

液压配件
联轴器
油箱

HBE.

*Hydraulic Components
Drive Couplings
Oil Tanks*



SOFTEX® 弹性联轴器, 无齿隙弹性联轴器

SOFTEX® ELASTIC AND NO BACKLASH SHAFT COUPLINGS

SOFTEX® 标准联轴器
SOFTEX® -STANDARD COUPLINGS



- 扭向弹性, 免维护
- 吸收振动
- 轴向可插拔
- 全面加工——良好的动态性能
- 设计紧凑, 转动惯量小
- 轴套材质有: 铝、铸铁 (EN-GJL-250)、球墨铸铁 (EN-GJS-400-15), 烧结钢和钢
- 有多种硬度的弹性体
- 孔径有圆柱形 (米制/英寸), 锥度或花键连接按照DIN SAE标准
- Torsionally flexible, maintenance-free
- Vibration reducing
- Axially pluggable
- Machined all over – good dynamic properties
- Compact design/ low flywheel effects
- Available hub materials: Aluminium, cast iron (EN-GJL-250, spheroidal cast iron (EN-GJS-400-15), sintered steel and steel
- Different elastomer hardness of the gear rings
- Bore diameter cylindrical (metric/inch), available tapered or splined acc. to DIN SAE standard
- **Atex approval**

SOFTEX® 无齿隙弹性联轴器
SOFTEX® -ES NO BACKLASH COUPLINGS



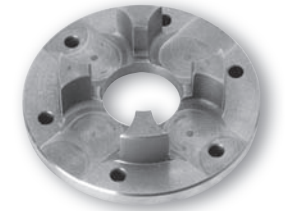
- 预应力下无齿隙的连接
- 材质: 铝质轴套
- 有多种硬度的弹性体
- 三个简易的万向爪
- 轴向可插拔—安装简易, 不耗时间
- 尺寸小, 转动惯量小
- 免维护
- 便于目测检查
- 可配所有常用孔径
- 成品孔径公差按照 ISO 标准为 H7 (夹紧轴套 F7) 孔径 ≥ 6 以上键槽宽公差按照标准 DIN 6885 P.1 为 JS9
- Under initial tension no backlash shaft connection
- Material: Hubs made of aluminium
- Different elastomer hardness of the gear rings
- Triple simple cardanic coupling
- Axially pluggable – simple blind mounting, no time-consuming screwings
- Small structural dimensions – low flywheel effects
- Maintenance-free
- Simple optical test
- Available for all usual shaft dimensions
- Finish bores acc. to ISO limit and fit H7 (clamp hub F7) keyway from ≥ 6 acc. to DIN 6885 P.1-JS9

SOFTEX® 联轴器带锥形胀套
SOFTEX® -TL WITH TAPER BUSH



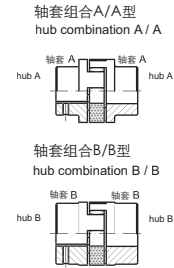
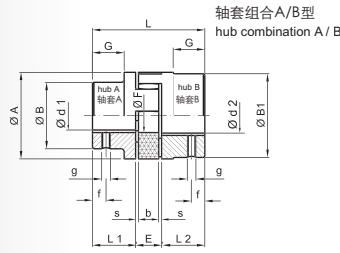
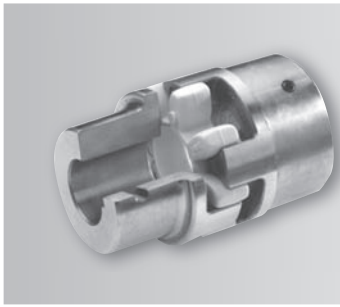
- 适用于所有机械驱动
- 摩擦力矩可调
- 联轴器类型可有 TL 1/1; TL 2/2 和 TL 1/2
- TL 2轴套可径向拆除
- 有各种标准锥形胀套
- For all driving applications concerning mechanical engineering
- Friction-locked solvable shafts/hub connections
- Coupling types TL 1/1; TL 2/2 and TL 1/2 possible
- Coupling hubs TL 2 axially separable
- Application with all standard taper bushes

SOFTEX® 法兰型弹性联轴器
SOFTEX® FA FLANGE COUPLINGS



- 法兰轴套适用于重型机械
- 所有轴套的法兰侧均未加工, 可按需要配置安装
- 两个法兰轴套, 或FA轴套和标准的 SofTEX® 轴套均可相互连接
- 材质: 铸铁 (EN-GJL-250)
- Flange hubs for heavy machinery
- All sizes are unmachined on the flange side and available ready for assembly
- 2 flanges can be combined or FA flange with standard SofTEX® hub
- Material: Cast Iron (EN-GJL-250)

SOFTEX® 标准联轴器 (弹性联轴器)
SOFTEX® STANDARD COUPLINGS (ELASTIC COUPLINGS)



产品描述

- 扭向弹性, 免维护
- 吸收振动
- 轴向可插拔
- 全面加工 - 良好的动态性能
- 设计紧凑/惯性小

PRODUCT DESCRIPTION

- Torsionally flexible, maintenance-free
- Vibration reducing
- Axially pluggable
- Machined all over - good dynamic properties
- Compact design/ low flywheel effects

材质: 铸铝

MATERIAL: DIE CAST ALUMINIUM

联轴器型号 SIZE	轴套/HUB A		轴套/HUB B		尺寸标注/DIMENSIONS (mm)													增长型轴套-B型 EXTENDED B-HUBS max. mm	重量标准-A/B型 ²⁾ WEIGHT (KG) COMBINATION A/B	
	预加工孔径 PREBORE d1	成品孔径范围 ¹⁾ FINISH BORE d1		预加工孔径 PREBORE d2	成品孔径范围 ¹⁾ FINISH BORE d2		A	B	B ₁	L	L ₁ +L ₂	E	s	b	G	F	g			f
		min	max		min	max														
19/24 铝质 Aluminium	6	6	19	18	20	24	40	31	38	66	25	16	2	12	20	18	M5	10	-	0,11
24/30 铝质 Aluminium	6	8	24	22	25	30	55	39	48	78	30	18	2	14	24	27	M5	10	50	0,24
28/38 铝质 Aluminium	9	10	28	26	30	38	65	46	61	90	35	20	2,5	15	28	30	M6	15	60	0,42
38/45 铝质 Aluminium	12	14	38	36	40	45	80	64	75	114	45	24	3	18	37	38	M8	15	-	0,86

