

ATLANTA



高性能螺旋升降机
High Performance
Screw Jack Gearbox



亚特兰 HS高性能螺旋升降机在大载荷情况下仍能实现高进给率。它将力与速度完美结合，拥有电机驱动技术的所有优点，且方便灵活，尤其在不同位置的精确定位及重复定位方面表现优秀。

HS高性能螺旋升降机是在亚特兰伺服蜗轮蜗杆减速箱的基础上设计制造的。通过蜗轮蜗杆减速箱和特殊的滚珠丝杠轴驱动，可实现低背隙、高动态负载驱动。不论是旋转主轴、非旋转主轴或举升缸，都设计紧凑，方便与现有设备配合使用。

HS高性能螺旋升降机精度高、刚性强，是理想的线性驱动设备，典型应用包括：所有的动态举升、进给、冲压、倾斜和旋转运动，以及需要高精度定位的类似的运动。

特征：

- 背隙<12弧分
- 输入速度可达5000min⁻¹
- 线性速度可达550mm/s
- 与普通减速机相比，扭矩高出50%
- 滚珠丝杠驱动与轴向间隙0.03毫米，几乎无间隙
- 导程精度0.023毫米/300毫米（公差等级P5）

HS high-performance screw-jack gearboxes from ATLANTA make it possible to achieve high feed rates even with heavy loads. Combining power and speed they feature all the advantages of the flexible electro-mechanic drive technology, particularly the exact approach to different positions and an excellent repeatability precision.

The construction of the HS screw-jack gearboxes is based on the proved design of the ATLANTA servo worm-gear units. In combination with special ball-screw spindle drives with dynamic load capacities far above standard they enable the realization of low-clearance, dynamic, and long-living lifting drives. Due to their compactness the rotating spindle, non-rotating spindle or lifting cylinder designs can be easily integrated in existing machine concepts.

Because of their precision and robustness the HS high-performance screw-jack gearboxes as linear drives are the ideal drive concept for all dynamic lifting, lowering, feeding, pressing, tilting, and swiveling motions as well as for similar moving processes and very precise positioning.

Special features are:

- Circumferential backlash basic gear <12 angular minutes
- Input speeds up to 5000 min⁻¹
- Linear speed up to 550 mm/s
- 50 % higher torque compared to standard gear units
- Ball-screw drives with axial play 0.03 mm, possible without play
- Lead accuracy 0.023 mm / 300 mm (tolerance class P5)

如果没有得到我们明确的许可-复制（摘取片段）都是不允许的。关于本目录中尺寸和任何其他技术说明的变更，恕不另行通知，且无义务通知。我们保留关于尺寸和标准项目的技术修改权利。

Duplication – even by way of excerpts – is not allowed without our express permission. Dimensions and any other technical details given in this catalogue are subject to alterations without notice and are completely without obligation on our part. All rights to make technical changes to the dimensions and the range of our standard programme are reserved.



一般参数

General data

自锁	否 / no	Self-locking quality
最大占空比 (取决于负载和周期)	高达100% / up to 100 % ¹⁾	Max. duty cycle (depending on load and cycle)
减速比	3,0; 6,75 / and 29	Ratio of gearunit
电机	三相交流伺服电机 / 3-phase AC- and servomotors	Motors
制动	是 / yes	Brake required

		HS 10		HS 25		Gearunit
减速机						
非旋转主轴						non-rotating spindle
滚珠丝杠驱动		20x10	20x20	32x10	32x20	Ball screw drive
行程中的最大负载	[kN]	9	5	25	25	Max. load during travelling
最大静载荷	[kN]	9	9	35	25	Max. static load
最大输入速度	[min ⁻¹]	5000		5000		Max. input speed
最大直线速度	[mm/s]	275	555	275	555	Max. travelling speed
动态负载电容 C	[kN]	11,9	11,9	36,6	27,5	Dyn. load capacity C
旋转主轴						rotating spindle
滚珠丝杠驱动		32x10	32x20	40x10	40x20	Ball screw drive
行程中的最大负载	[kN]	10	5	25	25 ²⁾	Max. load during travelling
最大静载荷	[kN]	18	18	45	45	Max. static load
最大输入速度	[min ⁻¹]	5000		5000		Max. input speed
最大行驶速度	[mm/s]	275	555	275	555	Max. travelling speed
动态负载电容 C	[kN]	36,6	27,5	92,6	75,2	Dyn. load capacity C
举升缸						Lifting cylinder
滚珠丝杠驱动		25x10	25x20	40x10	40x20	Ball screw drive
行程中的最大负载	[kN]	10	5	25	25 ²⁾	Max. load during travelling
最大静载荷	[kN]	18	13	45	45	Max. static load
最大输入速度	[min ⁻¹]	5000		5000		Max. input speed
最大行驶速度	[mm/s]	275	555	275	555	Max. travelling speed
动态负载电容 C	[kN]	19,8	14,9	64,7	75,2	Dyn. load capacity C
减速机		HS 50		HS 100		Gearunit
非旋转主轴						non-rotating spindle
滚珠丝杠驱动		40x10	40x20	50x20		Ball screw drive
行程中的最大负载	[kN]	50	50 ³⁾	100 ⁴⁾		Max. load during travelling
最大静载荷	[kN]	90	65	160		Max. static load
最大输入速度	[min ⁻¹]	4000		3000		Max. input speed
最大直线速度	[mm/s]	220	440	330		Max. travelling speed
动态负载电容 C	[kN]	92,6	75,2	195		Dyn. load capacity C
旋转主轴						rotating spindle
滚珠丝杠驱动		50x20	50x20	63x20	80x20	Ball screw drive
行程中的最大负载	[kN]	50 ³⁾	50 ³⁾	100 ⁴⁾	100 ⁴⁾	Max. load during travelling
最大静载荷	[kN]	85	90	180	180	Max. static load
最大输入速度	[min ⁻¹]	4000		3000		Max. input speed
最大行驶速度	[mm/s]	440	440	330	330	Max. travelling speed
动态负载电容 C	[kN]	96	160	248	359	Dyn. load capacity C
举升缸						Lifting cylinder
滚珠丝杠驱动		50x20	50x20	63x20	80x20	Ball screw drive
行程中的最大负载	[kN]	50 ³⁾	50 ³⁾	100 ⁴⁾	100 ⁴⁾	Max. load during travelling
最大静载荷	[kN]	85	90	180	180	Max. static load
最大输入速度	[min ⁻¹]	4000		3000		Max. input speed
最大直线速度	[mm/s]	440	440	330	330	Max. travelling speed
动态负载电容 C	[kN]	96	160	248	359	Dyn. load capacity C

