

DESCH DRIVE- AND SYSTEM SOLUTIONS

for machine tools



DESCH DRIVE- AND SYSTEM SOLUTIONS FOR MACHINE TOOLS

Innovative, customized solutions for your complete drive line.





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.

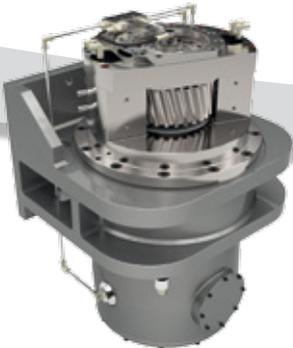
In this field, DESCH combines decades of know-how with use of ultra-modern machinery to offer premium-quality products.

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.

Besides our proven planetary gearboxes DESCH offers an almost complete product range for your drive solution such as motor spindle, machining heads, flexible couplings, tooth clutches, v-belts and pulleys, tooth gears, valve blocks for the hydraulic units for lube oil and actuation oil and also measurement systems for condition monitoring.



DESCH PLANETARY SHIFTING GEARBOXES

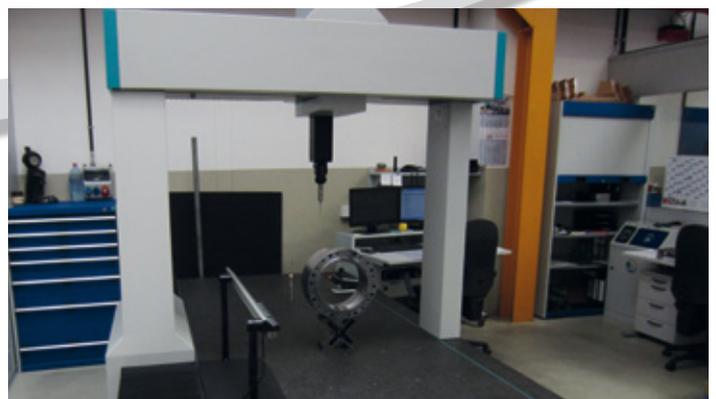
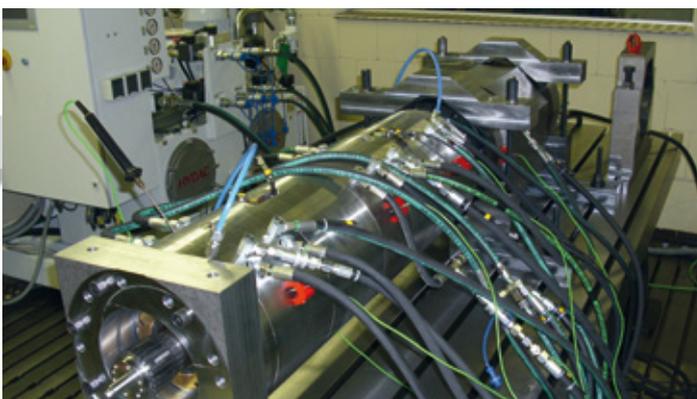


DESCH KNOW-HOW

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

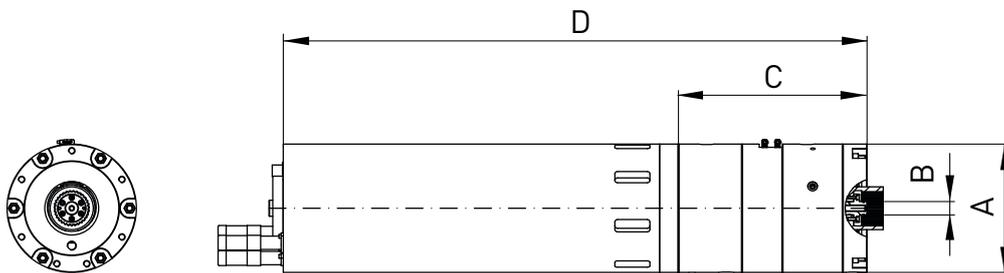
The components for DESCH gearboxes are manufactured by our ultra-modern machinery, using state-of-the-art computerized gearing machines, milling machines, grinding machines and machining centres.

Our test rig for machine tool gearboxes, equipped with computer-monitored testing technology, is also located close to the assembly department 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.