材质: GG = 铸铁

(DIN EN 1561/1563)

S = 烧结钢

ST = 钢

MATERIAL: GG = CAST IRON

(DIN EN 1561/1563)

S = SINTERED STEEL

ST = STEEL

联轴器型号 SIZE	轴套/HUB A		轴套/HUB B		尺寸标注/DIMENSIONS (mm)													增长型轴套-B型 EXTENDED B-HUBS max. mm	重量标准-A/B型 ²⁾ WEIGHT (KG) COMBINATION A/B	
	预加工孔径 PREBORE d1	成品孔径范围 ¹⁾ FINISH BORE d1		预加工孔径 PREBORE d2	成品孔径范围 ¹⁾ FINISH BORE d2		A	B	B ₁	L	L ₁ +L ₂	E	s	b	G	F	g			f
		min	max		min	max														
14/16 S	-	-	-	-	4	16	30	-	30	35	11	13	1,5	10	-	8	M4	5	-	0,14
19/24 S	-	-	-	-	6	24	40	-	40	66	25	16	2	12	-	18	M5	10	40	0,34
24/30 S	-	-	-	-	8	32	55	-	55	78	30	18	2	14	-	27	M5	10	50	0,90
28/38 S	-	-	-	-	10	38	65	-	65	90	35	20	2,5	15	-	30	M6	15	60	1,5
38/45 GG	-	14	38	-	40	45	80	66	78	114	45	24	3	18	37	38	M8	15	70	2,35
42/55 GG	-	16	42	-	45	55	95	75	93	126	50	26	3	20	40	46	M8	20	75	3,55
48/60 GG	-	19	48	-	50	60	105	85	103	140	56	28	3,5	21	45	51	M8	20	80	4,85
55/70 GG	-	22	55	-	53	60	120	98	118	160	65	30	4	22	52	60	M10	20	90	7,4
65/75 GG	-	25	65	-	63	70	135	115	133	185	75	35	4,5	26	61	68	M10	20	100	10,8
75/90 GG	-	30	75	-	73	80	160	135	158	210	85	40	5	30	69	80	M10	25	110	17,7
90/100 GG	-	-	-	-	45	100	200	-	170	245	100	45	5,5	34	81	100	M10	25	-	29,6
100/110 ST	-	-	-	-	45	110	225	-	180	270	110	50	6	38	89	113	M12	30	-	39,0
110/125 ST	-	-	-	-	60	125	255	-	200	295	120	55	6,5	42	96	127	M16	35	-	55,0
125/145 ST	-	-	-	-	60	145	290	-	230	340	140	60	7	46	112	147	M16	40	-	77,0

1) 成品孔径公差按照ISO标准为 H 7, 键槽宽公差按照标准 DIN 6885/1 为 JS9, 锥形孔参见第六页

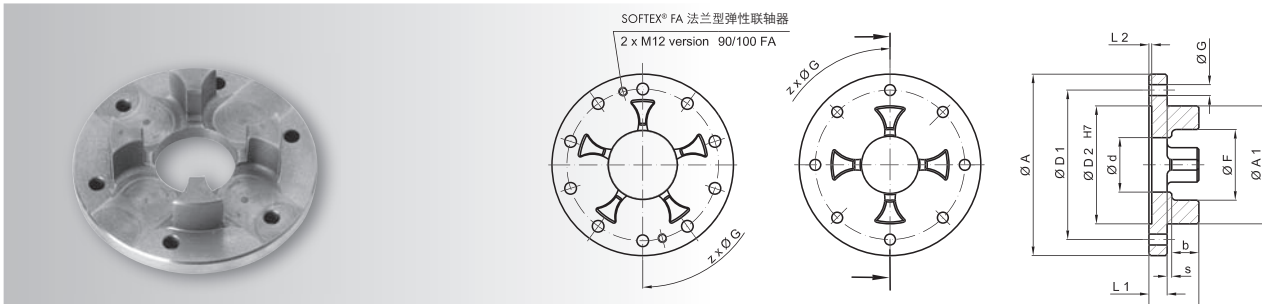
2) 所标重量是指材料为铸铝/铸铁, 且孔径 d1 为最大值, 不带键槽。

1) Finish bores acc. to ISO-standard H 7, keyway acc. to DIN 6885, sheet 1- JS9, taper bores page 6.

2) Weights refer to materials aluminium/GG with d₁ max. without keyway.

SOFTEX® FA 法兰型弹性联轴器

SOFTEX® FA ELASTIC FLANGE COUPLINGS



产品描述

- 法兰轴套适用于重型机械
- 所有轴套的法兰侧均未加工, 可按需要配置安装
- 两个法兰轴套, 或FA轴套和标准的 Softex® 轴套均可相互连接
- 材质: 铸铁 (EN-GJL-250)

PRODUCT DESCRIPTION

- Flange hubs for heavy machinery
- All sizes are unmachined on the flange side and available ready for assembly
- 2 flanges can be combined or FA flange with standard Softex® hub
- Material: Cast Iron (EN-GJL-250)

联轴器 型号 SIZE	尺寸标注 DIMENSIONS [mm]													Z 螺栓个数 QUANTITY	重量 ¹⁾ WEIGHT ¹⁾ [kg]
	A	A ₁	L	L ₁	s	b	F	I ₂	D ₁	D ₂	d	G			
28/38 FA	100	65	27,5	10	2,5	15	39	1,5	80	65	30	7	6	0,55	
38/45 FA	115	80	31	10	3	18	48	1,5	95	80	38	7	6	0,75	
42/55 FA	140	95	35	12	3	20	57	2	115	95	46	9	6	1,35	
48/60 FA	150	105	36,5	12	3,5	21	63	2	125	105	51	9	8	1,55	
55/70 FA	175	120	42	16	4	22	74	2	145	120	60	11	8	2,70	
65/75 FA	190	135	46,5	16	4,5	26	83	2	160	135	68	11	10	3,30	
75/90 FA	215	160	54	19	5	30	98	2,5	185	160	80	14	10	4,90	
90/100 FA	260	200	59,5	20	5,5	34	122	3	225	200	100	14	12	6,70	

1) 重量按照材料为铸铁计算。

1) Weights refer to material GG.

