

DESCH Planetary Gearboxes

in cutting Machine Tools



WM 13 - GB



CUTTING AND SPLITTING

Drive Technology for machine tools - customized
400 Nm - 1 600 000 Nm

DESCH machine tool gearboxes

DRIVE TECHNOLOGY

As one of the market leaders in the development and production of complex, customized drive systems, DESCH provides planetary gearboxes and special gearboxes for cutting and splitting machine tools.

In this field, DESCH combines decades of know-how with the use of ultra-modern machinery to offer premium-quality products.

highly precise power packs as a
key to your success

DESCH gearboxes offer the perfect solution for each client due to selectable ratios and selectable internal bore diameters.

DESCH responds to the demand for increased rotation speeds and increased torques by offering customized gearing, bearing and lubrication systems.

Hydraulically shiftable DESCH main spindle gearboxes

DRIVE TECHNOLOGY

have due to their compactness, the highest possible power density in the smallest of spaces. In this way, the installation geometry fits perfectly into the RAM contour for flush mounting with pre-defined interfaces, without any disruptive elements.

The DESCH Drive Technology product range in the field of machine tools comprises loss-optimized standard shift gearboxes, main spindle drives combined with motor and/or tool spindles, and rotary table drives.



DESCH gearboxes for

- ■ ■ main spindles
- ■ ■ rotary tables
- ■ ■ main drives

horizontal or vertical installation position in:

- ■ ■ large turning machines
- ■ ■ portal milling machines
- ■ ■ machining centers
- ■ ■ excenter shears, lining and drawing machines
- ■ ■ presses, die cutters, rolling machines



DESCH planetary shifting gearbox

DRIVE TECHNOLOGY

with 91 kW for the drive of a milling spindle
with C-axis two „inline“ drive motors and
two gearbox outputs.

■ main spindle drive

$P_{\max.} = 91 \text{ kW}$
 $T_{\max.} = 9.280 \text{ Nm}$
 $n_{\max.} = 6.000 \text{ rpm}$
 $i = 1,0 / 4,0 / 16,0$

C-axis drive

$P_{\max.} = 25 \text{ kW}$
 $T_{\max.} = 9.000 \text{ Nm}$
 $n_{\max.} = - 5 \text{ rpm}$
 $i = - 20$

■ $P_{\max.} = 82 \text{ kW}$

$T_{\max.} = 15.000 \text{ Nm}$
 $n_{\max.} = 3.822 \text{ rpm}$
 $i = 1,0 / 3,86 / 4,73 / 18,26$



DESCH planetary shifting gearbox

DRIVE TECHNOLOGY

with 100 kW for the drive of a vertical milling spindle with integrated water cooling system.

- $P_{\max.} = 100 \text{ kW}$
- $T_{\max.} = 8.333 \text{ Nm}$
- $n_{\max.} = 4.000 \text{ rpm}$
- $i = 1,0 / 3,27 / 5,0 / 16,36$

mit 52 kW for the drive of a milling spindle with spindle bearings outputside.

- $P_{\max.} = 52 \text{ kW}$
- $T_{\max.} = 2.790 \text{ Nm}$
- $n_{\max.} = 10.000 \text{ rpm}$
- $i = 1,0 / 6,0$



DESCH planetary shifting gearbox

DRIVE TECHNOLOGY

with per 60 kW for the drive of a rotary table drive
in a machining center.

■ ■ ■ $P_{\max.} = 60 \text{ kW}$
 $T_{\max.} = 4.930 \text{ Nm}$
 $n_{\max.} = 2.045 \text{ rpm}$
 $i = 2,2 / 9,08$

with 52 kW at only 200 mm outer diameter for the drive
of a milling spindle.

■ ■ ■ $P_{\max.} = 52 \text{ kW}$
 $T_{\max.} = 2.600 \text{ Nm}$
 $n_{\max.} = 4.000 \text{ rpm}$
 $i = 3,0 / 18,0$



DESCH planetary shifting gearbox

DRIVE TECHNOLOGY

Experience with latest technology and highly skilled associates guarantee high-tech performance in manufacturing machine tool gearboxes.

