

中文 | ENGLISH

编码器用抗扭联轴器

HK(SI) 5 / HKD(SI) 5 / HKI 97 - 112 / CPS / 中间法兰

Torsion-resistant couplings for encoders

HK(SI) 5 / HKD(SI) 5 / HKI 97 - 112 / CPS / Intermediate flanges



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精确度、优势、以客户为中心

我们专注于技术 – 我们理解我们的客户。我们以卓越的理念和量身定制的解决方案坚定的站在您的身边，并通过为客户提供强大的编码器系统、强大的驱动技术和全球化服务来支持我们的客户。这就是我们如何与客户共同努力，克服重型工业和其他恶劣条件下的领域的巨大挑战，并可持续地改善他们的业务，您希望我们应对哪些挑战？

我们的应用领域：

- 金属和轧机技术
- 港口和起重机技术
- 矿山工业
- 石油和天然气工业
- 造纸工业
- 运输
- 海洋工程
- 发电
- ... 以及许多其他应用领域

Precision. Strength. Customer focused.

We are fascinated by technology – and we understand our customers. We stand firmly at your side with exceptional ideas and tailor-made solutions and support our customers by offering them robust encoder systems, powerful drive technology and global service. This is how we work together with our customers to overcome the huge challenges in the heavy-duty industry and other fields subject to harsh conditions and to sustainably improve their business. What challenges do you want us to tackle?

Our fields of applications:

- Metal and rolling mill technology
- Harbour and crane technology
- Mining industry
- Oil and gas industry
- Paper industry
- Transport
- Marine engineering
- Power generation
- ... and many other applications

任务和解决方案

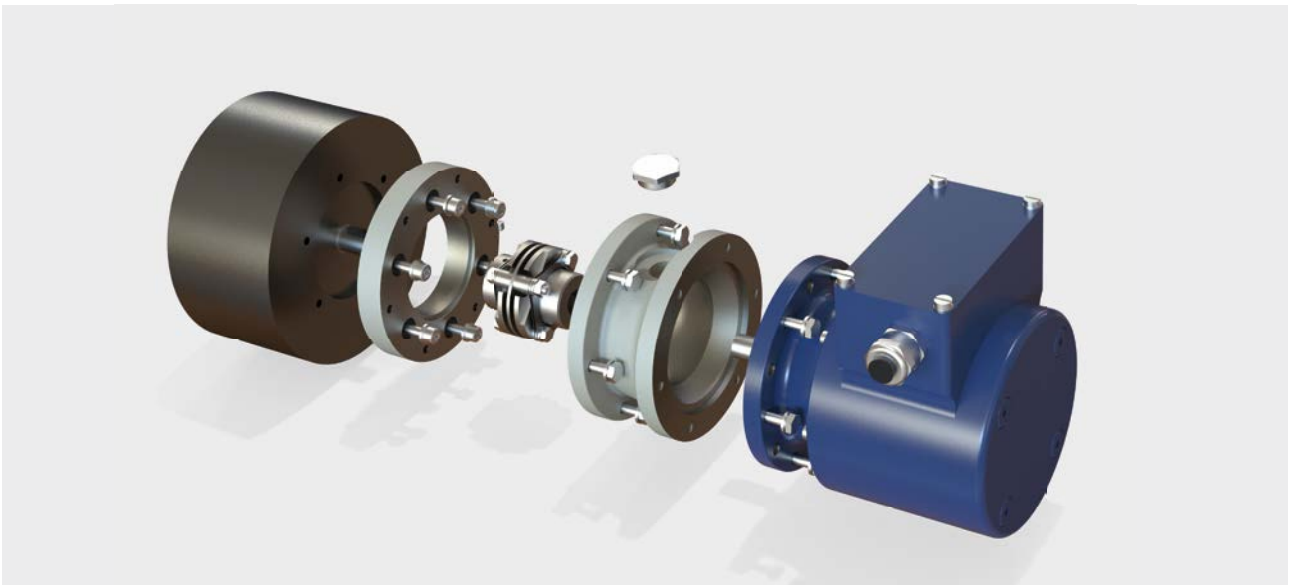
Task and Solution

任务

重工业要求编码器解决方案能够多年可靠地提供过程控制所需的信号，即使在由于冲击、振动、温度、粉尘、污垢和液体造成的重负载的极端环境条件下也是如此。潜在爆炸性环境涉及更高的挑战性要求。每一次非计划性停机都会造成重大的生产损失。除了选择合适且坚固耐用的编码器外，机械安装的质量对信号质量有重要影响。在安装编码器时，轴向或径向轴间隙和角偏移都需要保持平衡。