法兰轴套

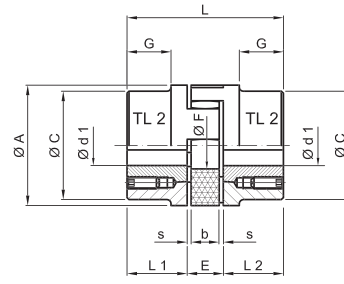
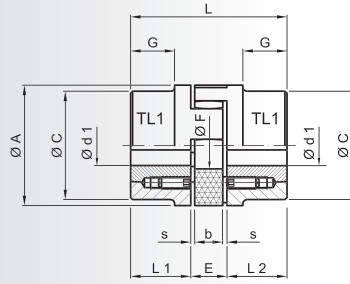
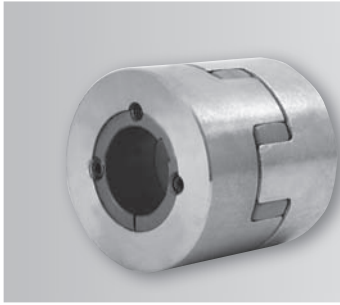
标准轴套的配合请查阅第4页, 所有技术参数请查阅第6-7两页, 有各种 D1-D2-12-G 尺寸未加工的半成品可供选用。

FLANGE HUBS

Please consult the table on page 3 for combinable standard hubs and pages 6 and 7 for all technical data. All sizes also available unmachined without dimensions D1-D2-12-G.

SOFTEX® TL 弹性联轴器带锥形胀套

SOFTEX® TL ELASTIC COUPLINGS WITH TAPER BUSH



产品描述

- 适用于所有机械驱动
- 摩擦力矩可调
- 联轴器类型可有 TL 1/1; TL 2/2 和 TL 1/2
- 有各种标准锥形胀套
- 材质: 轴套为铸铁 (EN-GJL-250), 锥形胀套为钢

PRODUCT DESCRIPTION

- For all driving applications concerning mechanical engineering
- Friction-locked solvable shafts/hub connections
- Coupling types TL 1/1; TL 2/2 and TL 1/2 possible
- Application with all standard taper bushes
- Material: Coupling hub cast iron (EN-GJL-250), taper bush steel

联轴器型号 SIZE	锥形胀套 TAPER-BUSH	尺寸标注 DIMENSIONS [mm]									重量-最大孔径时 WEIGHT AT MAX. BORE Ø [kg]	重量-最大孔径时 ANGULAR MOMENTUM AT MAX. BORE Ø [kg m²]	胀套的拧紧螺栓 FIXING SCREW FOR TAPER-BUSH			
		A	C	L	L ₁ L ₂	E	s	b	G	F			重量 SIZE [ZOLL]	长度 LENGTH [mm]	数量 QUANT.	力矩 TORQUE [Nm]
28/38	1108	65	65	66	23	20	2,5	15	-	30	1,0	0,0007	1/4"	13	2	5,6
38/45	1108	80	78	70	23	24	3	18	15	38	2,7	0,0030	1/4"	13	2	5,6
42/55	1610	95	93	78	26	26	3	20	16	46	3,0	0,0036	3/8"	16	2	20
48/60	1615	105	103	106	39	28	3,5	21	28	51	4,8	0,0080	3/8"	16	2	20
55/70	2012	120	118	96	33	30	4	22	20	60	4,9	0,0120	7/16"	22	2	31
65/75	2012	135	115	101	33	35	4,5	26	19	68	6,9	0,0140	7/16"	22	2	31
75/90	1) 2517	160	158	144	52	40	5	30	36	80	14,5	0,0650	1/2"	25	2	50
	2) 3020												5/8"	32		90

- 1) 只有 TL1 型 1) only available for TL 1
 2) 只有 TL2 型 2) only available for TL 2

锥形胀套型号 SIZE OF TAPER BUSH	可提供的成品孔尺寸 D1; 公差标准 H7, 键槽公差按照 DIN 6885 P.1* 标准 BORE DIMENSIONS AVAILABLE d1; LIMIT AN FIT H7 – KEYWAY ACC. TO DIN 6885 P.1*																		
1108	9	10	11	12	14	16	18	19	20	22	24	25	28*						
1610	14	16	18	19	20	22	24	25	28	30	32	35	38	40	42*				
1615	14	16	18	19	20	22	24	25	28	30	32	35	38	40	42*				
2012	14	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	
2517	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60
3020	25	28	30	35	38	40	42	45	48	50	55	60	65	70	75				

*带键槽 (平槽) 孔, 公差标准按照标准 DIN 6885 第3页
 *Bore with keyway (flat type) acc. to DIN 6885 page 3

订货描述示例

ORDER EXAMPLE

联轴器型号 SIZE OF COUPLING	弹性体硬度 HARDNESS OF SPIDER [SHORE A]	轴套类型 HUB	成品孔径 FINISH BORE	轴套类型 HUB	成品孔径 FINISH BORE
SOFTEX® 42/55	92°	TL 1	Ø 28	TL 1	Ø 38