The components for DESCH gearboxes are manufactured by our ultra-modern machinery, using state-of-the-art computerized gearing machines, milling machines, grinding machines and machining centres.

The interaction between machinery and high-precision assembly at structured work stations provides the basis for successful production.

High-precision measuring devices in production, which include an air-conditioned measuring room with a 3D measuring machine directly beside the gearbox assembly station, ensure a high quality standard.

Our high-tech rig for machine tool gearboxes, equipped with computer-monitored testing technology, is also located close to the assembly station on vibration-free foundations in air-conditioned rooms.

In this way, the production process is optimized and shortened, which is one of the keys to success.



DRIVE TECHNOLOGY



DRIVE TECHNOLOGY



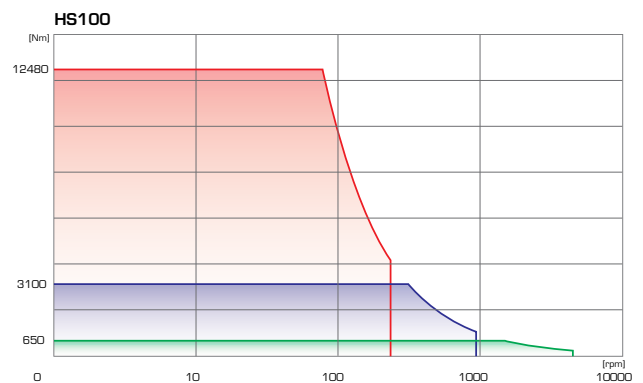
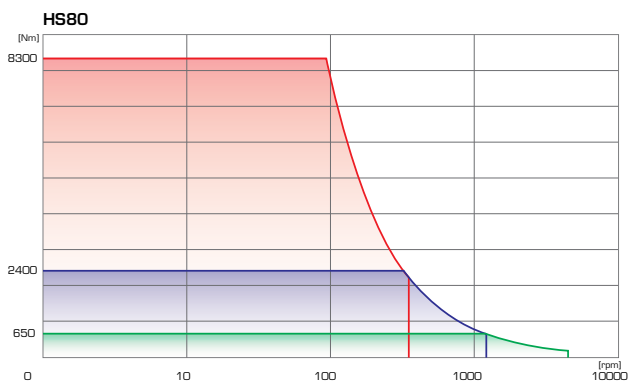
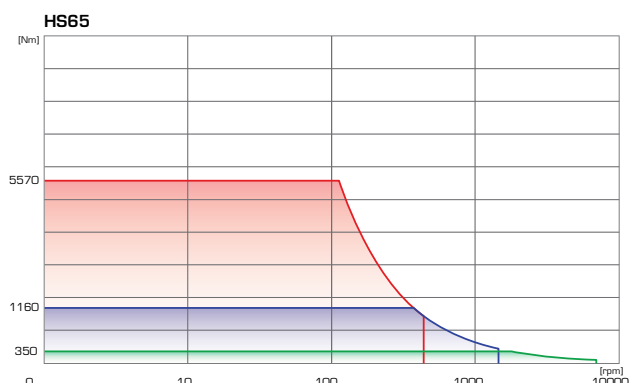
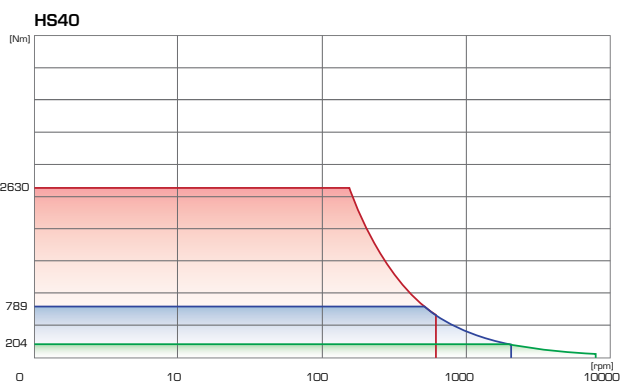
DESCH motor gearbox unit - Denox HS

DRIVE TECHNOLOGY

The motor-and-gearbox units of the Denox HS series, both single-stage and multi-stage models with performances ranging from 35 to 110 kW, are used as main spindle drives in machine tools.