Task

The heavy-duty industry demands encoder solutions that reliably provide the required signals for process control over many years, even under extreme environmental conditions with heavy loads due to shock, vibration, temperature, dust, dirt and liquids. Potentially explosive environments involve further challenging requirements. Every unplanned downtime causes significant production losses. In addition to selecting a suitable robust encoder, the quality of the mechanical mounting also has a significant influence on the signal quality. The axial or radial shaft backlash and the angular offset need to be balanced when the encoder is mounted.



解决方案

Johannes Hübner Giessen, 重工业中在全球范围内真正的重载编码器解决方案的专家提供合适的抗扭联轴器、适配器盘和中间法兰，用于在恶劣的环境条件下安装增量和绝对值编码器。

Hübner Giessen 的联轴器有不同的设计：

- 用于法兰和底座安装的单节和双节联轴器
- 可选择带隔离功能，以保护轴承并防止轴电流
- 安全型 (PL e) 专用联轴器用于编码器安装
- 潜在爆炸性环境中使用的联轴器
- 偏差增加或狭窄安装空间的编码器安装的解决方案
- 具有不同的长度和孔径

Solution

Johannes Hübner Giessen, the specialist for genuine heavy-duty encoder solutions in the heavy-duty industry worldwide, offers suitable torsion-resistant couplings, adapter discs and intermediate flanges for mounting incremental and absolute encoders under tough environmental conditions

Couplings from Hübner Giessen are available in different designs:

- Single and double joint couplings for flange and foot mounting
- Optionally available with isolation for protection against bearing and shaft currents
- Special couplings for encoder installations with functional safety (PL e)
- Couplings for use in potentially explosive atmospheres
- Solutions for encoder installations with increased misalignment or narrow installation space
- With different lengths and bore diameters

联轴器一览 Couplings at a glance

	单节联轴器 / Single joint couplings	
系列 / Series	HK 5	HKS 5
应用领域 / Fields of application	适用于较小不对中的编码器安装 / For encoder installations with low misalignment	用于安装较小不对中和功能安全型 (PL e) 的编码器安装 / For encoder installations with low misalignment and functional safety (PL e)
法兰安装的编码器 / Encoders with flange mounting	x	x
底座安装的编码器 / Encoders with foot mounting	-	-
测速发电机 / Tacho generators	-	-
特殊要求 / Special requirements		
安全部件符合DIN EN ISO 13849-2 (PL e) Safety components acc. to DIN EN ISO 13849-2 (PL e)	-	x
选项: 绝缘设计 / Optional: isolated design	x	x
选项: 带Ex保护设计 / Optional: design with Ex protection	-	x
材料 / Material		
不锈钢 / Stainless steel	x	x
铝 / Aluminum	-	-
塑料 / Plastic	x	x
紧固 / Fastening		
滑键 / Feather key	x	x
夹紧 / Clamping	x	-
尺寸 / Dimensions		
孔径 / Bore diameter	6–22 mm	6–22 mm
外径 / Outside diameter	54 mm	54 mm
总长度 / Total length	36–68 mm	52–68 mm
技术特性 / Technical properties		
重量约为 / Appr. weight	0.4 kg	0.4 kg
转动惯量约为 / Appr. mass moment of inertia	1.2 kg cm ²	1.2 kg cm ²
最大允许扭矩 / Max. permitted torque	5 Nm	3 Nm
最大速度 / Max. speed	10000 rpm	6000 rpm
抗冲击 / Shock resistance	10 g (短时 / short-time 100 g)	10 g (短时 / short-time 100 g)
抗振动 / Vibration resistance	3 g (短时 / short-time 20 g)	3 g (短时 / short-time 20 g)
温度范围 / Temperature range	-50 °C ... +120 °C	-50 °C ... +120 °C
弹性 / 偏差 / Resilience / Misalignment		
半径 / Radial	-	-
角度 / Angle	0.5°	0.5°
轴向 / Axial	±1 mm	±1 mm