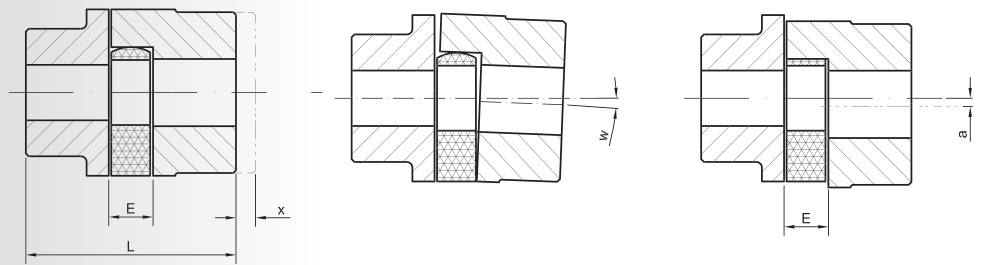
联轴器型号, 有各种材料 COUPLING TYPES FOR ALL MATERIALS	扭矩规格 TORQUE (Nm)			扭矩规格 TORQUE (Nm)			扭矩规格 TORQUE (Nm)			扭矩规格 TORQUE (Nm)			最高速度 RPM ¹⁾ SPEED [1/MIN] 当 V/ATV	
	聚氨酯弹性体 POLYURETHANE SPIDER 硬度 80°Sh-A, 蓝色 80° Shore A colour: blue			聚氨酯弹性体 POLYURETHANE SPIDER 硬度 92°Sh-A, 白色 92° Shore A colour: white			聚氨酯弹性体 POLYURETHANE SPIDER 硬度 95°/98°Sh-A, 红色 98° Shore A / 95° Shore A colour: red			聚氨酯弹性体 POLYURETHANE SPIDER 硬度 64°Sh-D, 绿色 64° Shore D colour: green				
	额定扭矩 CONT. TKN	最大扭矩 TK MAX.	交变扭矩 ALTER- NATING TKW	额定扭矩 CONT. TKN	最大扭矩 TK MAX.	交变扭矩 ALTER- NATING TKW	额定扭矩 CONT. TKN	最大扭矩 TK MAX.	交变扭矩 ALTER- NATING TKW	额定扭矩 CONT. TKN	最大扭矩 TK MAX.	交变扭矩 ALTER- NATING TKW		
14/16	4	8	1	7,5	15	2	12,5	25	3,3	-	-	-	19000	-
19/24	4,9	9,7	1,3	10	20	2,6	17	34	4,4	75	150	20	14000	19000
24/30	17	34	4,4	35	70	9	60	120	16	200	400	52	10600	14000
28/38	46	92	12	95	190	25	160	320	42	405	810	105	8500	11800
38/45	93	186	24	190	380	49	325	650	85	560	1120	145	7100	9500
42/55	130	260	34	265	530	69	450	900	120	655	1310	170	6000	8000
48/60	150	300	39	310	620	81	525	1050	137	750	1500	195	5600	7100
55/70	180	360	47	375	750	93	625	1250	163	800	1600	208	4750	6300
65/75	205	410	53	625	850	111	900	1300	169	1830	3660	476	4250	5600
75/90	475	950	124	975	1950	254	1500	3000	390	4500	9000	1170	3550	4750
90/100	1175	2350	306	2400	4800	624	3600	7200	963	-	-	-	2800	3750
100/110	-	-	-	3300	6600	858	4950	9900	1287	-	-	-	2500	3350
110/125	-	-	-	4000	8000	1040	6000	12000	1560	-	-	-	2240	3000
125/145	-	-	-	5000	10000	1300	7500	15000	1950	-	-	-	2000	2650

1) 当外缘线速度超过 V= 30 m/s 时, 轴套材质要求为球墨铸铁或钢, 并要求动平衡。

1) For peripheral speeds exceeding V= 30 m/s dynamically balanced hubs made of GGG or steel instead of GG hubs are required.

偏差

MISALIGNMENT VALUES



轴轴向偏差
Axial displacement

角向偏差
Angular displacement or

径向偏差
Radial displacement

联轴器型号 SIZE	E	最大轴向偏差* MAX. AXIAL DISPLACEMENT* [mm] x	最大角向偏差 1500 (1/min) MAX. ANGULAR DISPLACEMENT w 1500 (1/min)	最大径向偏差 1500 (1/min) [mm] MAX. RADIAL DISPLACEMENT 1500 (1/min) [mm] a
14/16	13	1,0	0,9°	0,17
19/24	16	1,2	0,9°	0,2
24/30	18	1,4	0,9°	0,22
28/38	20	1,5	0,9°	0,25
38/45	24	1,8	1°	0,28
42/55	26	2,0	1°	0,32
48/60	28	2,1	1,1°	0,36
55/70	30	2,2	1,1°	0,38
65/75	35	2,6	1,2°	0,42
75/90	40	3,0	1,2°	0,48
90/100	45	3,4	1,2°	0,50
100/110	50	3,8	1,2°	0,52
110/125	55	4,2	1,3°	0,55
125/145	60	4,6	1,3°	0,60

*轴轴向偏差时, 参数 "E" 和 "L" 应取最大值

*In case of axial misalignment the factors "E" and "L" are the max. values.

在安装联轴器时, 要注意准确调整尺寸 "E", 以保证轴向的柔性。
两连接轴的准确对心将会增加联轴器运行的稳定性。
偏差值由扭矩大小、转速等决定。

When mounting the coupling, dimension "E" must be observed exactly in order to keep the coupling axially flexible. The stability of the coupling will be increased by careful alignment of the shafts. The displacement values depend on torque speed and performance.

