          | 3.79          | 5.14          | 7.28          | 8.59           | 11.00          |
|               |                      |            | Output Torque Nm | 21500         | 30700         | 43800         | 64600         | 73500          | 99700          |
| 1250.         | 0.58                 | Mechanical | Input Power kW   | 1.44 (1.94)   | 2.14 (2.35)   | 3.77          | 5.15 (5.73)   | 6.70 (9.16)    | 7.91 (11.60)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20700) | 33500         | 48100 (53600) | 65500 (89900)  | 80800 (119000) |
|               |                      | Thermal    | Input Power kW   | 2.99          | 4.74          | 4.74          | 8.04          | 11.20          | 16.30          |
|               |                      |            | Output Torque Nm | 25100         | 42400         | 42300         | 75600         | 111000         | 167000         |
| 1400.         | 0.52                 | Mechanical | Input Power kW   | 1.44 (1.55)   | 2.08 (2.43)   | 3.76 (3.89)   | 4.90 (5.45)   | 6.88 (9.82)    | 7.75 (11.00)   |
|               |                      |            | Output Torque Nm | 11900 (12900) | 18800 (22000) | 34200 (35500) | 48100 (53600) | 65500 (94000)  | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.83          | 3.72          | 4.45          | 6.23          | 7.77           | 10.90          |
|               |                      |            | Output Torque Nm | 23900         | 34000         | 40600         | 61400         | 74100          | 114000         |
| 1500.         | 0.48                 | Mechanical | Input Power kW   | 1.26 (1.69)   | 1.88 (2.23)   | 2.90          | 4.47 (5.73)   | 5.77 (6.43)    | 6.81 (8.76)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30700         | 48100 (61900) | 65500 (73100)  | 80800 (104000) |
|               |                      | Thermal    | Input Power kW   | 2.99          | 4.74          | 4.74          | 8.04          | 11.20          | 15.60          |
|               |                      |            | Output Torque Nm | 28900         | 48500         | 50700         | 87300         | 129000         | 187000         |
| 1600.         | 0.45                 | Mechanical | Input Power kW   | 1.21 (1.56)   | 1.83 (1.93)   | 3.18          | 4.14 (4.36)   | 5.09           | 6.07           |
|               |                      |            | Output Torque Nm | 11900 (15400) | 18800 (19800) | 33300         | 48100 (50700) | 62500          | 77700          |
|               |                      | Thermal    | Input Power kW   | 3.31          | 4.49          | 5.53          | 7.65          | 9.77           | 14.90          |
|               |                      |            | Output Torque Nm | 33400         | 47000         | 58500         | 89600         | 121000         | 193000         |
| 1750.         | 0.41                 | Mechanical | Input Power kW   | 1.13 (1.52)   | 1.73 (1.87)   | 3.03          | 3.97 (4.35)   | 5.16 (7.20)    | 6.07 (8.77)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20400) | 33400         | 48100 (52900) | 65500 (91900)  | 80800 (117000) |
|               |                      | Thermal    | Input Power kW   | 2.20          | 3.23          | 3.23          | 5.82          | 9.17           | 13.20          |
|               |                      |            | Output Torque Nm | 23700         | 35800         | 35700         | 71100         | 117000         | 177000         |
| 1800.         | 0.40                 | Mechanical | Input Power kW   | 1.10 (1.48)   | 1.65 (1.96)   | 2.54          | 3.87 (4.92)   | 5.03 (5.59)    | 5.93 (7.61)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30600         | 48100 (61400) | 65500 (72900)  | 80800 (104000) |
|               |                      | Thermal    | Input Power kW   | 2.53          | 3.90          | 3.90          | 6.71          | 9.76           | 14.00          |
|               |                      |            | Output Torque Nm | 28000         | 45400         | 47400         | 84200         | 128000         | 193000         |
| 2000.         | 0.36                 | Mechanical | Input Power kW   | 1.04 (1.33)   | 1.54 (1.62)   | 2.66          | 3.48 (3.65)   | 4.28           | 5.08           |
|               |                      |            | Output Torque Nm | 11900 (15400) | 18800 (19800) | 33200         | 48100 (50600) | 62300          | 77500          |
|               |                      | Thermal    | Input Power kW   | 2.99          | 4.33          | 4.74          | 7.33          | 9.40           | 14.30          |
|               |                      |            | Output Torque Nm | 35400         | 54300         | 59900         | 103000        | 139000         | 222000         |
| 2100.         | 0.35                 | Mechanical | Input Power kW   | 1.05 (1.16)   | 1.58 (1.87)   | 2.84 (3.01)   | 3.67 (4.07)   | 5.00 (7.60)    | 5.55 (7.84)    |
|               |                      |            | Output Torque Nm | 11900 (13200) | 18800 (22400) | 34200 (36300) | 48100 (53400) | 65500 (100000) | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.67          | 3.53          | 4.18          | 5.77          | 7.01           | 9.67           |
|               |                      |            | Output Torque Nm | 31300         | 43000         | 50800         | 76300         | 92300          | 142000         |
| 2400.         | 0.30                 | Mechanical | Input Power kW   | 0.95 (1.27)   | 1.44 (1.70)   | 2.35          | 3.24 (3.63)   | 4.40 (6.90)    | 5.05 (7.95)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32900         | 48100 (54100) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.61          | 3.43          | 4.62          | 6.34          | 7.26           | 9.09           |
|               |                      |            | Output Torque Nm | 33800         | 46100         | 65600         | 95500         | 109000         | 147000         |
| 2500.         | 0.29                 | Mechanical | Input Power kW   | 0.90 (1.21)   | 1.34 (1.59)   | 2.38 (2.94)   | 3.10 (3.47)   | 2.92           | 4.12           |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (42500) | 48100 (54100) | 50300          | 74800          |
|               |                      | Thermal    | Input Power kW   | 2.86          | 3.71          | 4.56          | 7.00          | 10.60          | 12.70          |
|               |                      |            | Output Torque Nm | 39100         | 53500         | 66500         | 110000        | 188000         | 235000         |
| 2800.         | 0.26                 | Mechanical | Input Power kW   | 0.85 (0.95)   | 1.28 (1.51)   | 2.29 (2.47)   | 2.93 (3.23)   | 3.97 (6.22)    | 4.39 (6.17)    |
|               |                      |            | Output Torque Nm | 11900 (13500) | 18800 (22400) | 34200 (36900) | 48100 (53300) | 65500 (104000) | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.57          | 3.39          | 4.00          | 5.44          | 6.60           | 9.07           |
|               |                      |            | Output Torque Nm | 37700         | 51500         | 60500         | 90600         | 110000         | 169000         |
| 3000.         | 0.24                 | Mechanical | Input Power kW   | 0.82 (1.09)   | 1.21 (1.43)   | 1.98          | 2.73 (3.06)   | 3.74 (5.85)    | 4.27 (6.71)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32900         | 48100 (54000) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.57          | 3.32          | 4.46          | 6.11          | 7.00           | 8.73           |
|               |                      |            | Output Torque Nm | 39100         | 53200         | 75500         | 110000        | 124000         | 168000         |
| 3500.         | 0.21                 | Mechanical | Input Power kW   | 0.73 (0.82)   | 1.08 (1.28)   | 1.93 (2.11)   | 2.47 (2.72)   | 3.37 (5.27)    | 3.71 (5.20)    |
|               |                      |            | Output Torque Nm | 11900 (13600) | 18800 (22400) | 34200 (37400) | 48100 (53200) | 65500 (104000) | 80800 (114000) |
|               |                      | Thermal    | Input Power kW   | 2.53          | 3.29          | 3.87          | 5.23          | 6.36           | 8.73           |
|               |                      |            | Output Torque Nm | 43700         | 59600         | 69600         | 104000        | 125000         | 194000         |
| 3600.         | 0.20                 | Mechanical | Input Power kW   | 0.72 (0.96)   | 1.07 (1.27)   | 1.74          | 2.38 (2.65)   | 3.28 (5.13)    | 3.74 (5.87)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32800         | 48100 (53900) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.53          | 3.29          | 3.90          | 5.95          | 6.84           | 8.52           |
|               |                      |            | Output Torque Nm | 44000         | 59900         | 75100         | 123000        | 139000         | 187000         |
| 4200.         | 0.17                 | Mechanical | Input Power kW   | 0.64 (0.73)   | 0.96 (1.13)   | 1.71 (1.88)   | 2.15 (2.37)   | 2.97 (4.63)    | 3.25 (4.54)    |
|               |                      |            | Output Torque Nm | 11900 (13800) | 18800 (22400) | 34200 (37800) | 48100 (53100) | 65500 (104000) | 80800 (114000) |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.26          | 3.83          | 5.09          | 6.23           | 8.54           |
|               |                      |            | Output Torque Nm | 49400         | 67100         | 78300         | 117000        | 140000         | 217000         |
|               |                      |            | Efficiency %     | 34            | 36            | 36            | 40            | 40             | 45             |

DOUBLE REDUCTION

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |       |        |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|-------|--------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12    | 14     | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 96.00                          | Mechanical       | Input Power kW   | 63.10        | 93.70 | 131.00 | 236.00 | 330.00 | 459.00 |
|                  |               |                                |                  | Output Torque Nm | 5920         | 8830  | 12100  | 22400  | 31300  | 44500  |
|                  |               |                                | Thermal          | Input Power kW   | 35.90        | 54.60 | 82.50  | 124.00 | 154.00 | 239.00 |
|                  |               |                                |                  | Output Torque Nm | 3370         | 5140  | 7650   | 11700  | 14500  | 23200  |
|                  | 7.5           | 64.00                          | Mechanical       | Input Power kW   | 45.00        | 69.50 | 94.30  | 196.00 | 294.00 | 424.00 |
|                  |               |                                |                  | Output Torque Nm | 6260         | 9720  | 13200  | 27600  | 41500  | 60000  |
|                  |               |                                | Thermal          | Input Power kW   | 30.60        | 45.70 | 67.80  | 100.00 | 141.00 | 198.00 |
|                  |               |                                |                  | Output Torque Nm | 4250         | 6380  | 9490   | 14100  | 19900  | 28000  |
|                  | 10.0          | 48.00                          | Mechanical       | Input Power kW   | 31.10        | 56.40 | 75.90  | 160.00 | 226.00 | 326.00 |
|                  |               |                                |                  | Output Torque Nm | 5560         | 10200 | 13800  | 29900  | 41700  | 60300  |
|                  |               |                                | Thermal          | Input Power kW   | 27.10        | 41.10 | 62.00  | 91.90  | 132.00 | 186.00 |
|                  |               |                                |                  | Output Torque Nm | 4850         | 7440  | 11300  | 17100  | 24300  | 34300  |
|                  | 12.5          | 38.40                          | Mechanical       | Input Power kW   | 34.20        | 45.00 | 69.80  | 118.00 | 158.00 | 270.00 |
|                  |               |                                |                  | Output Torque Nm | 7910         | 10300 | 16300  | 27300  | 37500  | 63600  |
|                  |               |                                | Thermal          | Input Power kW   | 23.50        | 37.30 | 53.30  | 83.60  | 119.00 | 169.00 |
|                  |               |                                |                  | Output Torque Nm | 5430         | 8550  | 12500  | 19300  | 28200  | 39700  |
|                  | 15.0          | 32.00                          | Mechanical       | Input Power kW   | 27.50        | 39.30 | 72.40  | 120.00 | 177.00 | 234.00 |
|                  |               |                                |                  | Output Torque Nm | 7260         | 10500 | 19500  | 32500  | 48200  | 64100  |
|                  |               |                                | Thermal          | Input Power kW   | 22.00        | 33.50 | 48.70  | 76.40  | 108.00 | 155.00 |
|                  |               |                                |                  | Output Torque Nm | 5800         | 8910  | 13100  | 20600  | 29400  | 42300  |
|                  | 20.0          | 24.00                          | Mechanical       | Input Power kW   | 26.10        | 40.70 | 58.00  | 101.00 | 122.00 | 183.00 |
|                  |               |                                |                  | Output Torque Nm | 9060         | 14300 | 20500  | 35900  | 43700  | 66000  |
|                  |               |                                | Thermal          | Input Power kW   | 18.40        | 27.60 | 41.70  | 61.30  | 93.40  | 128.00 |
|                  |               |                                |                  | Output Torque Nm | 6380         | 9640  | 14700  | 21600  | 33500  | 46300  |
|                  | 25.0          | 19.20                          | Mechanical       | Input Power kW   | 21.50        | 31.90 | 45.60  | 74.70  | 117.00 | 148.00 |
|                  |               |                                |                  | Output Torque Nm | 9020         | 13800 | 19600  | 32500  | 51500  | 66300  |
|                  |               |                                | Thermal          | Input Power kW   | 15.00        | 22.50 | 34.10  | 48.00  | 69.20  | 96.50  |
|                  |               |                                |                  | Output Torque Nm | 6260         | 9730  | 14600  | 20800  | 30400  | 43200  |
| 30.0             | 16.00         | Mechanical                     | Input Power kW   | 18.10            | 29.00        | 41.10 | 72.00  | 106.00 | 129.00 |        |
|                  |               |                                | Output Torque Nm | 8950             | 14600        | 21500 | 36900  | 55300  | 67700  |        |
|                  |               | Thermal                        | Input Power kW   | 13.00            | 20.60        | 29.30 | 44.70  | 65.10  | 89.00  |        |
|                  |               |                                | Output Torque Nm | 6390             | 10400        | 15300 | 22800  | 33800  | 46600  |        |
| 40.0             | 12.00         | Mechanical                     | Input Power kW   | 15.60            | 23.40        | 34.00 | 48.00  | 70.90  | 88.10  |        |
|                  |               |                                | Output Torque Nm | 9900             | 15200        | 22300 | 32300  | 48700  | 60700  |        |
|                  |               | Thermal                        | Input Power kW   | 10.30            | 15.90        | 21.80 | 33.40  | 46.40  | 76.30  |        |
|                  |               |                                | Output Torque Nm | 6490             | 10300        | 14200 | 22400  | 31700  | 52500  |        |
| 50.0             | 9.60          | Mechanical                     | Input Power kW   | 13.00            | 19.60        | 27.50 | 51.80  | 47.70  | 69.40  |        |
|                  |               |                                | Output Torque Nm | 9840             | 15300        | 21600 | 41700  | 39600  | 58400  |        |
|                  |               | Thermal                        | Input Power kW   | 8.74             | 13.40        | 18.00 | 29.90  | 47.30  | 64.90  |        |
|                  |               |                                | Output Torque Nm | 6600             | 10400        | 14100 | 23900  | 39300  | 54600  |        |
| 60.0             | 8.00          | Mechanical                     | Input Power kW   | 10.90            | 17.20        | 25.30 | 42.70  | 58.10  | 69.50  |        |
|                  |               |                                | Output Torque Nm | 9550             | 15500        | 23300 | 40000  | 54500  | 66900  |        |
|                  |               | Thermal                        | Input Power kW   | 7.71             | 11.70        | 16.60 | 25.40  | 32.10  | 45.60  |        |
|                  |               |                                | Output Torque Nm | 6690             | 10500        | 15200 | 23500  | 29900  | 43500  |        |
| 70.0             | 6.86          | Mechanical                     | Input Power kW   | 8.95             | 14.30        | 21.00 | 35.20  | 51.50  | 61.90  |        |
|                  |               |                                | Output Torque Nm | 8860             | 14500        | 21500 | 37200  | 54900  | 68700  |        |
|                  |               | Thermal                        | Input Power kW   | 7.22             | 10.90        | 14.20 | 21.60  | 28.70  | 43.90  |        |
|                  |               |                                | Output Torque Nm | 7120             | 11100        | 14500 | 22600  | 30200  | 48400  |        |
|                  |               |                                | Efficiency %     | 71               | 73           | 73    | 75     | 76     | 79     |        |

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Mineral Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |               |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|---------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20            | 24             |
| 75.0          | 6.40                 | Mechanical | Input Power kW   | 9.71          | 11.90         | 21.90         | 30.60         | 53.70 (56.80) | 65.30 (65.50)  |
|               |                      |            | Output Torque Nm | 11400         | 14200         | 26500         | 37500         | 65500 (69200) | 80800 (81000)  |
|               |                      | Thermal    | Input Power kW   | 10.00         | 15.10         | 16.10         | 28.20         | 35.90         | 54.30          |
|               |                      |            | Output Torque Nm | 11700         | 18000         | 19500         | 34500         | 43800         | 67100          |
| 100.          | 4.80                 | Mechanical | Input Power kW   | 7.83 (9.05)   | 11.90         | 20.10         | 30.40 (30.60) | 35.30         | 50.00 (60.50)  |
|               |                      |            | Output Torque Nm | 11900 (13800) | 18500         | 31600         | 48100 (48400) | 56300         | 80800 (97900)  |
|               |                      | Thermal    | Input Power kW   | 8.76          | 12.00         | 16.10         | 24.00         | 35.90         | 44.20          |
|               |                      |            | Output Torque Nm | 13300         | 18700         | 25400         | 37900         | 57300         | 71300          |
| 125.          | 3.84                 | Mechanical | Input Power kW   | 6.59 (7.48)   | 9.92 (11.00)  | 15.80         | 25.10 (26.00) | 33.90 (41.00) | 40.80 (63.60)  |
|               |                      |            | Output Torque Nm | 11900 (13500) | 18800 (20900) | 29800         | 48100 (49800) | 65500 (79100) | 80800 (126000) |
|               |                      | Thermal    | Input Power kW   | 7.03          | 9.75          | 13.30         | 18.10         | 25.80         | 33.40          |
|               |                      |            | Output Torque Nm | 12700         | 18400         | 25100         | 34600         | 49600         | 66100          |
| 150.          | 3.20                 | Mechanical | Input Power kW   | 5.68 (6.31)   | 8.62 (9.97)   | 13.80         | 21.60 (25.00) | 29.00 (33.10) | 35.00 (46.20)  |
|               |                      |            | Output Torque Nm | 11900 (13200) | 18800 (21700) | 31400         | 48100 (55700) | 65500 (74700) | 80800 (107000) |
|               |                      | Thermal    | Input Power kW   | 6.18          | 8.73          | 11.70         | 17.20         | 24.80         | 31.10          |
|               |                      |            | Output Torque Nm | 13000         | 19000         | 26700         | 38300         | 55900         | 71700          |
| 200.          | 2.40                 | Mechanical | Input Power kW   | 4.37 (5.51)   | 6.40          | 11.10         | 16.30         | 18.90         | 26.70 (32.10)  |
|               |                      |            | Output Torque Nm | 11900 (15100) | 18000         | 31800         | 47000         | 56000         | 80800 (97300)  |
|               |                      | Thermal    | Input Power kW   | 7.00          | 9.26          | 12.20         | 17.70         | 25.90         | 31.40          |
|               |                      |            | Output Torque Nm | 19100         | 26100         | 34700         | 51000         | 76900         | 95000          |
| 225.          | 2.13                 | Mechanical | Input Power kW   | 4.09 (4.86)   | 6.04 (7.20)   | 9.61          | 15.00 (18.70) | 20.00 (22.80) | 24.10 (31.80)  |
|               |                      |            | Output Torque Nm | 11900 (14200) | 18800 (22400) | 31300         | 48100 (60000) | 65500 (74700) | 80800 (107000) |
|               |                      | Thermal    | Input Power kW   | 5.37          | 7.39          | 9.86          | 14.20         | 20.20         | 25.20          |
|               |                      |            | Output Torque Nm | 15700         | 23000         | 32100         | 45400         | 66100         | 84600          |
| 250.          | 1.92                 | Mechanical | Input Power kW   | 3.71 (4.74)   | 5.51 (6.40)   | 9.86          | 13.80 (15.00) | 18.40 (23.50) | 21.90 (34.00)  |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18800 (21800) | 33700         | 48100 (52300) | 65500 (84000) | 80800 (126000) |
|               |                      | Thermal    | Input Power kW   | 5.57          | 7.54          | 10.00         | 13.30         | 18.40         | 23.70          |
|               |                      |            | Output Torque Nm | 18000         | 25700         | 34100         | 46200         | 65700         | 87200          |
| 300.          | 1.60                 | Mechanical | Input Power kW   | 3.21 (4.00)   | 4.80 (5.72)   | 7.61          | 11.90 (15.60) | 15.70 (17.90) | 18.80 (24.70)  |
|               |                      |            | Output Torque Nm | 11900 (14900) | 18800 (22400) | 31200         | 48100 (63000) | 65500 (74400) | 80800 (106000) |
|               |                      | Thermal    | Input Power kW   | 4.92          | 6.77          | 8.93          | 12.80         | 17.90         | 22.30          |
|               |                      |            | Output Torque Nm | 18400         | 26600         | 36600         | 51500         | 74700         | 95600          |
| 350.          | 1.37                 | Mechanical | Input Power kW   | 3.04 (3.11)   | 4.60 (5.03)   | 7.47          | 11.20 (12.30) | 15.50 (18.70) | 17.70 (25.30)  |
|               |                      |            | Output Torque Nm | 11900 (12200) | 18800 (20500) | 30700         | 48100 (53300) | 65500 (79300) | 80800 (116000) |
|               |                      | Thermal    | Input Power kW   | 3.61          | 4.90          | 6.07          | 8.87          | 11.60         | 16.30          |
|               |                      |            | Output Torque Nm | 14200         | 20000         | 24900         | 38100         | 48700         | 74100          |
| 375.          | 1.28                 | Mechanical | Input Power kW   | 2.49 (3.36)   | 3.88 (4.42)   | 6.98          | 9.29 (10.30)  | 12.70 (16.60) | 15.20 (23.10)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21400) | 33900         | 48100 (53400) | 65500 (85700) | 80800 (123000) |
|               |                      | Thermal    | Input Power kW   | 4.91          | 6.70          | 8.82          | 11.30         | 15.70         | 20.00          |
|               |                      |            | Output Torque Nm | 23700         | 32500         | 42900         | 58700         | 81000         | 106000         |
| 400.          | 1.20                 | Mechanical | Input Power kW   | 2.41 (3.06)   | 3.32          | 5.86          | 8.27          | 9.88          | 14.20 (16.90)  |
|               |                      |            | Output Torque Nm | 11900 (15200) | 17500         | 31400         | 45600         | 55300         | 80800 (96200)  |
|               |                      | Thermal    | Input Power kW   | 4.73          | 6.97          | 6.97          | 12.40         | 18.40         | 24.00          |
|               |                      |            | Output Torque Nm | 23500         | 37000         | 37400         | 68500         | 103000        | 137000         |
| 450.          | 1.07                 | Mechanical | Input Power kW   | 2.16 (2.84)   | 3.39 (4.04)   | 5.33          | 8.03 (10.70)  | 10.90 (12.30) | 13.10 (17.00)  |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (22400) | 31000         | 48100 (64000) | 65500 (73900) | 80800 (106000) |
|               |                      | Thermal    | Input Power kW   | 4.35          | 6.02          | 7.92          | 10.90         | 15.40         | 18.90          |
|               |                      |            | Output Torque Nm | 24200         | 33500         | 46200         | 65700         | 92500         | 117000         |
| 500.          | 0.96                 | Mechanical | Input Power kW   | 2.06 (2.78)   | 2.96 (3.32)   | 5.29          | 7.28 (8.18)   | 9.79 (13.00)  | 11.70 (17.60)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21100) | 33700         | 48100 (54100) | 65500 (86800) | 80800 (122000) |
|               |                      | Thermal    | Input Power kW   | 4.68          | 6.24          | 6.97          | 10.50         | 14.20         | 18.00          |
|               |                      |            | Output Torque Nm | 27400         | 39900         | 44500         | 69300         | 95400         | 124000         |
| 600.          | 0.80                 | Mechanical | Input Power kW   | 1.99 (2.52)   | 2.97 (3.53)   | 4.98          | 7.03 (7.98)   | 9.69 (13.80)  | 11.30 (17.80)  |
|               |                      |            | Output Torque Nm | 11900 (15200) | 18800 (22400) | 33200         | 48100 (54700) | 65500 (93800) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 3.02          | 4.00          | 5.44          | 7.89          | 9.45          | 12.10          |
|               |                      |            | Output Torque Nm | 18300         | 25400         | 36300         | 54100         | 63800         | 87000          |
| 625.          | 0.77                 | Mechanical | Input Power kW   | 1.71 (2.30)   | 2.55 (2.84)   | 4.55          | 6.26 (7.06)   | 8.18 (11.00)  | 9.58 (14.20)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20900) | 33600         | 48100 (54300) | 65500 (88100) | 80800 (120000) |
|               |                      | Thermal    | Input Power kW   | 3.80          | 5.88          | 5.88          | 9.97          | 13.50         | 16.90          |
|               |                      |            | Output Torque Nm | 26800         | 43700         | 43600         | 76800         | 108000        | 143000         |
| 700.          | 0.69                 | Mechanical | Input Power kW   | 1.76 (1.86)   | 2.63 (3.01)   | 4.76 (4.79)   | 6.31 (7.04)   | 8.69 (11.80)  | 9.79 (14.00)   |
|               |                      |            | Output Torque Nm | 11900 (12600) | 18800 (21500) | 34200 (34400) | 48100 (53800) | 65500 (89400) | 80800 (116000) |
|               |                      | Thermal    | Input Power kW   | 2.95          | 3.91          | 4.70          | 6.73          | 8.53          | 12.00          |
|               |                      |            | Output Torque Nm | 20200         | 28100         | 33800         | 51400         | 64300         | 98900          |
| 750.          | 0.64                 | Mechanical | Input Power kW   | 1.49 (2.00)   | 2.23 (2.66)   | 3.48          | 5.42 (7.06)   | 7.03 (7.87)   | 8.24 (10.70)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30800         | 48100 (62800) | 65500 (73400) | 80800 (105000) |
|               |                      | Thermal    | Input Power kW   | 3.80          | 5.41          | 5.88          | 9.68          | 13.30         | 16.00          |
|               |                      |            | Output Torque Nm | 30800         | 46000         | 52300         | 86300         | 124000        | 158000         |
| 800.          | 0.60                 | Mechanical | Input Power kW   | 1.46 (1.88)   | 2.11 (2.23)   | 3.68          | 4.88 (5.10)   | 6.25          | 7.55           |
|               |                      |            | Output Torque Nm | 11900 (15500) | 18800 (19800) | 33400         | 48100 (50300) | 62700         | 78000          |
|               |                      | Thermal    | Input Power kW   | 3.31          | 4.45          | 5.49          | 7.76          | 10.10         | 15.60          |
|               |                      |            | Output Torque Nm | 27500         | 40000         | 50000         | 76800         | 102000        | 162000         |
| Efficiency %  |                      |            | 53               | 55            | 56            | 60            | 64            | 67            |                |