¹⁾ 按要求占空比需超过50% / For duty cycles over 50% upon request.

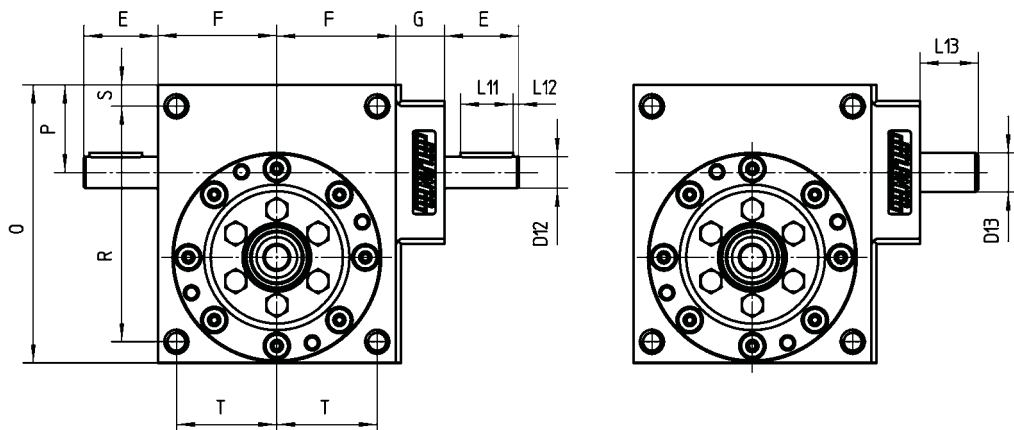
²⁾ For i=3 F_{max} = 15kN

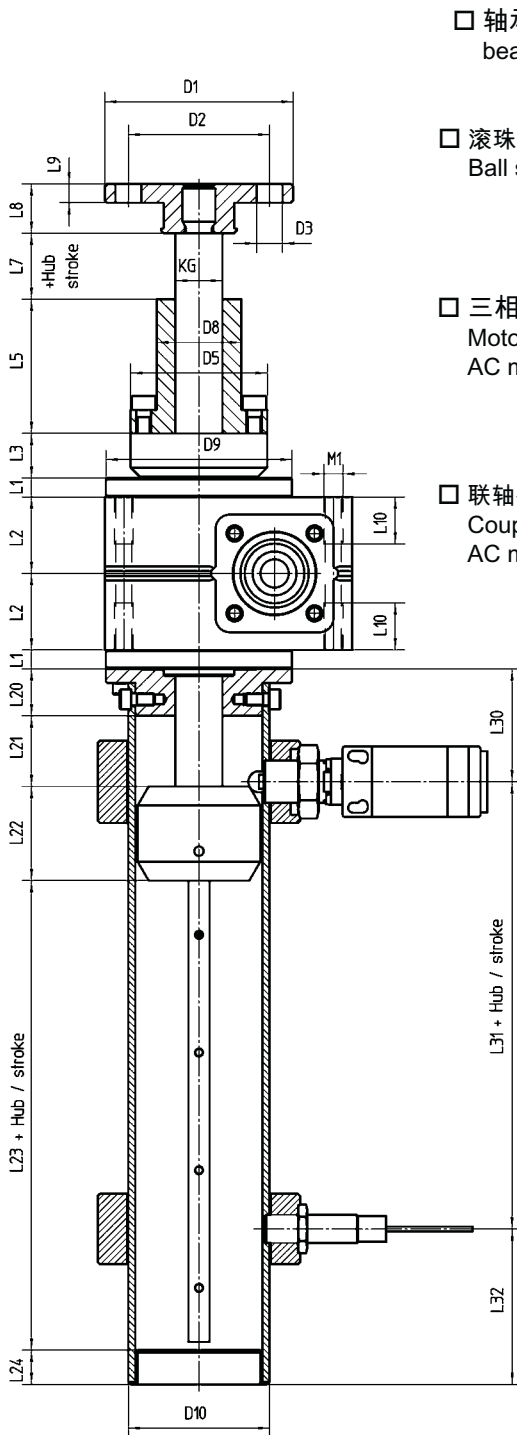
³⁾ For i=3 F_{max} = 30kN

⁴⁾ For i=3 F_{max} = 80kN



减速机 / Gear unit	HS 10		HS 25		HS 50		HS 100
	20x10 C=11,9 kN	20x20 C=11,9 kN	32x10 C=36,6 kN	32x20 C=27,5 kN	40x10 C=92 kN	40x20 C=75 kN	50x20 C=195 kN
KG							
动态载荷/Dyn. load capacity							
A		32		50		63	80
D1		80		90		110	150
D2		60		67		85	117
D3		4x ø11		4x ø11		4x ø13	4x ø17
D5		58		80		93	125
D8		36		50		63	85
D9		79		128		159	200
D10		60		90		100	150
D12		12j6		19k6		24k6	28k6
D13 (DIN5480)		W15x1,25x10		W15x1,25x10		W25x1,25x18	W38x1,25x29
E		28		37		42	52
F		45		70		85	102,5
G		18,5		20		22	35,5
L1		8		11		12	16
L2		32,5		50		65	77,5
L3		19		25		28	31,5
L5	31	57	48	54	99	84	150
L7	20	30	10	20	20	30	35
L8		21		23		30	50
L9		8		10		15	20
L10		20		24		30	40
L11		20		30		36	50
L12		2		3		2	2
L13		22		20		25	37
L20		24		34		42	50
L21 (min.)	10	20	10	20	10	20	20
L22		40		45		60	70
L23 (min.)	10	20	10	20	10	20	20
L24		14,5		19		19	25
L30 mech.		51		69		81	97
L30 ind.		52		66		78	94
L31 mech.		34		39		54	64
L31 ind.		24		29		44	54
L32 mech. (min.)		31		35		35	48
L32 ind. (min.)		34		37		37	53
M1		M8		M12		M12	M16
O		105		160		195	245
P		33		45		52	65
R		89		138		175	217
S		8		11		10	13
T		38		59		72,5	87,5