工况类型 OPERATING TYPE	被驱动设备/负载 DRIVEN MACHINE/EXAMPLES	汽车发动机 PRIME MOTOR				
		电动机 E-MOTOR	柴油机/汽油机(汽缸式) DIESEL- / PETROL ENGINES (CYLINDERS)			
			≥4	3	2	1
a	单一工况, 轻型负载 液压泵, 离心泵和轻型发电机 Uniform operation, with small masses to be accelerated Hydraulic and centrifugal pumps, light generators, transmissions, ventilators, transfer equipments	1,0 - 1,25	1,2 - 1,5	1,5 - 1,7	1,7 - 2,0	2,4 - 2,7
b	传送带, 通风设备, 输送设备 单一工况, 中型负载 Uniform operation, with medium masses to be accelerated Sheet metal banding machines, wood working machines, textile machines, mills, mixers	1,6 - 1,8	1,7 - 2,0	2,0 - 2,3	2,3 - 2,5	2,8 - 3,0
c	轧机设备, 木工设备, 纺织设备, 轧钢设备, 搅拌机 无规律工况, 中型负载 With medium masses to be accelerated and irregular operation Rotating ovens, printing and colouring machines, generators, shredders, winders, spinning machines, pumps for viscous fluids	1,8 - 1,9	2,0 - 2,0	2,3 - 2,5	2,5 - 2,7	2,9 - 3,1
d	转炉, 打印和上色设备, 发电机, 粉碎机, 卷扬机, 纺纱机, 高精度输送泵 中型负载, 带冲击的无规律工况 混凝土搅拌机, 锤击设备, 缆车, 造纸机, 压缩和推进泵, 卷扬机, 真空泵 With medium masses to be accelerated, irregular operation and shocks Concrete mixers, drop hammers, cable cars, paper mills, compression and propeller pumps, rope winders, centrifuges	1,8 - 2,0	2,2 - 2,5	2,5 - 2,7	2,7 - 3,0	3,1 - 3,4
e	大型负载, 重型冲击的无规律工况 开凿机, 锤式粉碎机, 柱塞泵, 压铸机, 旋转 钻探设备, 剪切机, 锻压机, 冲压泵 Large masses to be accelerated, irregular operation and heavy shocks Excavators, hammer mills, piston pumps, presses, rotary boring machines, shears, forge presses, stamping presses	2,1 - 2,3	2,5 - 2,7	2,7 - 3,0	3,2 - 3,4	3,5 - 3,8
f	超大型负载, 超重型冲击的无规律工况 恒速活塞式压缩机或柱塞泵, 重型卷扬机, 焊接设备, 压砖机, 碎石机 Very large masses to be accelerated, irregular operation and very heavy shocks Piston type compressors and pumps without speed variations, heavy roll sets, welding machines, brick presses, stone crushers	2,5 - 3,1	3,0 - 3,3	3,3 - 3,6	3,7 - 4,0	4,1 - 4,5

工作期间(小时/天) 安全系数 K2 SAFETY FACTOR K2 FOR OPERATION PERIOD (HOURS/DAY)				
超过 more than	-	2	12	
至 up to	2	12	24	
系数 K2 Factor K2	0,9	1	1,1	

每小时启动次数 安全系数 K3 SAFETY FACTOR K3 FOR STARTS PER HOUR					
超过 more than	-	10	40	125	500
至 up to	10	40	125	500	-
工况类型 a-c Operating type a-c	1	1,05	1,3	1,45	1,6
工况类型 d-f Operating type d-f	1	1,05	1,1	1,15	1,5

标志 DESIGNATION	定义 DEFINITION					
启动系数 SZ STARTING FACTOR SZ	每小时启动频率 Z 引起的额外负载的参考系数 The factor which takes into account the additional loading caused by the frequency Z of starts per hour	z	100	200	400	800
		Sz	1	1,2	1,4	1,6
温度系数 ST TEMPERATURE FACTOR ST	温度变化引起的橡胶稳定性下降的参考系数 The factor which considers the decrease of stability of the elastic rubber material in accordance to the thermal influence	T (° C)	St 聚氨酯 (PUR) St for Polyurethan (PUR)			
		T (° C)	-25° < +30° < +30° < +40° < +40° C +60° C +60° C +80° C	1	1,2	1,4
冲击系数 S _r /S _l SHOCK FACTOR S _r /S _l	启动轻型冲击 1,5	启动中型冲击 1,8	启动重型冲击 2,2			
	Slight starting shock 1,5	Medium starting shocks 1,8	Heavy starting shocks 2,2			

SOFTEX®-弹性体 工作条件 OPERATING CONDITIONS FOR SOFTEX®-SPIDERS	标准弹性体(聚氨酯) STANDARD SPIDER (POLYURETHANE)			特殊弹性体(HYTREL热塑性弹性体) SPECIAL SPIDER (HYTREL)
弹性体硬度和颜色 HARDNESS OF SPIDER AND COLOUR	80° Shore (A) 蓝色 80° Shore (A) Blue	92° Shore (A) 蓝色 92° Shore (A) White	95°/98° Shore (A) 红色 95°/98° Shore (A) Red	64° Shore (D) 绿色 64° Shore (D) Green
额定工作温度范围 PERMISSIBLE DURABLE TEMPERATURE-RANGE	-50°C 至 +80° C -50° C up to +80° C	-40°C 至 +90° C -40° C up to +90° C	-30°C 至 +90° C -30° C up to +90° C	-50°C 至 +110° C -50° C up to +110° C
短峰值温度范围 PERMISSIBLE SHORT TERM TEMPERATURE PEAKS	-60°C 至 +80° C -60° C up to +80° C	-50°C 至 +120° C -50° C up to +120° C	-40°C 至 +120° C -40° C up to +120° C	-60°C 至 +150° C -60° C up to +150° C
减震 DAMPING	很好 Very good	好 Good	中等 Medium	低 Low
弹性 ELASTICITY	软 Soft	中等 Medium	硬 Hard	非常硬 Very hard
耐磨 ABRASION RESISTANCE	很好 Very good	很好 Very good	好 Good	好 Good
耐用性 DURABILITY	极好 excellent	很好 Very good	很好 Very good	很好 Very good
典型应用 TYPICAL APPLICATIONS	普通驱动, 有可能共振 Normal drives also resonance speed possibility	普通驱动 Normal drives	普通驱动, 性能好 Normal drives with high performance	高性能, 小扭转角 High performance with small torsional angle

联轴器选型:

应该以可能使用的最大扭力作为选型基础。
样本的扭力已经综合考虑所有安全系数。

$$T_N = T_{KN} \times K1 \times K2 \times K3$$

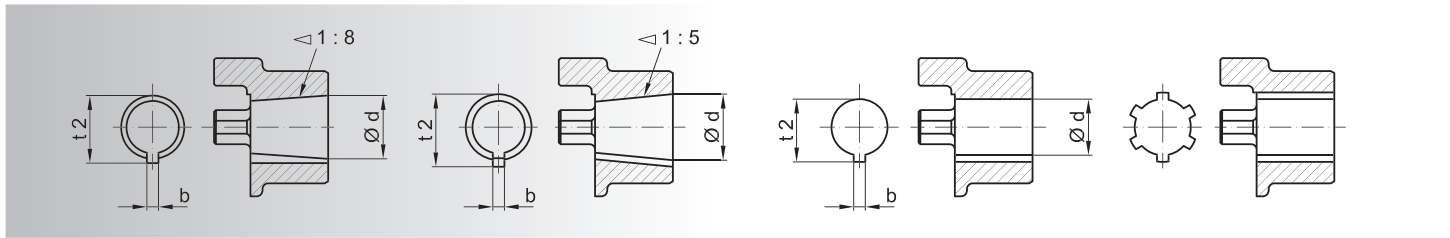
Coupling selection:

The largest possible torque T_N should be used as a basis.
The catalogue torque has to be multiplied with all safety factors.

$$T_N = T_{KN} \times K1 \times K2 \times K3$$

孔代码

BORE CODES



锥形孔 / TAPER 1:8

代码 CODE	详细尺寸 BORE DETAILS			
	d σ +0,05	b +0,05	t ₂ +0,1	L
... N/1	9,7	2,4	10,7	17
... N/1c	11,6	3	12,9	16,5
... N/1e	13	2,4	13,8	21
... N/1d	14	3	15,5	17,5
... N/1b	14,3	3,2	15,7	19,5
... N/2	17,2	3,2	18,3	24
... N/2a	17,2	4	19,0	24
... N/2b	17,2	3	18,4	24
... N/3	22	4	23,5	28
... N/4	25,4	4,78	27,8	36
... N/4b	25,4	5	28,2	36
... N/4a	27	4,78	28,8	32,5
... N/4g	28,45	6	29,3	38,5
... N/5	33	6,35	35,5	44
... N/5a	33	7	35,5	44
... N/6	43,05	7,95	46,5	51
... N/6a	41,15	8	44,2	42,5

锥形孔 / TAPER 1:5

代码 CODE	详细尺寸 BORE DETAILS			
	d σ +0,05	b js 9	t ₂ +0,1	L
... A 10	9,85	2	10,85	11,5
... B 17	16,85	3	18,65	18,5
... C 20	19,85	4	22,05	21,5
... Cs 22	21,95	3	23,75	21,5
... D 25	24,85	5	27,75	26,5
... E 30	29,85	6	32,45	31,5
... F 35	34,85	6	37,45	36,5
... G 40	39,85	6	42,45	41,5

英制孔 / INCH BORES

代码 CODE	公制尺寸 (mm) METRIC (mm)			英寸 INCH	
	d σ	b+0,05	t ₂ +0,1	d σ	b
DNB	11,11 M7	2,4	12,5	7/16	3/32
V	11,11 +0,03	3,2	12,6	7/16	1/8
Ta	12,7 +0,03	3,2	14,3	1/2	1/8
E	15,87 +0,03	3,2	17,5	5/8	1/8
Ed	15,87 +0,03	4,75	18,1	5/8	3/16
ES	15,88 +0,03	4,0	17,7	5/8	5/32
Ad	19,02 +0,03	3,2	20,7	3/4	1/8
A	19,05 +0,03	4,78	21,3	3/4	3/16
Gs	22,22 +0,03	4,78	24,4	7/8	3/16
G	22,22 +0,03	4,75	24,7	7/8	3/16
F	22,22 +0,03	6,35	25,2	7/8	1/4
B	25,37 +0,03	4,78	27,8	1	3/16
Bs	25,38 +0,03	6,37	28,3	1	1/4
HS	25,4 +0,03	6,35	28,7	1	1/4
SB	28,58 +0,03	6,35	31,5	1 1/8	1/4
Sd	28,58 +0,03	7,93	32,1	1 1/8	5/16
Js	31,75 +0,03	6,35	34,6	1 1/4	1/4
J	31,75 +0,03	7,93	34,4	1 1/4	5/16
K	31,75 M7	7,93	35,5	1 1/4	5/16
KS	31,75 +0,03	7,93	36,6	1 1/4	5/16
M	34,92 +0,03	7,93	38,6	1 3/8	5/16
CB	36,5 +0,03	9,55	38,6	1 7/16	3/8
C	38,07 +0,03	9,55	42,5	1 1/2	3/8
N	41,25 +0,03	9,55	45,6	1 5/8	3/8
L	44,45 K7	11,11	49,4	1 3/4	7/16
NM	47,625 +0,03	12,73	53,5	1 7/8	1/2
DS	50,77 +0,03	12,73	56,4	2	1/2
P	53,95 +0,03	12,73	59,6	2 1/8	1/2
U	57,1 +0,03	12,73	62,9	2 1/4	1/2
UB	60,3 +0,03	15,87	67,6	2 3/8	5/8
W	69,85 M7	15,875	77,3	2 3/4	5/8
WA	73,0 +0,03	19,05	81,7	2 7/8	3/4
WD	85,725 M7	22,225	95,8	3 3/8	7/8
WE	88,9 +0,03	22,225	98,6	3 5/8	7/8
WF	92,075 M7	22,225	101,9	3 5/8	7/8

联轴器的大小尺寸应插在各编码之前, 如: z. B. 24/30 N/2a

This size of coupling should be inserted before the code: e.g. 24/30 N/2a

花键孔适合 DIN 标准, SAE 法兰, 英制孔请另外说明。

For splines acc. to DIN and SAE as well as for inch bores please ask for separate list.