DOUBLE REDUCTION

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

# SERIES A

## RATINGS AT 480 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         | SIZE OF UNIT     |               |               |               |                |                |                |
|------------------|---------------|----------------------|------------------|------------------|---------------|---------------|---------------|----------------|----------------|----------------|
|                  |               |                      |                  | 10               | 12            | 14            | 17            | 20             | 24             |                |
| DOUBLE REDUCTION | 900.          | 0.53                 | Mechanical       | Input Power kW   | 1.36 (1.82)   | 2.12 (2.52)   | 3.54          | 4.79 (5.41)    | 6.82 (10.40)   | 7.94 (12.50)   |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33100         | 48100 (54400)  | 65500 (101000) | 80800 (128000) |
|                  |               |                      | Thermal          | Input Power kW   | 2.71          | 3.60          | 4.88          | 6.86           | 8.15           | 10.40          |
|                  |               |                      |                  | Output Torque Nm | 24100         | 32100         | 45800         | 69200          | 78400          | 106000         |
|                  | 1000.         | 0.48                 | Mechanical       | Efficiency %     | 47            | 51            | 53            | 55             | 55             | 58             |
|                  |               |                      |                  | Input Power kW   | 1.19 (1.60)   | 1.78 (1.95)   | 3.15          | 4.28 (4.72)    | 5.52 (7.64)    | 6.51 (9.47)    |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (16100) | 18800 (20500) | 33400         | 48100 (53200)  | 65500 (91000)  | 80800 (118000) |
|                  |               |                      |                  | Input Power kW   | 2.75          | 4.08          | 4.08          | 7.22           | 9.76           | 14.30          |
|                  | 1200.         | 0.40                 | Mechanical       | Output Torque Nm | 28100         | 43600         | 43600         | 81700          | 116000         | 179000         |
|                  |               |                      |                  | Efficiency %     | 51            | 53            | 54            | 57             | 60             | 62             |
|                  |               |                      | Thermal          | Input Power kW   | 1.13 (1.52)   | 1.64 (1.95)   | 2.71          | 3.79 (4.27)    | 5.33 (8.39)    | 6.19 (9.78)    |
|                  |               |                      |                  | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33000         | 48100 (54300)  | 65500 (104000) | 80800 (128000) |
|                  | 1250.         | 0.38                 | Mechanical       | Input Power kW   | 2.59          | 3.38          | 4.57          | 6.41           | 7.45           | 9.48           |
|                  |               |                      |                  | Output Torque Nm | 27800         | 39300         | 56000         | 81900          | 91900          | 124000         |
|                  |               |                      | Thermal          | Efficiency %     | 45            | 47            | 50            | 52             | 52             | 56             |
|                  |               |                      |                  | Input Power kW   | 1.01 (1.36)   | 1.50 (1.63)   | 2.64          | 3.59 (3.93)    | 4.66 (6.54)    | 5.48 (7.90)    |
|                  | 1400.         | 0.34                 | Mechanical       | Output Torque Nm | 11900 (16100) | 18800 (20400) | 33400         | 48100 (52700)  | 65500 (92300)  | 80800 (117000) |
|                  |               |                      |                  | Efficiency %     | 48            | 50            | 52            | 55             | 57             | 59             |
|                  |               |                      | Thermal          | Input Power kW   | 2.20          | 3.43          | 3.43          | 5.86           | 8.23           | 12.00          |
|                  |               |                      |                  | Output Torque Nm | 26300         | 43500         | 43500         | 79000          | 116000         | 178000         |
|                  | 1500.         | 0.32                 | Mechanical       | Efficiency %     | 44            | 45            | 46            | 49             | 50             | 55             |
|                  |               |                      |                  | Input Power kW   | 1.00 (1.11)   | 1.45 (1.72)   | 2.63 (2.80)   | 3.42 (3.79)    | 4.79 (7.32)    | 5.37 (7.61)    |
|                  |               |                      | Thermal          | Output Torque Nm | 11900 (13200) | 18800 (22400) | 34200 (36400) | 48100 (53400)  | 65500 (100000) | 80800 (115000) |
|                  |               |                      |                  | Input Power kW   | 2.55          | 3.33          | 3.96          | 5.48           | 6.76           | 9.42           |
| 1600.            | 0.30          | Mechanical           | Output Torque Nm | 30900            | 43800         | 51700         | 77700         | 92700          | 143000         |                |
|                  |               |                      | Efficiency %     | 44               | 45            | 46            | 49            | 50             | 55             |                |
|                  |               | Thermal              | Input Power kW   | 0.89 (1.19)      | 1.32 (1.57)   | 2.03          | 3.12 (3.93)   | 4.01 (4.45)    | 4.72 (6.04)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 30600         | 48100 (60800) | 65500 (72700)  | 80800 (104000) |                |
| 1750.            | 0.27          | Mechanical           | Input Power kW   | 2.20             | 3.43          | 3.43          | 5.86          | 8.23           | 12.00          |                |
|                  |               |                      | Output Torque Nm | 30200            | 49700         | 52000         | 91100         | 136000         | 207000         |                |
|                  |               | Thermal              | Efficiency %     | 46               | 49            | 50            | 53            | 56             | 58             |                |
|                  |               |                      | Input Power kW   | 0.85 (1.09)      | 1.28 (1.35)   | 2.22          | 2.89 (3.03)   | 3.51           | 4.17           |                |
| 1800.            | 0.27          | Mechanical           | Output Torque Nm | 11900 (15400)    | 18800 (19700) | 33200         | 48100 (50400) | 62200          | 77300          |                |
|                  |               |                      | Efficiency %     | 44               | 46            | 47            | 52            | 56             | 59             |                |
|                  |               | Thermal              | Input Power kW   | 2.75             | 4.08          | 4.08          | 6.87          | 8.72           | 13.30          |                |
|                  |               |                      | Output Torque Nm | 39500            | 61100         | 61500         | 116000        | 156000         | 250000         |                |
| 2000.            | 0.24          | Mechanical           | Efficiency %     | 44               | 46            | 47            | 52            | 56             | 59             |                |
|                  |               |                      | Input Power kW   | 0.80 (1.07)      | 1.23 (1.32)   | 2.15          | 2.79 (3.02)   | 3.61 (5.16)    | 4.24 (6.03)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (16100)    | 18800 (20100) | 33200         | 48100 (52100) | 65500 (94200)  | 80800 (116000) |                |
|                  |               |                      | Input Power kW   | 1.64             | 2.36          | 2.36          | 4.22          | 6.74           | 9.72           |                |
| 2100.            | 0.23          | Mechanical           | Output Torque Nm | 25100            | 36600         | 36600         | 73100         | 123000         | 187000         |                |
|                  |               |                      | Efficiency %     | 44               | 44            | 45            | 50            | 53             | 55             |                |
|                  |               | Thermal              | Input Power kW   | 0.78 (1.04)      | 1.16 (1.38)   | 1.79          | 2.72 (3.40)   | 3.52 (3.89)    | 4.12 (5.26)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 30500         | 48100 (60400) | 65500 (72500)  | 80800 (103000) |                |
| 2400.            | 0.20          | Mechanical           | Input Power kW   | 1.88             | 2.83          | 2.83          | 4.83          | 7.17           | 10.40          |                |
|                  |               |                      | Output Torque Nm | 29600            | 46700         | 48800         | 86100         | 135000         | 205000         |                |
|                  |               | Thermal              | Efficiency %     | 43               | 46            | 47            | 50            | 53             | 56             |                |
|                  |               |                      | Input Power kW   | 0.73 (0.93)      | 1.09 (1.14)   | 1.87          | 2.43 (2.54)   | 2.96           | 3.50           |                |
| 2500.            | 0.19          | Mechanical           | Output Torque Nm | 11900 (15400)    | 18800 (19700) | 33100         | 48100 (50300) | 62000          | 77000          |                |
|                  |               |                      | Efficiency %     | 41               | 43            | 44            | 50            | 53             | 56             |                |
|                  |               | Thermal              | Input Power kW   | 2.20             | 3.43          | 3.43          | 5.86          | 8.23           | 12.00          |                |
|                  |               |                      | Output Torque Nm | 37000            | 60800         | 61200         | 118000        | 175000         | 267000         |                |
| 2800.            | 0.17          | Mechanical           | Input Power kW   | 0.74 (0.84)      | 1.11 (1.31)   | 2.00 (2.17)   | 2.57 (2.84)   | 3.50 (5.49)    | 3.85 (5.42)    |                |
|                  |               |                      | Output Torque Nm | 11900 (13600)    | 18800 (22400) | 34200 (37200) | 48100 (53200) | 65500 (104000) | 80800 (114000) |                |
|                  |               | Thermal              | Input Power kW   | 2.45             | 3.21          | 3.79          | 5.17          | 6.21           | 8.52           |                |
|                  |               |                      | Output Torque Nm | 40900            | 55900         | 65400         | 97800         | 117000         | 181000         |                |
| 3000.            | 0.16          | Mechanical           | Efficiency %     | 39               | 41            | 41            | 45            | 46             | 51             |                |
|                  |               |                      | Input Power kW   | 0.67 (0.90)      | 1.01 (1.20)   | 1.65          | 2.27 (2.54)   | 3.09 (4.84)    | 3.52 (5.55)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 32800         | 48100 (53900) | 65500 (104000) | 80800 (128000) |                |
|                  |               |                      | Input Power kW   | 2.40             | 3.15          | 4.08          | 5.74          | 6.50           | 8.10           |                |
| 3500.            | 0.14          | Mechanical           | Output Torque Nm | 44300            | 60200         | 82500         | 124000        | 139000         | 188000         |                |
|                  |               |                      | Efficiency %     | 37               | 39            | 42            | 44            | 44             | 48             |                |
|                  |               | Thermal              | Input Power kW   | 0.64 (0.85)      | 0.95 (1.12)   | 1.68 (2.07)   | 2.17 (2.43)   | 2.02           | 2.84           |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 34200 (42400) | 48100 (53900) | 50000          | 74400          |                |
| 3600.            | 0.13          | Mechanical           | Input Power kW   | 2.20             | 3.43          | 3.43          | 5.86          | 8.23           | 11.40          |                |
|                  |               |                      | Output Torque Nm | 42600            | 70000         | 70500         | 132000        | 209000         | 305000         |                |
|                  |               | Thermal              | Efficiency %     | 38               | 40            | 41            | 45            | 50             | 53             |                |
|                  |               |                      | Input Power kW   | 0.60 (0.68)      | 0.90 (1.06)   | 1.62 (1.78)   | 2.05 (2.26)   | 2.79 (4.37)    | 3.05 (4.28)    |                |
| 4200.            | 0.11          | Mechanical           | Output Torque Nm | 11900 (13800)    | 18800 (22400) | 34200 (37800) | 48100 (53100) | 65500 (104000) | 80800 (114000) |                |
|                  |               |                      | Efficiency %     | 36               | 38            | 38            | 42            | 42             | 48             |                |
|                  |               | Thermal              | Input Power kW   | 2.38             | 3.12          | 3.67          | 4.92          | 5.91           | 8.11           |                |
|                  |               |                      | Output Torque Nm | 49700            | 67500         | 78600         | 117000        | 141000         | 218000         |                |
| 3000.            | 0.16          | Mechanical           | Input Power kW   | 0.58 (0.77)      | 0.86 (1.02)   | 1.39          | 1.92 (2.14)   | 2.63 (4.12)    | 2.98 (4.69)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 32700         | 48100 (53800) | 65500 (104000) | 80800 (128000) |                |
|                  |               | Thermal              | Input Power kW   | 2.20             | 3.08          | 3.43          | 5.57          | 6.33           | 7.84           |                |
|                  |               |                      | Output Torque Nm | 47400            | 69800         | 81900         | 142000        | 160000         | 215000         |                |
| 3500.            | 0.14          | Mechanical           | Efficiency %     | 35               | 37            | 39            | 42            | 42             | 45             |                |
|                  |               |                      | Input Power kW   | 0.51 (0.59)      | 0.76 (0.90)   | 1.37 (1.53)   | 1.74 (1.91)   | 2.37 (3.72)    | 2.59 (3.62)    |                |
|                  |               | Thermal              | Output Torque Nm | 11900 (13900)    | 18800 (22400) | 34200 (38200) | 48100 (53000) | 65500 (104000) | 80800 (114000) |                |
|                  |               |                      | Input Power kW   | 2.20             | 3.06          | 3.43          | 4.78          | 5.77           | 7.89           |                |
| 3600.            | 0.13          | Mechanical           | Output Torque Nm | 53700            | 78400         | 87000         | 135000        | 162000         | 251000         |                |
|                  |               |                      | Efficiency %     | 33               | 35            | 36            | 40            | 40             | 45             |                |
|                  |               | Thermal              | Input Power kW   | 0.51 (0.68)      | 0.76 (0.90)   | 1.23          | 1.68 (1.87)   | 2.32 (3.62)    | 2.62 (4.12)    |                |
|                  |               |                      | Output Torque Nm | 11900 (16100)    | 18800 (22400) | 32700         | 48100 (53700) | 65500 (104000) | 80800 (128000) |                |
| 4200.            | 0.11          | Mechanical           | Input Power kW   | 1.88             | 2.83          | 2.83          | 4.83          | 6.24           | 7.71           |                |
|                  |               |                      | Output Torque Nm | 46200            | 72700         | 76700         | 141000        | 180000         | 242000         |                |
|                  |               | Thermal              | Efficiency %     | 33               | 34            | 37            | 40            | 39             | 43             |                |
|                  |               |                      | Input Power kW   | 0.45 (0.53)      | 0.68 (0.80)   | 1.22 (1.37)   | 1.52 (1.67)   | 2.09 (3.27)    | 2.28 (3.17)    |                |
| 3000.            | 0.16          | Mechanical           | Output Torque Nm | 11900 (14100)    | 18800 (22400) | 34200 (38600) | 48100 (52900) | 65500 (104000) | 80800 (114000) |                |
|                  |               |                      | Efficiency %     | 31               | 33            | 34            | 38            | 38             | 42             |                |
|                  |               | Thermal              | Input Power kW   | 1.88             | 2.83          | 2.83          | 4.70          | 5.69           | 7.76           |                |
|                  |               |                      | Output Torque Nm | 52300            | 82300         | 81300         | 152000        | 182000         | 282000         |                |

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Mineral Oil)

9611

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED REV / MIN | CAPACITY         |                  | SIZE OF UNIT |       |       |        |        |        |
|------------------|---------------|--------------------------------|------------------|------------------|--------------|-------|-------|--------|--------|--------|
|                  |               |                                |                  |                  | 10           | 12    | 14    | 17     | 20     | 24     |
| SINGLE REDUCTION | 5.0           | 50.00                          | Mechanical       | Input Power kW   | 42.60        | 63.30 | 88.40 | 160.00 | 209.00 | 311.00 |
|                  |               |                                |                  | Output Torque Nm | 7520         | 11300 | 15500 | 28700  | 37400  | 57400  |
|                  |               |                                | Thermal          | Input Power kW   | 24.40        | 36.80 | 55.00 | 86.60  | 113.00 | 150.00 |
|                  |               |                                |                  | Output Torque Nm | 4300         | 6530  | 9640  | 15500  | 20200  | 27600  |
|                  | 7.5           | 33.33                          | Mechanical       | Input Power kW   | 30.10        | 46.50 | 63.20 | 131.00 | 197.00 | 271.00 |
|                  |               |                                |                  | Output Torque Nm | 7880         | 12300 | 16700 | 35000  | 52800  | 72900  |
|                  |               |                                | Thermal          | Input Power kW   | 21.80        | 32.50 | 48.10 | 73.80  | 108.00 | 124.00 |
|                  |               |                                |                  | Output Torque Nm | 5710         | 8550  | 12700 | 19600  | 28800  | 33400  |
|                  | 10.0          | 25.00                          | Mechanical       | Input Power kW   | 20.60        | 37.60 | 50.50 | 107.00 | 143.00 | 212.00 |
|                  |               |                                |                  | Output Torque Nm | 6960         | 12800 | 17400 | 37700  | 49800  | 74400  |
|                  |               |                                | Thermal          | Input Power kW   | 19.50        | 29.30 | 43.90 | 67.50  | 101.00 | 115.00 |
|                  |               |                                |                  | Output Torque Nm | 6560         | 10000 | 15100 | 23800  | 35300  | 40100  |
|                  | 12.5          | 20.00                          | Mechanical       | Input Power kW   | 22.60        | 29.70 | 46.20 | 78.10  | 105.00 | 174.00 |
|                  |               |                                |                  | Output Torque Nm | 9800         | 12800 | 20400 | 34100  | 46900  | 77400  |
|                  |               |                                | Thermal          | Input Power kW   | 17.00        | 26.80 | 36.30 | 61.20  | 90.90  | 104.00 |
|                  |               |                                |                  | Output Torque Nm | 7380         | 11600 | 16000 | 26700  | 40700  | 46200  |
|                  | 15.0          | 16.67                          | Mechanical       | Input Power kW   | 18.10        | 25.90 | 47.80 | 79.00  | 117.00 | 150.00 |
|                  |               |                                |                  | Output Torque Nm | 8940         | 12900 | 24100 | 40400  | 60100  | 77900  |
|                  |               |                                | Thermal          | Input Power kW   | 15.80        | 24.10 | 32.60 | 54.20  | 75.80  | 94.80  |
|                  |               |                                |                  | Output Torque Nm | 7780         | 12100 | 16400 | 27600  | 38900  | 49000  |
| 20.0             | 12.50         | Mechanical                     | Input Power kW   | 17.00            | 24.70        | 37.90 | 66.40 | 72.40  | 118.00 |        |
|                  |               |                                | Output Torque Nm | 11000            | 16200        | 25000 | 44200 | 48800  | 80300  |        |
|                  |               | Thermal                        | Input Power kW   | 13.30            | 19.40        | 27.30 | 41.20 | 63.60  | 78.10  |        |
|                  |               |                                | Output Torque Nm | 8620             | 12700        | 18000 | 27300 | 42800  | 53000  |        |
| 25.0             | 10.00         | Mechanical                     | Input Power kW   | 14.00            | 20.10        | 29.70 | 48.70 | 76.30  | 95.80  |        |
|                  |               |                                | Output Torque Nm | 10900            | 16200        | 23800 | 39600 | 62900  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 10.90            | 15.60        | 22.10 | 31.30 | 45.80  | 59.50  |        |
|                  |               |                                | Output Torque Nm | 8440             | 12600        | 17700 | 25300 | 37600  | 50100  |        |
| 30.0             | 8.33          | Mechanical                     | Input Power kW   | 11.80            | 17.40        | 26.60 | 46.90 | 66.60  | 82.10  |        |
|                  |               |                                | Output Torque Nm | 10700            | 16200        | 25900 | 44600 | 64500  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 9.50             | 13.90        | 19.20 | 29.30 | 43.30  | 54.70  |        |
|                  |               |                                | Output Torque Nm | 8610             | 12900        | 18700 | 27800 | 41800  | 53700  |        |
| 40.0             | 6.25          | Mechanical                     | Input Power kW   | 10.00            | 13.60        | 22.10 | 31.00 | 43.20  | 52.80  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 26600 | 38600 | 54900  | 67800  |        |
|                  |               | Thermal                        | Input Power kW   | 7.38             | 10.60        | 14.30 | 21.70 | 30.40  | 46.80  |        |
|                  |               |                                | Output Torque Nm | 8510             | 12600        | 17100 | 26900 | 38400  | 60000  |        |
| 50.0             | 5.00          | Mechanical                     | Input Power kW   | 8.47             | 11.50        | 17.90 | 31.80 | 29.00  | 41.80  |        |
|                  |               |                                | Output Torque Nm | 11600            | 16200        | 25600 | 46700 | 44300  | 65300  |        |
|                  |               | Thermal                        | Input Power kW   | 6.28             | 8.91         | 11.90 | 19.90 | 31.80  | 39.80  |        |
|                  |               |                                | Output Torque Nm | 8580             | 12500        | 17000 | 29100 | 48700  | 62100  |        |
| 60.0             | 4.17          | Mechanical                     | Input Power kW   | 7.16             | 10.00        | 16.40 | 27.30 | 38.50  | 45.80  |        |
|                  |               |                                | Output Torque Nm | 11200            | 16200        | 27400 | 46500 | 65500  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 5.51             | 7.81         | 11.10 | 17.00 | 22.00  | 28.50  |        |
|                  |               |                                | Output Torque Nm | 8580             | 12500        | 18500 | 28700 | 37100  | 50000  |        |
| 70.0             | 3.57          | Mechanical                     | Input Power kW   | 5.83             | 8.85         | 13.70 | 22.90 | 33.90  | 39.80  |        |
|                  |               |                                | Output Torque Nm | 10300            | 16200        | 25300 | 43800 | 65100  | 80800  |        |
|                  |               | Thermal                        | Input Power kW   | 5.25             | 7.38         | 9.55  | 14.30 | 19.40  | 27.20  |        |
|                  |               |                                | Output Torque Nm | 9280             | 13500        | 17500 | 27300 | 37000  | 54900  |        |
|                  |               |                                | Efficiency %     | 66               | 68           | 69    | 71    | 71     | 75     |        |

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Mineral Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 75.0          | 3.33                 | Mechanical | Input Power kW   | 5.55 (5.75)   | 6.33          | 14.70         | 16.30         | 29.20 (30.20)  | 34.80          |
|               |                      |            | Output Torque Nm | 11900 (12400) | 13900         | 32500         | 36600         | 65500 (67600)  | 79100          |
|               |                      | Thermal    | Input Power kW   | 6.48          | 10.30         | 10.30         | 17.60         | 24.40          | 36.80          |
|               |                      |            | Output Torque Nm | 13900         | 22700         | 22900         | 39500         | 54600          | 83700          |
| 100.          | 2.50                 | Mechanical | Input Power kW   | 4.28 (5.41)   | 6.33          | 11.00         | 16.30         | 19.10          | 27.20 (32.80)  |
|               |                      |            | Output Torque Nm | 11900 (15100) | 18000         | 31800         | 47000         | 56000          | 80800 (97400)  |
|               |                      | Thermal    | Input Power kW   | 6.48          | 9.20          | 10.30         | 17.60         | 24.40          | 31.70          |
|               |                      |            | Output Torque Nm | 18100         | 26200         | 29700         | 50700         | 71400          | 94100          |
| 125.          | 2.00                 | Mechanical | Input Power kW   | 3.63 (4.65)   | 5.45 (6.33)   | 9.78          | 13.80 (15.00) | 18.60 (23.90)  | 22.40 (34.80)  |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18800 (21800) | 33700         | 48100 (52300) | 65500 (84000)  | 80800 (126000) |
|               |                      | Thermal    | Input Power kW   | 5.49          | 7.48          | 9.93          | 13.30         | 18.60          | 23.90          |
|               |                      |            | Output Torque Nm | 18100         | 25800         | 34200         | 46200         | 65200          | 86400          |
| 150.          | 1.67                 | Mechanical | Input Power kW   | 3.14 (3.93)   | 4.75 (5.66)   | 7.53          | 11.90 (15.60) | 15.90 (18.10)  | 19.20 (25.20)  |
|               |                      |            | Output Torque Nm | 11900 (14900) | 18800 (22400) | 31200         | 48100 (62900) | 65500 (74400)  | 80800 (106000) |
|               |                      | Thermal    | Input Power kW   | 4.85          | 6.71          | 8.87          | 12.70         | 18.00          | 22.50          |
|               |                      |            | Output Torque Nm | 18500         | 26600         | 36700         | 51500         | 74100          | 94700          |
| 200.          | 1.25                 | Mechanical | Input Power kW   | 2.40 (3.05)   | 3.41          | 6.03          | 8.69          | 10.20          | 14.50 (17.30)  |
|               |                      |            | Output Torque Nm | 11900 (15200) | 17500         | 31400         | 45800         | 55400          | 80800 (96300)  |
|               |                      | Thermal    | Input Power kW   | 4.87          | 7.45          | 8.01          | 13.60         | 19.50          | 24.00          |
|               |                      |            | Output Torque Nm | 24300         | 38400         | 41800         | 71600         | 106000         | 134000         |
| 225.          | 1.11                 | Mechanical | Input Power kW   | 2.26 (2.97)   | 3.33 (3.96)   | 5.25          | 8.29 (11.00)  | 11.00 (12.40)  | 13.20 (17.20)  |
|               |                      |            | Output Torque Nm | 11900 (15700) | 18800 (22400) | 31000         | 48100 (64100) | 65500 (73900)  | 80800 (106000) |
|               |                      | Thermal    | Input Power kW   | 4.34          | 5.89          | 7.76          | 11.00         | 15.30          | 18.90          |
|               |                      |            | Output Torque Nm | 23000         | 33400         | 45900         | 63800         | 91600          | 116000         |
| 250.          | 1.00                 | Mechanical | Input Power kW   | 2.04 (2.76)   | 3.03 (3.41)   | 5.44          | 7.61 (8.51)   | 10.10 (13.30)  | 12.00 (18.10)  |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (21200) | 33800         | 48100 (53800) | 65500 (86600)  | 80800 (122000) |
|               |                      | Thermal    | Input Power kW   | 4.55          | 6.08          | 7.99          | 10.40         | 14.20          | 18.10          |
|               |                      |            | Output Torque Nm | 26700         | 37800         | 49700         | 65900         | 92700          | 122000         |
| 300.          | 0.83                 | Mechanical | Input Power kW   | 1.77 (2.36)   | 2.65 (3.15)   | 4.16          | 6.58 (8.69)   | 8.63 (9.71)    | 10.30 (13.40)  |
|               |                      |            | Output Torque Nm | 11900 (15900) | 18800 (22400) | 30900         | 48100 (63600) | 65500 (73700)  | 80800 (105000) |
|               |                      | Thermal    | Input Power kW   | 4.04          | 5.48          | 7.19          | 10.10         | 14.00          | 17.10          |
|               |                      |            | Output Torque Nm | 27300         | 39000         | 53600         | 73800         | 106000         | 134000         |
| 350.          | 0.71                 | Mechanical | Input Power kW   | 1.71 (1.82)   | 2.59 (2.97)   | 4.71 (4.74)   | 6.29 (7.03)   | 8.78 (11.90)   | 9.96 (14.20)   |
|               |                      |            | Output Torque Nm | 11900 (12700) | 18800 (21600) | 34200 (34400) | 48100 (53800) | 65500 (89200)  | 80800 (116000) |
|               |                      | Thermal    | Input Power kW   | 2.90          | 3.87          | 4.66          | 6.71          | 8.56           | 12.10          |
|               |                      |            | Output Torque Nm | 20300         | 28200         | 33900         | 51400         | 63800          | 97900          |
| 375.          | 0.67                 | Mechanical | Input Power kW   | 1.38 (1.86)   | 2.15 (2.38)   | 3.82          | 5.13 (5.74)   | 6.98 (9.48)    | 8.34 (12.30)   |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20800) | 33600         | 48100 (53900) | 65500 (89000)  | 80800 (120000) |
|               |                      | Thermal    | Input Power kW   | 3.74          | 5.53          | 6.03          | 9.12          | 12.50          | 15.80          |
|               |                      |            | Output Torque Nm | 32700         | 48700         | 53100         | 85800         | 117000         | 153000         |
| 400.          | 0.63                 | Mechanical | Input Power kW   | 1.33 (1.68)   | 1.80          | 3.22          | 4.47          | 5.37           | 7.77 (9.15)    |
|               |                      |            | Output Torque Nm | 11900 (15100) | 17100         | 31100         | 44500         | 54800          | 80800 (95200)  |
|               |                      | Thermal    | Input Power kW   | 3.13          | 4.48          | 4.48          | 7.82          | 12.10          | 17.20          |
|               |                      |            | Output Torque Nm | 28200         | 42800         | 43300         | 78100         | 124000         | 179000         |
| 450.          | 0.56                 | Mechanical | Input Power kW   | 1.20 (1.62)   | 1.88 (2.23)   | 2.93          | 4.44 (5.74)   | 6.00 (6.71)    | 7.17 (9.27)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30800         | 48100 (62200) | 65500 (73200)  | 80800 (105000) |
|               |                      | Thermal    | Input Power kW   | 3.66          | 4.99          | 6.03          | 8.88          | 12.30          | 15.00          |
|               |                      |            | Output Torque Nm | 36700         | 50300         | 63600         | 96500         | 135000         | 170000         |
| 500.          | 0.50                 | Mechanical | Input Power kW   | 1.14 (1.54)   | 1.65 (1.80)   | 2.92          | 4.04 (4.47)   | 5.40 (7.47)    | 6.46 (9.43)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20500) | 33400         | 48100 (53200) | 65500 (90700)  | 80800 (118000) |
|               |                      | Thermal    | Input Power kW   | 3.13          | 4.48          | 4.48          | 7.82          | 11.50          | 14.50          |
|               |                      |            | Output Torque Nm | 33000         | 51400         | 51400         | 93400         | 140000         | 182000         |
| 600.          | 0.42                 | Mechanical | Input Power kW   | 1.12 (1.51)   | 1.66 (1.98)   | 2.77          | 3.94 (4.44)   | 5.45 (8.59)    | 6.32 (9.99)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 33000         | 48100 (54300) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.51          | 3.28          | 4.44          | 6.35          | 7.44           | 9.45           |
|               |                      |            | Output Torque Nm | 27100         | 37300         | 53100         | 77900         | 89600          | 121000         |
| 625.          | 0.40                 | Mechanical | Input Power kW   | 0.96 (1.29)   | 1.42 (1.55)   | 2.52          | 3.49 (3.83)   | 4.54 (6.36)    | 5.30 (7.67)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20400) | 33400         | 48100 (52800) | 65500 (92000)  | 80800 (117000) |
|               |                      | Thermal    | Input Power kW   | 2.60          | 3.85          | 3.85          | 6.59          | 9.66           | 13.80          |
|               |                      |            | Output Torque Nm | 32800         | 51200         | 51100         | 91400         | 140000         | 211000         |
| 700.          | 0.36                 | Mechanical | Input Power kW   | 0.99 (1.09)   | 1.47 (1.75)   | 2.68 (2.84)   | 3.55 (3.94)   | 4.90 (7.44)    | 5.48 (7.77)    |
|               |                      |            | Output Torque Nm | 11900 (13200) | 18800 (22400) | 34200 (36200) | 48100 (53400) | 65500 (99700)  | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 2.47          | 3.23          | 3.84          | 5.43          | 6.73           | 9.39           |
|               |                      |            | Output Torque Nm | 30100         | 41500         | 49100         | 73900         | 90200          | 139000         |
| 750.          | 0.33                 | Mechanical | Input Power kW   | 0.83 (1.12)   | 1.25 (1.49)   | 1.93          | 3.03 (3.83)   | 3.91 (4.34)    | 4.56 (5.84)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30600         | 48100 (61000) | 65500 (72800)  | 80800 (104000) |
|               |                      | Thermal    | Input Power kW   | 2.60          | 3.85          | 3.85          | 6.59          | 9.66           | 13.20          |
|               |                      |            | Output Torque Nm | 37600         | 58500         | 61200         | 105000        | 163000         | 235000         |
| 800.          | 0.31                 | Mechanical | Input Power kW   | 0.82 (1.05)   | 1.18 (1.24)   | 2.06          | 2.72 (2.86)   | 3.43           | 4.12           |
|               |                      |            | Output Torque Nm | 11900 (15400) | 18800 (19700) | 33200         | 48100 (50500) | 62200          | 77300          |
|               |                      | Thermal    | Input Power kW   | 2.83          | 3.78          | 4.48          | 6.45          | 8.26           | 12.70          |
|               |                      |            | Output Torque Nm | 42000         | 60800         | 72600         | 115000        | 151000         | 241000         |
| Efficiency %  |                      |            | 51               | 51            | 51            | 56            | 60            | 63             |                |