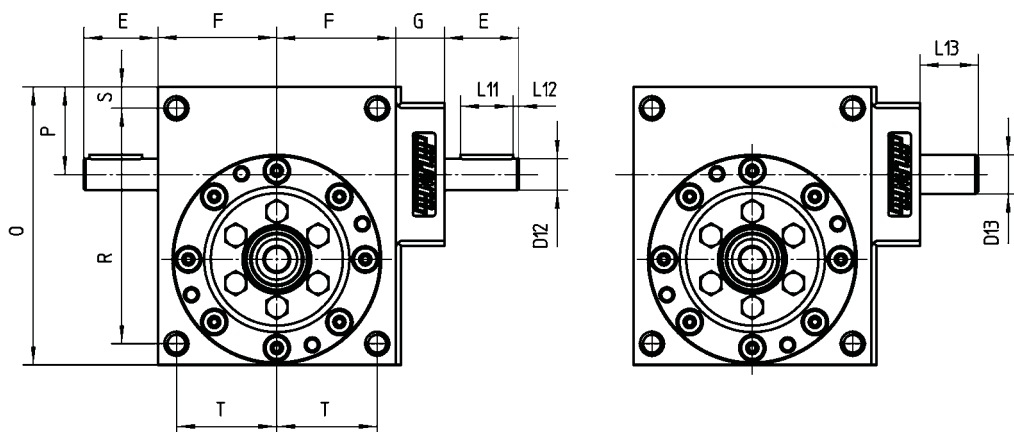


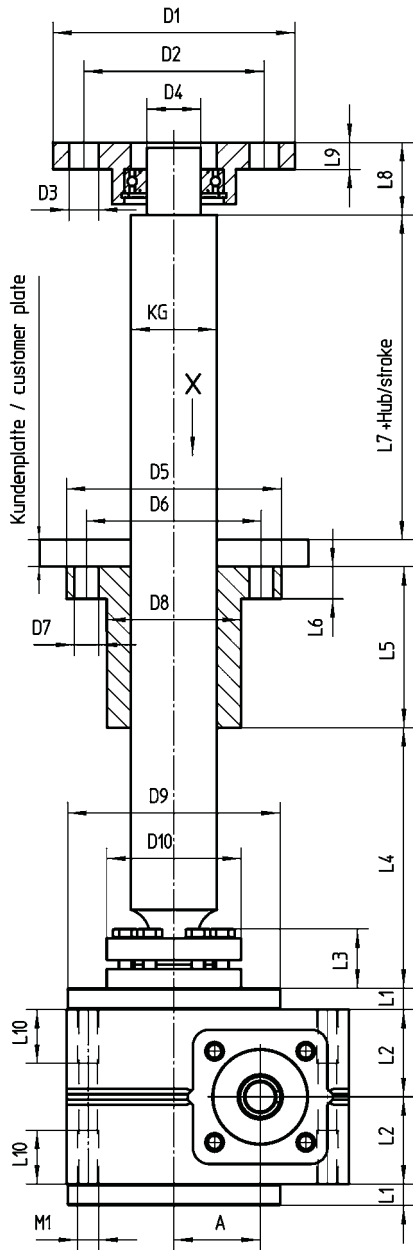


- 轴承杆头
bearing rod head
- 滚珠丝杠驱动
Ball screw drive
- 三相交流电机法兰
Motor flange for AC motor
- 联轴器 交流电机
Coupling for AC motor
- 基础减速机
Basic gear unit
- 减速机枢轴块
Pivot block for gear unit
- 拧转保护
Twisting protection
- 保护管
Protective tube
- 固定法兰