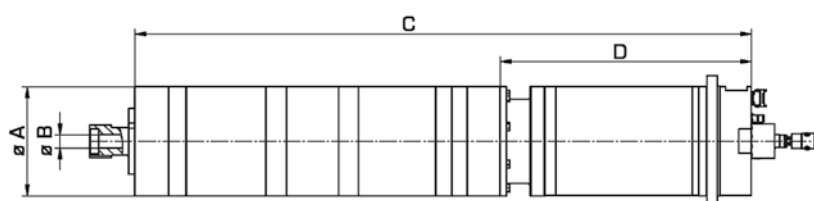
They are extremely compact, thus offering ultimate power density in a minimum of space. The hydraulic shifts and media ducts for cooling and lubrication are integrated in the gearbox housing. The result is an installation geometry without disruptive elements which can be flush-mounted into the RAM contour with defined interfaces.

Tool spindles with tool fixtures for HSK, ISO, etc. are available and/or can be built in as an option.



DESCH motor gearbox unit - Denox HS

DRIVE TECHNOLOGY



Rated data			HS40	HS65	HS80	HS100
Motor output	P	kW	42	65	81	102
Motor		Type	synchron	synchron	synchron	synchron
Rated speed	n	rpm	2000	1800	1200	1500
Rated torque	T2n	Nm	204	350	650	650
Ratio	i		1,00 / 3,87 / 12,90	1,00 / 4,80 / 15,92	1,00 / 3,70 / 12,82	1,00 / 4,80 / 19,20
Nominal torque (S1-100%)	T	Nm	2630	5570	8330	12480
Peak torque (S6-40%)	T	Nm	3500	7430	11110	16640
Max. output speed	n	rpm	8000	7000	4500	4500
Thermal protection motor		Type	KTY-PTC	KTY-PTC	KTY-PTC	KTY-PTC
Motor encoder		Type	Signal Sin/Cos 1Vpp	Signal Sin/Cos 1Vpp	Signal Sin/Cos 1Vpp	Signal Sin/Cos 1Vpp
Motor cooling system		Type	water cooling	water cooling	water cooling	water cooling
External diameter	A	mm	220	260	300	350
Hollow trough shaft diameter	B	mm	35	35	45	45
Total unit length	C	mm	1500	1700	1800	1800
Motor length	D	mm	650	850	850	850
Switching pressure		bar	40			
Switching position monitoring			inductiv ^[1]			
Mounting position			horizontal ^[2]			
Lubrication system			external forced oil lubrication			
Efficiency	η	%	94			

[1] Position monitoring optional hydraulically possible.

[2] Mounting position optional vertical feasible.

Note: the above specifications and dimensions may vary by location and position and by the engine used in the application.

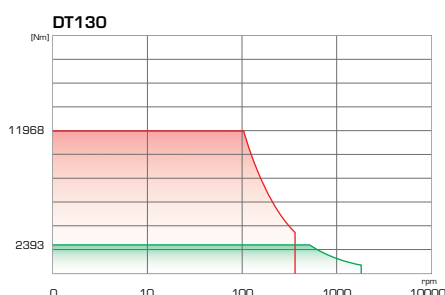
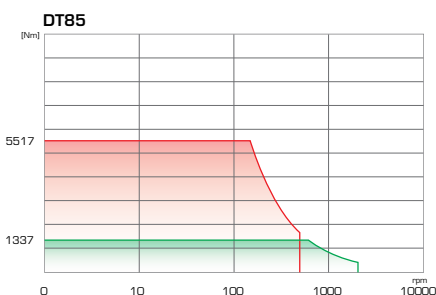
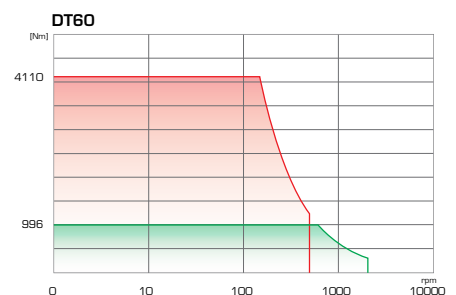
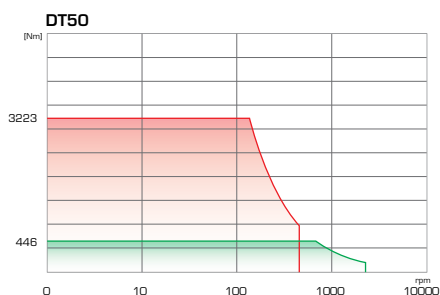
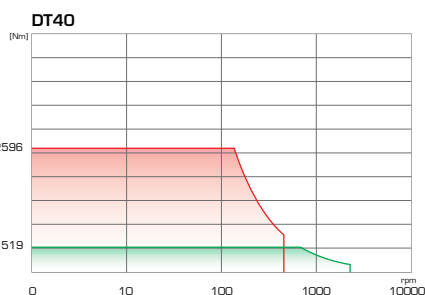
DESCH rotary table drive - Denox DT