Bracketed figures indicate a unit with two keys at 90° in the wheel hub only

# SERIES A

## RATINGS AT 250 REV/MIN INPUT (Mineral Oil)

9611

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT  |               |               |               |                |                |
|---------------|----------------------|------------|------------------|---------------|---------------|---------------|---------------|----------------|----------------|
|               |                      |            |                  | 10            | 12            | 14            | 17            | 20             | 24             |
| 900.          | 0.28                 | Mechanical | Input Power kW   | 0.76 (1.03)   | 1.19 (1.42)   | 1.97          | 2.69 (3.02)   | 3.84 (6.05)    | 4.45 (7.03)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32900         | 48100 (54100) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.29          | 3.02          | 4.07          | 5.66          | 6.60           | 8.34           |
|               |                      |            | Output Torque Nm | 36400         | 48000         | 68200         | 102000        | 113000         | 152000         |
| 1000.         | 0.25                 | Mechanical | Input Power kW   | 0.67 (0.90)   | 1.01 (1.08)   | 1.78          | 2.42 (2.61)   | 3.11 (4.45)    | 3.66 (5.20)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (20100) | 33200         | 48100 (51900) | 65500 (94100)  | 80800 (115000) |
|               |                      | Thermal    | Input Power kW   | 1.86          | 2.70          | 2.70          | 4.67          | 6.53           | 9.39           |
|               |                      |            | Output Torque Nm | 33700         | 50700         | 50600         | 93500         | 138000         | 209000         |
| 1200.         | 0.21                 | Mechanical | Input Power kW   | 0.64 (0.86)   | 0.93 (1.10)   | 1.53          | 2.14 (2.39)   | 3.00 (4.73)    | 3.47 (5.49)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32800         | 48100 (53900) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 2.23          | 2.89          | 3.89          | 5.38          | 6.14           | 7.75           |
|               |                      |            | Output Torque Nm | 42400         | 59500         | 84500         | 122000        | 135000         | 181000         |
| 1250.         | 0.20                 | Mechanical | Input Power kW   | 0.58 (0.77)   | 0.86 (0.91)   | 1.50          | 2.04 (2.18)   | 2.64 (3.77)    | 3.10 (4.37)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (19900) | 33100         | 48100 (51500) | 65500 (93900)  | 80800 (114000) |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.55           | 7.84           |
|               |                      |            | Output Torque Nm | 31700         | 51000         | 51000         | 91200         | 138000         | 206000         |
| 1400.         | 0.18                 | Mechanical | Input Power kW   | 0.57 (0.65)   | 0.82 (0.98)   | 1.50 (1.65)   | 1.93 (2.13)   | 2.71 (4.26)    | 3.01 (4.23)    |
|               |                      |            | Output Torque Nm | 11900 (13700) | 18800 (22400) | 34200 (37800) | 48100 (53100) | 65500 (104000) | 80800 (114000) |
|               |                      | Thermal    | Input Power kW   | 2.20          | 2.87          | 3.37          | 4.60          | 5.58           | 7.76           |
|               |                      |            | Output Torque Nm | 47500         | 66700         | 77800         | 116000        | 136000         | 210000         |
| 1500.         | 0.17                 | Mechanical | Input Power kW   | 0.50 (0.68)   | 0.75 (0.89)   | 1.15          | 1.77 (2.18)   | 2.28 (2.51)    | 2.67 (3.39)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30400         | 48100 (59300) | 65500 (72200)  | 80800 (103000) |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.55           | 7.84           |
|               |                      |            | Output Torque Nm | 36300         | 58200         | 60900         | 105000        | 161000         | 239000         |
| 1600.         | 0.16                 | Mechanical | Input Power kW   | 0.48 (0.62)   | 0.73 (0.77)   | 1.27          | 1.64 (1.70)   | 1.97           | 2.32           |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18800 (19600) | 33000         | 48100 (50100) | 61700          | 76600          |
|               |                      | Thermal    | Input Power kW   | 1.86          | 2.70          | 2.70          | 4.67          | 6.53           | 9.39           |
|               |                      |            | Output Torque Nm | 47100         | 70500         | 70900         | 139000        | 207000         | 314000         |
| 1750.         | 0.14                 | Mechanical | Input Power kW   | 0.45 (0.61)   | 0.71 (0.75)   | 1.24          | 1.60 (1.69)   | 2.07 (2.94)    | 2.42 (3.38)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (19700) | 33000         | 48100 (51000) | 65500 (93500)  | 80800 (113000) |
|               |                      | Thermal    | Input Power kW   | 1.14          | 1.59          | 1.59          | 2.81          | 4.65           | 6.50           |
|               |                      |            | Output Torque Nm | 30600         | 42600         | 42600         | 85100         | 149000         | 219000         |
| 1800.         | 0.14                 | Mechanical | Input Power kW   | 0.44 (0.59)   | 0.67 (0.79)   | 1.02          | 1.55 (1.90)   | 2.01 (2.21)    | 2.35 (2.98)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 30300         | 48100 (58900) | 65500 (72000)  | 80800 (103000) |
|               |                      | Thermal    | Input Power kW   | 1.29          | 1.91          | 1.91          | 3.19          | 4.88           | 6.84           |
|               |                      |            | Output Torque Nm | 35700         | 54700         | 57200         | 99800         | 160000         | 237000         |
| 2000.         | 0.13                 | Mechanical | Input Power kW   | 0.42 (0.53)   | 0.62 (0.65)   | 1.07          | 1.38 (1.44)   | 1.67           | 1.97           |
|               |                      |            | Output Torque Nm | 11900 (15300) | 18800 (19600) | 32900         | 48100 (50000) | 61600          | 76400          |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.55           | 7.84           |
|               |                      |            | Output Torque Nm | 44300         | 70800         | 71200         | 135000        | 207000         | 309000         |
| 2100.         | 0.12                 | Mechanical | Input Power kW   | 0.42 (0.49)   | 0.63 (0.75)   | 1.15 (1.29)   | 1.47 (1.61)   | 1.99 (3.13)    | 2.17 (3.04)    |
|               |                      |            | Output Torque Nm | 11900 (14000) | 18800 (22400) | 34200 (38500) | 48100 (52900) | 65500 (104000) | 80800 (114000) |
|               |                      | Thermal    | Input Power kW   | 2.18          | 2.84          | 3.32          | 4.46          | 5.27           | 7.21           |
|               |                      |            | Output Torque Nm | 63900         | 86400         | 99900         | 148000        | 175000         | 271000         |
| 2400.         | 0.10                 | Mechanical | Input Power kW   | 0.38 (0.51)   | 0.58 (0.69)   | 0.94          | 1.30 (1.44)   | 1.77 (2.78)    | 2.01 (3.16)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32600         | 48100 (53600) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 1.86          | 2.70          | 2.70          | 4.67          | 5.62           | 6.95           |
|               |                      |            | Output Torque Nm | 60100         | 89700         | 94700         | 176000        | 211000         | 284000         |
| 2500.         | 0.10                 | Mechanical | Input Power kW   | 0.37 (0.49)   | 0.55 (0.65)   | 0.97 (1.19)   | 1.24 (1.38)   | 1.14           | 1.60           |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 34200 (42200) | 48100 (53600) | 49700          | 73900          |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.55           | 7.84           |
|               |                      |            | Output Torque Nm | 50800         | 81200         | 81700         | 151000        | 248000         | 368000         |
| 2800.         | 0.09                 | Mechanical | Input Power kW   | 0.34 (0.40)   | 0.52 (0.61)   | 0.94 (1.07)   | 1.18 (1.29)   | 1.60 (2.51)    | 1.74 (2.43)    |
|               |                      |            | Output Torque Nm | 11900 (14200) | 18800 (22400) | 34200 (39100) | 48100 (52800) | 65500 (104000) | 80800 (113000) |
|               |                      | Thermal    | Input Power kW   | 1.86          | 2.70          | 2.70          | 4.30          | 5.12           | 7.01           |
|               |                      |            | Output Torque Nm | 68000         | 102000        | 100000        | 179000        | 213000         | 331000         |
| 3000.         | 0.08                 | Mechanical | Input Power kW   | 0.33 (0.44)   | 0.50 (0.59)   | 0.80          | 1.10 (1.22)   | 1.51 (2.38)    | 1.71 (2.70)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32600         | 48100 (53500) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.55           | 6.85           |
|               |                      |            | Output Torque Nm | 56400         | 89900         | 94900         | 171000        | 244000         | 328000         |
| 3500.         | 0.07                 | Mechanical | Input Power kW   | 0.29 (0.35)   | 0.44 (0.52)   | 0.80 (0.91)   | 1.00 (1.09)   | 1.37 (2.15)    | 1.48 (2.06)    |
|               |                      |            | Output Torque Nm | 11900 (14400) | 18800 (22400) | 34200 (39500) | 48100 (52700) | 65500 (104000) | 80800 (113000) |
|               |                      | Thermal    | Input Power kW   | 1.50          | 2.29          | 2.29          | 3.84          | 5.07           | 6.92           |
|               |                      |            | Output Torque Nm | 63800         | 102000        | 100000        | 189000        | 247000         | 384000         |
| 3600.         | 0.07                 | Mechanical | Input Power kW   | 0.29 (0.39)   | 0.44 (0.52)   | 0.71          | 0.97 (1.07)   | 1.34 (2.10)    | 1.52 (2.39)    |
|               |                      |            | Output Torque Nm | 11900 (16100) | 18800 (22400) | 32500         | 48100 (53500) | 65500 (104000) | 80800 (128000) |
|               |                      | Thermal    | Input Power kW   | 1.29          | 1.91          | 1.91          | 3.19          | 4.88           | 6.83           |
|               |                      |            | Output Torque Nm | 55200         | 84300         | 89100         | 162000        | 242000         | 370000         |
| 4200.         | 0.06                 | Mechanical | Input Power kW   | 0.26 (0.31)   | 0.39 (0.46)   | 0.71 (0.82)   | 0.88 (0.96)   | 1.22 (1.90)    | 1.31 (1.82)    |
|               |                      |            | Output Torque Nm | 11900 (14500) | 18800 (22400) | 34200 (39800) | 48100 (52600) | 65500 (104000) | 80800 (113000) |
|               |                      | Thermal    | Input Power kW   | 1.29          | 1.91          | 1.91          | 3.19          | 4.88           | 6.84           |
|               |                      |            | Output Torque Nm | 62500         | 95400         | 94000         | 179000        | 268000         | 430000         |
|               |                      |            | Efficiency %     | 29            | 30            | 30            | 34            | 33             | 38             |

DOUBLE REDUCTION

### REDUCER UNIT DIMENSIONS

| Designation | Type of Shaft & Keyway | Number of Reductions | Mounting Position     | Version              | Page No   |
|-------------|------------------------|----------------------|-----------------------|----------------------|-----------|
| CNU         | Metric                 | Single Reduction     | Underdriven           | Foot Mounted         | <b>47</b> |
| NU          | Imperial               | Single Reduction     | Underdriven           | Foot Mounted         | <b>48</b> |
| CNO         | Metric                 | Single Reduction     | Overdriven            | Foot Mounted         | <b>49</b> |
| NO          | Imperial               | Single Reduction     | Overdriven            | Foot Mounted         | <b>50</b> |
| CNV         | Metric                 | Single Reduction     | Vertical Output Shaft | Flange Mounted       | <b>51</b> |
| NV          | Imperial               | Single Reduction     | Vertical Output Shaft | Flange Mounted       | <b>52</b> |
| CNUS        | Metric                 | Single Reduction     | Underdriven           | Shaft Mounted        | <b>53</b> |
| CNVS        | Metric                 | Single Reduction     | Vertical Output Shaft | Flange/Shaft Mounted | <b>54</b> |
| VHDST       | Metric & Imperial      | Single Reduction     | Vertical Output Shaft | Heavy Duty Stirrer   | <b>55</b> |
| CNVCT       | Metric                 | Single Reduction     | Vertical Output Shaft | Cooling Tower        | <b>56</b> |
| CNUD        | Metric                 | Double Reducion      | Underdriven           | Foot Mounted         | <b>57</b> |
| NUD         | Imperial               | Double Reducion      | Underdriven           | Foot Mounted         | <b>58</b> |
| CNOD        | Metric                 | Double Reducion      | Overdriven            | Foot Mounted         | <b>59</b> |
| NOD         | Imperial               | Double Reducion      | Overdriven            | Foot Mounted         | <b>60</b> |
| CNVD        | Metric                 | Double Reducion      | Vertical Output Shaft | Flange Mounted       | <b>61</b> |
| NVD         | Imperial               | Double Reducion      | Vertical Output Shaft | Flange Mounted       | <b>62</b> |

### MOTORISED UNIT DIMENSIONS

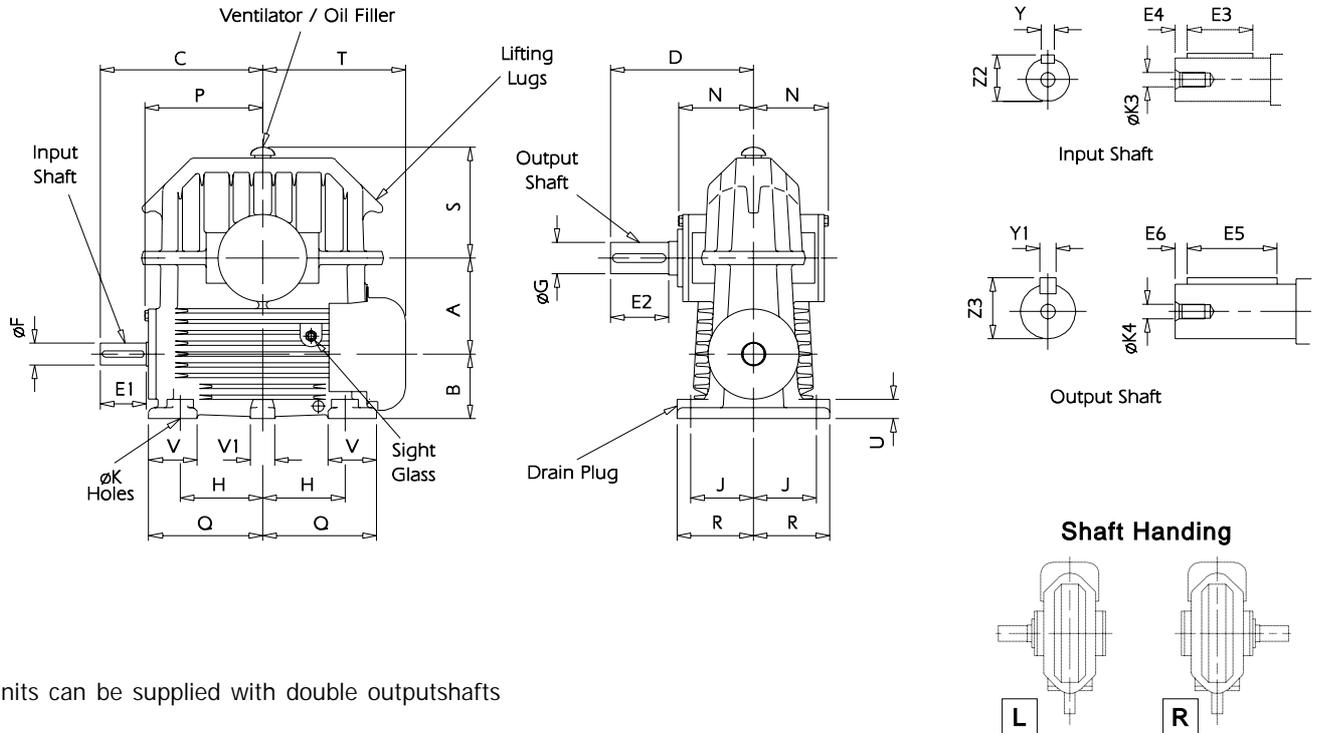
| Number of Reductions | Page No |
|----------------------|---------|
| Single Reduction     | 85      |
| Triple Reduction     | 86      |

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9610

CN U  - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | B   | C   | D   | E1  | E2  | E3  | E4 | E5  | E6   | øF                 | øG                 |
|------|-------|-----|-----|-----|-----|-----|-----|----|-----|------|--------------------|--------------------|
| 10   | 254.0 | 171 | 425 | 375 | 107 | 152 | 94  | 13 | 118 | 16   | 55.030<br>55.011   | 85.035<br>85.013   |
| 12   | 304.8 | 190 | 495 | 413 | 121 | 171 | 92  | 14 | 135 | 17.5 | 60.030<br>60.011   | 95.035<br>95.013   |
| 14   | 355.6 | 216 | 571 | 483 | 137 | 191 | 105 | 15 | 148 | 21   | 75.030<br>75.011   | 120.035<br>120.013 |
| 17   | 431.8 | 254 | 698 | 546 | 183 | 203 | 118 | 16 | 144 | 23   | 80.030<br>80.011   | 140.040<br>140.015 |
| 20   | 508.0 | 292 | 813 | 610 | 210 | 241 | 132 | 19 | 180 | 25   | 100.035<br>100.013 | 170.040<br>170.015 |
| 24   | 609.6 | 330 | 940 | 711 | 236 | 355 | 152 | 19 | 235 | 27.5 | 110.035<br>110.013 | 190.046<br>190.017 |

| SIZE | H   | J   | øK            | øK3           | øK4      | N   | P   | Q   | R   | S   | T   | U  |
|------|-----|-----|---------------|---------------|----------|-----|-----|-----|-----|-----|-----|----|
| 10   | 216 | 165 | 32<br>4 Holes | M20 x 43 Deep | M24 x 50 | 197 | 310 | 298 | 200 | 294 | 375 | 51 |
| 12   | 260 | 184 | 35<br>4 Holes | M20 x 43 Deep | M24 x 50 | 213 | 366 | 356 | 222 | 348 | 438 | 57 |
| 14   | 298 | 216 | 41<br>4 Holes | M20 x 43 Deep | M30 x 63 | 254 | 425 | 413 | 260 | 399 | 515 | 63 |
| 17   | 381 | 254 | 41<br>6 Holes | M24 x 52 Deep | M30 x 63 | 300 | 505 | 502 | 298 | 477 | 629 | 76 |
| 20   | 444 | 292 | 48<br>6 Holes | M24 x 52 Deep | M36 x 74 | 317 | 594 | 584 | 356 | 554 | 749 | 89 |
| 24   | 546 | 317 | 41<br>6 Holes | M30 x 63 Deep | M36 x 74 | 340 | 695 | 686 | 368 | 670 | 876 | 38 |

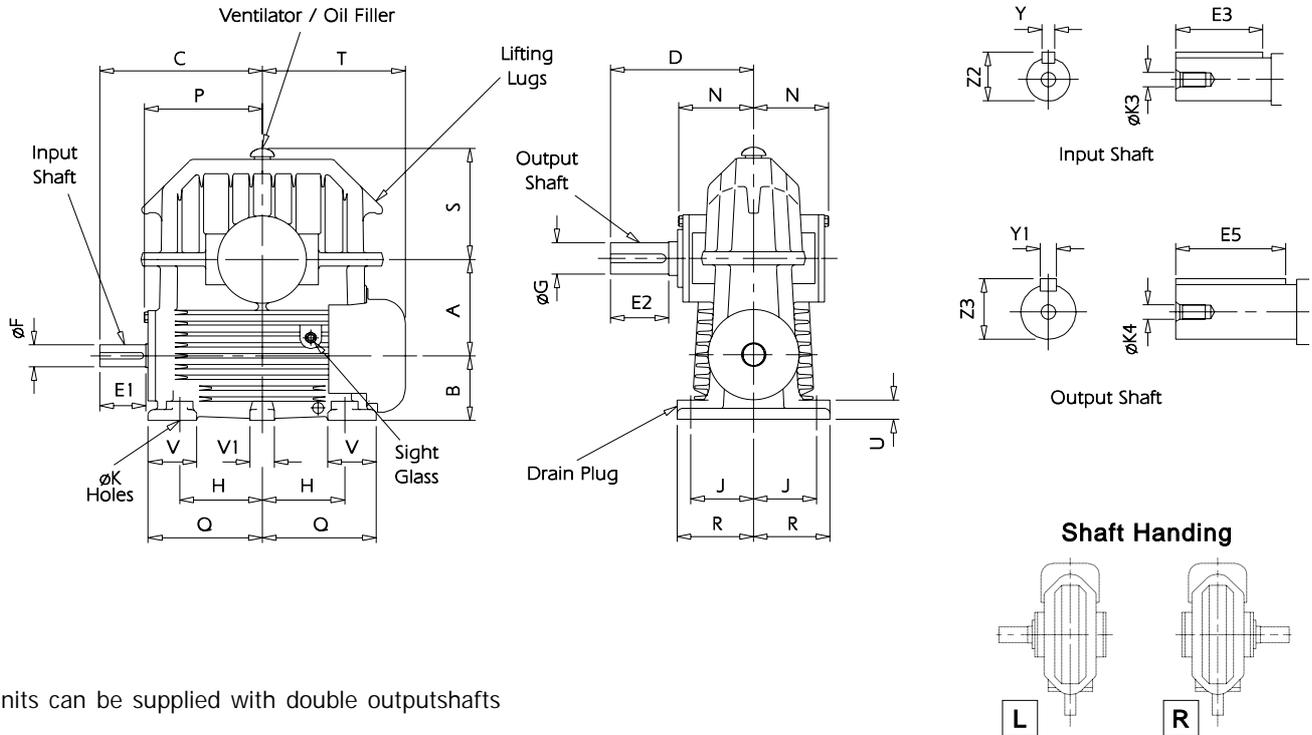
| SIZE | V   | V1  | Y      | Y1     | Z2     | Z3      |
|------|-----|-----|--------|--------|--------|---------|
| 10   | 127 | 63  | 16.000 | 22.000 | 59.00  | 94.500  |
|      |     |     | 15.957 | 21.948 | 58.71  | 94.148  |
| 12   | 152 | 76  | 18.000 | 25.000 | 64.00  | 105.500 |
|      |     |     | 17.957 | 24.948 | 63.69  | 105.148 |
| 14   | 178 | 89  | 20.000 | 32.000 | 79.50  | 134.000 |
|      |     |     | 19.948 | 31.938 | 79.19  | 133.638 |
| 17   | 190 | 127 | 22.000 | 36.000 | 85.00  | 155.500 |
|      |     |     | 21.948 | 35.938 | 84.69  | 155.138 |
| 20   | 229 | 152 | 28.000 | 40.000 | 106.00 | 187.500 |
|      |     |     | 27.948 | 39.938 | 105.69 | 187.138 |
| 24   | 229 | 152 | 28.000 | 45.000 | 116.00 | 210.000 |
|      |     |     | 27.948 | 44.938 | 115.69 | 209.638 |

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**N** **U**  - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | B    | C     | D     | E1   | E2   | E3   | E5    | $\phi F$ | $\phi G$ |
|------|----|------|-------|-------|------|------|------|-------|----------|----------|
| 10   | 10 | 6.75 | 16.75 | 14.75 | 4.21 | 6.00 | 3.19 | 5.06  | 2.2500   | 3.2500   |
|      |    |      |       |       |      |      |      |       | 2.2493   | 3.2491   |
| 12   | 12 | 7.50 | 19.50 | 16.25 | 4.76 | 6.75 | 3.19 | 5.75  | 2.5000   | 3.7500   |
|      |    |      |       |       |      |      |      |       | 2.4993   | 3.7491   |
| 14   | 14 | 8.50 | 22.50 | 19.00 | 5.39 | 7.50 | 5.38 | 7.63  | 3.0000   | 4.5000   |
|      |    |      |       |       |      |      |      |       | 2.9993   | 4.4991   |
| 17   | 17 | 10.0 | 27.50 | 21.50 | 7.20 | 8.00 | 5.56 | 8.00  | 3.2500   | 5.5000   |
|      |    |      |       |       |      |      |      |       | 3.2491   | 5.4990   |
| 20   | 20 | 11.5 | 32.00 | 24.00 | 8.27 | 9.50 | 6.50 | 9.50  | 4.0000   | 6.5000   |
|      |    |      |       |       |      |      |      |       | 3.9991   | 6.4990   |
| 24   | 24 | 13.0 | 37.00 | 28.00 | 9.29 | 14.0 | 7.38 | 12.50 | 4.5000   | 7.5000   |
|      |    |      |       |       |      |      |      |       | 4.4991   | 7.4988   |

| SIZE | H     | J     | $\phi K$         | $\phi K3$     | $\phi K4$ | N     | P     | Q     | R     | S     | T     | U    |
|------|-------|-------|------------------|---------------|-----------|-------|-------|-------|-------|-------|-------|------|
| 10   | 8.50  | 6.50  | 1.250<br>4 Holes | M20 x 43 Deep | M24 x 50  | 7.75  | 12.19 | 11.75 | 7.88  | 11.56 | 14.88 | 2.00 |
| 12   | 10.25 | 7.25  | 1.375<br>4 Holes | M20 x 43 Deep | M24 x 50  | 8.38  | 14.39 | 14.00 | 8.75  | 13.69 | 17.38 | 2.25 |
| 14   | 11.75 | 8.50  | 1.625<br>4 Holes | M20 x 43 Deep | M30 x 63  | 10.0  | 16.75 | 16.25 | 10.25 | 15.69 | 20.50 | 2.50 |
| 17   | 15.00 | 10.00 | 1.625<br>6 Holes | M24 x 52 Deep | M30 x 63  | 11.81 | 19.89 | 19.75 | 11.75 | 19.25 | 24.75 | 3.00 |
| 20   | 17.50 | 11.50 | 1.875<br>6 Holes | M24 x 52 Deep | M36 x 74  | 12.50 | 23.37 | 23.00 | 14.00 | 22.31 | 29.50 | 3.50 |
| 24   | 21.50 | 12.50 | 1.625<br>6 Holes | M30 x 63 Deep | M36 x 74  | 13.38 | 27.38 | 27.00 | 14.50 | 26.00 | 34.50 | 1.50 |

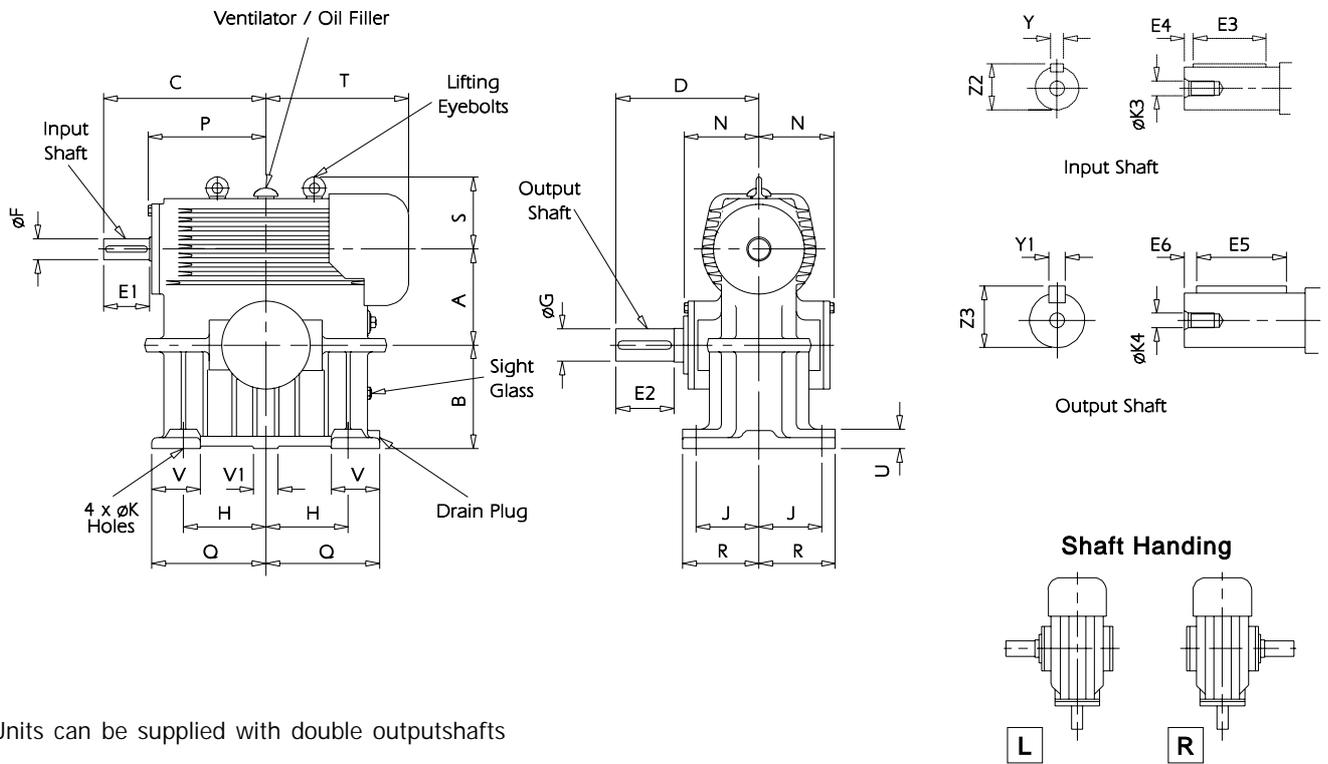
| SIZE | V   | V1  | Y     | Y1    | Z2    | Z3    |
|------|-----|-----|-------|-------|-------|-------|
| 10   | 5.0 | 2.5 | 0.627 | 0.877 | 2.431 | 3.509 |
|      |     |     | 0.625 | 0.875 | 2.422 | 3.499 |
| 12   | 6.0 | 3.0 | 0.627 | 1.003 | 2.681 | 4.063 |
|      |     |     | 0.625 | 1.000 | 2.672 | 4.053 |
| 14   | 7.0 | 3.5 | 0.752 | 1.253 | 3.203 | 4.860 |
|      |     |     | 0.750 | 1.250 | 3.194 | 4.850 |
| 17   | 7.5 | 5.0 | 0.877 | 1.503 | 3.506 | 5.904 |
|      |     |     | 0.875 | 1.500 | 3.498 | 5.894 |
| 20   | 9.0 | 6.0 | 1.002 | 1.753 | 4.311 | 7.013 |
|      |     |     | 1.000 | 1.750 | 4.302 | 7.003 |
| 24   | 9.0 | 6.0 | 1.253 | 2.003 | 4.860 | 8.060 |
|      |     |     | 1.250 | 2.000 | 4.850 | 8.050 |

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9610

CN O  - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | B   | C   | D   | E1  | E2  | E3  | E4 | E5  | E6   | øF     | øG      |
|------|-------|-----|-----|-----|-----|-----|-----|----|-----|------|--------|---------|
| 10   | 254.0 | 273 | 425 | 375 | 107 | 152 | 94  | 13 | 118 | 16   | 55.030 | 85.035  |
|      |       |     |     |     |     |     |     |    |     |      | 55.011 | 85.013  |
| 12   | 304.8 | 330 | 495 | 413 | 121 | 171 | 92  | 14 | 135 | 17.5 | 60.030 | 95.035  |
|      |       |     |     |     |     |     |     |    |     |      | 60.011 | 95.013  |
| 14   | 355.6 | 381 | 571 | 483 | 137 | 191 | 105 | 15 | 148 | 21   | 75.030 | 120.035 |
|      |       |     |     |     |     |     |     |    |     |      | 75.011 | 120.013 |

| SIZE | H   | J   | øK            | øK3           | øK4      | N   | P   | Q   | R   | S   | T   | U  |
|------|-----|-----|---------------|---------------|----------|-----|-----|-----|-----|-----|-----|----|
| 10   | 216 | 165 | 32<br>4 Holes | M20 x 43 Deep | M24 x 50 | 197 | 310 | 298 | 200 | 182 | 384 | 51 |
| 12   | 260 | 184 | 35<br>4 Holes | M20 x 43 Deep | M24 x 50 | 213 | 366 | 356 | 222 | 237 | 448 | 57 |
| 14   | 298 | 216 | 41<br>4 Holes | M20 x 43 Deep | M30 x 63 | 254 | 425 | 413 | 260 | 278 | 524 | 63 |