Fixing flange
- 旋转头
Swivel head
- 波纹管
Bellows
- 螺母保护套
Nut protection
- 伺服电机法兰
Servo motor flange
- 伺服联轴器
Servo coupling
- 限位开关
机械设置
Limit switch set mechanical
- 限位开关
感应设置
Limit switch set inductiv

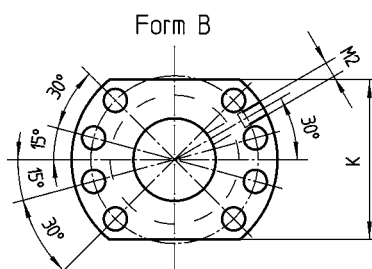
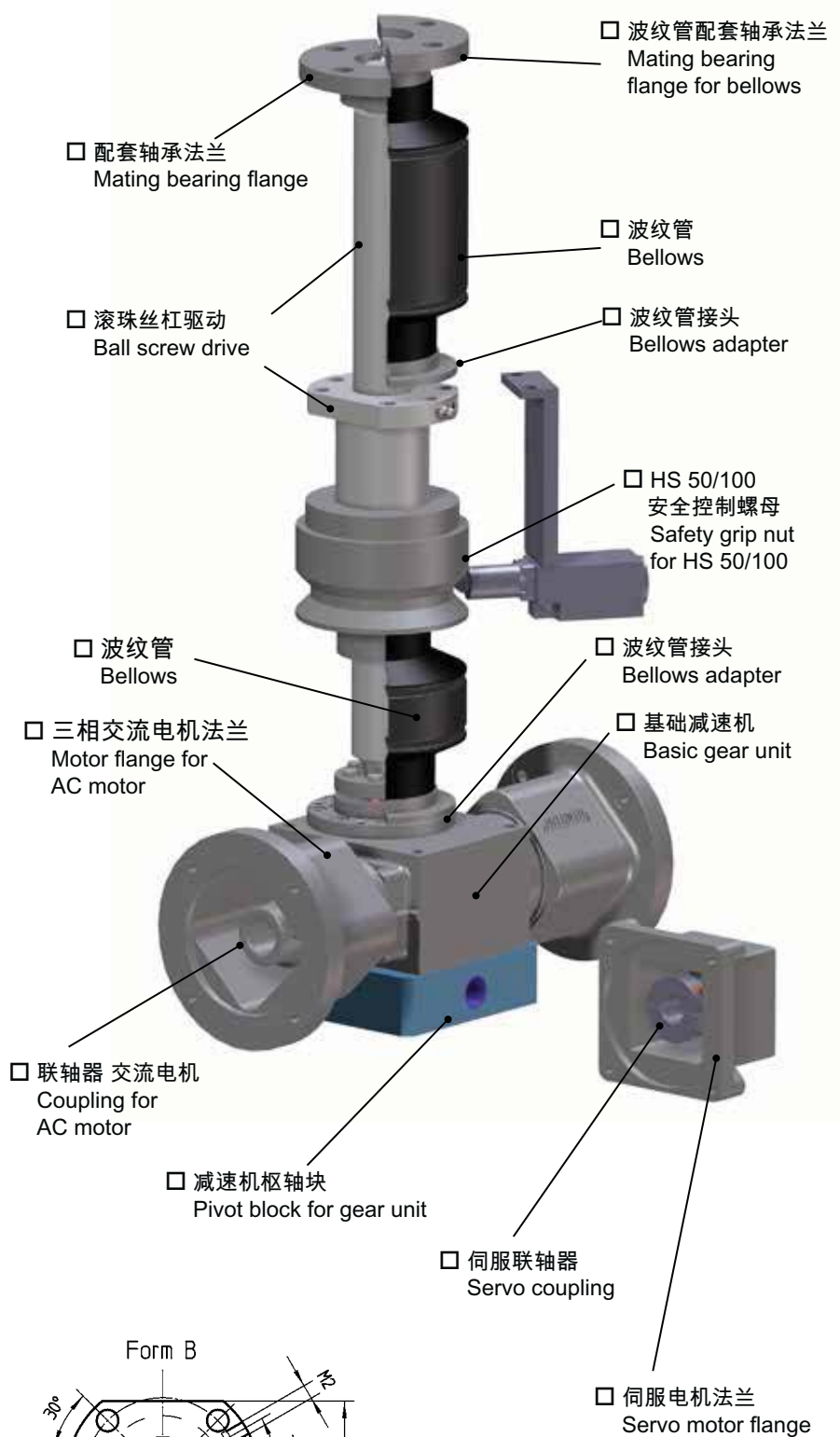
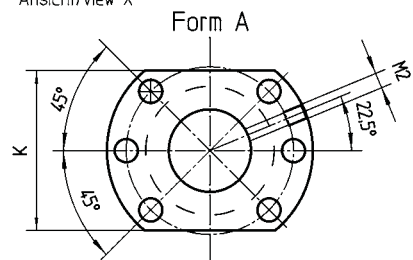