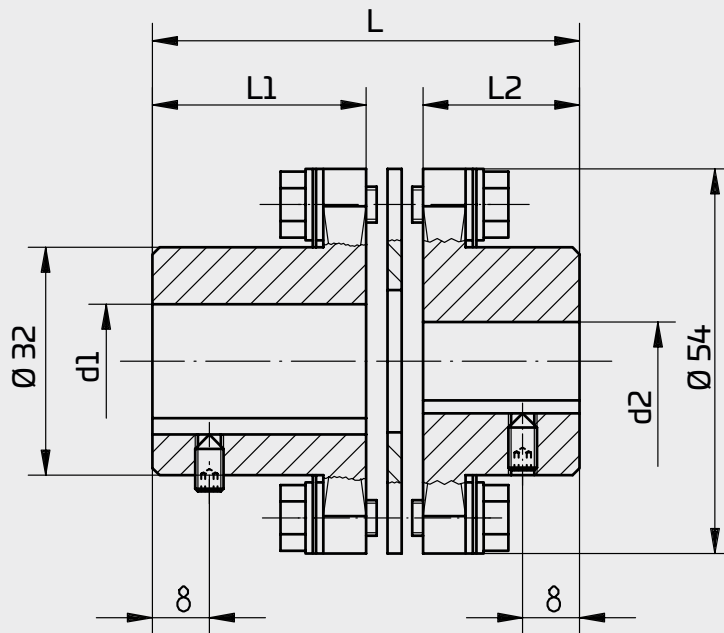
双节联轴器 / Double joint couplings			插入式联轴器 / Plug-in couplings
HKD 5	HKDS 5	HKI 97-112	CPS
用于安装较大不对中的编码器 / For encoder installations with larger misalignment	用于安装较大不对中和功能安全型 (PL e) 的编码器安装 / For encoder installations with larger misalignment and functional safety (PL e)	非常适合安装测速发电机 / Ideal for mounting tachogenerators	偏差增加或狭窄安装空间的编码器安装的解决方案 / For encoder installations with increased misalignment or narrow installation space
x	x	(x)	x
x	x	(x)	x
-	-	x	-
-	x	-	-
x	x	x	x
-	x	-	-
x	x	x	-
-	x	-	x
x	x	x	x
x	x	x	x
x	x	x	x
x	-	-	x
6-22 mm	6-22 mm	14-32 mm	6-30 mm
54 mm	54 mm	97 mm	25-56 mm
66-120 mm	68-120 mm	112 mm	25-57 mm
0.9 kg	0.6 kg	2.9 kg	N/A
2.4 kg cm ²	1.9 kg cm ²	28 kg cm ²	N/A
5 Nm	3 Nm	100 Nm	N/A
8000 rpm	6000 rpm	12000 rpm	22000 rpm
短时 / short-time 50 g	10 g (短时 / short-time 100 g)	10 g (短时 / short-time 100 g)	10 g (短时 / short-time 100 g)
短时 / short-time 10 g	3 g (短时 / short-time 20 g)	3 g (短时 / short-time 20 g)	3 g (短时 / short-time 20 g)
-50 °C ... +120 °C	-50 °C ... +120 °C	-40 °C ... +110 °C	-30 °C 到 / to +80 °C
0.5 mm	0.5 mm	1 mm	1.5 mm
-	-	-	1.5°
±1.5 mm	±1.5 mm	±2 mm	±1 mm

HK / HKI 5



- 不腐蚀的单节联轴器，优化编码器
- 用于带有法兰的较小不对中的编码器安装
- 无齿隙、抗扭转、长寿命
- 带滑键的轴连接/夹紧
- 选项：绝缘设计

- Non-corrosive single joint couplings, optimized for encoders
- For encoder installations with a flange and low misalignment
- Backlash-free, torsion-resistant and long-living
- Shaft connection with feather key / clamping
- Optional: isolated design