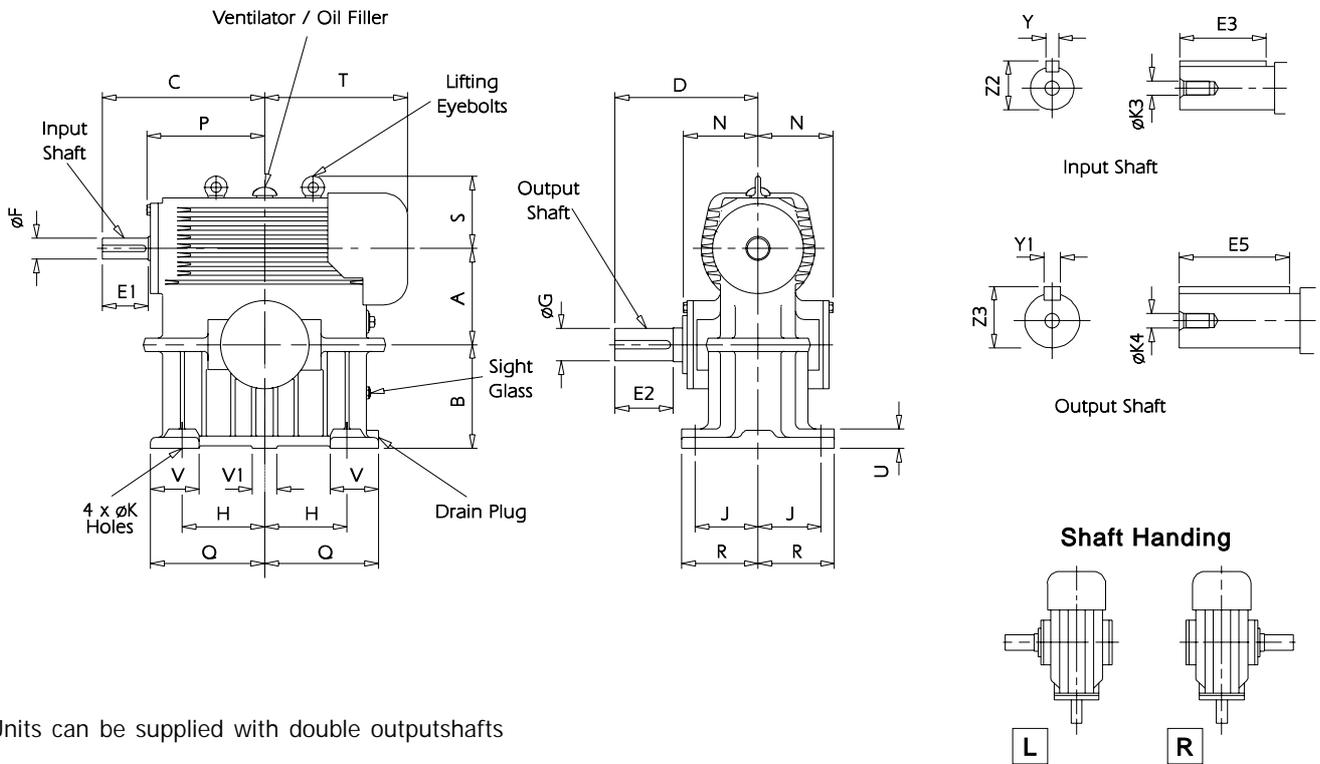
| SIZE | V   | V1 | Y      | Y1     | Z2    | Z3      |
|------|-----|----|--------|--------|-------|---------|
| 10   | 127 | 63 | 16.000 | 22.000 | 59.00 | 94.500  |
|      |     |    | 15.957 | 21.948 | 58.71 | 94.148  |
| 12   | 152 | 76 | 18.000 | 25.000 | 64.00 | 105.500 |
|      |     |    | 17.957 | 24.948 | 63.69 | 105.148 |
| 14   | 178 | 89 | 20.000 | 32.000 | 79.50 | 134.000 |
|      |     |    | 19.948 | 31.938 | 79.19 | 133.638 |

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**N** **O**  - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | B     | C     | D     | E1   | E2   | E3   | E5   | ø F    | ø G    |
|------|----|-------|-------|-------|------|------|------|------|--------|--------|
| 10   | 10 | 10.75 | 16.75 | 14.75 | 4.21 | 6.00 | 3.19 | 5.06 | 2.2500 | 3.2500 |
|      |    |       |       |       |      |      |      |      | 2.2493 | 3.2491 |
| 12   | 12 | 13.00 | 19.50 | 16.25 | 4.76 | 6.75 | 3.19 | 5.75 | 2.5000 | 3.7500 |
|      |    |       |       |       |      |      |      |      | 2.4993 | 3.7491 |
| 14   | 14 | 15.00 | 22.50 | 19.00 | 5.39 | 7.50 | 5.38 | 7.63 | 3.0000 | 4.5000 |
|      |    |       |       |       |      |      |      |      | 2.9993 | 4.4991 |

| SIZE | H     | J    | ø K              | ø K3          | ø K4     | N    | P     | Q     | R     | S     | T     | U    |
|------|-------|------|------------------|---------------|----------|------|-------|-------|-------|-------|-------|------|
| 10   | 8.50  | 6.50 | 1.250<br>4 Holes | M20 x 43 Deep | M24 x 50 | 7.75 | 12.19 | 11.75 | 7.88  | 7.14  | 15.13 | 2.00 |
| 12   | 10.25 | 7.25 | 1.375<br>4 Holes | M20 x 43 Deep | M24 x 50 | 8.38 | 14.39 | 14.00 | 8.75  | 9.33  | 17.63 | 2.25 |
| 14   | 11.75 | 8.50 | 1.625<br>4 Holes | M20 x 43 Deep | M30 x 63 | 10.0 | 16.75 | 16.25 | 10.25 | 10.93 | 20.63 | 2.50 |

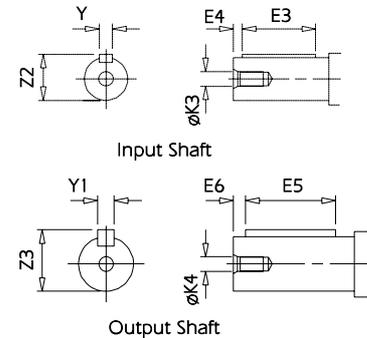
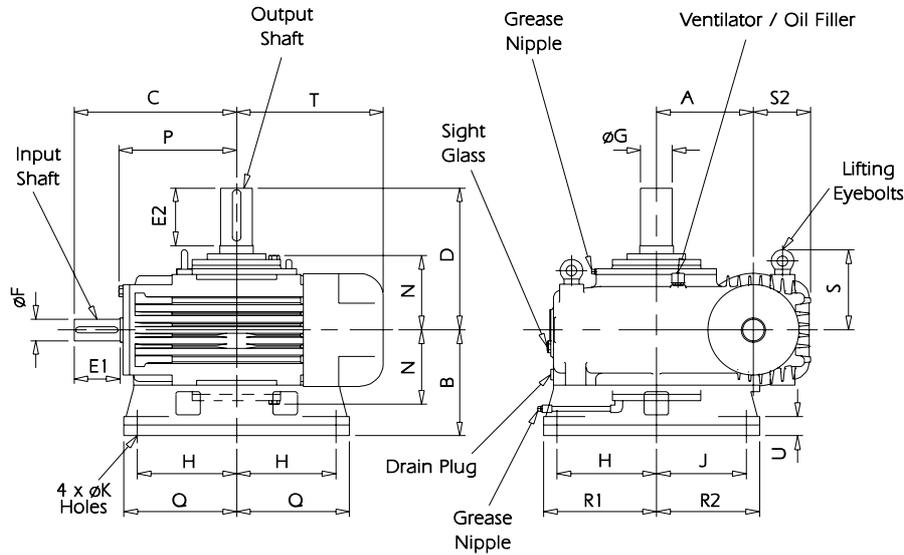
| SIZE | V   | V1  | Y     | Y1    | Z2    | Z3    |
|------|-----|-----|-------|-------|-------|-------|
| 10   | 5.0 | 2.5 | 0.627 | 0.877 | 2.431 | 3.509 |
|      |     |     | 0.625 | 0.875 | 2.422 | 3.499 |
| 12   | 6.0 | 3.0 | 0.627 | 1.003 | 2.681 | 4.063 |
|      |     |     | 0.625 | 1.000 | 2.672 | 4.053 |
| 14   | 7.0 | 3.5 | 0.752 | 1.253 | 3.203 | 4.860 |
|      |     |     | 0.750 | 1.250 | 3.194 | 4.850 |

# SERIES A

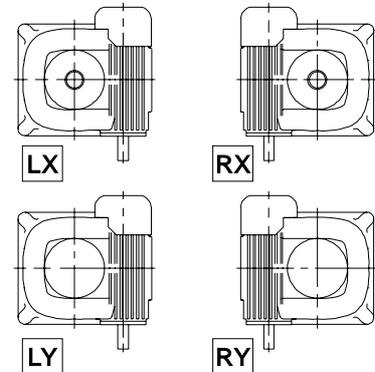
## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**CN** **V**  - FLANGEMOUNTED



### Shaft Handling



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | B   | C   | D   | E1  | E2  | E3  | E4 | E5  | E6   | øF                 | øG                 |
|------|-------|-----|-----|-----|-----|-----|-----|----|-----|------|--------------------|--------------------|
| 10   | 254.0 | 279 | 425 | 375 | 107 | 152 | 94  | 13 | 118 | 16   | 55.030<br>55.011   | 85.035<br>85.013   |
| 12   | 304.8 | 305 | 495 | 413 | 121 | 171 | 92  | 14 | 135 | 17.5 | 60.030<br>60.011   | 95.035<br>95.013   |
| 14   | 355.6 | 330 | 571 | 483 | 137 | 191 | 105 | 15 | 148 | 21   | 75.030<br>75.011   | 120.035<br>120.013 |
| 17   | 431.8 | 406 | 698 | 546 | 183 | 203 | 118 | 16 | 144 | 23   | 80.030<br>80.011   | 140.040<br>140.015 |
| 20   | 508.0 | 432 | 813 | 610 | 210 | 241 | 132 | 19 | 180 | 25   | 100.035<br>100.013 | 170.040<br>170.015 |

| SIZE | H   | J   | øK            | øK3           | øK4      | N   | P   | Q   | R1  | R2  | S   | S2  |
|------|-----|-----|---------------|---------------|----------|-----|-----|-----|-----|-----|-----|-----|
| 10   | 260 | 235 | 32<br>4 Holes | M20 x 43 Deep | M24 x 50 | 197 | 310 | 295 | 295 | 270 | 212 | 149 |
| 12   | 317 | 267 | 35<br>4 Holes | M20 x 43 Deep | M24 x 50 | 213 | 366 | 356 | 356 | 305 | 247 | 169 |
| 14   | 356 | 305 | 41<br>4 Holes | M20 x 43 Deep | M30 x 63 | 254 | 425 | 403 | 403 | 352 | 300 | 187 |
| 17   | 432 | 432 | 41<br>4 Holes | M24 x 52 Deep | M30 x 63 | 300 | 505 | 502 | 502 | 502 | -   | 254 |
| 20   | 521 | 521 | 41<br>4 Holes | M24 x 52 Deep | M36 x 74 | 317 | 594 | 597 | 597 | 597 | -   | 283 |

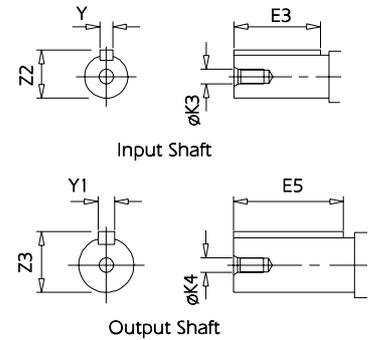
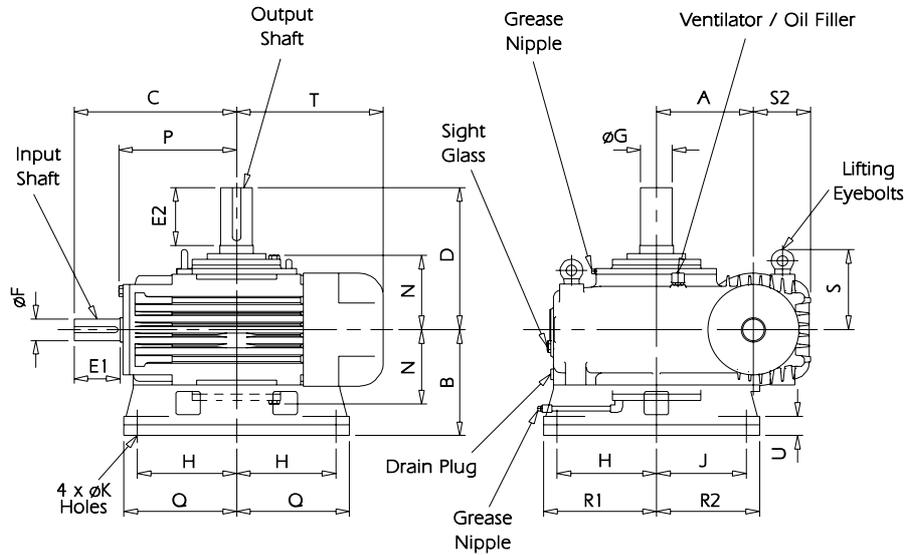
| SIZE | T   | U  | Y                | Y1               | Z2               | Z3                 |
|------|-----|----|------------------|------------------|------------------|--------------------|
| 10   | 384 | 51 | 16.000<br>15.957 | 22.000<br>21.948 | 59.00<br>58.71   | 94.500<br>94.148   |
| 12   | 450 | 57 | 18.000<br>17.957 | 25.000<br>24.948 | 64.00<br>63.69   | 105.500<br>105.148 |
| 14   | 526 | 63 | 20.000<br>19.948 | 32.000<br>31.938 | 79.50<br>79.19   | 134.000<br>133.638 |
| 17   | 629 | 76 | 22.000<br>21.948 | 36.000<br>35.938 | 85.00<br>84.69   | 155.500<br>155.138 |
| 20   | 749 | 89 | 28.000<br>27.948 | 40.000<br>39.938 | 106.00<br>105.69 | 187.500<br>187.138 |

# SERIES A

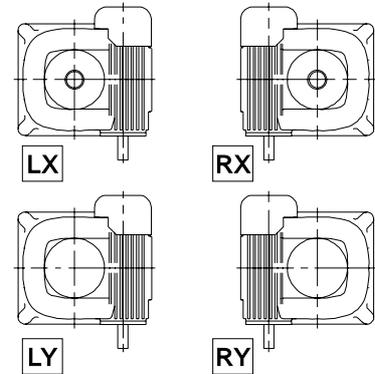
## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**N** **V**  - FLANGEMOUNTED



### Shaft Handling



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | B    | C     | D     | E1   | E2   | E3   | E5   | øF     | øG     |
|------|----|------|-------|-------|------|------|------|------|--------|--------|
| 10   | 10 | 11.0 | 16.75 | 14.75 | 4.21 | 6.00 | 3.19 | 5.06 | 2.2500 | 3.2500 |
|      |    |      |       |       |      |      |      |      | 2.2493 | 3.2491 |
| 12   | 12 | 12.0 | 19.50 | 16.25 | 4.76 | 6.75 | 3.19 | 5.75 | 2.5000 | 3.7500 |
|      |    |      |       |       |      |      |      |      | 2.4993 | 3.7491 |
| 14   | 14 | 13.0 | 22.50 | 19.00 | 5.39 | 7.50 | 5.38 | 7.63 | 3.0000 | 4.5000 |
|      |    |      |       |       |      |      |      |      | 2.9993 | 4.4991 |
| 17   | 17 | 16.0 | 27.50 | 21.50 | 7.20 | 8.00 | 5.56 | 8.00 | 3.2500 | 5.5000 |
|      |    |      |       |       |      |      |      |      | 3.2491 | 5.4990 |
| 20   | 20 | 17.0 | 32.00 | 24.00 | 8.27 | 9.50 | 6.50 | 9.50 | 4.0000 | 6.5000 |
|      |    |      |       |       |      |      |      |      | 3.9991 | 6.4990 |

| SIZE | H     | J     | øK               | øK3           | øK4      | N     | P     | Q     | R1    | R2    | S     | S2    |
|------|-------|-------|------------------|---------------|----------|-------|-------|-------|-------|-------|-------|-------|
| 10   | 10.25 | 9.25  | 1.250<br>4 Holes | M20 x 43 Deep | M24 x 50 | 7.75  | 12.19 | 11.63 | 11.63 | 10.63 | 8.33  | 5.88  |
| 12   | 12.50 | 10.50 | 1.375<br>4 Holes | M20 x 43 Deep | M24 x 50 | 8.38  | 14.39 | 14.00 | 14.00 | 12.00 | 9.70  | 6.63  |
| 14   | 14.00 | 12.00 | 1.625<br>4 Holes | M20 x 43 Deep | M30 x 63 | 10.0  | 16.75 | 15.88 | 15.88 | 13.88 | 11.80 | 7.38  |
| 17   | 17.00 | 17.00 | 1.625<br>4 Holes | M24 x 52 Deep | M30 x 63 | 11.81 | 19.89 | 19.75 | 19.75 | 19.75 | -     | 10.00 |
| 20   | 20.50 | 20.50 | 1.625<br>4 Holes | M24 x 52 Deep | M36 x 74 | 12.50 | 23.37 | 23.50 | 23.50 | 23.50 | -     | 11.13 |

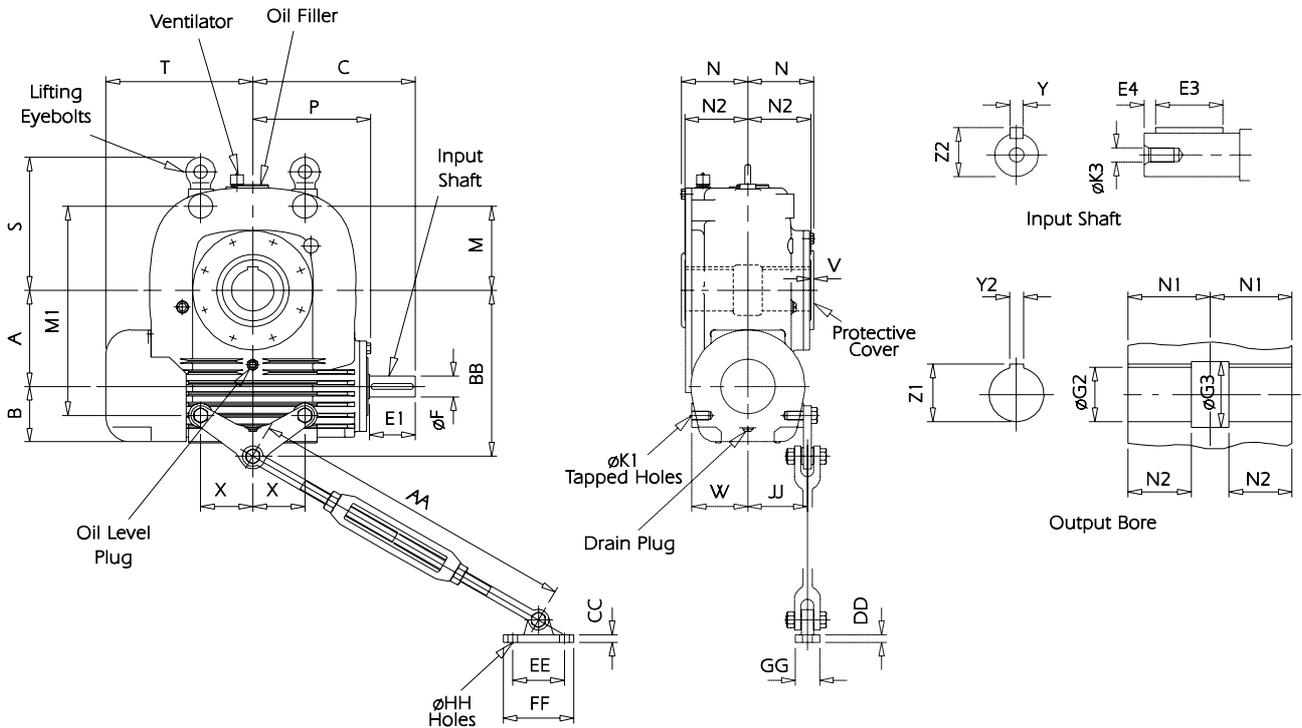
| SIZE | T     | U    | Y     | Y1    | Z2    | Z3    |
|------|-------|------|-------|-------|-------|-------|
| 10   | 15.13 | 2.00 | 0.627 | 0.877 | 2.431 | 3.509 |
|      |       |      | 0.625 | 0.875 | 2.422 | 3.499 |
| 12   | 17.69 | 2.25 | 0.627 | 1.003 | 2.681 | 4.063 |
|      |       |      | 0.625 | 1.000 | 2.672 | 4.053 |
| 14   | 20.69 | 2.50 | 0.752 | 1.253 | 3.203 | 4.860 |
|      |       |      | 0.750 | 1.250 | 3.194 | 4.850 |
| 17   | 24.75 | 3.00 | 0.877 | 1.503 | 3.506 | 5.904 |
|      |       |      | 0.875 | 1.500 | 3.498 | 5.894 |
| 20   | 29.50 | 3.50 | 1.002 | 1.753 | 4.311 | 7.013 |
|      |       |      | 1.000 | 1.750 | 4.302 | 7.003 |

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9810

**CN** **U** **S** - SHAFT MOUNTED



The torque arm must be mounted so that it is loaded in TENSION. The angle between torque arm and high speed shaft MUST NOT EXCEED 30°.

It is recommended that the torque arm is fitted on the side of the unit adjacent to the driven machine. Two torque arms must be fitted for reversing applications. Units must be locked axially when mounted in position.

| SIZE | A     | B   | C   | E1  | E3  | E4 | øF     | øG2     | øG3   | øK1      | øK3      | M   |
|------|-------|-----|-----|-----|-----|----|--------|---------|-------|----------|----------|-----|
| 10   | 254.0 | 150 | 425 | 107 | 94  | 13 | 55.030 | 110.071 | 133.3 | M24 x 43 | M20 x 43 | 222 |
|      |       |     |     |     |     |    | 55.011 | 110.035 |       |          |          |     |
| 12   | 304.8 | 168 | 495 | 121 | 92  | 14 | 60.030 | 130.083 | 152.0 | M24 x 43 | M20 x 43 | 260 |
|      |       |     |     |     |     |    | 60.011 | 130.043 |       |          |          |     |
| 14   | 355.6 | 187 | 571 | 137 | 105 | 15 | 75.030 | 160.084 | 187.0 | M30 x 55 | M20 x 43 | 295 |
|      |       |     |     |     |     |    | 75.011 | 160.043 |       |          |          |     |

| SIZE | M1  | N   | N1  | N2  | P   | S   | T   | V | W   | X   | Y      | Y2     |
|------|-----|-----|-----|-----|-----|-----|-----|---|-----|-----|--------|--------|
| 10   | 552 | 172 | 165 | 127 | 310 | 352 | 384 | 8 | 146 | 136 | 16.000 | 28.026 |
|      |     |     |     |     |     |     |     |   |     |     | 15.957 | 27.972 |
| 12   | 656 | 194 | 185 | 152 | 366 | 399 | 450 | 7 | 162 | 175 | 18.000 | 32.032 |
|      |     |     |     |     |     |     |     |   |     |     | 17.957 | 31.970 |
| 14   | 749 | 230 | 220 | 178 | 425 | 471 | 526 | 7 | 194 | 206 | 20.000 | 40.030 |
|      |     |     |     |     |     |     |     |   |     |     | 19.948 | 39.970 |

| SIZE | Z1    | Z2    | AA         | BB  | CC | DD | EE  | FF  | GG | HH | JJ  |
|------|-------|-------|------------|-----|----|----|-----|-----|----|----|-----|
| 10   | 116.6 | 59.00 | 864 - 1016 | 438 | 60 | 20 | 135 | 185 | 64 | 26 | 156 |
|      | 116.4 | 58.71 |            |     |    |    |     |     |    |    |     |
| 12   | 137.6 | 64.00 | 864 - 1016 | 508 | 60 | 20 | 135 | 185 | 64 | 26 | 172 |
|      | 137.4 | 63.69 |            |     |    |    |     |     |    |    |     |
| 14   | 169.7 | 79.50 | 864 - 1016 | 584 | 70 | 22 | 165 | 225 | 84 | 33 | 206 |
|      | 169.4 | 79.19 |            |     |    |    |     |     |    |    |     |

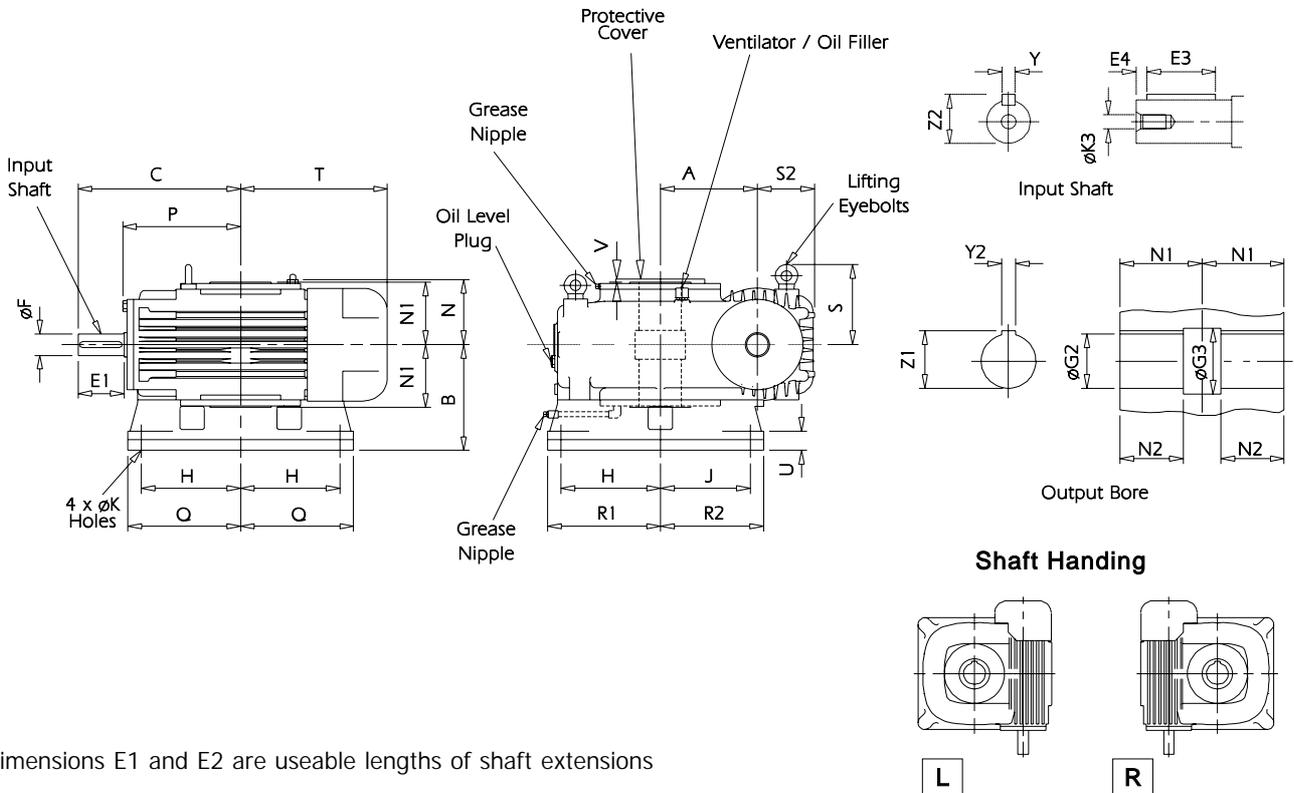
Dimensions E1 and E2 are useable lengths of shaft extensions

# SERIES A

## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**CN** **V** **S** - FLANGE/SHAFT MOUNTED



Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | B   | C   | E1  | E3  | E4 | ØF     | ØG2     | ØG3   | H   | J   | K    |
|------|-------|-----|-----|-----|-----|----|--------|---------|-------|-----|-----|------|
| 10   | 254.0 | 279 | 425 | 107 | 94  | 13 | 55.030 | 110.071 | 133.3 | 260 | 235 | 31.7 |
|      |       |     |     |     |     |    | 55.011 | 110.035 |       |     |     |      |
| 12   | 304.8 | 305 | 495 | 121 | 92  | 14 | 60.030 | 130.083 | 152.0 | 317 | 267 | 34.9 |
|      |       |     |     |     |     |    | 60.011 | 130.043 |       |     |     |      |
| 14   | 355.6 | 330 | 571 | 137 | 105 | 15 | 75.030 | 160.084 | 187.0 | 356 | 305 | 41.3 |
|      |       |     |     |     |     |    | 75.011 | 160.043 |       |     |     |      |

| SIZE | ØK3      | N   | N1  | N2  | P   | Q   | R1  | R2  | S   | S2  | T   | U  | V |
|------|----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|---|
| 10   | M20 x 43 | 172 | 165 | 127 | 310 | 295 | 295 | 270 | 212 | 149 | 384 | 51 | 8 |
| 12   | M20 x 43 | 194 | 185 | 152 | 366 | 356 | 356 | 305 | 247 | 169 | 450 | 57 | 7 |
| 14   | M20 x 43 | 230 | 220 | 178 | 425 | 403 | 403 | 352 | 300 | 187 | 526 | 63 | 7 |

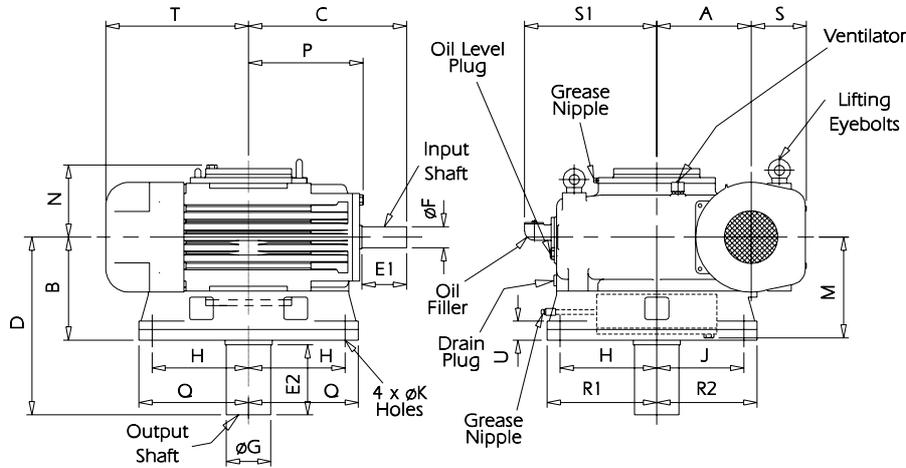
| SIZE | Y      | Y2     | Z1    | Z2    |
|------|--------|--------|-------|-------|
| 10   | 16.000 | 28.026 | 116.6 | 59.00 |
|      | 15.957 | 27.972 | 116.4 | 58.71 |
| 12   | 18.000 | 32.032 | 137.6 | 64.00 |
|      | 17.957 | 31.970 | 137.4 | 63.69 |
| 14   | 20.000 | 40.030 | 169.7 | 79.50 |
|      | 19.948 | 39.970 | 169.4 | 79.19 |

# SERIES A

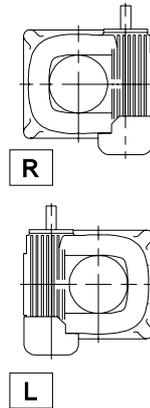
## DIMENSIONS SINGLE REDUCTION (WORM)