减速机 KG 动态载荷 / Dyn. load capacity	HS 10		HS 25		HS 50			HS 100	
	32x10	32x20	40x10	40x20	50x20	50x20	63x20	63x20	80x20
	C=36,6 kN	C=27,5 kN	C=92 kN	C=75kN	C=96 kN	C=160kN	C=248kN	C=248kN	C=359kN
A	32		50		63			80	
D1	90		110		110	110	170	170	
D2	67		85		85	85	130	130	
D3	4x ø11		4x ø13		4x ø13	4x ø13	4x ø21	4x ø21	
D4	20 j7		25 j7		25 j7	25 j7	45 j7	45 j7	
D5	80		93		125	125	135	135	165
D6	65		78		105	105	115	115	145
D7	6x ø9		8x ø9		8x ø11	8x ø11	8x ø13,5	8x ø13,5	
D8	50g6 (L=12)		63g6 (L=17)		85g6 (L=16)	85g6 (L=16)	95g6 (L=16)	95g6 (L=16)	125g6 (L=25)
D9	79		128		159			200	
D10	50		80		100			138	
D12	12j6		19k6		24k6			28k6	
D13 (DIN5480)	W15x1,25x10		W15x1,25x10		W25x1,25x18			W38x1,25x29	
E	28		37		42			52	
F	45		70		85			102,5	
Form	A		B		B	B	B	B	B
G	18,5		20		22			35,5	
K	62		70		- (rund)	- (rund)	- (rund)	- (rund)	- (rund)
L1	8		11		12			16	
L2	32,5		50		65			77,5	
L3	22		29		32,5			27,5	
L4	49,5	64,5	60	70	84	84	94	80	90
L5	58	60	110	90	122	132	180	180	185
L6	12		14		16	16	20	20	25
L7	10	20	10	20	20	20	20	20	
L8	28		33		33	33	50	50	
L9	10		15		15	15	25	25	
L10	20		24		30			40	
L11	20		30		36			50	
L12	2		3		2			2	
L13	22		20		25			37	
M1	M8		M12		M12			M16	
M2	M6		M8x1		M8x1			M8x1	
O	105		160		195			245	
P	33		45		52			65	
R	89		138		175			217	
S	8		11		10			13	
T	38		59		72,5			87,5	