DESCH MOTOR GEARBOX UNIT - Denox® HSE

The drive units of the HSE / HS - series are used with single or multi-stage design as main spindle drives in the power range of 40-125 kW in machine tool applications. They are characterized by their extraordinary compactness. The hydraulic circuits and media ducts for cooling and lubrication are integrated in the transmission housing.



Rated data			HSE40	HSE60	HSE70	HSE80
Power	P	kW	40	60	70	80
Rated speed	n	rpm	1500	1400	1380	1200
Rated torque	T1	Nm	250	400	500	650
Ratio ^[1]	i		1 / 5	1 / 5	1 / 5	1 / 5
Nominal torque [S1-100%]	T2	Nm	1250	2000	2500	3250
Max. output speed	n	rpm	8000	6000	5000	4500
External diameter	A	mm	240	260	300	320
Hollow trough shaft diameter ^[2]	B	mm	20	25	25	30
Length of gearbox	C	mm	430	440	445	545
Total unit length ^[3]	D	mm	1150	1330	1170	1415
Mounting position			horizontal / vertical			
Efficiency	η	%	97			

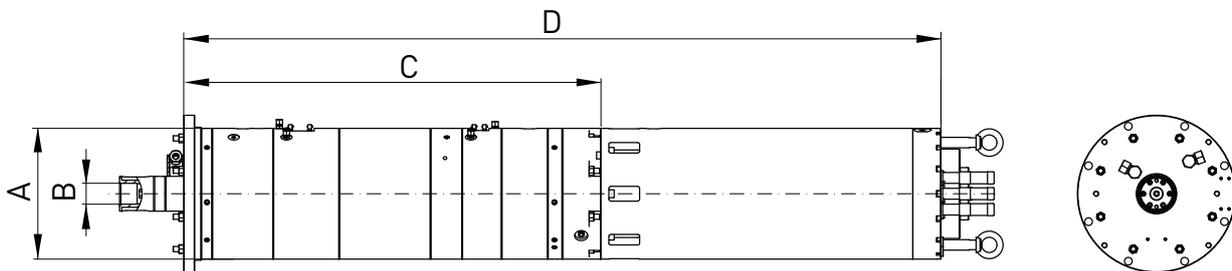
Other ratio [1] and bore diameter [2] on request.

[3] Excl. motor - several motortypes can be offered.

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

DESCH MOTOR GEARBOX UNIT - Denox® HS

This yields to an installation geometry without distorting elements for interlocking installation with defined interfaces in the RAM contour. Optionally tool spindles with HSK, ISO and other interface can be offered or fitted. Beside of the listed standard sizes, it is also possible to realise customized drive units up to 200 kW.



Rated data			HS60	HS80	HS100	HS120	HS140
Power	P	kW	60	80	104	125	140
Rated speed	n	rpm	1460	1200	1700	1500	1300
Rated torque	T1	Nm	390	650	585	800	1000
Ratio ^[1]	i		1,00 / 4,00 / 14,17	1,00 / 3,5 / 12,80	1,00 / 4,50 / 15,88	1,00 / 4,00 / 14,17	1,00 / 4,00 / 16,00
Nominal torque [S1-100%]	T2	Nm	5500	8300	9300	11300	16000
Max. output speed	n	rpm	6000	6000	5000	4500	4000
External diameter	A	mm	260	300	350	350	400
Hollow trough shaft diameter ^[2]	B	mm	35	45	45	45	45
Length of gearbox	C	mm	900	950	970	970	1000
Total unit length ^[3]	D	mm	1750	1800	1700	1700	2000
Mounting position			horizontal / vertical				
Efficiency	η	%	94				