9610

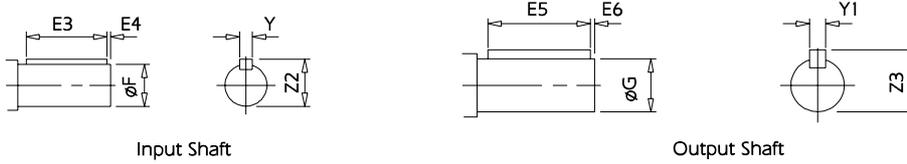
V HDST - HEAVY DUTY STIRRER



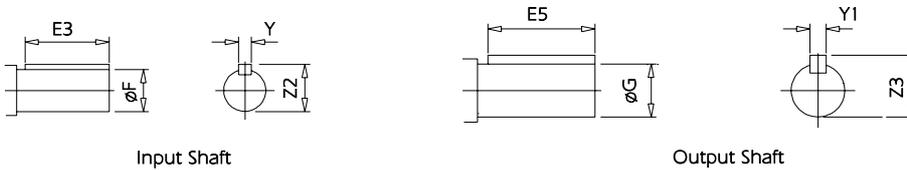
### Shaft Handling



### Shaft Dimensions, CNV-HDST



### Shaft Dimensions, NV-HDST



Dimensions E1 and E2 are useable lengths of shaft extensions

Types NV and CNV, common dimensions (mm)

| SIZE | A     | B   | C   | D   | H   | J   | K               | M   | N   | P   | Q   | R1  | R2  | S   | S1  | T   | U  |
|------|-------|-----|-----|-----|-----|-----|-----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 10   | 254.0 | 279 | 425 | 483 | 260 | 235 | 32 x<br>4 holes | 273 | 194 | 308 | 295 | 295 | 270 | 149 | 356 | 375 | 51 |
| 12   | 304.8 | 305 | 495 | 546 | 317 | 267 | 35 x<br>4 holes | 314 | 216 | 364 | 356 | 356 | 305 | 165 | 406 | 440 | 57 |
| 14   | 355.6 | 330 | 571 | 610 | 356 | 305 | 41 x<br>4 holes | 317 | 254 | 425 | 403 | 403 | 352 | 184 | 452 | 516 | 64 |

Type CNV, Shaft dimensions (mm)

| SIZE | E1  | E2  | E3  | E4 | E5  | E6 | F      | G       | Y      | Y1     | Z2   | Z3     |
|------|-----|-----|-----|----|-----|----|--------|---------|--------|--------|------|--------|
| 10   | 107 | 191 | 94  | 13 | 148 | 21 | 55.030 | 120.035 | 16.000 | 32.000 | 59.5 | 127.00 |
|      |     |     |     |    |     |    | 55.011 | 120.013 | 15.957 | 31.938 | 59.3 | 126.69 |
| 12   | 121 | 203 | 92  | 14 | 144 | 23 | 60.030 | 140.040 | 18.000 | 36.000 | 64.6 | 148.00 |
|      |     |     |     |    |     |    | 60.011 | 140.015 | 17.957 | 35.938 | 64.4 | 147.57 |
| 14   | 137 | 241 | 105 | 15 | 180 | 25 | 75.030 | 170.040 | 20.000 | 40.000 | 80.1 | 179.00 |
|      |     |     |     |    |     |    | 75.011 | 170.015 | 19.948 | 39.938 | 79.9 | 178.57 |

Type NV, Shaft dimensions (inches)

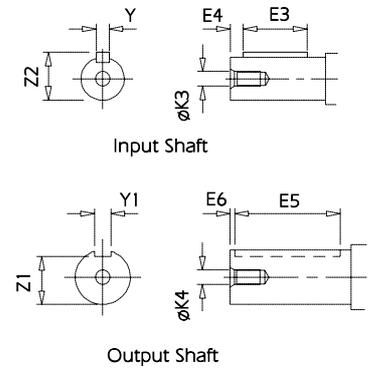
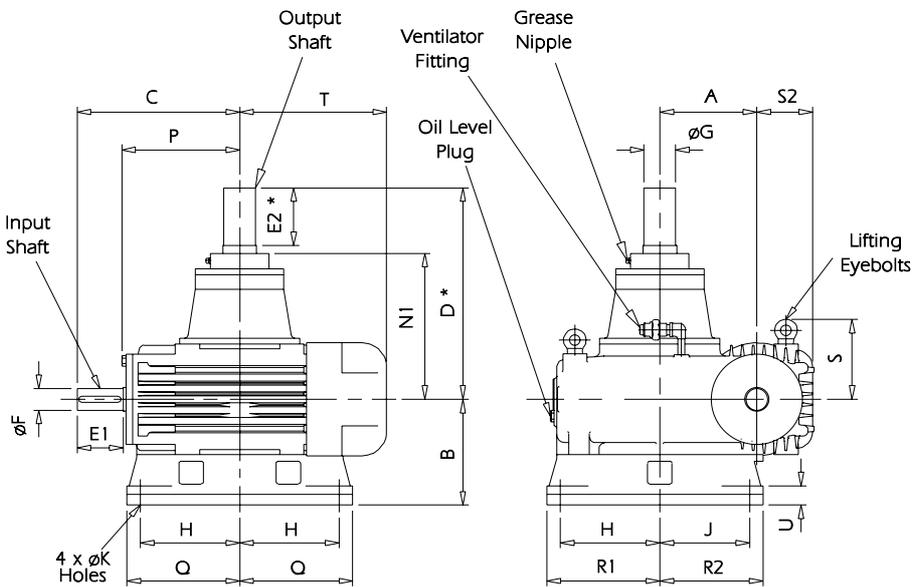
| SIZE | E1   | E2  | E3   | E5    | F      | G      | Y     | Y1    | Z2    | Z3    |
|------|------|-----|------|-------|--------|--------|-------|-------|-------|-------|
| 10   | 4.21 | 7.5 | 3.19 | 7.625 | 2.2500 | 4.5000 | 0.627 | 1.253 | 2.431 | 4.861 |
|      |      |     |      |       | 2.4993 | 4.4991 | 0.625 | 1.250 | 2.422 | 4.851 |
| 12   | 4.76 | 8.0 | 3.19 | 8.00  | 2.5000 | 5.5000 | 0.627 | 1.503 | 2.681 | 5.907 |
|      |      |     |      |       | 2.4993 | 5.4990 | 0.625 | 1.500 | 2.672 | 5.895 |
| 14   | 5.39 | 9.5 | 5.38 | 9.50  | 3.0000 | 6.5000 | 0.752 | 1.753 | 3.203 | 7.016 |
|      |      |     |      |       | 2.9993 | 6.4990 | 0.750 | 1.750 | 3.194 | 7.004 |

# SERIES A

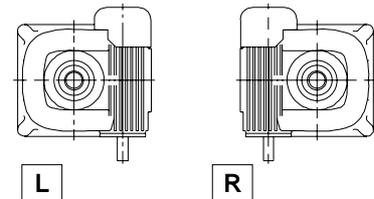
## DIMENSIONS SINGLE REDUCTION (WORM)

9610

**CN** **V** **CT** - COOLING TOWER



### Shaft Handling



\* To suit customers requirements for fan hubs

Units are supplied with BSP plugs fitted to, oil filler, drain and ventilator points suitable for connections to outside of towers.

Lubrication is entirely self contained. Gears and lower bearings dip in the oil bath whilst oil is pumped to the top wheelshaft bearing by means of a built-in mechanical oil pump.

| SIZE | A     | B   | C   | E1  | E3  | E4 | E5  | E6 | øF     | øG      | H   | J   |
|------|-------|-----|-----|-----|-----|----|-----|----|--------|---------|-----|-----|
| 10   | 254.0 | 279 | 425 | 107 | 94  | 13 | 140 | 5  | 55.030 | 85.035  | 260 | 235 |
|      |       |     |     |     |     |    |     |    | 55.011 | 85.013  |     |     |
| 12   | 304.8 | 305 | 495 | 121 | 92  | 14 | 160 | 5  | 60.030 | 95.035  | 317 | 267 |
|      |       |     |     |     |     |    |     |    | 60.011 | 95.013  |     |     |
| 14   | 355.6 | 330 | 571 | 137 | 105 | 15 | 180 | 5  | 75.030 | 120.035 | 356 | 305 |
|      |       |     |     |     |     |    |     |    | 75.011 | 120.013 |     |     |

| SIZE | K  | øK3      | øK4      | N1  | P   | Q   | R1  | R2  | S   | S2  | T   | U  |
|------|----|----------|----------|-----|-----|-----|-----|-----|-----|-----|-----|----|
| 10   | 32 | M20 x 43 | M24 x 50 | 386 | 310 | 295 | 295 | 270 | 212 | 149 | 384 | 51 |
| 12   | 35 | M20 x 43 | M24 x 50 | 419 | 366 | 356 | 356 | 305 | 247 | 169 | 450 | 57 |
| 14   | 41 | M20 x 43 | M30 x 63 | 470 | 425 | 403 | 403 | 352 | 300 | 187 | 526 | 63 |

| SIZE | Y      | Y1     | Z1    | Z2    |
|------|--------|--------|-------|-------|
| 10   | 16.000 | 21.978 | 76.0  | 59.00 |
|      | 15.957 | 21.926 | 75.8  | 58.71 |
| 12   | 18.000 | 24.978 | 86.0  | 64.00 |
|      | 17.957 | 24.926 | 85.8  | 63.69 |
| 14   | 20.000 | 31.974 | 109.0 | 79.50 |
|      | 19.948 | 31.912 | 108.8 | 79.19 |

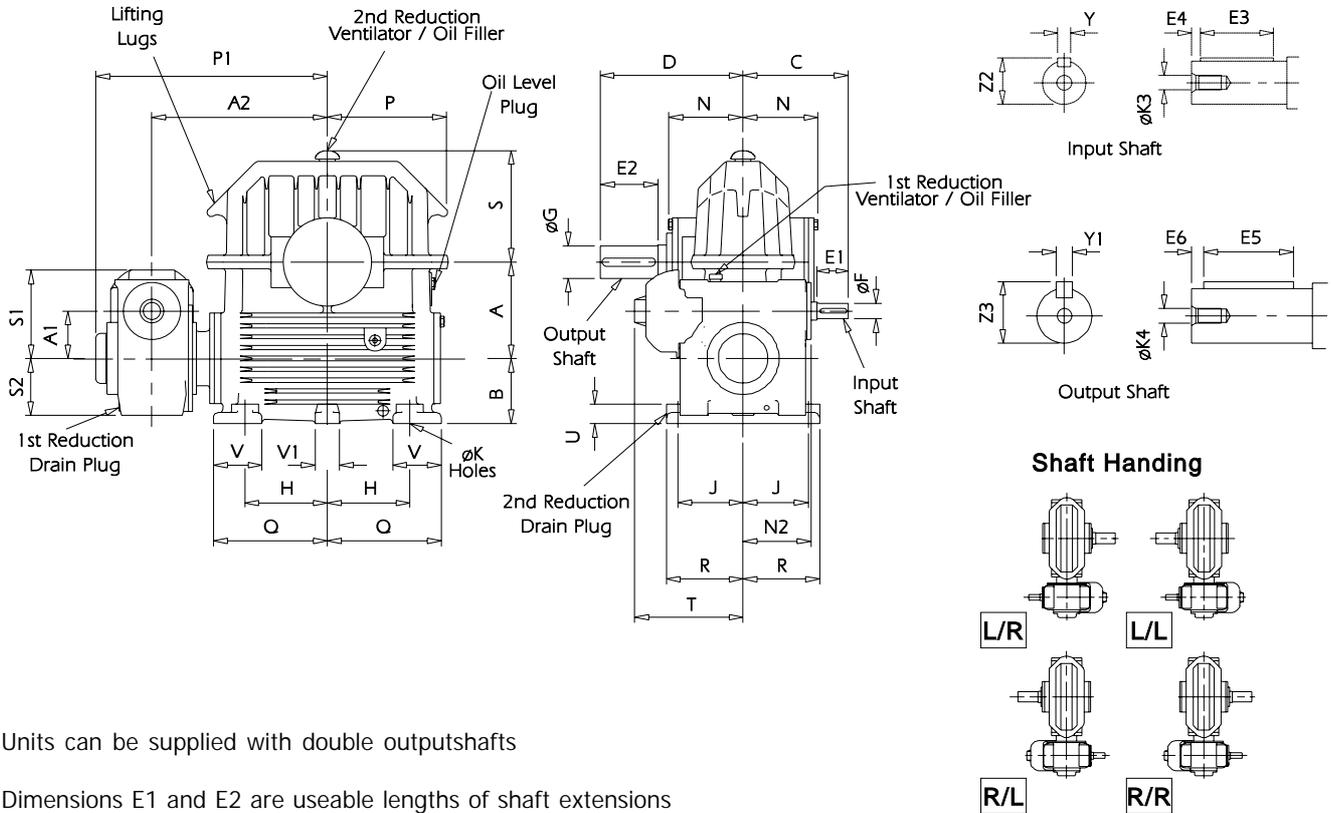
Dimensions E1 and E2 are useable lengths of shaft extensions

# SERIES A

## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9610

**CN** **U** **D** - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | A1    | A2  | B   | C   | D   | E1  | E2  | E3 | E4 | E5  | E6   | øF               |
|------|-------|-------|-----|-----|-----|-----|-----|-----|----|----|-----|------|------------------|
| 10   | 254.0 | 125   | 460 | 171 | 275 | 375 | 82  | 152 | 58 | 9  | 118 | 16   | 40.018<br>40.002 |
| 12   | 304.8 | 160   | 545 | 190 | 310 | 413 | 82  | 171 | 56 | 10 | 135 | 17.5 | 45.018<br>45.002 |
| 14   | 355.6 | 160   | 605 | 216 | 310 | 483 | 82  | 191 | 56 | 10 | 148 | 21   | 45.018<br>45.002 |
| 17   | 431.8 | 200   | 695 | 254 | 345 | 546 | 82  | 203 | 56 | 10 | 144 | 23   | 50.018<br>50.002 |
| 20   | 508.0 | 200   | 800 | 292 | 345 | 610 | 82  | 241 | 56 | 10 | 180 | 25   | 50.018<br>50.002 |
| 24   | 609.6 | 304.8 | 950 | 330 | 495 | 711 | 121 | 355 | 92 | 14 | 235 | 27.5 | 60.030<br>60.011 |

| SIZE | øG                 | H   | J   | øK            | øK3         | øK4         | N   | N2  | P   | P1   | Q   | R   | S   |
|------|--------------------|-----|-----|---------------|-------------|-------------|-----|-----|-----|------|-----|-----|-----|
| 10   | 85.035<br>85.013   | 216 | 165 | 32<br>4 Holes | M12 x<br>25 | M24 x<br>50 | 197 | 185 | 318 | 606  | 298 | 200 | 294 |
| 12   | 95.035<br>95.013   | 260 | 184 | 35<br>4 Holes | M12 x<br>25 | M24 x<br>50 | 213 | 215 | 368 | 708  | 356 | 222 | 348 |
| 14   | 120.035<br>120.013 | 298 | 216 | 41<br>4 Holes | M12 x<br>25 | M30 x<br>63 | 254 | 215 | 432 | 768  | 413 | 260 | 399 |
| 17   | 140.040<br>140.015 | 381 | 254 | 41<br>6 Holes | M12 x<br>25 | M30 x<br>63 | 300 | 255 | 521 | 868  | 502 | 298 | 477 |
| 20   | 170.040<br>170.015 | 444 | 292 | 48<br>6 Holes | M12 x<br>25 | M36 x<br>74 | 317 | 255 | 610 | 973  | 584 | 356 | 554 |
| 24   | 190.046<br>190.017 | 546 | 317 | 41<br>6 Holes | M20 x<br>43 | M36 x<br>74 | 340 | 255 | 695 | 1144 | 686 | 368 | 670 |

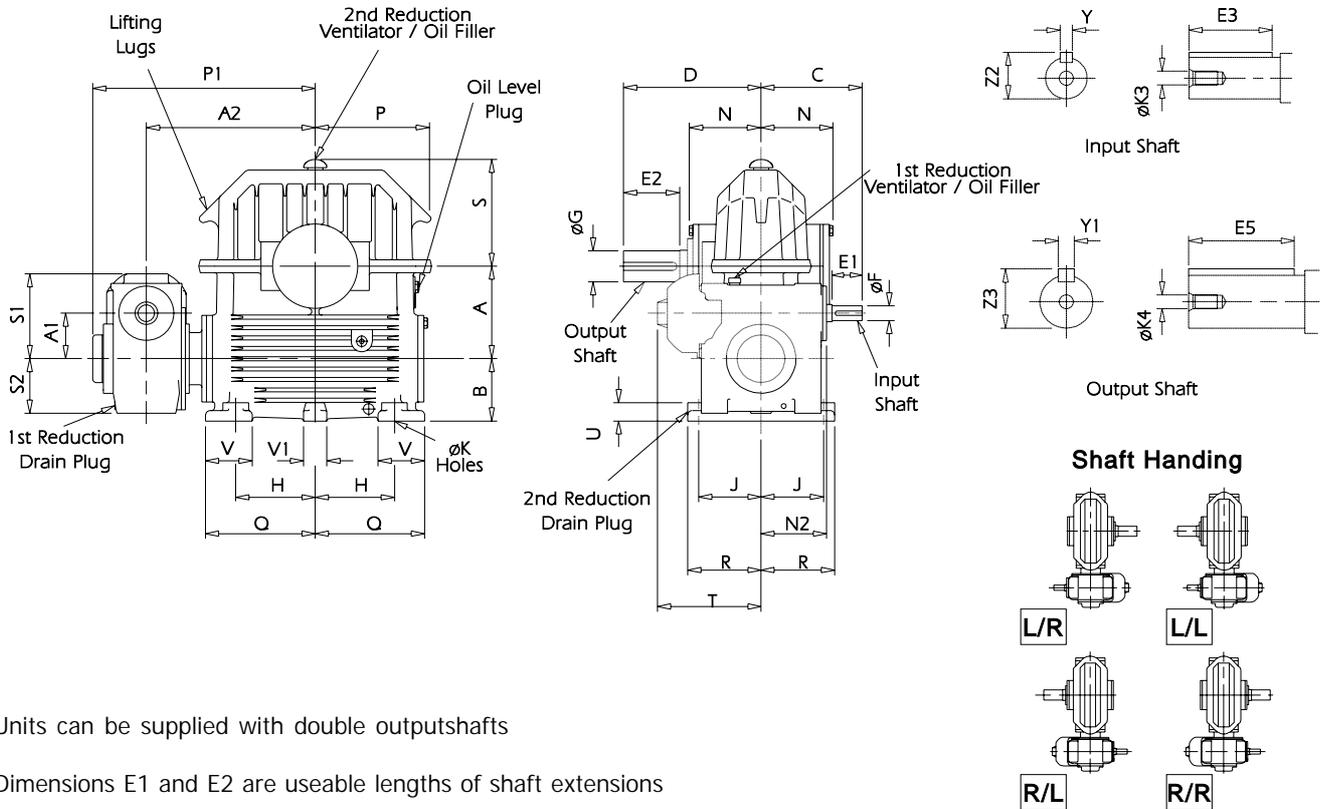
| SIZE | S1  | S2  | T   | U  | V   | V1  | Y                | Y1               | Z2             | Z3                 |
|------|-----|-----|-----|----|-----|-----|------------------|------------------|----------------|--------------------|
| 10   | 233 | 150 | 282 | 51 | 127 | 63  | 12.000<br>11.957 | 22.000<br>21.948 | 43.00<br>42.71 | 94.500<br>94.148   |
| 12   | 278 | 177 | 317 | 57 | 152 | 76  | 14.000<br>13.957 | 25.000<br>24.948 | 48.50<br>48.21 | 105.500<br>105.148 |
| 14   | 278 | 177 | 317 | 63 | 178 | 89  | 14.000<br>13.957 | 32.000<br>31.938 | 48.50<br>48.21 | 134.000<br>133.638 |
| 17   | 332 | 230 | 353 | 76 | 190 | 127 | 14.000<br>13.957 | 36.000<br>35.938 | 53.50<br>53.21 | 155.500<br>155.138 |
| 20   | 332 | 230 | 353 | 89 | 229 | 152 | 14.000<br>13.957 | 40.000<br>39.938 | 53.50<br>53.21 | 187.500<br>187.138 |
| 24   | 470 | 340 | 438 | 38 | 229 | 152 | 18.000<br>17.957 | 45.000<br>44.938 | 64.00<br>63.69 | 210.000<br>209.638 |

# SERIES A

## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9610

**N** **U** **D** - FOOT MOUNTED



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | A1    | A2    | B    | C     | D     | E1   | E2   | E3    | E5    | øF               | øG               |
|------|----|-------|-------|------|-------|-------|------|------|-------|-------|------------------|------------------|
| 10   | 10 | 4.92  | 18.11 | 6.75 | 10.83 | 14.75 | 3.23 | 6.00 | 2.495 | 5.06  | 1.6250<br>1.6244 | 3.2500<br>3.2491 |
| 12   | 12 | 6.30  | 21.45 | 7.50 | 12.20 | 16.25 | 3.23 | 6.75 | 2.500 | 5.75  | 1.8750<br>1.8744 | 3.7500<br>3.7491 |
| 14   | 14 | 6.30  | 23.81 | 8.50 | 12.20 | 19.00 | 3.23 | 7.50 | 2.500 | 7.63  | 1.8750<br>1.8744 | 4.5000<br>4.4991 |
| 17   | 17 | 7.87  | 27.36 | 10.0 | 13.58 | 21.50 | 3.23 | 8.00 | 2.500 | 8.00  | 2.0000<br>1.9993 | 5.5000<br>5.4990 |
| 20   | 20 | 7.87  | 31.50 | 11.5 | 13.58 | 24.00 | 3.23 | 9.50 | 2.500 | 9.50  | 2.0000<br>1.9993 | 6.5000<br>6.4990 |
| 24   | 24 | 12.00 | 37.40 | 13.0 | 19.50 | 28.00 | 4.76 | 14.0 | 3.190 | 12.50 | 2.5000<br>2.4993 | 7.5000<br>7.4988 |

| SIZE | H     | J     | øK               | øK3                     | øK4                      | N     | N2    | P     | P1    | Q     | R     | S     |
|------|-------|-------|------------------|-------------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|
| 10   | 8.50  | 6.50  | 1.250<br>4 Holes | 5/8" UNF<br>x 1.25 Deep | 7/8" UNF<br>x 1.75 Deep  | 7.75  | 7.28  | 12.50 | 23.86 | 11.75 | 7.88  | 11.56 |
| 12   | 10.25 | 7.25  | 1.375<br>4 Holes | 5/8" UNF<br>x 1.25 Deep | 7/8" UNF<br>x 1.75 Deep  | 8.38  | 8.46  | 14.50 | 27.87 | 14.00 | 8.75  | 13.69 |
| 14   | 11.75 | 8.50  | 1.625<br>4 Holes | 5/8" UNF<br>x 1.25 Deep | 1" UNF<br>x 2.0 Deep     | 10.0  | 8.46  | 17.00 | 30.24 | 16.25 | 10.25 | 15.69 |
| 17   | 15.00 | 10.00 | 1.625<br>6 Holes | 5/8" UNF<br>x 1.25 Deep | 1" UNF<br>x 2.0 Deep     | 11.81 | 10.04 | 20.50 | 34.17 | 19.75 | 11.75 | 19.25 |
| 20   | 17.50 | 11.50 | 1.875<br>6 Holes | 5/8" UNF<br>x 1.25 Deep | 1.1/4" UNF<br>x 2.5 Deep | 12.50 | 10.04 | 24.00 | 38.31 | 23.00 | 14.00 | 22.31 |
| 24   | 21.50 | 12.50 | 1.625<br>6 Holes | M20 x 43                | 1.1/4" UNF<br>x 2.5 Deep | 13.38 | 14.39 | 28.75 | 45.04 | 27.00 | 14.50 | 26.00 |

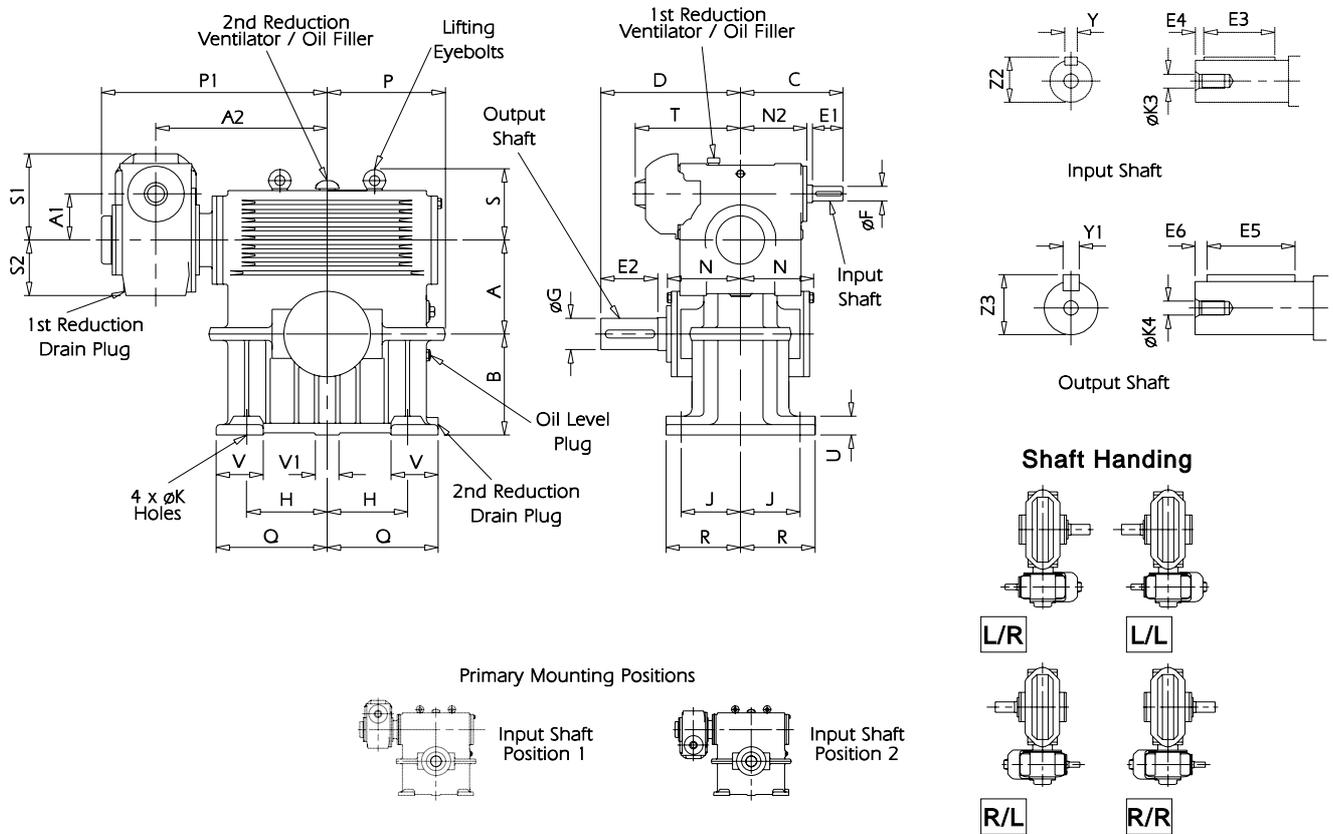
| SIZE | S1    | S2    | T     | U    | V   | V1  | Y              | Y1             | Z2             | Z3             |
|------|-------|-------|-------|------|-----|-----|----------------|----------------|----------------|----------------|
| 10   | 9.17  | 5.91  | 11.10 | 2.00 | 5.0 | 2.5 | 0.377<br>0.375 | 0.877<br>0.875 | 1.793<br>1.785 | 3.509<br>3.499 |
| 12   | 10.94 | 6.97  | 12.48 | 2.25 | 6.0 | 3.0 | 0.502<br>0.500 | 1.003<br>1.000 | 2.093<br>2.085 | 4.063<br>4.053 |
| 14   | 10.94 | 6.97  | 12.48 | 2.50 | 7.0 | 3.5 | 0.502<br>0.500 | 1.253<br>1.250 | 2.093<br>2.085 | 4.860<br>4.850 |
| 17   | 13.07 | 9.06  | 13.90 | 3.00 | 7.5 | 5.0 | 0.502<br>0.500 | 1.503<br>1.500 | 2.219<br>2.211 | 5.904<br>5.894 |
| 20   | 13.07 | 9.06  | 13.90 | 3.50 | 9.0 | 6.0 | 0.502<br>0.500 | 1.753<br>1.750 | 2.219<br>2.211 | 7.013<br>7.003 |
| 24   | 18.50 | 13.39 | 17.38 | 3.50 | 9.0 | 6.0 | 0.627<br>0.625 | 2.003<br>2.000 | 2.681<br>2.672 | 8.060<br>8.050 |

# SERIES A

## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9610

**CN** **O** **D** - FOOT MOUNTED



Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | A1  | A2  | B   | C   | D   | E1 | E2  | E3 | E4 | E5  | E6   | øF     |
|------|-------|-----|-----|-----|-----|-----|----|-----|----|----|-----|------|--------|
| 10   | 254.0 | 125 | 460 | 273 | 275 | 375 | 82 | 152 | 58 | 9  | 118 | 16   | 40.018 |
|      |       |     |     |     |     |     |    |     |    |    |     |      | 40.002 |
| 12   | 304.8 | 160 | 545 | 330 | 310 | 413 | 82 | 171 | 56 | 10 | 135 | 17.5 | 45.018 |
|      |       |     |     |     |     |     |    |     |    |    |     |      | 45.002 |
| 14   | 355.6 | 160 | 605 | 381 | 310 | 483 | 82 | 191 | 56 | 10 | 148 | 21   | 45.018 |
|      |       |     |     |     |     |     |    |     |    |    |     |      | 45.002 |

| SIZE | øG      | H   | J   | øK | øK3   | øK4   | N   | N2  | P   | P1  | Q   | R   | S   |
|------|---------|-----|-----|----|-------|-------|-----|-----|-----|-----|-----|-----|-----|
| 10   | 85.035  | 216 | 165 | 32 | M12 x | M24 x | 197 | 185 | 318 | 606 | 298 | 200 | 182 |
|      | 4 Holes |     |     | 25 | 50    |       |     |     |     |     |     |     |     |
| 12   | 95.035  | 260 | 184 | 35 | M12 x | M24 x | 213 | 215 | 367 | 708 | 356 | 222 | 237 |
|      | 4 Holes |     |     | 25 | 50    |       |     |     |     |     |     |     |     |
| 14   | 120.035 | 298 | 216 | 41 | M12 x | M30 x | 254 | 215 | 432 | 768 | 413 | 260 | 278 |
|      | 4 Holes |     |     | 25 | 63    |       |     |     |     |     |     |     |     |