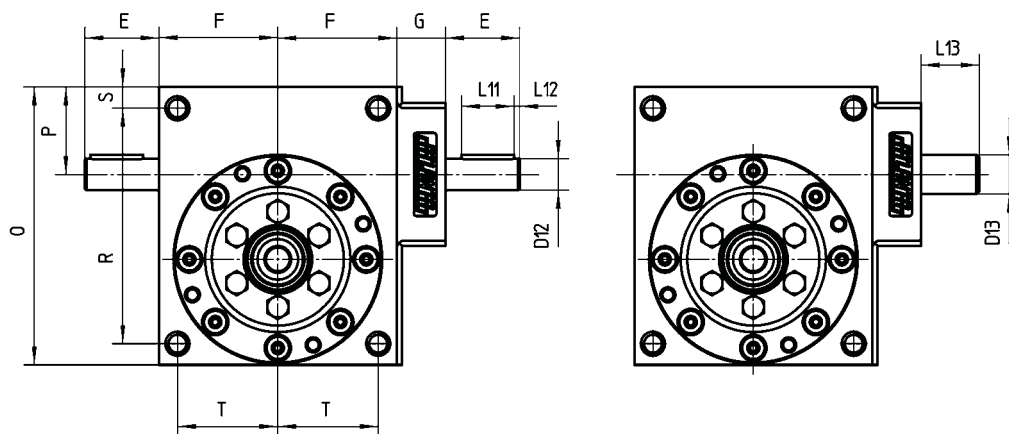


Ansicht/view X



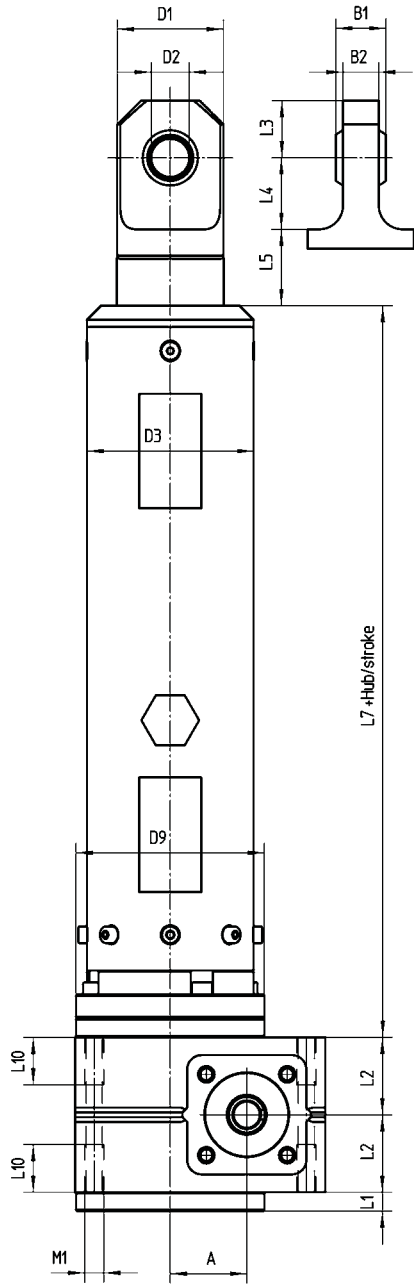


减速机	HS 10		HS 25		HS 50		HS 100	
	25x10	25x20	40x10	40x20	50x20	50x20	63x20	80x20
KG 动态载荷 / Dyn. load capacity	C=19,8 kN	C=14,9 kN	C=65 kN	C=75kN	C=96 kN	C=160kN	C=248kN	C=359kN
A	32		50		63		80	
B1	21		31		28		35	
B2	15		22		22		34	
D1	45		65		80		120	
D2	16		25		40		50	
D3	70		100		110		150	
D9	79		128		159		200	
D12	12j6		19k6		24k6		28k6	
D13 (DIN5480)	W15x1,25x10		W15x1,25x10		W25x1,25x18		W38x1,25x29	
E	28		37		42		52	
F	45		70		85		102,5	
G	18,5		20		22		35,5	
L1	8		11		12		16	
L2	32,5		50		65		77,5	
L3	24		36		45		60	
L4	30		38		45		55	
L5	20		20		15		28	
L7 min. ¹⁾	262		268		360		412	
L7 max. ²⁾	612		668		720		772	
L10	20		24		30		40	
L11	20		30		36		50	
L12	2		3		2		2	
L13	22		20		25		37	
M1	M8		M12		M12		M16	
O	105		160		195		245	
P	33		45		52		65	
R	89		138		175		217	
S	8		11		10		13	
T	38		59		72,5		87,5	



¹⁾ 有效行程250毫米 / valid up to 250mm stroke

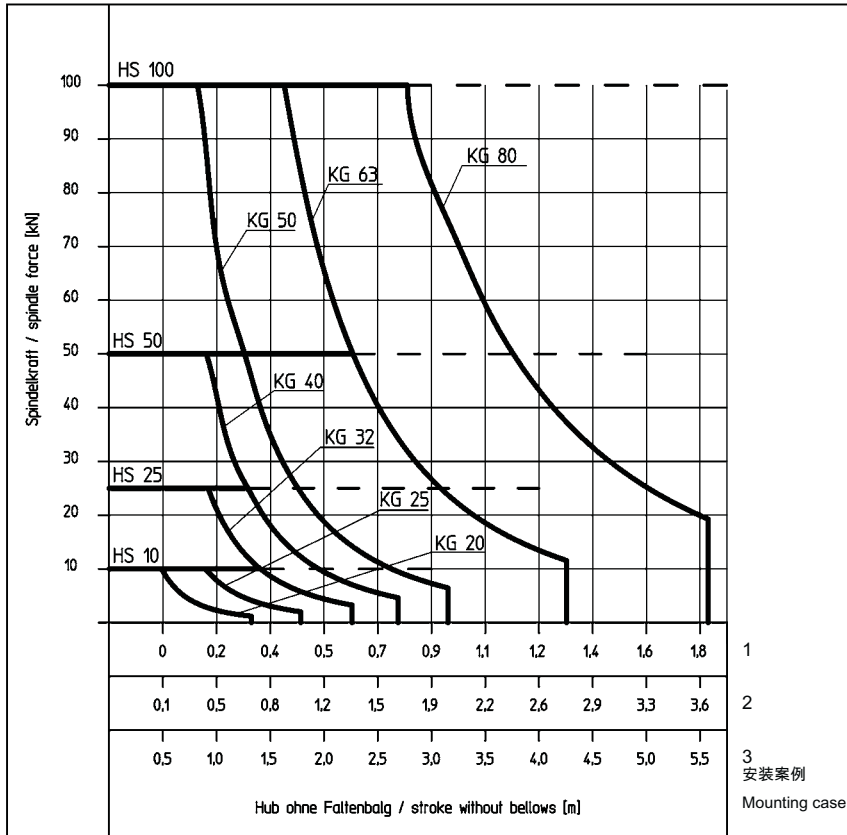
²⁾ 有效行程2000毫米，尺寸取决于行程长度；按需供应精准尺寸。
valid up to 2000mm stroke; dimension depends on the stroke length; exact demensions on request