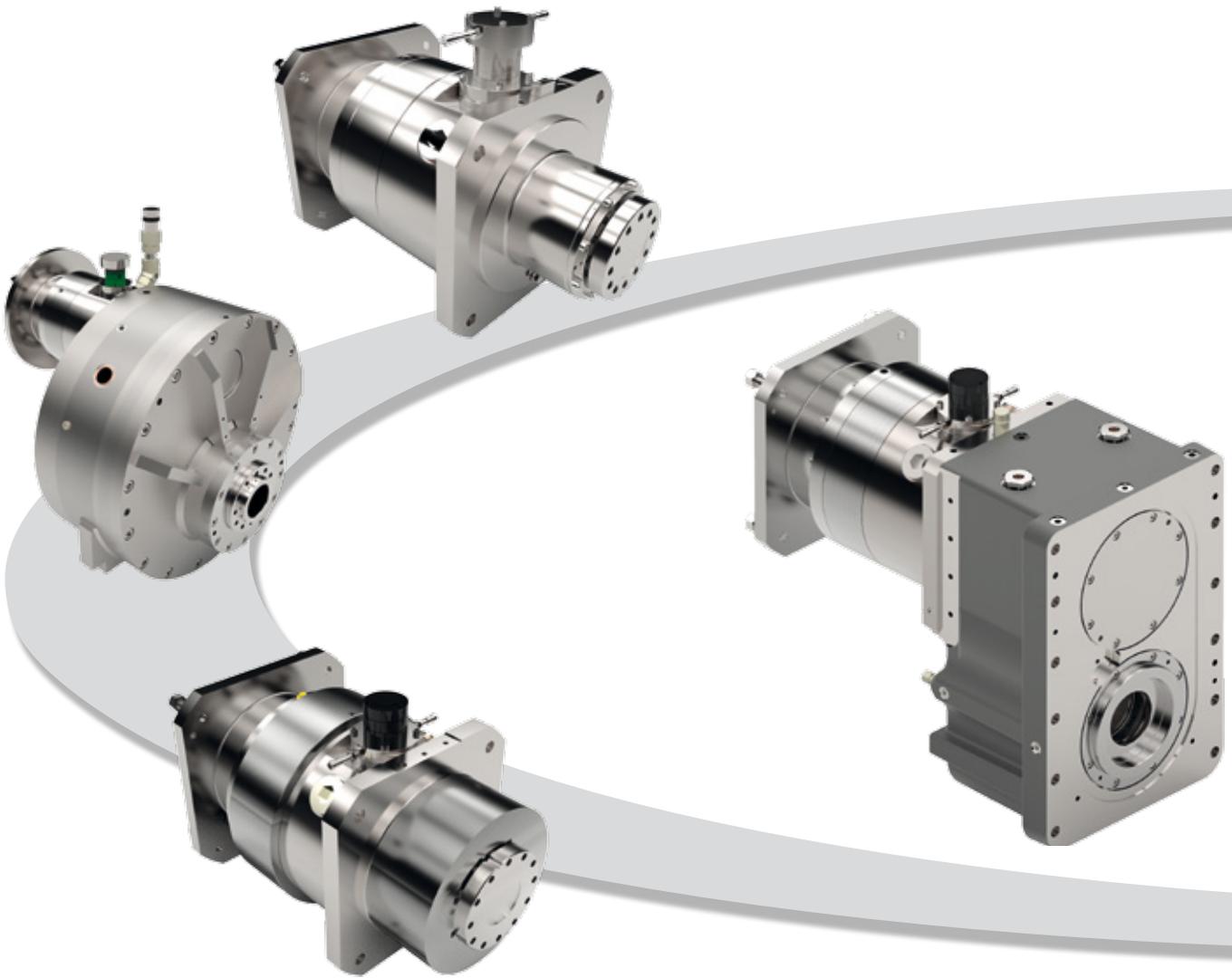
Other ratio [1] and bore diameter [2] on request.

[3] Excl. motor - several motortypes can be offered.

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

DESCH MAIN DRIVES

DESCH main drives for milling-, drilling- and multipurpose machines are characterized by a high power density with low installation size. Especially the combination of a two speed gearbox paired with a spur gearbox as main drive for tool spindles, offers an especially efficient drive- and system solution. The DESCH main drives can be installed horizontal or vertical.



In addition to our main drives for machining main spindles, DESCH also offers a variety of backlash reduced drive systems for cutting, forming, grinding and bending machine tools.