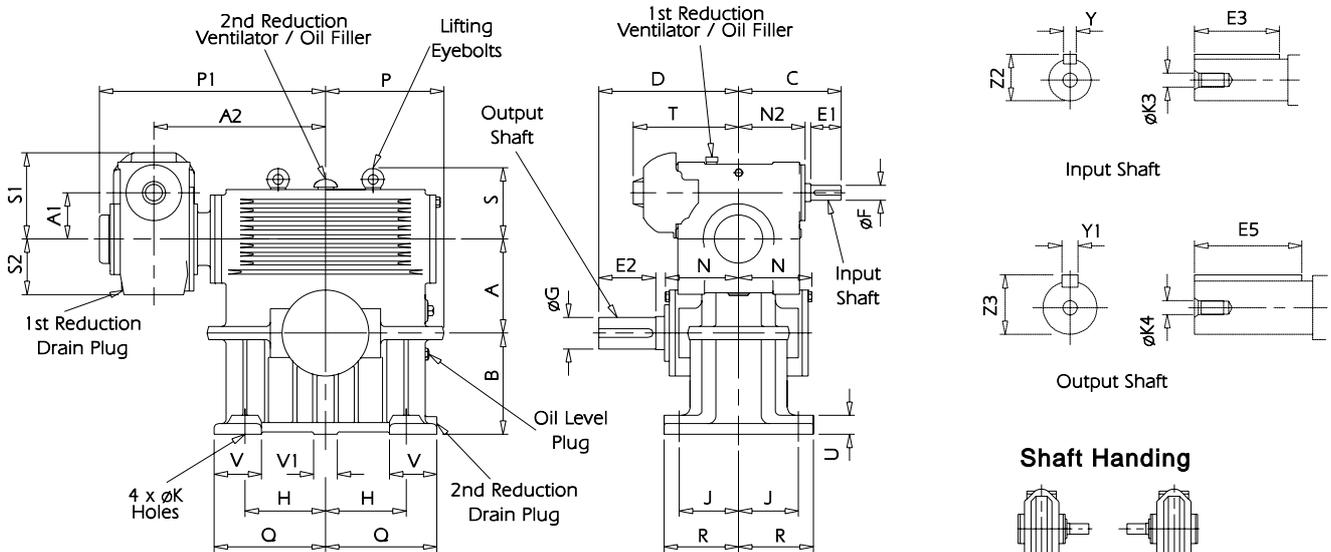
| SIZE | S1  | S2  | T   | U  | V   | V1 | Y      | Y1     | Z2    | Z3      |
|------|-----|-----|-----|----|-----|----|--------|--------|-------|---------|
| 10   | 233 | 150 | 282 | 51 | 127 | 63 | 12.000 | 22.000 | 43.00 | 94.500  |
|      |     |     |     |    |     |    | 11.957 | 21.948 | 42.71 | 94.148  |
| 12   | 278 | 177 | 317 | 57 | 152 | 76 | 14.000 | 25.000 | 48.50 | 105.500 |
|      |     |     |     |    |     |    | 13.957 | 24.948 | 48.21 | 105.148 |
| 14   | 278 | 177 | 317 | 63 | 178 | 89 | 14.000 | 32.000 | 48.50 | 134.000 |
|      |     |     |     |    |     |    | 13.957 | 31.938 | 48.21 | 133.638 |

# SERIES A

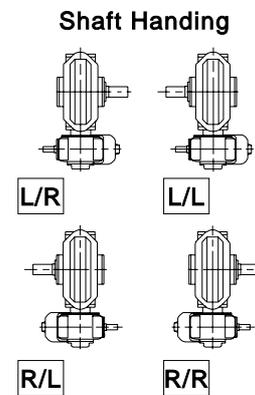
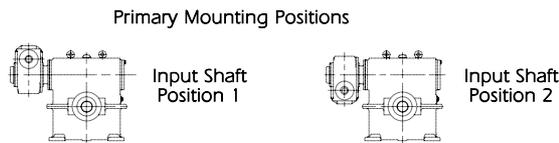
## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9610

**N** **O** **D** - FOOT MOUNTED



Units can be supplied with double outputshafts



Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | A1   | A2    | B     | C     | D     | E1   | E2   | E3    | E5   | øF     | øG     |
|------|----|------|-------|-------|-------|-------|------|------|-------|------|--------|--------|
| 10   | 10 | 4.92 | 18.11 | 10.75 | 10.83 | 14.75 | 3.23 | 6.00 | 2.495 | 5.06 | 1.6250 | 3.2500 |
|      |    |      |       |       |       |       |      |      |       |      | 1.6244 | 3.2491 |
| 12   | 12 | 6.30 | 21.45 | 13.00 | 12.20 | 16.25 | 3.23 | 6.75 | 2.500 | 5.75 | 1.8750 | 3.7500 |
|      |    |      |       |       |       |       |      |      |       |      | 1.8744 | 3.7491 |
| 14   | 14 | 6.30 | 23.81 | 15.00 | 12.20 | 19.00 | 3.23 | 7.50 | 2.500 | 7.63 | 1.8750 | 4.5000 |
|      |    |      |       |       |       |       |      |      |       |      | 1.8744 | 4.4991 |

| SIZE | H     | J    | øK    | øK3         | øK4         | N    | N2   | P     | P1    | Q     | R     | S     |
|------|-------|------|-------|-------------|-------------|------|------|-------|-------|-------|-------|-------|
| 10   | 8.50  | 6.50 | 1.250 | 5/8" UNF    | 7/8" UNF    | 7.75 | 7.28 | 12.50 | 23.86 | 11.75 | 7.88  | 7.14  |
|      |       |      |       | x 1.25 Deep | x 1.75 Deep |      |      |       |       |       |       |       |
| 12   | 10.25 | 7.25 | 1.375 | 5/8" UNF    | 7/8" UNF    | 8.38 | 8.46 | 14.50 | 27.87 | 14.00 | 8.75  | 9.33  |
|      |       |      |       | x 1.25 Deep | x 1.75 Deep |      |      |       |       |       |       |       |
| 14   | 11.75 | 8.50 | 1.625 | 5/8" UNF    | 1" UNF      | 10.0 | 8.46 | 17.00 | 30.24 | 16.25 | 10.25 | 10.93 |
|      |       |      |       | x 1.25 Deep | x 2.0 Deep  |      |      |       |       |       |       |       |

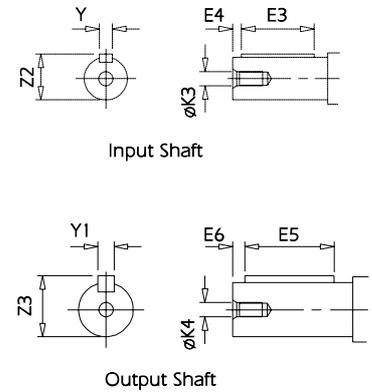
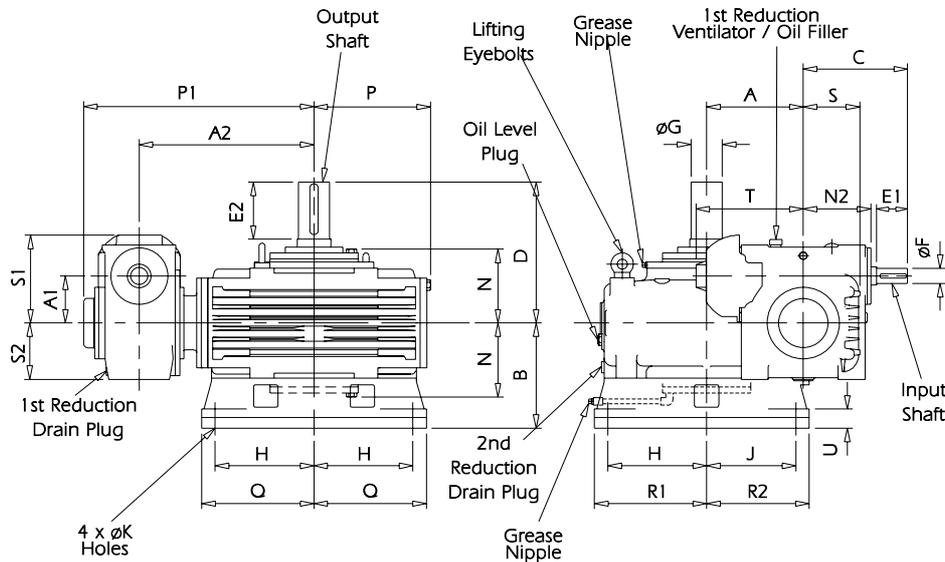
| SIZE | S1    | S2   | T     | U    | V   | V1  | Y     | Y1    | Z2    | Z3    |
|------|-------|------|-------|------|-----|-----|-------|-------|-------|-------|
| 10   | 9.17  | 5.91 | 11.10 | 2.00 | 5.0 | 2.5 | 0.377 | 0.877 | 1.793 | 3.509 |
|      |       |      |       |      |     |     | 0.375 | 0.875 | 1.785 | 3.499 |
| 12   | 10.94 | 6.97 | 12.48 | 2.25 | 6.0 | 3.0 | 0.502 | 1.003 | 2.093 | 4.063 |
|      |       |      |       |      |     |     | 0.500 | 1.000 | 2.085 | 4.053 |
| 14   | 10.94 | 6.97 | 12.48 | 2.50 | 7.0 | 3.5 | 0.502 | 1.253 | 2.093 | 4.860 |
|      |       |      |       |      |     |     | 0.500 | 1.250 | 2.085 | 4.850 |

# SERIES A

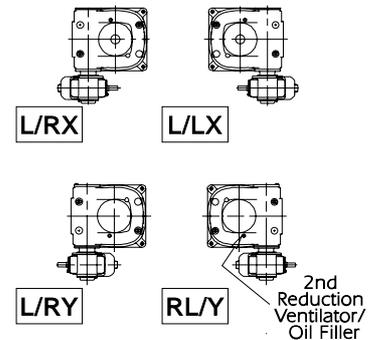
## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9610

**CN** **V** **D** - FLANGEMOUNTED



### Shaft Handling



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

### Primary Mounting Positions



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A     | A1  | A2  | B   | C   | D   | E1 | E2  | E3 | E4 | E5  | E6   | ø F              |
|------|-------|-----|-----|-----|-----|-----|----|-----|----|----|-----|------|------------------|
| 10   | 254.0 | 125 | 460 | 279 | 275 | 375 | 82 | 152 | 58 | 9  | 118 | 16   | 40.018<br>40.002 |
| 12   | 304.8 | 160 | 545 | 305 | 310 | 413 | 82 | 171 | 56 | 10 | 135 | 17.5 | 45.018<br>45.002 |
| 14   | 355.6 | 160 | 605 | 330 | 310 | 483 | 82 | 191 | 56 | 10 | 148 | 21   | 45.018<br>45.002 |
| 17   | 431.8 | 200 | 695 | 406 | 345 | 546 | 82 | 203 | 56 | 10 | 144 | 23   | 50.018<br>50.002 |
| 20   | 508.0 | 200 | 800 | 432 | 345 | 610 | 82 | 241 | 56 | 10 | 180 | 25   | 50.018<br>50.002 |

| SIZE | ø G                | H   | J   | ø K | ø K3        | ø K4        | N   | N2  | P   | P1  | Q   | R1  | R2  |
|------|--------------------|-----|-----|-----|-------------|-------------|-----|-----|-----|-----|-----|-----|-----|
| 10   | 85.035<br>85.013   | 260 | 235 | 32  | M12 x<br>25 | M24 x<br>50 | 197 | 185 | 318 | 606 | 295 | 295 | 270 |
| 12   | 95.035<br>95.013   | 317 | 267 | 35  | M12 x<br>25 | M24 x<br>50 | 213 | 215 | 368 | 708 | 356 | 356 | 305 |
| 14   | 120.035<br>120.013 | 356 | 305 | 41  | M12 x<br>25 | M30 x<br>63 | 254 | 215 | 432 | 768 | 403 | 403 | 352 |
| 17   | 140.040<br>140.015 | 432 | 432 | 41  | M12 x<br>25 | M30 x<br>63 | 300 | 255 | 521 | 868 | 502 | 502 | 502 |
| 20   | 170.040<br>170.015 | 521 | 521 | 41  | M12 x<br>25 | M36 x<br>74 | 317 | 255 | 610 | 973 | 597 | 597 | 597 |

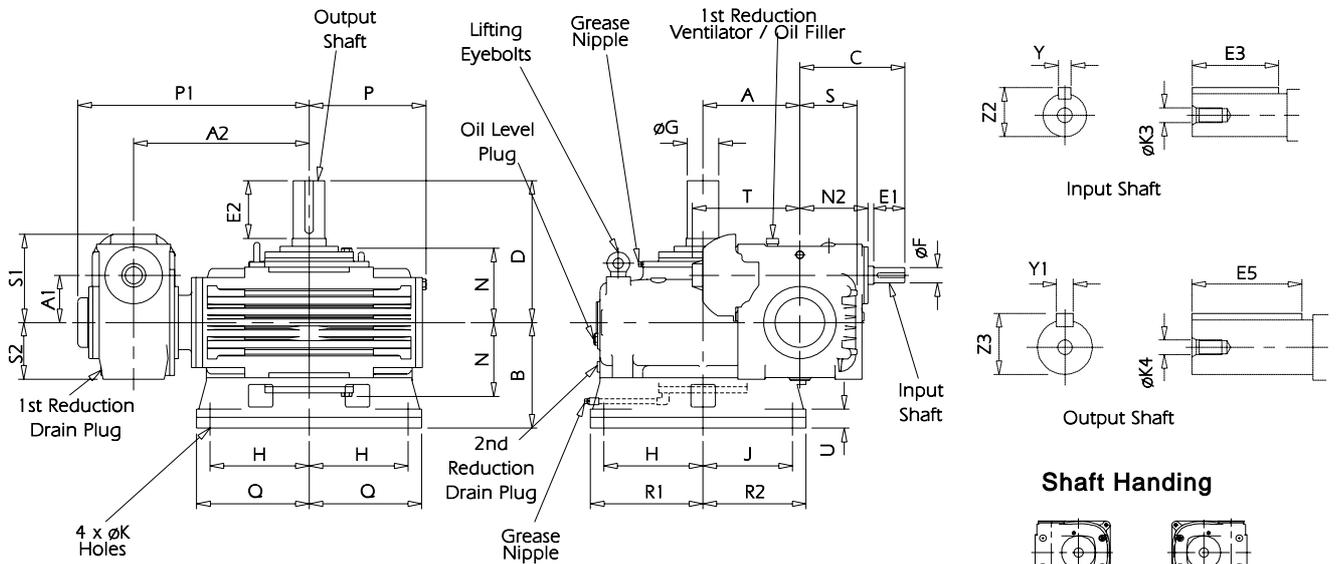
| SIZE | S   | S1  | S2  | T   | U  | Y                | Y1               | Z2             | Z3                 |
|------|-----|-----|-----|-----|----|------------------|------------------|----------------|--------------------|
| 10   | 149 | 233 | 150 | 282 | 51 | 12.000<br>11.957 | 22.000<br>21.948 | 43.00<br>42.71 | 94.500<br>94.148   |
| 12   | 169 | 278 | 177 | 317 | 57 | 14.000<br>13.957 | 25.000<br>24.948 | 48.50<br>48.21 | 105.500<br>105.148 |
| 14   | 187 | 278 | 177 | 317 | 63 | 14.000<br>13.957 | 32.000<br>31.938 | 48.50<br>48.21 | 134.000<br>133.638 |
| 17   | 254 | 332 | 230 | 353 | 76 | 14.000<br>13.957 | 36.000<br>35.938 | 53.50<br>53.21 | 155.500<br>155.138 |
| 20   | 283 | 332 | 230 | 353 | 89 | 14.000<br>13.957 | 40.000<br>39.938 | 53.50<br>53.21 | 187.500<br>187.138 |

# SERIES A

## DIMENSIONS DOUBLE REDUCTION (WORM / WORM)

9801

**N** **V** **D** - FLANGEMOUNTED



X Denotes slow speed shaft vertically up  
Y Denotes slow speed shaft vertically down

Primary Mounting Positions



Units can be supplied with double outputshafts

Dimensions E1 and E2 are useable lengths of shaft extensions

| SIZE | A  | A1   | A2    | B    | C     | D     | E1   | E2   | E3    | E5   | ø F              | ø G              |
|------|----|------|-------|------|-------|-------|------|------|-------|------|------------------|------------------|
| 10   | 10 | 4.92 | 18.11 | 11.0 | 10.83 | 14.75 | 3.23 | 6.00 | 2.495 | 5.06 | 1.6250<br>1.6244 | 3.2500<br>3.2491 |
| 12   | 12 | 6.30 | 21.45 | 12.0 | 12.20 | 16.25 | 3.23 | 6.75 | 2.500 | 5.75 | 1.8750<br>1.8744 | 3.7500<br>3.7491 |
| 14   | 14 | 6.30 | 23.81 | 13.0 | 12.20 | 19.00 | 3.23 | 7.50 | 2.500 | 7.63 | 1.8750<br>1.8744 | 4.5000<br>4.4991 |
| 17   | 17 | 7.87 | 27.36 | 16.0 | 13.58 | 21.50 | 3.23 | 8.00 | 2.500 | 8.00 | 2.0000<br>1.9993 | 5.5000<br>5.4990 |
| 20   | 20 | 7.87 | 31.50 | 17.0 | 13.58 | 24.00 | 3.23 | 9.50 | 2.500 | 9.50 | 2.0000<br>1.9993 | 6.5000<br>6.4990 |

| SIZE | H     | J     | øK               | øK3           | øK4      | N     | N2    | P     | P1    | Q     | R1    | R2    |
|------|-------|-------|------------------|---------------|----------|-------|-------|-------|-------|-------|-------|-------|
| 10   | 10.25 | 9.25  | 1.250<br>4 Holes | M20 x 43 Deep | M24 x 50 | 7.75  | 7.28  | 12.50 | 23.86 | 11.63 | 11.63 | 10.63 |
| 12   | 12.50 | 10.50 | 1.375<br>4 Holes | M20 x 43 Deep | M24 x 50 | 8.38  | 8.46  | 14.50 | 27.87 | 14.00 | 14.00 | 12.00 |
| 14   | 14.00 | 12.00 | 1.625<br>4 Holes | M20 x 43 Deep | M30 x 63 | 10.0  | 8.46  | 17.00 | 30.24 | 15.88 | 15.88 | 13.88 |
| 17   | 17.00 | 17.00 | 1.625<br>4 Holes | M24 x 52 Deep | M30 x 63 | 11.81 | 10.04 | 20.50 | 34.17 | 19.75 | 19.75 | 19.75 |
| 20   | 20.50 | 20.50 | 1.625<br>4 Holes | M24 x 52 Deep | M36 x 74 | 12.50 | 10.04 | 24.00 | 38.31 | 23.50 | 23.50 | 23.50 |

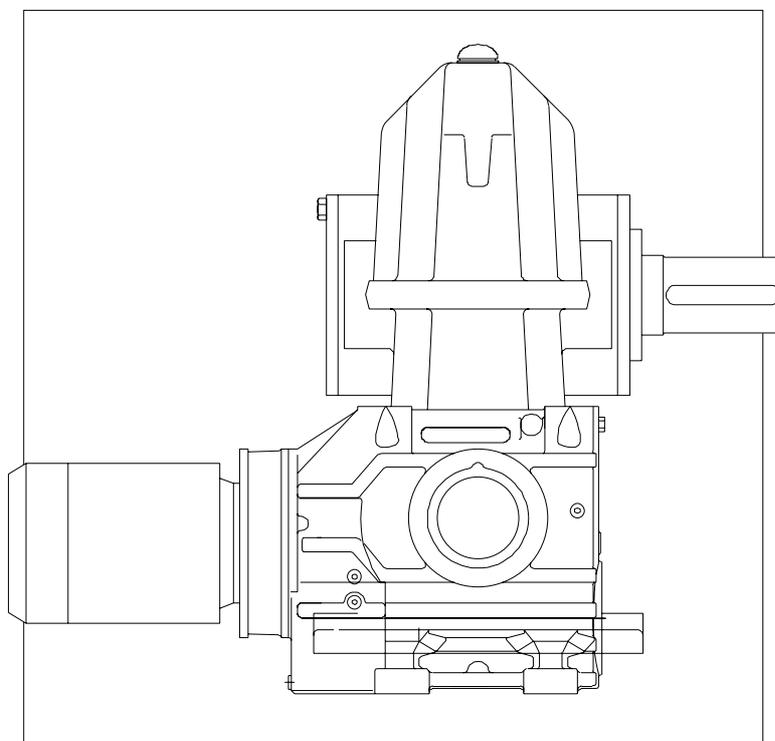
| SIZE | S     | S1    | S2   | T     | U    | Y              | Y1             | Z2             | Z3             |
|------|-------|-------|------|-------|------|----------------|----------------|----------------|----------------|
| 10   | 5.88  | 9.17  | 5.91 | 11.10 | 2.00 | 0.377<br>0.375 | 0.877<br>0.875 | 1.793<br>1.785 | 3.509<br>3.499 |
| 12   | 6.63  | 10.94 | 6.97 | 12.48 | 2.25 | 0.502<br>0.500 | 1.003<br>1.000 | 2.093<br>2.085 | 4.063<br>4.053 |
| 14   | 7.38  | 10.94 | 6.97 | 12.48 | 2.50 | 0.502<br>0.500 | 1.253<br>1.250 | 2.093<br>2.085 | 4.860<br>4.850 |
| 17   | 10.00 | 13.07 | 9.06 | 13.90 | 3.00 | 0.502<br>0.500 | 1.503<br>1.500 | 2.219<br>2.211 | 5.904<br>5.894 |
| 20   | 11.13 | 13.07 | 9.06 | 13.90 | 3.50 | 0.502<br>0.500 | 1.753<br>1.750 | 2.219<br>2.211 | 7.013<br>7.003 |

# **SERIES A**

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## **NOTES**

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# MOTORISED

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# **B** SERIES A

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# RADICON®

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# SERIES A

## MOTORISED MOMENTS OF INERTIA

9701

MOMENTS OF INERTIA (Kg cm<sup>2</sup>) Referred to Input Shaft

### TRIPLE REDUCTION (helical worm/worm)

| RATIO   | 10    | 12     | 14     | 17     | 20     |
|---------|-------|--------|--------|--------|--------|
| 75.00   | 93.65 | 279.49 | 289.10 | 543.65 | 601.45 |
| 100.00  | 92.62 | 277.10 | 285.58 | 532.35 | 568.61 |
| 125.00  | 52.88 | 176.09 | 180.12 | 314.88 | 339.93 |
| 150.00  | 32.59 | 121.99 | 124.26 | 191.44 | 205.95 |
| 200.00  | 91.51 | 274.75 | 279.48 | 516.24 | 540.53 |
| 225.00  | 35.86 | 132.10 | 133.80 | 202.93 | 210.11 |
| 250.00  | 32.19 | 121.02 | 122.38 | 185.38 | 191.53 |
| 300.00  | 52.02 | 174.10 | 176.09 | 303.01 | 313.53 |
| 350.00  | 46.26 | 157.59 | 159.17 | 262.31 | 270.47 |
| 375.00  | 46.29 | 163.33 | 163.98 | 255.20 | 258.72 |
| 400.00  | 91.17 | 274.17 | 278.72 | 511.06 | 524.04 |
| 450.00  | 35.64 | 131.63 | 132.58 | 199.74 | 204.55 |
| 500.00  | 32.02 | 120.64 | 121.40 | 182.64 | 186.77 |
| 600.00  | 13.89 | 24.72  | 24.87  | 31.54  | 32.39  |
| 625.00  | 46.22 | 163.17 | 163.62 | 254.38 | 256.79 |
| 700.00  | 46.14 | 157.40 | 158.91 | 260.57 | 264.93 |
| 750.00  | 16.76 | 32.49  | 32.66  | 48.35  | 49.30  |
| 800.00  | 31.98 | 120.56 | 121.31 | 181.50 | 184.58 |
| 900.00  | 35.58 | 131.51 | 132.43 | 198.72 | 201.29 |
| 1000.00 | 31.96 | 120.55 | 121.28 | 181.76 | 183.97 |
| 1200.00 | 31.96 | 120.54 | 121.05 | 181.50 | 186.42 |
| 1250.00 | 16.76 | 32.44  | 32.56  | 48.12  | 48.77  |
| 1400.00 | 41.54 | 148.87 | 149.22 | 224.22 | 225.22 |
| 1500.00 | 16.76 | 32.43  | 32.53  | 48.07  | 48.63  |
| 1600.00 | 21.85 | 94.52  | 94.81  | 121.35 | 122.16 |
| 1750.00 | 41.54 | 148.86 | 149.11 | 224.10 | 226.33 |
| 1800.00 | 17.94 | 35.63  | 35.78  | 54.42  | 55.02  |
| 2000.00 | 29.78 | 116.43 | 116.60 | 163.38 | 163.88 |
| 2100.00 | 14.23 | 26.10  | 26.15  | 34.77  | 35.05  |
| 2400.00 | 13.85 | 24.62  | 24.66  | 31.00  | 31.21  |
| 2500.00 | 16.75 | 32.43  | 32.54  | 47.98  | 48.33  |
| 2800.00 | 22.95 | 98.53  | 98.62  | 125.59 | 125.83 |
| 3000.00 | 16.75 | 32.42  | 32.51  | 47.94  | 48.72  |
| 3500.00 | 16.75 | 32.41  | 32.52  | 47.92  | 48.62  |
| 3600.00 | 14.23 | 26.10  | 26.16  | 34.73  | 34.90  |
| 4200.00 | 14.23 | 26.10  | 26.14  | 34.71  | 35.09  |

$GD^2 \text{ (Kg cm}^2\text{)} = 4 \times \text{Moment of Inertia (Kg cm}^2\text{)}$

# SERIES A

## MOTORISED EXACT RATIOS

9701

### TRIPLE REDUCTION (helical worm/worm)

| Nominal Ratio | Primary & Secondary Nominal Ratio | 10    | 12    | 14    | 17    | 20    |
|---------------|-----------------------------------|-------|-------|-------|-------|-------|
| 75.00         | 8 x 10                            | 75.75 | 78.13 | 78.13 | 79.51 | 78.18 |
| 100.00        | 8 x 12.5                          | 99.06 | 99.66 | 101.7 | 99.39 | 101.4 |
| 125.00        | 12 x 10                           | 119.3 | 120.6 | 120.6 | 120.8 | 118.8 |
| 150.00        | 20 x 7.5                          | 148.2 | 149.1 | 149.1 | 144.7 | 144.7 |
| 200.00        | 8 x 25                            | 190.4 | 199.3 | 195.3 | 196.1 | 196.1 |
| 225.00        | 18 x 12.5                         | 224.4 | 222.4 | 226.9 | 223.4 | 227.9 |
| 250.00        | 20 x 12.5                         | 251.9 | 248.5 | 253.5 | 241.2 | 246.0 |
| 300.00        | 12 x 25                           | 299.8 | 307.6 | 301.4 | 298.0 | 298.0 |
| 350.00        | 14 x 25                           | 333.4 | 345.2 | 338.3 | 338.4 | 338.4 |
| 375.00        | 25 x 15                           | 358.9 | 377.4 | 379.6 | 372.7 | 372.7 |
| 400.00        | 8 x 50                            | 388.5 | 398.6 | 398.6 | 397.5 | 393.6 |
| 450.00        | 10 x 25                           | 431.1 | 444.9 | 436.0 | 440.8 | 440.8 |
| 500.00        | 20 x 25                           | 484.0 | 497.0 | 487.1 | 475.9 | 475.9 |
| 600.00        | 80 x 7.5                          | 573.8 | 578.8 | 578.8 | 597.8 | 597.8 |
| 625.00        | 25 x 25                           | 599.5 | 643.4 | 630.5 | 623.3 | 623.3 |
| 700.00        | 14 x 50                           | 680.5 | 690.5 | 690.5 | 686.0 | 679.1 |
| 750.00        | 50 x 15                           | 722.5 | 725.9 | 730.0 | 715.5 | 715.5 |
| 800.00        | 20 x 40                           | 790.3 | 795.2 | 795.2 | 771.8 | 771.8 |
| 900.00        | 18 x 50                           | 879.9 | 889.7 | 889.7 | 893.5 | 884.6 |
| 1000.00       | 20 x 50                           | 987.8 | 994.0 | 994.0 | 964.7 | 955.0 |
| 1200.00       | 20 x 60                           | 1185. | 1193. | 1193. | 1158. | 1158. |
| 1250.00       | 50 x 25                           | 1207. | 1237. | 1213. | 1197. | 1197. |
| 1400.00       | 28 x 50                           | 1361. | 1444. | 1444. | 1435. | 1421. |
| 1500.00       | 50 x 30                           | 1453. | 1460. | 1509. | 1431. | 1431. |
| 1600.00       | 32 x 50                           | 1589. | 1571. | 1571. | 1593. | 1577. |
| 1750.00       | 28 x 60                           | 1633. | 1733. | 1733. | 1722. | 1722. |
| 1800.00       | 45 x 40                           | 1746. | 1782. | 1782. | 1746. | 1746. |
| 2000.00       | 40 x 50                           | 1976. | 2079. | 2079. | 2018. | 1998. |
| 2100.00       | 71 x 30                           | 2054. | 2062. | 2132. | 2041. | 2041. |
| 2400.00       | 80 x 30                           | 2257. | 2277. | 2354. | 2351. | 2351. |
| 2500.00       | 50 x 50                           | 2463. | 2475. | 2475. | 2426. | 2401. |
| 2800.00       | 56 x 50                           | 2730. | 2883. | 2883. | 2943. | 2913. |
| 3000.00       | 50 x 60                           | 2956. | 2969. | 2969. | 2911. | 2911. |
| 3500.00       | 50 x 70                           | 3448. | 3464. | 3464. | 3396. | 3396. |
| 3600.00       | 71 x 50                           | 3482. | 3495. | 3495. | 3459. | 3424. |
| 4200.00       | 71 x 60                           | 4179. | 4194. | 4194. | 4151. | 4151. |