HM 84 M 52 211

单节联轴器示例图
Sample drawing of a single joint coupling

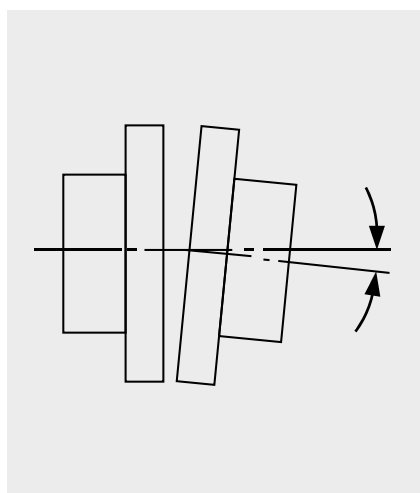
尺寸 / Dimensions

型号 / Type	L [mm]	L1 [mm]	L2 [mm]
HK 500	36	13	13
HK 521	37	22	8
HK 520	44	22	13
HK 522	52	22	22
HK 532	60	30	22
HK 533	68	30	30
HKI 521*	36	22	8
HKI 520	42	22	13
HKI 522	50	22	22
HKI 532	58	30	22
HKI 533	66	30	30

*根据DIN 5481, 在编码器侧, 花键为 $\varnothing 10$ mm /

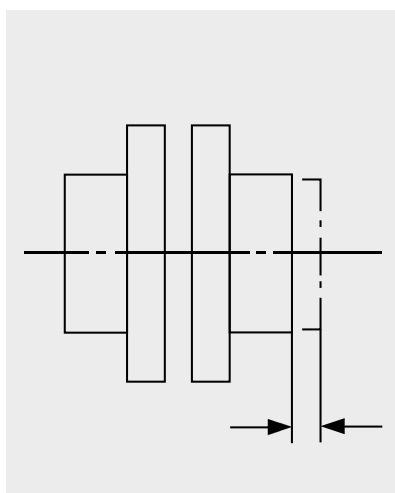
*On the encoder side with spline $\varnothing 10$ mm acc. to DIN 5481

技术数据 / Technical data	
孔径 / Bore diameter	6 – 22 mm; 3/8" – 7/8"
重量约为 / Appr. weight	0.4 kg
转动惯量约为 / Appr. mass moment of inertia	1.2 kg cm ²
最大允许扭矩 / Max. permitted torque	5 Nm
最大速度 / Max. speed	10000 rpm
抗冲击 / Shock resistance	10 g (短时 / short-time 100 g)
抗振动 / Vibration resistance	3 g (短时 / short-time 20 g)
温度范围 / Temperature range	HK 5...: -50 °C 到 / to +120 °C HKI 5...: -40 °C 到 / to +110 °C