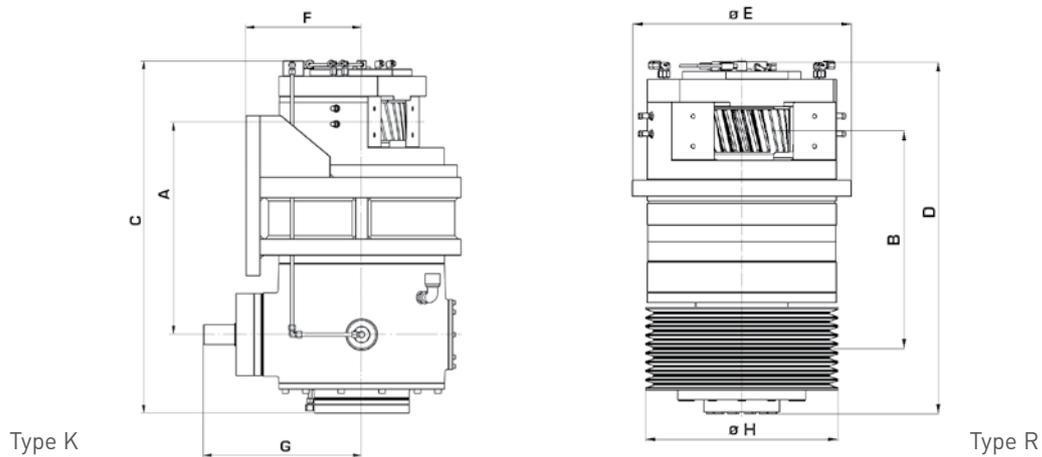


DESCH ROTARY TABLE DRIVE - Denox® DT

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



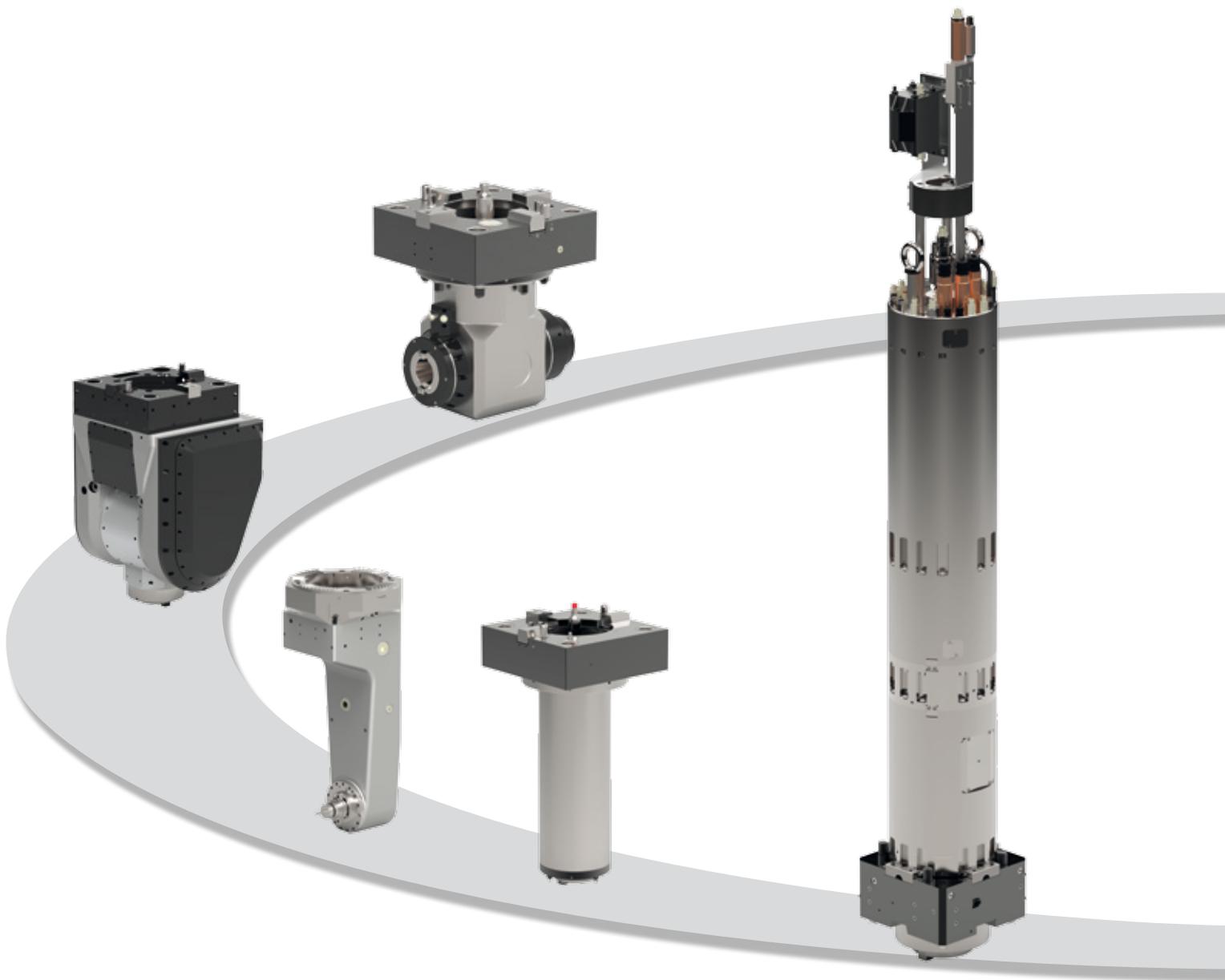
Rated data			DT40K	DT40R	DT50K	DT50R	DT60K	DT60R	DT85K	DT85R	DT130K	DT130R
Power	P	kW	37		46		60		85		130	
Max. input speed	n	rpm	5000	2180 [2]	5000	2100 [2]	4500	2060 [2]	4500	2060 [2]	4000	1730 [2]
Max. output speed	n	rpm	2273	2180 [2]	2273	2180 [2]	2045	2060 [2]	2045	2060 [2]	1818	1730 [2]
Ratio [1]	i		2,2 / 11	1 / 5	2,2 / 11	1 / 5	2,2 / 9,08	1 / 5	2,2 / 9,08	1 / 5	2,2 / 11	1 / 5
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		540	
B		mm	380		380		450		450		535	
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	273		273		380		380		435	
H		mm	350		350		370		370		440	
Switching pressure		bar	40									
Switching position monitoring			inductiv									
Lubrication system			external forced oil lubrication									
Efficiency	η	%	97									