# SERIES A

## MOTORISED RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9701

| NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY   |                  | SIZE OF UNIT |       |       |       |        |
|---------------|----------------------|------------|------------------|--------------|-------|-------|-------|--------|
|               |                      |            |                  | 10           | 12    | 14    | 17    | 20     |
| 75.0          | 19.33                | Mechanical | Input Power kW   | 20.30        | 36.40 | 36.50 | 60.50 | 63.80  |
|               |                      |            | Output Torque Nm | 8610         | 16200 | 16200 | 27700 | 29000  |
|               |                      | Thermal    | Input Power kW   | 24.60        | 35.20 | 49.30 | 76.20 | 88.50  |
|               |                      |            | Output Torque Nm | 10500        | 15600 | 22100 | 35100 | 40400  |
| 100.          | 14.50                | Mechanical | Efficiency %     | 85           | 86    | 86    | 87    | 88     |
|               |                      |            | Input Power kW   | 20.30        | 29.40 | 36.50 | 53.40 | 63.80  |
|               |                      | Thermal    | Output Torque Nm | 11100        | 16400 | 20900 | 30300 | 37400  |
|               |                      |            | Input Power kW   | 21.50        | 32.50 | 42.70 | 69.70 | 88.50  |
| 125.          | 11.60                | Mechanical | Output Torque Nm | 11800        | 18200 | 24500 | 39700 | 52000  |
|               |                      |            | Efficiency %     | 84           | 85    | 86    | 87    | 88     |
|               |                      | Thermal    | Input Power kW   | 15.60        | 27.80 | 28.30 | 45.40 | 50.20  |
|               |                      |            | Output Torque Nm | 10300        | 18800 | 19200 | 31200 | 34200  |
| 150.          | 9.67                 | Mechanical | Input Power kW   | 15.70        | 22.90 | 32.20 | 50.40 | 63.00  |
|               |                      |            | Output Torque Nm | 10400        | 15400 | 21900 | 34700 | 43100  |
|               |                      | Thermal    | Efficiency %     | 84           | 85    | 85    | 86    | 87     |
|               |                      |            | Input Power kW   | 11.70        | 21.20 | 21.20 | 31.90 | 37.90  |
| 200.          | 7.25                 | Mechanical | Output Torque Nm | 9440         | 17500 | 17600 | 26000 | 31100  |
|               |                      |            | Efficiency %     | 78           | 79    | 81    | 82    | 84     |
|               |                      | Thermal    | Input Power kW   | 10.90        | 15.80 | 21.80 | 34.70 | 41.80  |
|               |                      |            | Output Torque Nm | 8860         | 13000 | 18100 | 28200 | 34300  |
| 225.          | 6.44                 | Mechanical | Input Power kW   | 12.20        | 18.10 | 25.50 | 45.10 | 60.30  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 26500 | 47800 | 65500  |
|               |                      | Thermal    | Input Power kW   | 9.65         | 14.70 | 19.40 | 31.30 | 42.90  |
|               |                      |            | Output Torque Nm | 11500        | 17800 | 24000 | 38800 | 54900  |
| 250.          | 5.80                 | Mechanical | Efficiency %     | 81           | 83    | 83    | 84    | 85     |
|               |                      |            | Input Power kW   | 8.92         | 13.50 | 21.20 | 29.20 | 37.90  |
|               |                      | Thermal    | Output Torque Nm | 11900        | 18200 | 29200 | 38900 | 52100  |
|               |                      |            | Input Power kW   | 8.61         | 13.20 | 17.40 | 29.00 | 39.80  |
| 300.          | 4.83                 | Mechanical | Output Torque Nm | 11500        | 17800 | 23900 | 38800 | 54800  |
|               |                      |            | Efficiency %     | 81           | 82    | 82    | 84    | 85     |
|               |                      | Thermal    | Input Power kW   | 7.94         | 12.00 | 19.10 | 30.50 | 40.50  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 30200 | 48100 | 65500  |
| 350.          | 4.14                 | Mechanical | Input Power kW   | 8.86         | 13.10 | 18.60 | 28.60 | 40.30  |
|               |                      |            | Output Torque Nm | 13300        | 20600 | 29200 | 45100 | 65100  |
|               |                      | Thermal    | Efficiency %     | 76           | 77    | 79    | 80    | 82     |
|               |                      |            | Input Power kW   | 7.19         | 10.70 | 17.80 | 27.00 | 35.90  |
| 375.          | 3.87                 | Mechanical | Output Torque Nm | 11900        | 18800 | 31300 | 48100 | 65500  |
|               |                      |            | Efficiency %     | 75           | 77    | 79    | 80    | 82     |
|               |                      | Thermal    | Input Power kW   | 7.98         | 11.70 | 16.60 | 25.20 | 35.60  |
|               |                      |            | Output Torque Nm | 13300        | 20500 | 29100 | 44800 | 64700  |
| 400.          | 3.63                 | Mechanical | Input Power kW   | 6.68         | 9.95  | 17.40 | 24.60 | 31.20  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 33700 | 48100 | 61800  |
|               |                      | Thermal    | Input Power kW   | 11.30        | 16.70 | 19.50 | 35.90 | 38.00  |
|               |                      |            | Output Torque Nm | 20600        | 32100 | 37900 | 70900 | 75600  |
| 450.          | 3.22                 | Mechanical | Efficiency %     | 75           | 76    | 77    | 80    | 81     |
|               |                      |            | Input Power kW   | 6.99         | 10.50 | 14.90 | 25.10 | 23.70  |
|               |                      | Thermal    | Output Torque Nm | 11900        | 18800 | 27600 | 48100 | 47400  |
|               |                      |            | Input Power kW   | 8.40         | 12.20 | 16.50 | 26.40 | 41.60  |
| 500.          | 2.90                 | Mechanical | Output Torque Nm | 14500        | 22200 | 30600 | 50600 | 84800  |
|               |                      |            | Efficiency %     | 67           | 68    | 71    | 73    | 77     |
|               |                      | Thermal    | Input Power kW   | 5.65         | 8.45  | 15.00 | 21.10 | 28.00  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 33700 | 48100 | 65500  |
| 600.          | 2.42                 | Mechanical | Input Power kW   | 6.21         | 9.13  | 12.90 | 19.40 | 27.40  |
|               |                      |            | Output Torque Nm | 13100        | 20300 | 28800 | 44300 | 64000  |
|               |                      | Thermal    | Efficiency %     | 74           | 76    | 78    | 79    | 80     |
|               |                      |            | Input Power kW   | 5.06         | 7.62  | 13.80 | 19.60 | 26.10  |
| 625.          | 2.32                 | Mechanical | Output Torque Nm | 11900        | 18800 | 34200 | 48100 | 65500  |
|               |                      |            | Efficiency %     | 74           | 75    | 77    | 78    | 80     |
|               |                      | Thermal    | Input Power kW   | 5.54         | 8.19  | 11.60 | 18.00 | 25.40  |
|               |                      |            | Output Torque Nm | 13100        | 20200 | 28700 | 44200 | 63800  |
| 700.          | 2.07                 | Mechanical | Input Power kW   | 4.09         | 6.27  | 8.79  | 12.30 | 14.00  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 26500 | 38700 | 44100  |
|               |                      | Thermal    | Input Power kW   | 2.96         | 4.23  | 5.84  | 8.72  | 12.00  |
|               |                      |            | Output Torque Nm | 8600         | 12600 | 17500 | 27300 | 37700  |
| 750.          | 1.93                 | Mechanical | Efficiency %     | 77           | 78    | 79    | 80    | 80     |
|               |                      |            | Input Power kW   | 4.37         | 6.38  | 11.30 | 15.90 | 20.90  |
|               |                      | Thermal    | Output Torque Nm | 11900        | 18800 | 34200 | 48100 | 65500  |
|               |                      |            | Input Power kW   | 7.95         | 11.70 | 16.30 | 24.60 | 34.40  |
| 800.          | 1.81                 | Mechanical | Output Torque Nm | 22300        | 35500 | 50000 | 75900 | 109000 |
|               |                      |            | Efficiency %     | 69           | 70    | 73    | 74    | 76     |
|               |                      | Thermal    | Input Power kW   | 4.16         | 6.28  | 10.50 | 15.10 | 15.40  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 32600 | 48100 | 51700  |
| 750.          | 1.93                 | Mechanical | Input Power kW   | 4.83         | 7.10  | 9.56  | 15.30 | 24.30  |
|               |                      |            | Output Torque Nm | 14000        | 21400 | 29500 | 48700 | 82300  |
|               |                      | Thermal    | Efficiency %     | 64           | 66    | 68    | 71    | 75     |
|               |                      |            | Input Power kW   | 3.32         | 5.09  | 9.15  | 12.80 | 17.40  |
| 750.          | 1.93                 | Mechanical | Output Torque Nm | 11900        | 18800 | 34200 | 48100 | 65500  |
|               |                      |            | Efficiency %     | 76           | 77    | 77    | 80    | 80     |
|               |                      | Thermal    | Input Power kW   | 3.30         | 4.90  | 6.58  | 10.80 | 14.80  |
|               |                      |            | Output Torque Nm | 11900        | 18000 | 24500 | 40500 | 55600  |
| 800.          | 1.81                 | Mechanical | Input Power kW   | 3.47         | 5.26  | 9.28  | 12.60 | 16.90  |
|               |                      |            | Output Torque Nm | 11900        | 18800 | 34100 | 47100 | 65300  |
|               |                      | Thermal    | Input Power kW   | 3.89         | 5.80  | 7.85  | 13.70 | 19.30  |
|               |                      |            | Output Torque Nm | 13400        | 20800 | 28700 | 51200 | 74600  |
| 800.          | 1.81                 | Thermal    | Efficiency %     | 66           | 68    | 70    | 74    | 76     |

TRIPLE REDUCTION

# SERIES A

## MOTORISED RATINGS AT 1450 REV/MIN INPUT (Synthetic Oil)

9701

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         |                  | SIZE OF UNIT |       |       |        |        |
|------------------|---------------|----------------------|------------------|------------------|--------------|-------|-------|--------|--------|
|                  |               |                      |                  |                  | 10           | 12    | 14    | 17     | 20     |
| TRIPLE REDUCTION | 900.          | 1.61                 | Mechanical       | Input Power kW   | 3.29         | 4.97  | 8.73  | 11.90  | 12.30  |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 34200 | 48100  | 52700  |
|                  |               |                      | Thermal          | Input Power kW   | 3.76         | 5.53  | 7.45  | 11.80  | 18.70  |
|                  |               |                      |                  | Output Torque Nm | 13700        | 21000 | 29000 | 47800  | 81200  |
|                  | 1000.         | 1.45                 | Mechanical       | Efficiency %     | 62           | 65    | 66    | 69     | 74     |
|                  |               |                      |                  | Input Power kW   | 2.95         | 4.48  | 7.88  | 11.10  | 11.40  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900        | 18800 | 34200 | 48100  | 52700  |
|                  |               |                      |                  | Input Power kW   | 3.35         | 4.96  | 6.68  | 10.90  | 17.30  |
|                  | 1200.         | 1.21                 | Mechanical       | Output Torque Nm | 13600        | 20900 | 28800 | 47500  | 80900  |
|                  |               |                      |                  | Efficiency %     | 62           | 64    | 66    | 69     | 73     |
|                  |               |                      | Thermal          | Input Power kW   | 2.61         | 3.96  | 6.67  | 9.60   | 13.00  |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 33600 | 48100  | 65500  |
|                  | 1250.         | 1.16                 | Mechanical       | Input Power kW   | 2.98         | 4.38  | 6.21  | 9.82   | 12.30  |
|                  |               |                      |                  | Output Torque Nm | 13700        | 20900 | 31300 | 49200  | 61900  |
|                  |               |                      | Thermal          | Efficiency %     | 58           | 60    | 64    | 66     | 66     |
|                  |               |                      |                  | Input Power kW   | 2.16         | 3.23  | 5.85  | 8.25   | 11.00  |
|                  | 1400.         | 1.04                 | Mechanical       | Output Torque Nm | 11900        | 18800 | 34200 | 48100  | 65500  |
|                  |               |                      |                  | Efficiency %     | 69           | 71    | 73    | 74     | 75     |
|                  |               |                      | Thermal          | Input Power kW   | 2.38         | 3.48  | 5.97  | 8.15   | 8.27   |
|                  |               |                      |                  | Output Torque Nm | 23500        | 36900 | 50500 | 82600  | 141000 |
|                  | 1500.         | 0.97                 | Mechanical       | Efficiency %     | 56           | 57    | 60    | 62     | 68     |
|                  |               |                      |                  | Input Power kW   | 1.86         | 2.81  | 4.47  | 7.09   | 9.39   |
|                  |               |                      | Thermal          | Output Torque Nm | 11900        | 18800 | 31500 | 48100  | 65500  |
|                  |               |                      |                  | Input Power kW   | 2.00         | 3.05  | 4.15  | 6.49   | 9.32   |
|                  | 1600.         | 0.91                 | Mechanical       | Output Torque Nm | 12800        | 20400 | 29200 | 44000  | 65000  |
|                  |               |                      |                  | Efficiency %     | 67           | 70    | 71    | 72     | 74     |
|                  |               |                      | Thermal          | Input Power kW   | 1.91         | 2.93  | 5.18  | 6.95   | 7.13   |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 34200 | 48100  | 52400  |
|                  | 1750.         | 0.83                 | Mechanical       | Input Power kW   | 2.11         | 3.16  | 4.26  | 6.66   | 10.60  |
|                  |               |                      |                  | Output Torque Nm | 13200        | 20300 | 28000 | 46000  | 78900  |
|                  |               |                      | Thermal          | Efficiency %     | 60           | 62    | 64    | 66     | 71     |
|                  |               |                      |                  | Input Power kW   | 2.12         | 3.11  | 5.07  | 7.13   | 9.52   |
|                  | 1800.         | 0.81                 | Mechanical       | Output Torque Nm | 11900        | 18800 | 33600 | 48100  | 65500  |
|                  |               |                      |                  | Efficiency %     | 52           | 53    | 58    | 59     | 61     |
|                  |               |                      | Thermal          | Input Power kW   | 1.67         | 2.48  | 4.38  | 6.01   | 7.86   |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 33900 | 48100  | 64700  |
| 2000.            | 0.73          | Mechanical           | Input Power kW   | 1.80             | 2.63         | 3.56  | 6.15  | 8.71   |        |
|                  |               |                      | Output Torque Nm | 12900            | 19900        | 27500 | 49200 | 71800  |        |
|                  |               | Thermal              | Efficiency %     | 62               | 65           | 66    | 70    | 72     |        |
|                  |               |                      | Input Power kW   | 1.68             | 2.48         | 4.28  | 5.94  | 5.99   |        |
| 2100.            | 0.69          | Mechanical           | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 52300  |        |
|                  |               |                      | Efficiency %     | 54               | 55           | 58    | 61    | 66     |        |
|                  |               | Thermal              | Input Power kW   | 3.09             | 4.54         | 6.06  | 9.72  | 15.40  |        |
|                  |               |                      | Output Torque Nm | 22900            | 36200        | 49400 | 80800 | 139000 |        |
| 2400.            | 0.60          | Mechanical           | Efficiency %     | 54               | 55           | 58    | 61    | 66     |        |
|                  |               |                      | Input Power kW   | 1.35             | 2.03         | 3.23  | 5.09  | 6.74   |        |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 31400 | 48100 | 65500  |        |
|                  |               |                      | Input Power kW   | 1.43             | 2.18         | 2.97  | 4.59  | 6.60   |        |
| 2500.            | 0.58          | Mechanical           | Output Torque Nm | 12700            | 20100        | 28800 | 43300 | 64100  |        |
|                  |               |                      | Efficiency %     | 65               | 68           | 69    | 70    | 72     |        |
|                  |               | Thermal              | Input Power kW   | 1.24             | 1.85         | 2.94  | 4.46  | 5.90   |        |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 31400 | 48100 | 65500  |        |
| 2800.            | 0.52          | Mechanical           | Input Power kW   | 1.31             | 1.98         | 2.70  | 4.00  | 5.76   |        |
|                  |               |                      | Output Torque Nm | 12600            | 20100        | 28700 | 43100 | 63800  |        |
|                  |               | Thermal              | Efficiency %     | 65               | 68           | 69    | 70    | 72     |        |
|                  |               |                      | Input Power kW   | 1.28             | 1.93         | 3.42  | 4.72  | 4.80   |        |
| 3000.            | 0.48          | Mechanical           | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 52200  |        |
|                  |               |                      | Efficiency %     | 57               | 60           | 61    | 64    | 69     |        |
|                  |               | Thermal              | Input Power kW   | 1.38             | 2.03         | 2.74  | 4.42  | 7.06   |        |
|                  |               |                      | Output Torque Nm | 12900            | 19800        | 27200 | 44900 | 77400  |        |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 1.25             | 1.83         | 3.17  | 4.18  | 4.23   |        |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 52100  |        |
|                  |               | Thermal              | Input Power kW   | 2.27             | 3.31         | 4.42  | 6.72  | 10.70  |        |
|                  |               |                      | Output Torque Nm | 22500            | 35500        | 48500 | 79100 | 137000 |        |
| 3600.            | 0.40          | Mechanical           | Efficiency %     | 53               | 54           | 57    | 59    | 64     |        |
|                  |               |                      | Input Power kW   | 1.14             | 1.71         | 2.87  | 4.12  | 5.67   |        |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 33400 | 48100 | 65500  |        |
|                  |               |                      | Input Power kW   | 1.22             | 1.79         | 2.54  | 3.97  | 5.01   |        |
| 4200.            | 0.35          | Mechanical           | Output Torque Nm | 12900            | 19600        | 29500 | 46300 | 57700  |        |
|                  |               |                      | Efficiency %     | 54               | 56           | 59    | 61    | 60     |        |
|                  |               | Thermal              | Input Power kW   | 1.01             | 1.52         | 2.71  | 3.68  | 5.06   |        |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 65500  |        |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 1.16             | 1.69         | 2.21  | 3.62  | 4.60   |        |
|                  |               |                      | Output Torque Nm | 13900            | 21000        | 27700 | 47200 | 59300  |        |
|                  |               | Thermal              | Efficiency %     | 52               | 54           | 55    | 58    | 58     |        |
|                  |               |                      | Input Power kW   | 0.93             | 1.40         | 2.49  | 3.41  | 3.44   |        |
| 3600.            | 0.40          | Mechanical           | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 52000  |        |
|                  |               |                      | Efficiency %     | 56               | 58           | 59    | 62    | 67     |        |
|                  |               | Thermal              | Input Power kW   | 0.98             | 1.45         | 1.95  | 3.12  | 5.00   |        |
|                  |               |                      | Output Torque Nm | 12600            | 19400        | 26700 | 44000 | 76200  |        |
| 4200.            | 0.35          | Mechanical           | Input Power kW   | 0.83             | 1.25         | 2.09  | 2.97  | 4.11   |        |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 33400 | 48100 | 65500  |        |
|                  |               | Thermal              | Input Power kW   | 0.87             | 1.27         | 1.82  | 2.80  | 3.54   |        |
|                  |               |                      | Output Torque Nm | 12600            | 19200        | 28900 | 45300 | 56300  |        |
| 4200.            | 0.35          | Mechanical           | Efficiency %     | 52               | 54           | 57    | 59    | 58     |        |

# SERIES A

## MOTORISED RATINGS AT 1450 REV/MIN INPUT (Mineral Oil)

9701

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         |                  | SIZE OF UNIT |       |       |       |       |
|------------------|---------------|----------------------|------------------|------------------|--------------|-------|-------|-------|-------|
|                  |               |                      |                  |                  | 10           | 12    | 14    | 17    | 20    |
| TRIPLE REDUCTION | 75.0          | 19.33                | Mechanical       | Input Power kW   | 17.30        | 30.90 | 30.90 | 54.20 | 54.00 |
|                  |               |                      |                  | Output Torque Nm | 6990         | 13100 | 13200 | 23900 | 23700 |
|                  |               |                      | Thermal          | Input Power kW   | 19.20        | 27.50 | 38.30 | 59.20 | 67.30 |
|                  |               |                      |                  | Output Torque Nm | 7810         | 11600 | 16500 | 26200 | 29600 |
|                  | 100.          | 14.50                | Mechanical       | Efficiency %     | 81           | 82    | 83    | 84    | 85    |
|                  |               |                      |                  | Input Power kW   | 17.30        | 26.30 | 30.90 | 54.20 | 54.00 |
|                  |               |                      | Thermal          | Output Torque Nm | 8990         | 14000 | 16900 | 29600 | 30400 |
|                  |               |                      |                  | Input Power kW   | 16.90        | 25.40 | 33.40 | 54.20 | 67.30 |
|                  | 125.          | 11.60                | Mechanical       | Output Torque Nm | 8810         | 13600 | 18300 | 29700 | 38100 |
|                  |               |                      |                  | Efficiency %     | 80           | 82    | 82    | 83    | 84    |
|                  |               |                      | Thermal          | Input Power kW   | 13.30        | 24.10 | 24.10 | 42.60 | 42.50 |
|                  |               |                      |                  | Output Torque Nm | 8290         | 15500 | 15600 | 28100 | 27900 |
|                  | 150.          | 9.67                 | Mechanical       | Input Power kW   | 12.30        | 17.90 | 25.00 | 39.20 | 48.00 |
|                  |               |                      |                  | Output Torque Nm | 7690         | 11500 | 16200 | 25800 | 31500 |
|                  |               |                      | Thermal          | Efficiency %     | 80           | 81    | 82    | 83    | 84    |
|                  |               |                      |                  | Input Power kW   | 9.95         | 18.10 | 18.10 | 32.20 | 32.20 |
|                  | 200.          | 7.25                 | Mechanical       | Output Torque Nm | 7620         | 14200 | 14200 | 25100 | 25200 |
|                  |               |                      |                  | Efficiency %     | 78           | 79    | 80    | 81    | 82    |
|                  |               |                      | Thermal          | Input Power kW   | 12.70        | 18.50 | 26.10 | 42.70 | 54.00 |
|                  |               |                      |                  | Output Torque Nm | 11700        | 18100 | 25800 | 43000 | 55800 |
|                  | 225.          | 6.44                 | Mechanical       | Input Power kW   | 11.20        | 16.20 | 22.70 | 34.50 | 48.20 |
|                  |               |                      |                  | Output Torque Nm | 10200        | 15700 | 22300 | 34400 | 49600 |
|                  |               |                      | Thermal          | Efficiency %     | 73           | 74    | 76    | 77    | 80    |
|                  |               |                      |                  | Input Power kW   | 10.60        | 14.80 | 19.30 | 31.60 | 33.70 |
|                  | 250.          | 5.80                 | Mechanical       | Output Torque Nm | 11900        | 17000 | 22700 | 37400 | 41100 |
|                  |               |                      |                  | Efficiency %     | 76           | 78    | 78    | 80    | 81    |
|                  |               |                      | Thermal          | Input Power kW   | 9.47         | 13.70 | 18.10 | 30.00 | 32.20 |
|                  |               |                      |                  | Output Torque Nm | 11900        | 17400 | 23500 | 38200 | 42200 |
| 300.             | 4.83          | Mechanical           | Input Power kW   | 6.82             | 10.40        | 13.70 | 22.70 | 31.00 |       |
|                  |               |                      | Output Torque Nm | 8520             | 13200        | 17700 | 28700 | 40600 |       |
|                  |               | Thermal              | Efficiency %     | 75               | 78           | 77    | 80    | 81    |       |
|                  |               |                      | Input Power kW   | 8.51             | 12.80        | 19.20 | 31.80 | 42.50 |       |
| 350.             | 4.14          | Mechanical           | Output Torque Nm | 11900            | 18800        | 28400 | 47400 | 65000 |       |
|                  |               |                      | Efficiency %     | 70               | 72           | 74    | 75    | 77    |       |
|                  |               | Thermal              | Input Power kW   | 7.15             | 10.50        | 14.80 | 22.80 | 31.90 |       |
|                  |               |                      | Output Torque Nm | 9940             | 15400        | 21800 | 33600 | 48500 |       |
| 375.             | 3.87          | Mechanical           | Input Power kW   | 7.1              | 11.50        | 17.60 | 28.70 | 38.00 |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 29100 | 48100 | 65500 |       |
|                  |               | Thermal              | Input Power kW   | 6.45             | 9.41         | 13.20 | 20.10 | 28.10 |       |
|                  |               |                      | Output Torque Nm | 9890             | 15300        | 21700 | 33400 | 48200 |       |
| 400.             | 3.63          | Mechanical           | Efficiency %     | 70               | 72           | 74    | 75    | 77    |       |
|                  |               |                      | Input Power kW   | 7.16             | 10.40        | 15.00 | 25.80 | 26.70 |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18300        | 27000 | 47600 | 49700 |       |
|                  |               |                      | Input Power kW   | 9.11             | 13.40        | 15.10 | 28.50 | 29.30 |       |
| 450.             | 3.22          | Mechanical           | Output Torque Nm | 15300            | 23800        | 27200 | 52700 | 54700 |       |
|                  |               |                      | Efficiency %     | 70               | 71           | 72    | 75    | 76    |       |
|                  |               | Thermal              | Input Power kW   | 7.63             | 11.40        | 16.10 | 27.10 | 24.90 |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 27500 | 48100 | 46900 |       |
| 500.             | 2.90          | Mechanical           | Input Power kW   | 7.02             | 10.20        | 13.60 | 21.60 | 33.50 |       |
|                  |               |                      | Output Torque Nm | 10900            | 16700        | 23000 | 38000 | 63700 |       |
|                  |               | Thermal              | Efficiency %     | 61               | 62           | 64    | 67    | 73    |       |
|                  |               |                      | Input Power kW   | 6.09             | 9.06         | 14.60 | 22.50 | 29.80 |       |
| 600.             | 2.42          | Mechanical           | Output Torque Nm | 11900            | 18800        | 30600 | 48100 | 65500 |       |
|                  |               |                      | Efficiency %     | 68               | 70           | 72    | 73    | 76    |       |
|                  |               | Thermal              | Input Power kW   | 5.02             | 7.34         | 10.30 | 15.50 | 21.70 |       |
|                  |               |                      | Output Torque Nm | 9750             | 15100        | 21400 | 32900 | 47600 |       |
| 625.             | 2.32          | Mechanical           | Efficiency %     | 68               | 70           | 72    | 73    | 75    |       |
|                  |               |                      | Input Power kW   | 5.47             | 8.18         | 13.50 | 20.90 | 27.70 |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 31300 | 48100 | 65500 |       |
|                  |               |                      | Input Power kW   | 4.49             | 6.59         | 9.27  | 14.40 | 20.20 |       |
| 700.             | 2.07          | Mechanical           | Output Torque Nm | 9700             | 15000        | 21300 | 32800 | 47400 |       |
|                  |               |                      | Efficiency %     | 68               | 70           | 72    | 73    | 75    |       |
|                  |               | Thermal              | Input Power kW   | 4.21             | 6.73         | 7.63  | 12.80 | 13.20 |       |
|                  |               |                      | Output Torque Nm | 11400            | 18800        | 21400 | 37500 | 38900 |       |
| 750.             | 1.93          | Mechanical           | Input Power kW   | 2.34             | 3.33         | 4.60  | 6.82  | 9.34  |       |
|                  |               |                      | Output Torque Nm | 6280             | 9220         | 12800 | 19900 | 27500 |       |
|                  |               | Thermal              | Efficiency %     | 71               | 73           | 73    | 74    | 75    |       |
|                  |               |                      | Input Power kW   | 4.76             | 6.92         | 11.80 | 17.10 | 22.40 |       |
| 800.             | 1.81          | Mechanical           | Output Torque Nm | 11900            | 18800        | 32800 | 48100 | 65500 |       |
|                  |               |                      | Efficiency %     | 63               | 64           | 67    | 69    | 71    |       |
|                  |               | Thermal              | Input Power kW   | 6.53             | 9.56         | 13.30 | 20.00 | 27.70 |       |
|                  |               |                      | Output Torque Nm | 16600            | 26400        | 37200 | 56600 | 81300 |       |
| 800.             | 1.81          | Mechanical           | Input Power kW   | 4.60             | 6.89         | 10.90 | 16.50 | 16.40 |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 30700 | 48100 | 51100 |       |
|                  |               | Thermal              | Input Power kW   | 4.05             | 5.91         | 7.91  | 12.60 | 19.60 |       |
|                  |               |                      | Output Torque Nm | 10400            | 15900        | 22000 | 36300 | 61400 |       |
| 800.             | 1.81          | Mechanical           | Efficiency %     | 57               | 59           | 61    | 64    | 70    |       |
|                  |               |                      | Input Power kW   | 3.59             | 5.47         | 9.84  | 13.40 | 18.30 |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 34200 | 47100 | 64600 |       |
|                  |               |                      | Input Power kW   | 2.64             | 3.89         | 5.22  | 8.55  | 11.60 |       |
| 800.             | 1.81          | Mechanical           | Output Torque Nm | 8720             | 13300        | 18000 | 29800 | 40900 |       |
|                  |               |                      | Efficiency %     | 69               | 72           | 72    | 74    | 75    |       |
|                  |               | Thermal              | Input Power kW   | 3.83             | 5.77         | 10.10 | 13.70 | 18.00 |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 33800 | 47100 | 64400 |       |
| 800.             | 1.81          | Mechanical           | Input Power kW   | 3.22             | 4.77         | 6.43  | 11.10 | 15.50 |       |
|                  |               |                      | Output Torque Nm | 9950             | 15400        | 21200 | 38000 | 55300 |       |
|                  |               | Thermal              | Efficiency %     | 59               | 62           | 63    | 67    | 70    |       |
|                  |               |                      | Input Power kW   | 3.83             | 5.77         | 10.10 | 13.70 | 18.00 |       |