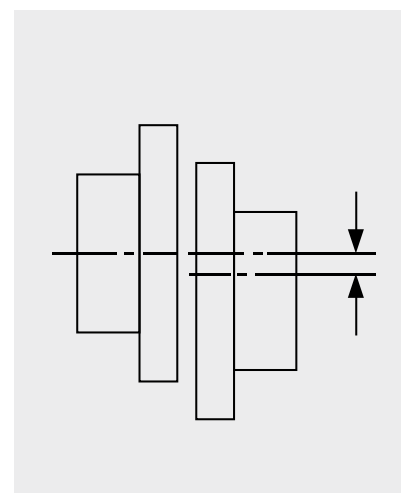
角度偏差 /
Angular misalignment

0.5°



轴向偏差 /
Axial misalignment

±1 mm



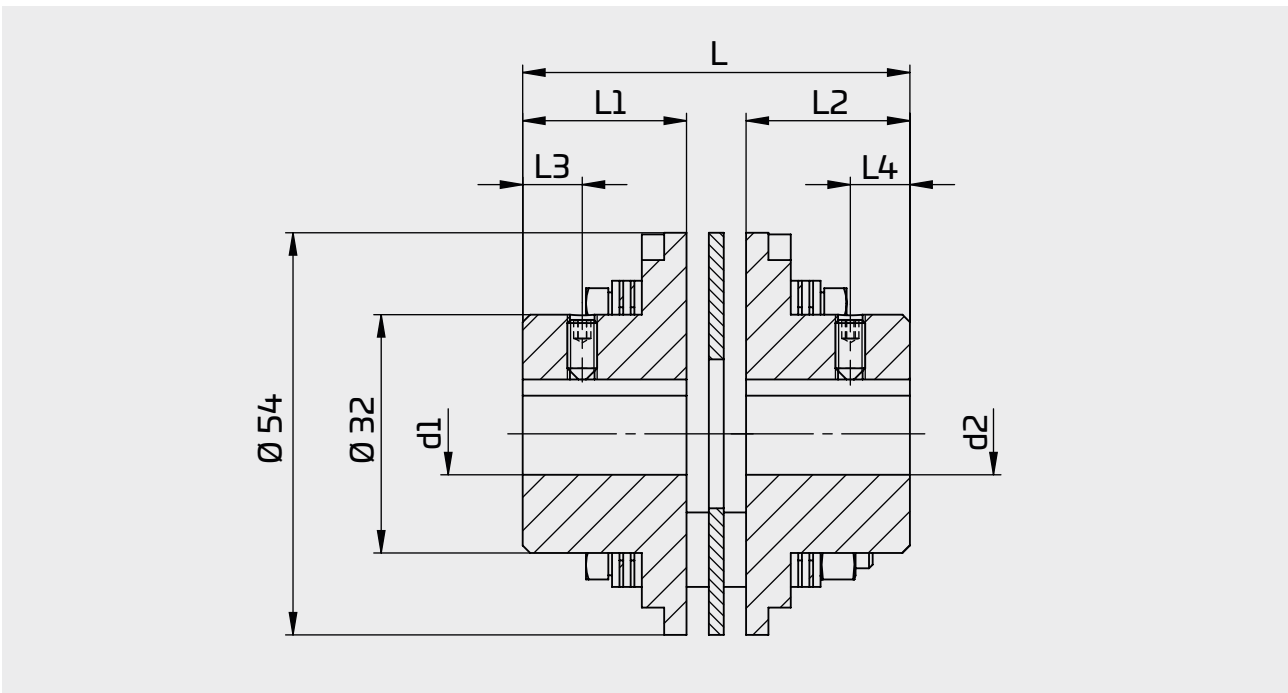
径向偏差 /
Radial misalignment

不允许 / Not permitted



- 不腐蚀的单节联轴器，优化编码器
- 用于带有功能安全型 (PLe) 的编码器安装
- 适用于较小不对中的法兰安装
- 无齿隙、抗扭转、失效安全
- 带滑键的轴连接
- 选项：隔离设计，设计具有防爆保护

- Non-corrosive single joint couplings, optimized for encoders
- For encoder installations with functional safety (PL e)
- Suitable for flange installations with low misalignment
- Backlash-free, torsion-resistant and fail-safe
- Shaft connection with feather key
- Options: isolated design, design with Ex protection*



HM 16 M 110366c

具有功能安全性的单节联轴器示例图

Sample drawing of a single joint coupling with functional safety

*防爆保护符合ATEX:

气体(1区和2区): EX II 2G EX h IIC T6 Gb

粉尘(21区和22区): EX II 2D EX h III C T85°C Db

*Ex protection acc. to ATEX:

Gas (Zones 1 and 2): EX II 2G EX h IIC T6 Gb

Dust (Zones 21 and 22): EX II 2D EX h III C T85°C Db

*防爆保护符合IECEX:

气体(1区和2区): Ex h IIC T6 Gb

粉尘(21区和22区): Ex h III C T85°C Db

*Ex protection acc. to IECEX:

Gas (Zones 1 and 2): Ex h IIC T6 Gb

Dust (Zones 21 and 22): Ex h III C T85°C Db

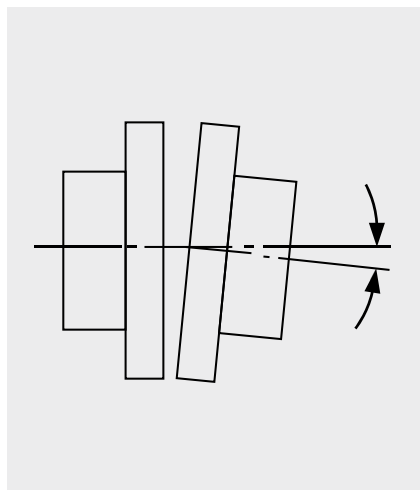
尺寸 / Dimensions

型号 / Type	L [mm]	L1 [mm]	L2 [mm]
HKS 522*	52	22	22
HKS 532*	60	30	22
HKS 533*	68	30	30
HKSI 522	52	22	22
HKSI 532	60	30	22
HKSI 533	68	30	30