DRIVE TECHNOLOGY

The Denox DT rotary table drive series can be delivered either with a belt pulley transmission or with a bevel gear, according to the customer's preference. This series covers a performance range from 37 to 130 kW. These shift gear-boxes can be used either as single drives to drive faceplates in vertical lathes for continuous turning operation, or by minimizing backlash as dual drives for positioning and milling operations. The drive units feature outstanding compactness and therefore provide highest power density with minimal space requirements.

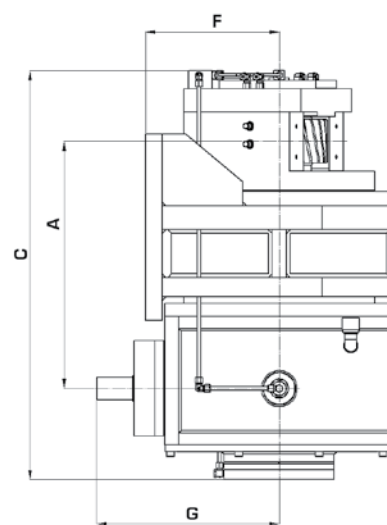
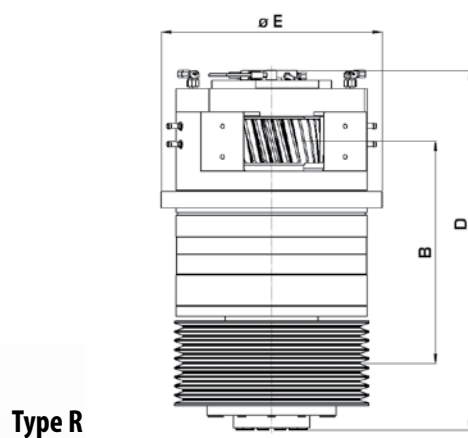
Elastic clutch systems, belt pulleys, cogged belts and gearing components such as intermediate gears and

toothed rings from our product range can be added to your drive system as an option to provide a system solution.



DESCH rotary table drive - Denox DT

DRIVE TECHNOLOGY



Rated data			DT40 K/R	DT50 K/R	DT60 K/R	DT85 K/R	DT130 K/R
Motor output	P	kW	37	46	60	85	130
Max. input speed	n	rpm	5000	5000	4500	4500	4000
Max. output speed	n	rpm	2273	2273	2045	2045	1818
Ratio	i		2,2 / 11	2,2 / 11	2,2 / 9,08	2,2 / 9,08	2,2 / 11
Nominal torque (S1-100%)	T	Nm	2600	3220	4110	5520	12000
Peak torque (S6-40%)	T	Nm	3460	4300	4930	7360	13600
A		mm	395	395	490	490	520
B		mm	380	380	450	450	515
C		mm	670	670	850	850	910
D		mm	610	610	750	750	850
E		mm	435	435	490	490	555
F		mm	255	255	290	290	320
G		mm	256	256	380	380	390
Switching pressure		bar	40				
Switching position monitoring			inductiv				
Lubrication system			external forced oil lubrication				
Efficiency	η	%	94				



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