- 举升缸铰接接头
Lifting cylinder with articulated joint
- 举升缸螺纹连接
Lifting cylinder with thread connection
- 基础减速箱
Basic gear unit
- 三相交流联轴器
Coupling for AC motor
- 三相交流电机法兰
Motor flange for AC motor
- 减速机枢轴块
Pivot block for gear unit
- 伺服联轴器
Servo coupling
- 伺服电机法兰
Servo motor flange

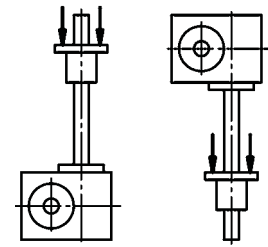


力-行程-图 / Force-stroke-diagram

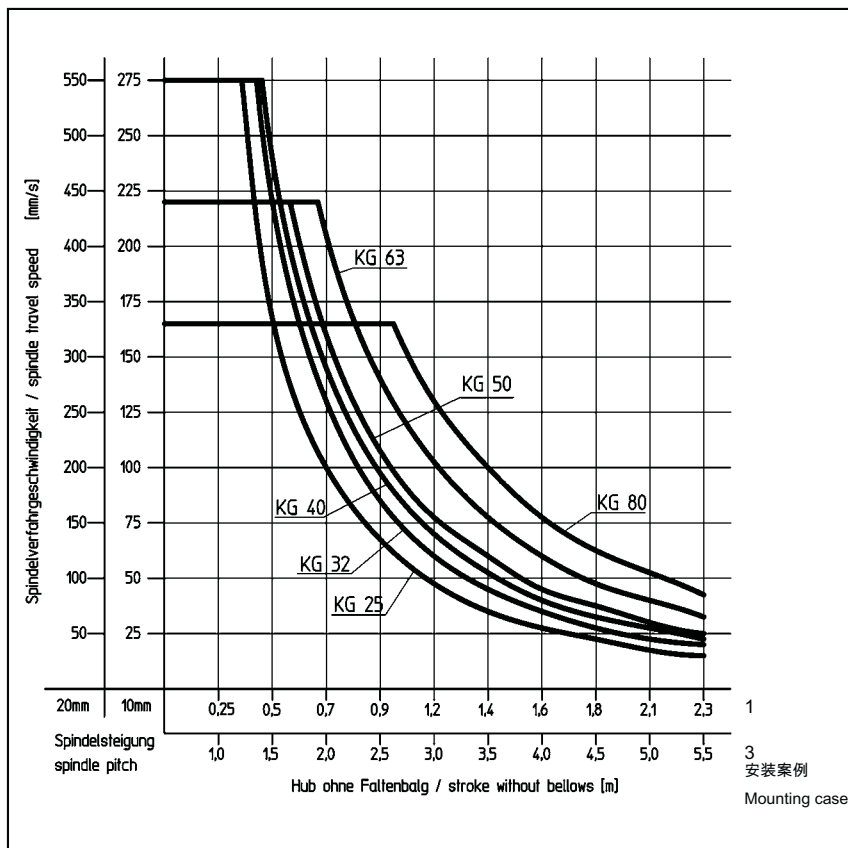


预选减速机可通过目录册核实
The preselected gear unit has to be checked with the catalogue.

负载类型 / Type of load



速度-行程-图 / Speed-stroke-diagram



安装案例 / Mounting cases

屈曲 / Buckling

- 1 = 旋转主轴无需额外导向
Rotating spindle without additional guiding
非旋转主轴无需额外导向
Non-rotating spindle without additional guiding
- 2 = 非旋转主轴的旋转驱动 (2个接头)
Non-rotating spindle as swivel drive (two joints)
- 3 = 旋转主轴需额外导向
Rotating spindle with additional guiding
非旋转主轴需额外导向
Non-rotating spindle with additional guiding
举升缸
Lifting cylinder

临界直线速度 / Critical travel speed

- 1 = 旋转主轴与法兰轴承不匹配
Rotating spindle without mating bearing flange
举升缸
Lifting cylinder
- 3 = 旋转主轴与法兰轴承匹配
Rotating spindle with mating bearing flange



地址 / Address of customer

负责人 / Person in charge

请核对并尽可能填写完整

Please check off or fill in as completely as possible.