[1] Adaption of ratio is possible.

[2] Based on V-belt pulley - diameter H.

DESCH MOTOR GEARBOX SPINDLE Denox® MGS AND ACCESSORIES

The DESCH Denox® MGS unit is the perfect combination of all needed components for a powerful drive solution. It consists a watercooled synchronous motor, gearbox with up to 7000 Nm output torque plus machining spindle in various tool interface options such as ISO-BT-HSK-CAPTO. This very compact main spindle design is presently available in 4 sizes up to 110 kW. A special feature is the pre-arranged tool head connection wich can be equipped with a huge variety of DESCH machining heads.



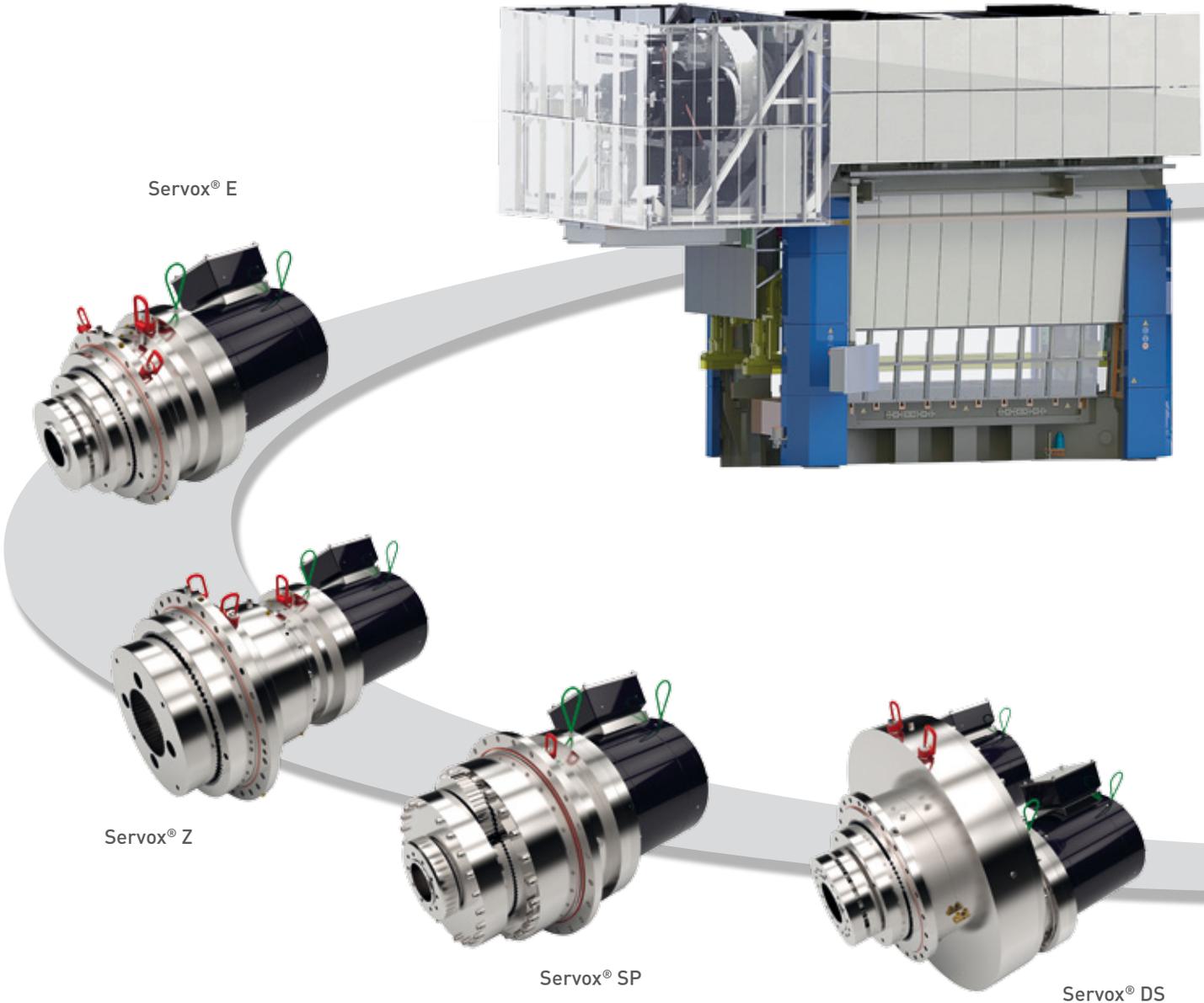
DESCH MOTOR SPINDLES

The DESCH motor spindle program offers customized drive solutions for milling-, grinding- and turning operations. DESCH offers compact and powerful motor spindles for the installation space of existing machines as well as for newly development drive concepts. The DESCH motor spindles use synchronous or asynchronous build-in motors and offer encoder system based on customer requirements. The tool head connection and the tool clamping system will also be chosen according to customers request.



DESCH PRESS DRIVES

The right torque converter is required to leverage the full potential of the servo motor and to generate the torque needed for the metal forming process. DESCH offers a wide range of drive concepts with planetary gearboxes with the required ratios and torque ratings. This gives rise to the optimum mechanical and electrical drive configuration. A hydraulically released spring applied, safety brake as static holding device and for the dynamically emergency stop is integrated.



Servovox® E

Servovox® Z

Servovox® SP

Servovox® DS

The DESCH complete press drive KA replaces the entire spur gear transmission or one transmission stage on automatic punching machines, eccentric presses and knuckle-joint presses or similar machines where the power required by the machine is taken from a fast moving flywheel. The new DESCH standard complete drives cover a torque range of 16 kNm to 160 kNm with gear ratios 4 and 6. The unit which is ready to be installed consists of a single-stage high performance planetary gear, a flywheel as power accumulator as well as a pneumatically or hydraulically actuated clutch/brake combination. Customized solutions up to 1.600 kNm and with higher ratios are available.



DESCH KA

The Servox[®]-brake is a hydraulically actuated, spring-operated multiple-disc brake and used as a static holding brake with an emergency stop function and exhibits a special, protected disc design that features special wear protection depending on the design and therefore further boosts the availability of the press. The brake is intended for use on e.g. servo presses with conventional reduction gear ratios and needs only a free shaft end for the hub and a means of fastening the housing to the press frame.



Servox[®] brake



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