基本圆孔、锥形孔对应列表

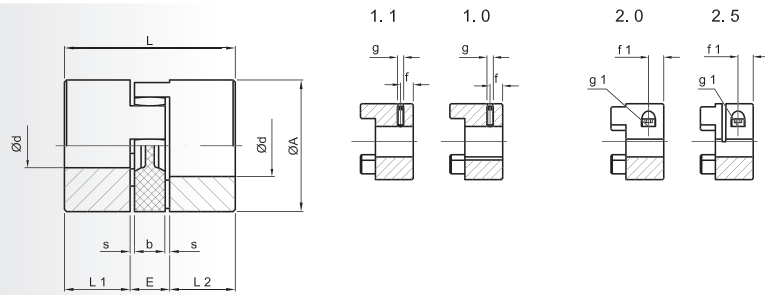
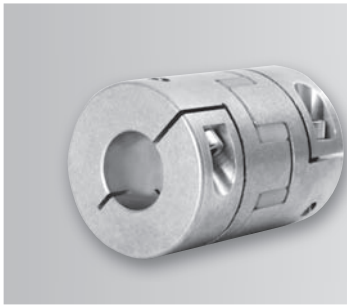
BASIC PROGRAMME METRIC AND CONICAL (TAPER) BORES

SOFTEX® 型号与材料 / SIZE MATERIAL		锥形孔 / TAPER 1:5				锥形孔 / TAPER 1:8					英制孔 / INCH BORES																		
		A 10	B17	C20	D25	N/1	N1d	N/2	N/2a	N/3	A	B5	C	Ed	E5	F	G	K	L	M	N	NM	P	Sb	Sd	Ta	WA	WD	
19/24	Alu-D	•				•	•				•					•											•		
	S	•				•	•				•					•													
24/30	Alu-D	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•							•					
	S		•	•	•						•	•	•	•	•	•	•												
28/38	Alu-D		•	•	•						•	•	•	•	•	•	•	•						•			•		
	S		•	•	•						•	•	•	•	•	•	•	•			•								
38/45	Alu-D		•		•						•	•	•	•	•	•	•	•											
	GG		•		•						•	•	•	•	•	•	•	•			•								
42/55	GG		•		•						•	•	•	•	•	•	•	•						•					
48/60	GG																												
55/70	GG																												
65/75	GG																												
75/90	GG																												

SOFTEX® 型号与材料 / SIZE MATERIAL		轴套/HUB	成品孔径公差按照 ISO 标准为 H7, 键槽宽公差按照标准 DIN 6885/1 FINISH BORES ACC. ISO-STANDARD H7, KEYWAY ACC. DIN 6885, SHEET 1																																						
			6	8	9	10	11	12	14	15	16	18	19	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	65	70	75	80	85	90	95	100				
19/24	AWD	A	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•			
		B																																							
	S				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
24/30	AWD	A				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•		
		B																																							
	S				•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	
28/38	AWD	A																																							
		B																																							
	S																																								
38/45	AWD	A																																							
		B																																							
	GG																																								
42/55	GG	A																																							
		B																																							
48/60	GG	A																																							
		B																																							
55/70	GG	A																																							
		B																																							
65/75	GG	A																																							
		B																																							
75/90	GG	A																																							
		B																																							
90/100	GG	h ₈																																							

• 标准长度 / Standard length ▪ B 增长型 - B 型 / B-hub extended

SOFTEX® ES 无齿隙弹性联轴器
SOFTEX® ES ZERO BACKLASH COUPLINGS



产品描述

- 预应力下无齿隙的连接
- 材质: 铝质轴套
- 三个简易的万向爪
- 轴向可插拔 – 安装简易, 不耗时间
- 尺寸小, 转动惯量小
- 传动具有柔性, 免维护
- 便于目测检查
- 有多种硬度的弹性体
- 可配所有常用孔径
- 成品孔径公差按照 ISO 标准为 H7 (夹紧轴套 F7), 键槽宽公差按照标准 DIN 6885 P.1 为 JS9

PRODUCT DESCRIPTION

- Under initial tension no backlash shaft connection
- Material: Hubs made of aluminium
- Triple simple cardanic coupling
- Axially pluggable – simple blind mounting, no time-consuming screwings
- Small structural dimensions – low flywheel effects
- Torsionally flexible, maintenance-free
- Simple optical test
- Different elastomer hardness of the gear rings
- Available for all usual shaft dimensions
- Finish bores acc. to ISO limit and fit H7 (clamp hub F7) keyway from Ø 6 acc. to DIN 6885 P.1-JS9

SOFTEX® ES 联轴器型号 SIZE	未加工孔径 UNBORED	成品孔径范围* FINISH BORES*				尺寸标注 DIMENSIONS [mm]								拧紧螺钉 CLAMPING SCREW		
		轴套类型 HUB TYPE				A	L	L ₁ L ₂	E	b	s	(1,0) (1,1) g	f	(2,0) (2,5) g ₁	f ₁	T _A [Nm]
		d _{min}	1,0 d _{max}	1,1 d _{max}	2,0/2,5 d _{max}											
材质: 铝 MAT.- ALUMINIUM																
9	x	4	9	11	11	20	30	10	10	8	1,0	M4	5	M2,5	5,0	0,76
14	x	4	15	16	16	30	35	11	13	10	1,5	M4	5	M3	5,0	1,34
19/24	x	6	24	24	20	40	66	25	16	12	2,0	M5	10	M6	12,0	10,5
24/30	x	10	30	30	28	55	78	30	18	14	2,0	M5	10	M6	10,5	10,5
28/38	x	10	38	38	38	65	90	35	20	15	2,5	M8	15	M8	11,5	25,0
38/45	x	15	45	45	45	80	114	45	24	18	3,0	M8	15	M8	15,5	25,0

* 特殊孔形可垂询

* Special bores on request

夹紧式轴套 (2.0/2.5) 各孔径 Ø D 所对应可传递的扭力大小 (NM)

BORE RANGE Ø d CORRESPONDING TRANSFERABLE TORQUES (NM) OF THE CLAMPING HUB (2.0/2.5)

SOFTEX® ES	8	9	10	11	14	15	16	19	20	24	25	28	30	32	35	38	40	42	45
9	2,5	2,6	2,7	2,8															
14	5,1	5,3	5,5	5,6	8,1	6,3	6,5												
19/24	25	26	27	27	29	30	31	32	34										
24/30			34	35	36	38	39	19	41	43	45	46							
28/38					80	81	81	85	87	91	92	97	99	102	105	109			
38/45						92	94	98	99	104	105	109	112	113	118	122	123	126	130