*也可作为Ex保护的设计提供 /

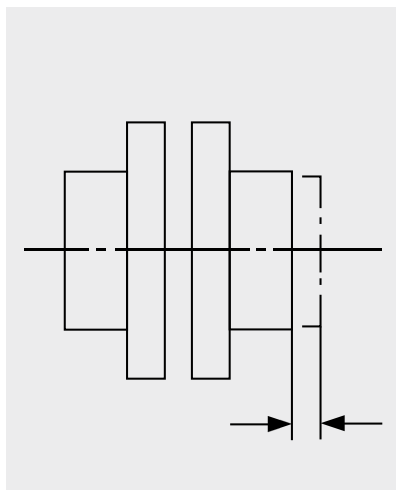
*Also available as design with Ex protection

技术数据 / Technical data	
孔径 / Bore diameter	6 – 22 mm; 3/8" – 7/8"
重量约为 / Appr. weight	0.4 kg
转动惯量约为 / Appr. mass moment of inertia	1.2 kg cm ²
最大允许扭矩 / Max. permitted torque	3 Nm
最大速度 / Max. speed	6000 rpm
抗冲击 / Shock resistance	10 g (短时 / short-time 100 g)
抗振动 / Vibration resistance	3 g (短时 / short-time 20 g)
温度范围 / Temperature range	HKS 5...: -50 °C to +120 °C HKSI 5...: -25 °C to +85 °C Ex: -50 to +70 °C



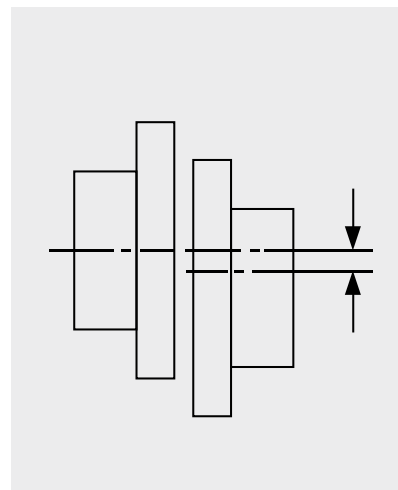
角度偏差 /
Angular misalignment

0.5°



轴向偏差 /
Axial misalignment

±1 mm



径向偏差 /
Radial misalignment

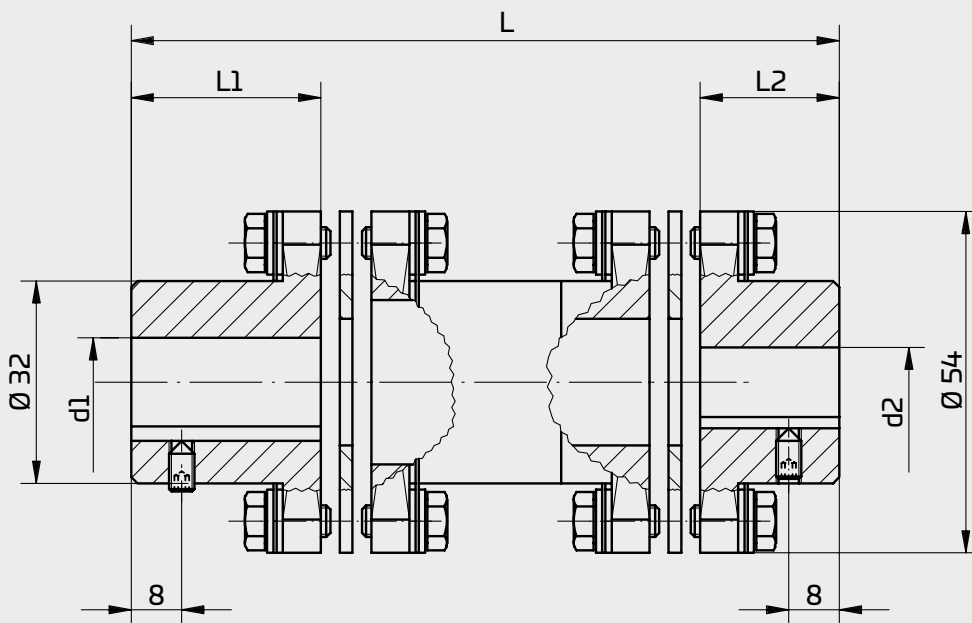
不允许 / Not permitted

HKD/HKDI 5



- 无腐蚀双节联轴器，优化编码器
- 对于底座和较大不对中的编码器安装
- 对于没有定心选项的安装
- 无齿隙、抗扭转、长寿命
- 带滑键/夹紧装置的轴连接
- 选项：绝缘设计