# SERIES A

## MOTORISED RATINGS AT 1450 REV/MIN INPUT (Mineral Oil)

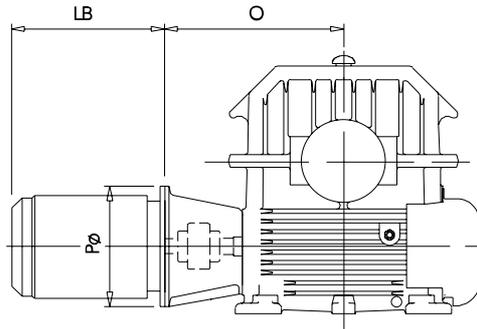
9701

|                  | NOMINAL RATIO | NOMINAL OUTPUT SPEED | CAPACITY         |                  | SIZE OF UNIT |       |       |       |       |
|------------------|---------------|----------------------|------------------|------------------|--------------|-------|-------|-------|-------|
|                  |               |                      |                  |                  | 10           | 12    | 14    | 17    | 20    |
| TRIPLE REDUCTION | 900.          | 1.61                 | Mechanical       | Input Power kW   | 3.66         | 5.48  | 9.08  | 13.00 | 13.10 |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 32200 | 48100 | 52000 |
|                  |               |                      | Thermal          | Input Power kW   | 3.15         | 4.61  | 6.17  | 9.70  | 15.10 |
|                  |               |                      |                  | Output Torque Nm | 10200        | 15600 | 21500 | 35500 | 60300 |
|                  | 1000.         | 1.45                 | Mechanical       | Efficiency %     | 56           | 58    | 59    | 62    | 68    |
|                  |               |                      |                  | Input Power kW   | 3.30         | 4.96  | 8.39  | 12.10 | 12.20 |
|                  |               |                      | Thermal          | Output Torque Nm | 11900        | 18800 | 32800 | 48100 | 52000 |
|                  |               |                      |                  | Input Power kW   | 2.81         | 4.13  | 5.54  | 8.99  | 14.00 |
|                  | 1200.         | 1.21                 | Mechanical       | Output Torque Nm | 10100        | 15500 | 21300 | 35200 | 60000 |
|                  |               |                      |                  | Efficiency %     | 55           | 57    | 59    | 62    | 68    |
|                  |               |                      | Thermal          | Input Power kW   | 2.94         | 4.43  | 7.35  | 10.60 | 14.40 |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 33300 | 48100 | 65500 |
|                  | 1250.         | 1.16                 | Mechanical       | Input Power kW   | 2.53         | 3.69  | 5.19  | 8.15  | 10.20 |
|                  |               |                      |                  | Output Torque Nm | 10200        | 15400 | 23100 | 36500 | 45900 |
|                  |               |                      | Thermal          | Efficiency %     | 52           | 53    | 57    | 59    | 59    |
|                  |               |                      |                  | Input Power kW   | 2.38         | 3.53  | 6.31  | 8.96  | 11.90 |
|                  | 1400.         | 1.04                 | Mechanical       | Output Torque Nm | 11900        | 18800 | 33800 | 48100 | 65500 |
|                  |               |                      |                  | Efficiency %     | 63           | 65    | 67    | 68    | 69    |
|                  |               |                      | Thermal          | Input Power kW   | 1.86         | 2.72  | 3.84  | 5.87  | 8.28  |
|                  |               |                      |                  | Output Torque Nm | 9270         | 14400 | 20400 | 31300 | 45300 |
|                  | 1500.         | 0.97                 | Mechanical       | Efficiency %     | 63           | 65    | 67    | 68    | 69    |
|                  |               |                      |                  | Input Power kW   | 2.67         | 3.88  | 6.69  | 9.03  | 8.91  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900        | 18800 | 34200 | 48100 | 51700 |
|                  |               |                      |                  | Efficiency %     | 50           | 51    | 54    | 56    | 62    |
|                  | 1600.         | 0.91                 | Mechanical       | Input Power kW   | 2.07         | 3.09  | 4.83  | 7.75  | 10.20 |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 31000 | 48100 | 65500 |
|                  |               |                      | Thermal          | Input Power kW   | 1.65         | 2.48  | 3.37  | 5.24  | 7.48  |
|                  |               |                      |                  | Output Torque Nm | 9420         | 15000 | 21400 | 32300 | 47700 |
|                  | 1750.         | 0.83                 | Mechanical       | Efficiency %     | 60           | 63    | 64    | 65    | 68    |
|                  |               |                      |                  | Input Power kW   | 2.16         | 3.28  | 5.80  | 7.72  | 7.68  |
|                  |               |                      | Thermal          | Output Torque Nm | 11900        | 18800 | 34200 | 48100 | 51600 |
|                  |               |                      |                  | Input Power kW   | 1.78         | 2.64  | 3.54  | 5.50  | 8.63  |
|                  | 1800.         | 0.81                 | Mechanical       | Output Torque Nm | 9710         | 14900 | 20600 | 33900 | 58100 |
|                  |               |                      |                  | Efficiency %     | 52           | 55    | 56    | 59    | 65    |
|                  |               |                      | Thermal          | Input Power kW   | 2.40         | 3.50  | 5.65  | 7.96  | 10.70 |
|                  |               |                      |                  | Output Torque Nm | 11900        | 18800 | 33200 | 48100 | 65500 |
|                  | 2000.         | 0.73                 | Mechanical       | Input Power kW   | 3.45         | 4.96  | 6.91  | 10.40 | 12.90 |
|                  |               |                      |                  | Output Torque Nm | 17700        | 27600 | 41200 | 64100 | 79300 |
|                  |               |                      | Thermal          | Efficiency %     | 46           | 47    | 51    | 53    | 54    |
|                  |               |                      |                  | Input Power kW   | 1.88         | 2.77  | 4.82  | 6.62  | 8.47  |
|                  | 2100.         | 0.69                 | Mechanical       | Output Torque Nm | 11900        | 18800 | 33500 | 48100 | 63700 |
|                  |               |                      |                  | Efficiency %     | 55           | 57    | 58    | 63    | 65    |
| Thermal          |               |                      | Input Power kW   | 1.50             | 2.18         | 2.94  | 5.00  | 7.04  |       |
|                  |               |                      | Output Torque Nm | 9430             | 14600        | 20100 | 36100 | 52800 |       |
| 2400.            | 0.60          | Mechanical           | Efficiency %     | 55               | 57           | 58    | 63    | 65    |       |
|                  |               |                      | Input Power kW   | 1.91             | 2.79         | 4.84  | 6.64  | 6.50  |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 51400 |       |
|                  |               |                      | Efficiency %     | 48               | 49           | 52    | 55    | 60    |       |
| 2500.            | 0.58          | Mechanical           | Input Power kW   | 1.51             | 2.25         | 3.51  | 5.61  | 7.38  |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 30800 | 48100 | 65500 |       |
|                  |               | Thermal              | Input Power kW   | 1.18             | 1.78         | 2.42  | 3.72  | 5.31  |       |
|                  |               |                      | Output Torque Nm | 9260             | 14700        | 21100 | 31700 | 46900 |       |
| 2800.            | 0.52          | Mechanical           | Efficiency %     | 58               | 61           | 62    | 63    | 66    |       |
|                  |               |                      | Input Power kW   | 1.38             | 2.05         | 3.20  | 4.93  | 6.48  |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 30800 | 48100 | 65500 |       |
|                  |               |                      | Input Power kW   | 1.08             | 1.61         | 2.20  | 3.25  | 4.64  |       |
| 3000.            | 0.48          | Mechanical           | Output Torque Nm | 9220             | 14700        | 21000 | 31500 | 46600 |       |
|                  |               |                      | Efficiency %     | 57               | 61           | 62    | 63    | 65    |       |
|                  |               | Thermal              | Input Power kW   | 1.46             | 2.18         | 3.86  | 5.30  | 5.21  |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 51300 |       |
| 3500.            | 0.41          | Mechanical           | Input Power kW   | 1.16             | 1.74         | 3.12  | 4.20  | 5.78  |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 65500 |       |
|                  |               | Thermal              | Input Power kW   | 1.00             | 1.44         | 1.88  | 3.04  | 3.86  |       |
|                  |               |                      | Output Torque Nm | 10100            | 15300        | 20200 | 34500 | 43200 |       |
| 3600.            | 0.40          | Mechanical           | Efficiency %     | 45               | 47           | 47    | 51    | 50    |       |
|                  |               |                      | Input Power kW   | 1.07             | 1.60         | 2.84  | 3.85  | 3.75  |       |
|                  |               | Thermal              | Output Torque Nm | 11900            | 18800        | 34200 | 48100 | 51100 |       |
|                  |               |                      | Input Power kW   | 0.83             | 1.21         | 1.63  | 2.59  | 4.08  |       |
| 4200.            | 0.35          | Mechanical           | Output Torque Nm | 9200             | 14100        | 19400 | 32100 | 55700 |       |
|                  |               |                      | Efficiency %     | 48               | 51           | 52    | 54    | 60    |       |
|                  |               | Thermal              | Input Power kW   | 0.96             | 1.43         | 2.36  | 3.39  | 4.70  |       |
|                  |               |                      | Output Torque Nm | 11900            | 18800        | 33000 | 48100 | 65500 |       |
|                  |               | Mechanical           | Input Power kW   | 0.75             | 1.08         | 1.53  | 2.34  | 2.96  |       |
|                  |               |                      | Output Torque Nm | 9190             | 14000        | 21100 | 33000 | 40900 |       |
|                  |               | Thermal              | Efficiency %     | 45               | 47           | 50    | 52    | 51    |       |
|                  |               |                      | Input Power kW   | 0.96             | 1.43         | 2.36  | 3.39  | 4.70  |       |

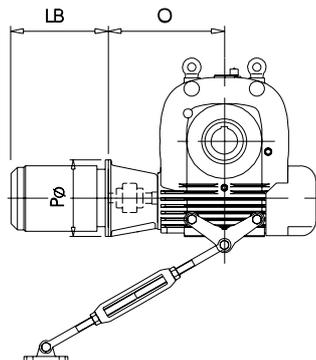
# SERIES A

## MOTORISED SINGLE REDUCTION (WORM)

9610



| SIZE OF UNIT | MOTOR FRAME SIZE | O   | P   | LB max | DB COUPLING |
|--------------|------------------|-----|-----|--------|-------------|
| 10           | 180              | 538 | 350 | 613    | 61204       |
|              | 200              | 538 | 400 | 613    | 61204       |
|              | 225              | 568 | 450 | 690    | 61204       |
|              | 250              | 568 | 550 | 690    | 61205       |
| 12           | 200              | 608 | 400 | 613    | 61204       |
|              | 225              | 638 | 450 | 690    | 61204       |
|              | 250              | 638 | 550 | 690    | 61205       |
|              | 280              | 668 | 550 | 820    | 61206       |
| 14           | 225              | 714 | 450 | 690    | 61206       |
|              | 250              | 714 | 550 | 690    | 61206       |
|              | 280              | 744 | 550 | 820    | 61206       |
| 17           | 250              | 841 | 550 | 690    | 61206       |
|              | 280              | 871 | 550 | 820    | 61206       |
|              | 315              | 871 | 660 | 962    | 61207       |

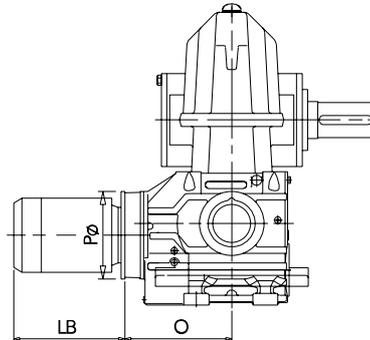


| SIZE OF UNIT | MOTOR FRAME SIZE | O   | P   | LB max | DB COUPLING |
|--------------|------------------|-----|-----|--------|-------------|
| 10           | 180              | 538 | 350 | 613    | 61204       |
|              | 200              | 538 | 400 | 613    | 61204       |
|              | 225              | 568 | 450 | 690    | 61204       |
|              | 250              | 568 | 550 | 690    | 61205       |
| 12           | 200              | 608 | 400 | 613    | 61204       |
|              | 225              | 638 | 450 | 690    | 61204       |
|              | 250              | 638 | 550 | 690    | 61205       |
|              | 280              | 668 | 550 | 820    | 61206       |
| 14           | 225              | 714 | 450 | 690    | 61206       |
|              | 250              | 714 | 550 | 690    | 61206       |
|              | 280              | 744 | 550 | 820    | 61206       |

# SERIES A

## MOTORISED TRIPLE REDUCTION (HELICAL WORM/WORM)

9612



| SIZE OF UNIT | MOTOR FRAME SIZE | O   | P   | LB max |
|--------------|------------------|-----|-----|--------|
| 10           | 80               | 302 | 200 | 230    |
|              | 90S/L            | 302 | 200 | 270    |
|              | 100/112          | 308 | 250 | 340    |
|              | 132              | 308 | 300 | 402    |
|              | 160/180M         | 338 | 350 | 538    |
| 12           | 80               | 358 | 200 | 230    |
|              | 90S/L            | 358 | 200 | 270    |
|              | 100/112          | 364 | 250 | 340    |
|              | 132              | 364 | 300 | 402    |
|              | 160/180M         | 399 | 350 | 538    |
|              | 180L             | 399 | 350 | 613    |
|              | 200              | 399 | 400 | 613    |
| 14           | 80               | 358 | 200 | 230    |
|              | 90S/L            | 358 | 200 | 270    |
|              | 100/112          | 364 | 250 | 340    |
|              | 132              | 364 | 300 | 402    |
|              | 160/180M         | 399 | 350 | 538    |
|              | 180L             | 399 | 350 | 613    |
|              | 200              | 399 | 400 | 613    |
| 17           | 100/112          | 402 | 250 | 340    |
|              | 132              | 402 | 300 | 402    |
|              | 160/180M         | 437 | 350 | 538    |
|              | 180L             | 437 | 350 | 613    |
|              | 200              | 437 | 400 | 613    |
|              | 225              | 464 | 450 | 690    |

Primary unit handed as shown only

# SERIES A

## AGITATOR UNITS SELECTION

9610

### AGITATOR UNIT, VERSION V - HDST

Based on the standard Radicon Series A Heavy Duty Range, the Agitator unit incorporates an extended bearing housing to accommodate a larger bottom bearing and increased shaft size, thereby enhancing the units capacity to absorb the high bending loads imposed during stirrer applications.

It is recommended that as much as possible of the following information be given on enquiry to enable us to check and advise on the correct size of unit for a given duty.

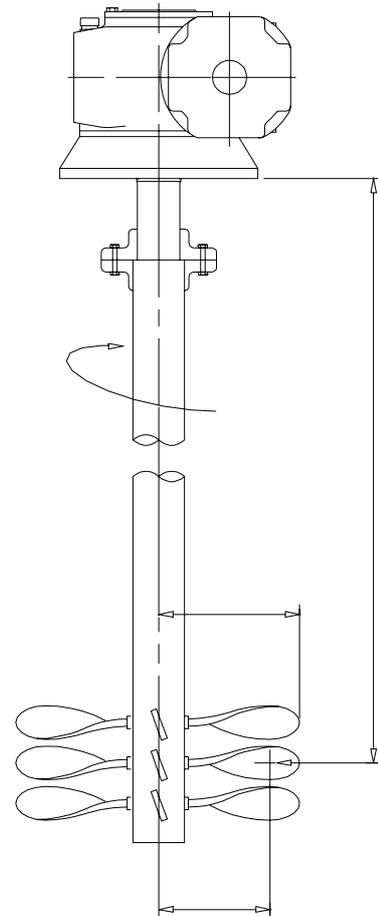
- 1 Quantity.
- 2 kW power or torque required at stirrer shaft.
- 3 Type of prime mover and kW power of prime mover.
- 4 Speed or range of speeds of stirrer shaft.
- 5 Total operating time per day with full details of any loading cycles.
- 6 Nature of medium to be stirred, i.e. constant or variable density.
- 7 Dimensions of the stirrer shaft, including length from the centre of the paddle to the top of the shaft, paddle diameter and shaft extension diameter.
- 8 Weight and thrust from paddle and direction of thrust.
- 9 Details of any abnormal operating conditions, e.g. ambient temperatures, humidity, etc.
- 10 Whether coupling or other ancillary equipment are required.

The following selection procedure applies.

#### Selection

- 1 Check the Radicon unit power capacity from ratings tables on pages 21 - 44.
- 2 Calculate the bending moment (m) at the Radicon output shaft.  

$$m = pk = \frac{\text{output torque}}{0.75r} \times k = \text{Nm}$$
- 3 Check the calculated bending moment against the shaft and bearing limitations shown in Tables 1 and 2.
- 4 Check from Table 3 the capacity of the unit to accept any specified axial thrust load.



#### Shaft Stress Limitations

Table 1 Allowable bending moment at the output shaft bottom bearing (Nm).

| Output Shaft Torque (Nm) | Standard Units |       |       |       | Heavy Duty Stirrer Units |       |       |
|--------------------------|----------------|-------|-------|-------|--------------------------|-------|-------|
|                          | 10             | 12    | 14    | 17    | 10                       | 12    | 14    |
| 1500                     | 9560           |       |       |       | 19500                    |       |       |
| 2200                     | 9460           | 13330 |       |       | 19450                    | 30870 |       |
| 3500                     | 9160           | 13120 | 27030 |       | 19310                    | 30780 | 55240 |
| 5300                     | 8480           | 12660 | 26800 | 42800 | 19000                    | 30590 | 55230 |
| 8000                     | 6710           | 11550 | 26300 | 42480 | 18280                    | 30150 | 55000 |
| 10000                    | 4250           | 10310 | 25780 | 42160 | 17530                    | 29700 | 54750 |
| 12000                    |                | 8570  | 25130 | 41760 | 16560                    | 29130 | 54440 |
| 14000                    |                | 5870  | 24350 | 41300 |                          | 28460 | 54080 |
| 17000                    |                |       | 22870 | 40440 |                          |       | 53440 |
| 20000                    |                |       |       | 39400 |                          |       |       |
| 25000                    |                |       |       | 37200 |                          |       |       |

#### Bearing Limitations \*

Table 2 Allowable bending moment at the output shaft bottom bearing (Nm).

| Output Shaft Speed (rev/min) | Standard Units |       |       |       | Heavy Duty Stirrer Units |       |       |
|------------------------------|----------------|-------|-------|-------|--------------------------|-------|-------|
|                              | 10             | 12    | 14    | 17    | 10                       | 12    | 14    |
| 280                          | 9400           | 10100 | 22590 | 23480 | 25700                    | 28980 | 29100 |
| 190                          | 11080          | 11830 | 27260 | 32730 | 29720                    | 33710 | 34400 |
| 125                          | 12240          | 12930 | 30600 | 37900 | 32570                    | 37070 | 38150 |
| 84                           | 14960          | 16230 | 37500 | 46650 | 39070                    | 44720 | 46720 |
| 56                           | 17090          | 18790 | 43560 | 53850 | 44140                    | 50680 | 53390 |
| 37                           | 20320          | 22440 | 58040 | 63680 | 51540                    | 59400 | 63150 |
| 25                           | 23340          | 26360 | 59230 | 73080 | 58720                    | 67850 | 72610 |
| 20 & less                    | 24340          | 27100 | 62490 | 77130 | 61290                    | 70870 | 76000 |

\* Bearing Limitations are based on 10,000 hrs L<sub>10</sub> life. For other lives multiply by the following factors:

| Required Life (hrs) | 5,000 | 10,000 | 25,000 | 50,000 | 100,000 |
|---------------------|-------|--------|--------|--------|---------|
| Factor              | 1.23  | 1      | 0.76   | 0.62   | 0.50    |

Table 3 Allowable Axial Thrust on Output Shaft (kN)

| Output Shaft Speed (rev/min) | Standard Units |      |      |      | Heavy Duty Units - Towards Gearbox |      |      | Heavy Duty Units - Away from Gearbox |      |      |
|------------------------------|----------------|------|------|------|------------------------------------|------|------|--------------------------------------|------|------|
|                              | 10             | 12   | 14   | 17   | 10                                 | 12   | 14   | 10                                   | 12   | 14   |
| 280                          | 6.6            | 8.4  | 15.0 | 8.5  | 6.6                                | 8.4  | 15.0 | 28.0                                 | 32.5 | 28.8 |
| 190                          | 10.4           | 12.1 | 23.8 | 25.5 | 10.4                               | 12.1 | 23.8 | 34.8                                 | 39.5 | 39.4 |
| 125                          | 13.3           | 14.9 | 30.2 | 37.4 | 13.3                               | 14.9 | 30.2 | 39.7                                 | 44.6 | 47.1 |
| 84                           | 20.6           | 24.0 | 45.1 | 53.6 | 20.6                               | 24.0 | 45.1 | 51.8                                 | 59.0 | 65.0 |
| 56                           | 25.6           | 30.7 | 55.8 | 64.7 | 25.6                               | 30.7 | 55.8 | 60.4                                 | 69.7 | 78.1 |
| 37                           | 32.5           | 38.8 | 68.4 | 80.3 | 32.5                               | 38.8 | 68.4 | 72.7                                 | 83.8 | 96.8 |
| 25                           | 38.4           | 46.7 | 81.5 | 94.7 | 38.4                               | 46.7 | 81.5 | 83.8                                 | 97.6 | 101  |
| 20 and less                  | 40.1           | 48.3 | 86.3 | 99.8 | 40.1                               | 48.3 | 86.3 | 87.4                                 | 101  | 116  |

The above axial thrusts may be applied in addition to the bending moment. Higher axial thrusts can be applied but the allowable bending moment would be reduced. Consult David Brown Radicon in such cases.

# SERIES A

## SHIPPING SPECIFICATION

9610

### SINGLE REDUCTION

| Unit Size                       | 10   |      |      |      |      |      |      | 12   |      |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Unit Type                       | U    | O    | V    | US   | VS   | HDST | CT   | U    | O    | V    | US   | VS   | HDST | CT   |
| Unit Weight                     | 345  | 345  | 400  | 481  | 578  | 475  | 520  | 500  | 500  | 590  | 701  | 862  | 702  | 767  |
| Weight Packed                   | 450  | 450  | 480  | 594  | 715  | 570  | 624  | 600  | 600  | 690  | 844  | 1180 | 842  | 920  |
| Volume Packed (m <sup>3</sup> ) | 0.42 | 0.42 | 0.73 | 0.54 | 0.63 | 0.78 | 0.90 | 0.83 | 0.83 | 0.83 | 0.76 | 0.89 | 1.18 | 1.30 |

| Unit Size                       | 14   |      |      |      |      |      |      | 17   |      |      | 20   |      |      | 24   |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Unit Type                       | U    | O    | V    | US   | VS   | HDST | CT   | U    | V    | CT   | U    | V    | CT   | U    |
| Unit Weight                     | 810  | 810  | 870  | 980  | 1210 | 1035 | 1131 | 1372 | 1390 | 1807 | 1984 | 2075 | 2698 | 2922 |
| Weight Packed                   | 930  | 930  | 1015 | 1234 | 1510 | 1242 | 1357 | 1500 | 1575 | 2169 | 2263 | 2545 | 3237 | 3400 |
| Volume Packed (m <sup>3</sup> ) | 1.06 | 1.06 | 1.34 | 1.08 | 1.26 | 1.56 | 1.76 | 1.72 | 1.78 | 2.98 | 2.84 | 3.20 | 3.70 | 4.22 |

### DOUBLE REDUCTION

| Unit Size                       | 10   |      |      | 12   |      |      | 14   |      |      | 17   |      | 20   |      | 24   |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Unit Type                       | UD   | OD   | VD   | UD   | OD   | VD   | UD   | OD   | VD   | UD   | VD   | UD   | VD   | UD   |
| Unit Weight                     | 440  | 440  | 493  | 640  | 640  | 730  | 950  | 950  | 1010 | 1584 | 1602 | 2196 | 2287 | 3240 |
| Weight Packed                   | 557  | 557  | 587  | 758  | 758  | 848  | 1088 | 1088 | 1173 | 1658 | 1820 | 2505 | 2805 | 3950 |
| Volume Packed (m <sup>3</sup> ) | 0.88 | 0.92 | 0.85 | 1.28 | 1.31 | 1.13 | 1.63 | 1.69 | 1.67 | 2.39 | 2.34 | 3.20 | 3.62 | 5.11 |

ALL WEIGHTS IN KG

ALL WEIGHTS EXCLUDE LUBRICANT

NOTE: For shipping specification of motorised units add weight and volume of motors and motor adaptors to the figures shown above.

### IMPORTANT

#### Product Safety Information

**General** - The following information is important in ensuring safety. It **must** be brought to the attention of personnel involved in the selection of power transmission equipment, those responsible for the design of the machinery in which it is to be incorporated and those involved in its installation, use and maintenance.

Our equipment will operate safely provided it is selected, installed, used and maintained properly. As with any power transmission equipment **proper precautions must** be taken as indicated in the following paragraphs, to ensure safety.

**Potential Hazards** - these are **not** necessarily listed in any order of severity as the degree of danger varies in individual circumstances. It is important therefore that the list is studied in its entirety:-

- 1) Fire/Explosion
  - (a) Oil mists and vapour are generated within gear units. It is therefore dangerous to use naked lights in the proximity of gearbox openings, due to the risk of fire or explosion.
  - (b) In the event of fire or serious overheating (over 300 °C), certain materials (rubber, plastics, etc.) may decompose and produce fumes. Care should be taken to avoid exposure to the fumes, and the remains of burned or overheated plastic/rubber materials should be handled with rubber gloves.
- 2) Guards - Rotating shafts and couplings must be guarded to eliminate the possibility of physical contact or entanglement of clothing. It should be of rigid construction and firmly secured.
- 3) Noise - High speed gearboxes and gearbox driven machinery may produce noise levels which are damaging to the hearing with prolonged exposure. Ear defenders should be provided for personnel in these circumstances. Reference should be made to the Department of Employment Code of Practice for reducing exposure of employed persons to noise.
- 4) Lifting - Where provided (on larger units) only the lifting points or eyebolts must be used for lifting operations (see maintenance manual or general arrangement drawing for lifting point positions). Failure to use the lifting points provided may result in personal injury and/or damage to the product or surrounding equipment. Keep clear of raised equipment.
- 5) Lubricants and Lubrication
  - (a) Prolonged contact with lubricants can be detrimental to the skin. The manufacturer's instruction must be followed when handling lubricants.
  - (b) The lubrication status of the equipment must be checked before commissioning. Read and carry out all instructions on the lubricant plate and in the installation and maintenance literature. Heed all warning tags. Failure to do so could result in mechanical damage and in extreme cases risk of injury to personnel.
- 6) Electrical Equipment - Observe hazard warnings on electrical equipment and isolate power before working on the gearbox or associated equipment, in order to prevent the machinery being started.
- 7) Installation, Maintenance and Storage
  - (a) In the event that equipment is to be held in storage, for a period exceeding 6 months, prior to installation or commissioning, we must be consulted regarding special preservation requirements. Unless otherwise agreed, equipment must be stored in a building protected from extremes of temperature and humidity to prevent deterioration.

The rotating components (gears and shafts) must be turned a few revolutions once a month (to prevent bearings brinelling).
  - (b) External gearbox components may be supplied with preservative materials applied, in the form of a "waxed" tape overwrap or wax film preservative. Gloves should be worn when removing these materials. The former can be removed manually, the latter using white spirit as a solvent.

Preservatives applied to the internal parts of the gear units do not require removal prior to operation.
  - (c) Installation must be performed in accordance with the manufacturer's instructions and be undertaken by suitably qualified personnel.
  - (d) Before working on a gearbox or associated equipment, ensure that the load has been removed from the system to eliminate the possibility of any movement of the machinery and isolate power supply. Where necessary, provide mechanical means to ensure the machinery cannot move or rotate. Ensure removal of such devices after work is complete.
  - (e) Ensure the proper maintenance of gearboxes in operation. Use only the correct tools and our approved spare parts for repair and maintenance. Consult the Maintenance Manual before dismantling or performing maintenance work.
- 8) Hot Surfaces and Lubricants
  - (a) During operation, gear units may become sufficiently hot to cause skin burns. Care must be taken to avoid accidental contact.
  - (b) After extended running the lubricant in gear units and lubrication systems may reach temperatures sufficient to cause burns. Allow equipment to cool before servicing or performing adjustments.
- 9) Selection and Design
  - (a) Where gear units provide a backstop facility, ensure that back-up systems are provided if failure of the backstop device would endanger personnel or result in damage.
  - (b) The driving and driven equipment must be correctly selected to ensure that the complete machinery installation will perform satisfactorily, avoiding system critical speeds, system torsional vibration, etc.
  - (c) The equipment must not be operated in an environment or at speeds, powers, torques or with external loads beyond those for which it was designed.
  - (d) As improvements in design are being made continually the contents of this catalogue are not to be regarded as binding in detail, and drawings and capacities are subject to alterations without notice.

The above guidance is based on the current state of knowledge and our best assessment of the potential hazards in the operation of the gear units.

Any further information or clarification required may be obtained by contacting our Application Engineers.

# SERIES A

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AGRICULTURE

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CHEMICAL

MARINE

TEXTILES

CONSTRUCTION

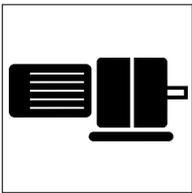
METALS

TRANSPORTATION

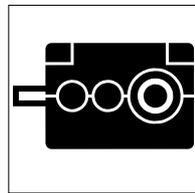
DEFENCE

MINING

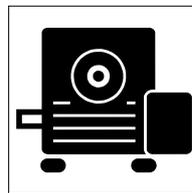
WATER



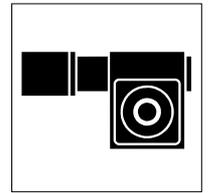
Geared motors



Industrial reducers



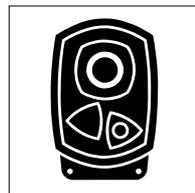
Worm



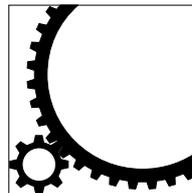
Precision products



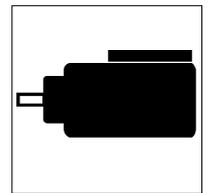
Screwjacks



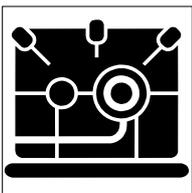
Shaftmount



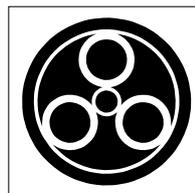
Horizontal mill drives



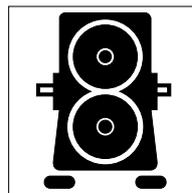
Vertical mill drives



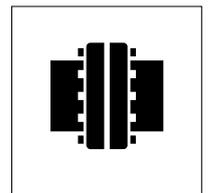
High speed



Planetary units



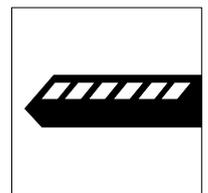
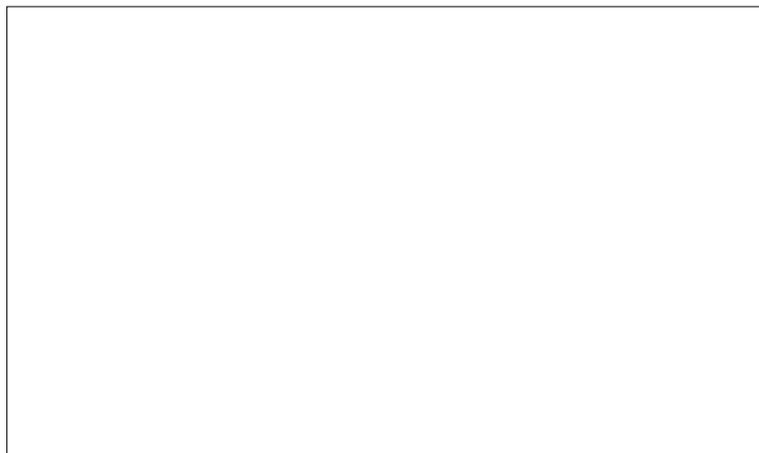
Specialist drives



Couplings



Defence Systems



Rail

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