电话 _____

传真 _____

主轴轴向力	[kN]	_____	Axial force of spindle	[kN]	_____
压力		<input type="checkbox"/>	Compressive force		<input type="checkbox"/>
拉力		<input type="checkbox"/>	Tensile force		<input type="checkbox"/>
主轴行程	[mm]	_____	Stroke of spindle	[mm]	_____
主轴直线速度	[mm/s]	_____	Travelling speed at spindle	[mm/s]	_____
环境温度	[°C]	_____	Ambient temperature	[°C]	_____
主轴螺纹	滚珠丝杠	<input type="checkbox"/>	Spindle thread	Ball-screw thread	<input type="checkbox"/>
	(梯形牙杆 如有需求)			(Trapezoidal-thread upon request)	
负载情况下人工操作?	是	<input type="checkbox"/>	Do persons work under the load?	yes	<input type="checkbox"/>
	否	<input type="checkbox"/>		no	<input type="checkbox"/>
是否有导向装置	是	<input type="checkbox"/>	Guides available?	yes	<input type="checkbox"/>
	类型 _____			Type _____	
减速机	非旋转主轴	<input type="checkbox"/>	Version of gear unit	non-rotating spindle	<input type="checkbox"/>
	旋转主轴	<input type="checkbox"/>		rotating spindle	<input type="checkbox"/>
	举升缸	<input type="checkbox"/>		lifting cylinder	<input type="checkbox"/>
安装方向	水平	<input type="checkbox"/>	Mounting position	horizontal	<input type="checkbox"/>
	垂直	<input type="checkbox"/>		vertical	<input type="checkbox"/>
	水平 _____度	<input type="checkbox"/>		at _____° to the horizontal	<input type="checkbox"/>
主轴或活塞管延伸	向上	<input type="checkbox"/>	Spindle or piston	upwards	<input type="checkbox"/>
	向下	<input type="checkbox"/>	tube is extending	downwards	<input type="checkbox"/>
驱动	三相交流电机	<input type="checkbox"/>	Drive	Three-phase AC motor	<input type="checkbox"/>
	伺服电机	<input type="checkbox"/>		Servo motor	<input type="checkbox"/>
通过变频器操作	是	<input type="checkbox"/>	Operated by inverter	yes	<input type="checkbox"/>
	否	<input type="checkbox"/>		no	<input type="checkbox"/>
其他	_____		Other requirements	_____	

附件: 请查看页码5/7 或9

Accessories: Please use pages 5/7 or 9

运行:

每小时循环数 _____

每天的小时数 _____

每年的天数 _____

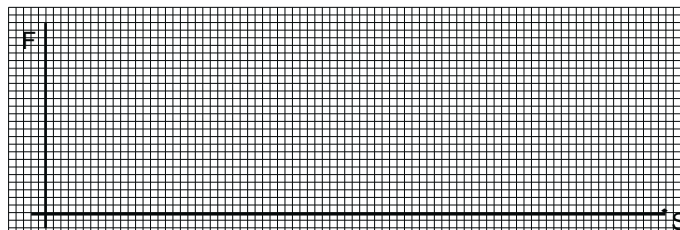
Operation:

No. of cycles per hour _____

No. of hours per day _____

No. of days per year _____

提升与制动力



Flow of force over lifting path



性能：

- 负载范围: 5-100 kN
- 最大直线速度: 550 mm/s
- 滚珠丝杠驱动具有高周期和高占空比，不带自锁功能。
- 与一般驱动相比，滚珠丝杠驱动具有动态负载能力，使用寿命更长久。
- 可使用三相交流电机和伺服电机
- 机械同步、电机同步皆可

液压解决方案的优点

- 高动态性能、定位精准
- 可实现位置可控性，即使驱动中断，也同样可以进行位置控制。
- 在整个使用过程中，恒定可控可调节（粘度没有变化）
- 安装成本低，只需要电路和信号线
- 低维护结构
- 清洁环保的驱动方式

Properties:

- Load range: 5-100 kN
- Max. travelling speed: 550 mm/s
- Ball-screw drives for high number of cycles and high duty cycles, but without self-locking quality.
- High life-time with ball-screw drives with dynamic load capacities, which are above standard drives. This results in multiple life-time.
- Three-phase AC motors and servomotors are available as standard drives.
- Mechanical or electrical synchronisation of several actuators is possible.

Advantages against hydraulic solutions

- High dynamic performance and very precise positioning.
- Different and/or varying positions can be easily approached. Positions stopped at are permanently held even after shutting off the drive.
- Constant controllability and adjustability (no change in viscosity) during the whole range of use.
- Minimal installation expenditure, only circuit and signalling lines required.
- Low maintenance and repair expenses.
- No pollution of the environment due to leakages.



ATLANTA

北京泰瑞恩商贸有限公司
北京市怀柔区迎宾中路36号2层2231室
电话：13801253818
传真：010-58030805
网址：www.torion.cn