型号为 1.0 和 1.1 的轴套, 成品孔径公差为 H7; 型号为 2.0 和 2.5 的轴套, 成品孔径公差为 F7; 键槽宽公差按照标准 DIN 6885/1, 为 JS 9

Finish bores hub types 1.0 and 1.1 limit and fit H7, types 2.0 and 2.5 limit and fit F7 Keyway acc. to DIN 6885, Page 1, Tol. JS 9

SOFTEX® ES 联轴器型号 SIZE	弹性体硬度 SPIDER SHORE®	扭矩/TORQUE [Nm]			最高速度 RPM, 当 V=30 m/s MAX. SPEED [1/MIN] V=30 m/s	静态扭向刚度 STATIC ELONGATION PER UNIT FORCE [Nm/rad]	容许偏差 ADMISSIBLE MISALIGNMENT n=1500 1/min			径向刚度 RADIAL ELONGATION PER UNIT FORCE Cr [N/mm]	重量/WEIGHT [kg]	转动惯量 ANGULAR MOMENTUM [kg/cm²]
		TK _{SP}	TK _N	TK _{MAX}			轴向偏差 Δka [mm]	径向偏差 Δkr [mm]	角向偏差 angular Δkw [Grad]			
9	64D	0,45	6	12	28000	74	0,8	0,05	0,9	739	0,015	0,01
	92A		3	6		32		0,15	1,0	260	0,015	0,01
	98A (Standard)		5	10		51		0,09	0,9	520	0,015	0,01
14	64D	1	16	32	13000	234	1,0	0,06	0,8	856	0,06	0,06
	92A		7,5	15		114		0,15	1,0	335	0,06	0,06
	98A (Standard)		12,5	25		172		0,09	0,9	605	0,06	0,06
19/24	64D	2,5	21	42	10000	1240	1,2	0,04	0,8	2830	0,13	0,37
	92A		10	20		570		0,10	1,0	1120	0,13	0,37
	98A (Standard)		17	34		855		0,07	0,9	2010	0,13	0,37
24/30	64D	-	75	150	7000	2980	1,4	0,07	0,8	3696	0,28	1,35
	92A		35	70		1430		0,14	1,0	1780	0,28	1,35
	98A (Standard)		60	120		2060		0,10	0,9	2565	0,28	1,35
28/38	64D	-	200	400	6000	4350	1,5	0,09	0,8	4348	0,46	3,10
	92A		95	190		2292		0,15	1,0	1785	0,46	3,10
	98A (Standard)		160	320		3440		0,11	0,9	3200	0,46	3,10
38/45	64D	-	405	810	5000	10540	1,8	0,09	0,8	6474	0,90	9,62
	92A		190	650		4584		0,17	1,0	2350	0,90	9,62
	98A (Standard)		325	380		7160		0,12	0,9	4400	0,90	9,62

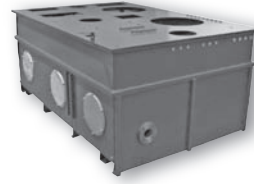
- 高速旋转时要求动平衡
- 长度L随着标识的 Δka 值的增加而增加
- 以上所列的允许偏差值均为近似值
- 角向偏差和轴向偏差同时存在时，两者需分别符合指定标准
- 表中所列的值，适用的工作温度为 T=+30°C
工作温度升高时，允许的扭矩以及最大径向、角向偏差值，都必须乘以一个温度系数St

- In case of higher speeds a dynamic balancing of the hubs is required.
- The length dimension L is increased by the indicated Δka values.
- The specified misalignment values are general approximate values.
- In case of current angular and radial misalignment the indicated values can only be utilized proportionately.
- The table values are valid for an operating temperature T=+30°C. In case of a temperature increase the admissible torques and the max. admissible radial and angular misalignment values must be multiplied by the temperature factor St.

温度 TEMPERATURE	- 25 < + 30°C	+ 30 < + 40°C	+ 40 < + 60°C	+ 60 < + 80°C
系数 ST FACTOR ST	1,0	0,8	0,7	0,6

HBE 任何时候都保留，对技术参数进行修改的权利
HBE reserves the right to modify technical data at any time.

- 钢质油箱, 不锈钢质油箱
- Oil tanks made of steel / stainless steel



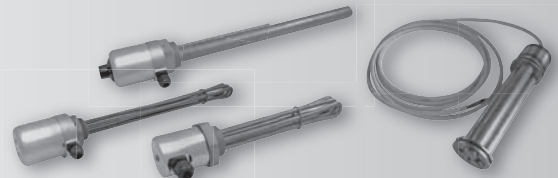
- 铝质油箱
- Oil tanks made of aluminium



- 清洗盖及其他油箱附件
- Cleaning covers and further accessories



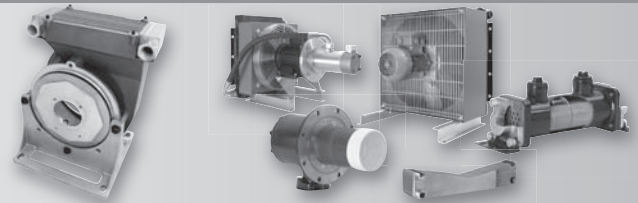
- 油箱加热器
- Tank heaters



- 钟形罩及其附件
- Bellhousings and accessories



- 钟形罩内置油冷却器
- 热交换器
- Bellhousing with oil-cooler
- Heat exchangers



- SOFTEX® 弹性联轴器, 无齿隙弹性联轴器
- SOFTEX® elastic and no backlash shaft couplings



- STAREX® 曲面齿联轴器, 内燃机法兰联轴器
- STAREX® flexible couplings



HBE GmbH
Hönnestraße 47
58809 Neuenrade/Germany

Phone +49 (0) 23 94 / 6 16-0
Fax +49 (0) 23 94 / 6 16-25
info@hbe-hydraulics.com
www.hbe-hydraulics.com

GFS German Fluid
Systems
德国流体系统有限公司

德国流体系统有限公司上海代表处
上海市漕溪路 250 号银海大楼 A103 室

电话: 020-64827125
传真: 020-64827126
info@germanfluid.com
www.germanfluid.com