- Non-corrosive double joint couplings, optimized for encoders
- For encoder installations with foot and larger misalignment
- For installations with no centering option
- Backlash-free, torsion-resistant and long-living
- Shaft connection with feather key / clamping
- Optional: isolated design



HM 84 M 52 322

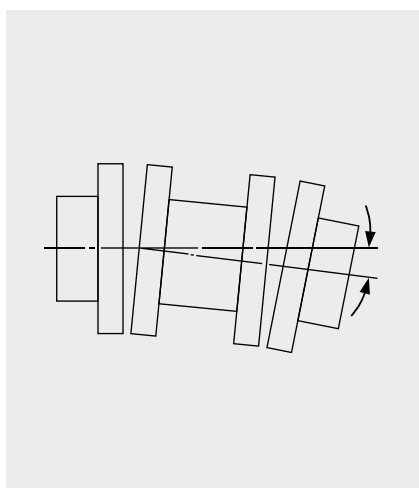
双节联轴器示例图

Sample drawing of a double joint coupling

尺寸 / Dimensions

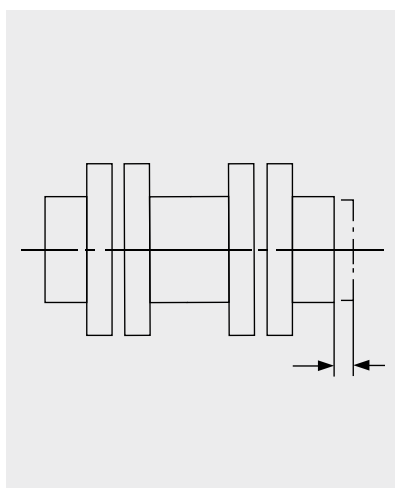
型号 / Type	L [mm]	L1 [mm]	L2 [mm]
HKD 568	68	15	15
HKD 580	82	19	19
HKD 586	88	22	22
HKD 521	89	22	8
HKD 594	96	30	30
HKD 522	104	22	22
HKD 532	112	30	22
HKD 533	120	30	30
HKDI 568	66	15	15
HKDI 580	80	19	19
HKDI 586	86	22	22
HKDI 521	88	22	8
HKDI 594	94	30	22
HKDI 522	102	22	22
HKDI 532	110	30	22
HKDI 533	118	30	30

技术数据 / Technical data	
孔径 / Bore diameter	6 – 22 mm; 3/8" – 7/8"
重量约为 / Appr. weight	0.9 kg
转动惯量约为 / Appr. mass moment of inertia	2.4 kg cm ²
最大允许扭矩 / Max. permitted torque	5 Nm
最大速度 / Max. speed	8000 rpm
抗冲击 / Shock resistance	短时 / short-time 50 g
抗振动 / Vibration resistance	短时 / short-time 10 g
温度范围 / Temperature range	HKD 5...: -50 °C to +120 °C HKDI 5...: -25 °C to +85 °C



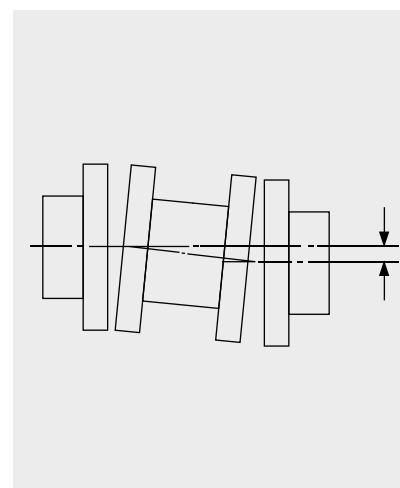
角度偏差 / Angular misalignment

-



轴向偏差 / Axial misalignment

±1.5 mm



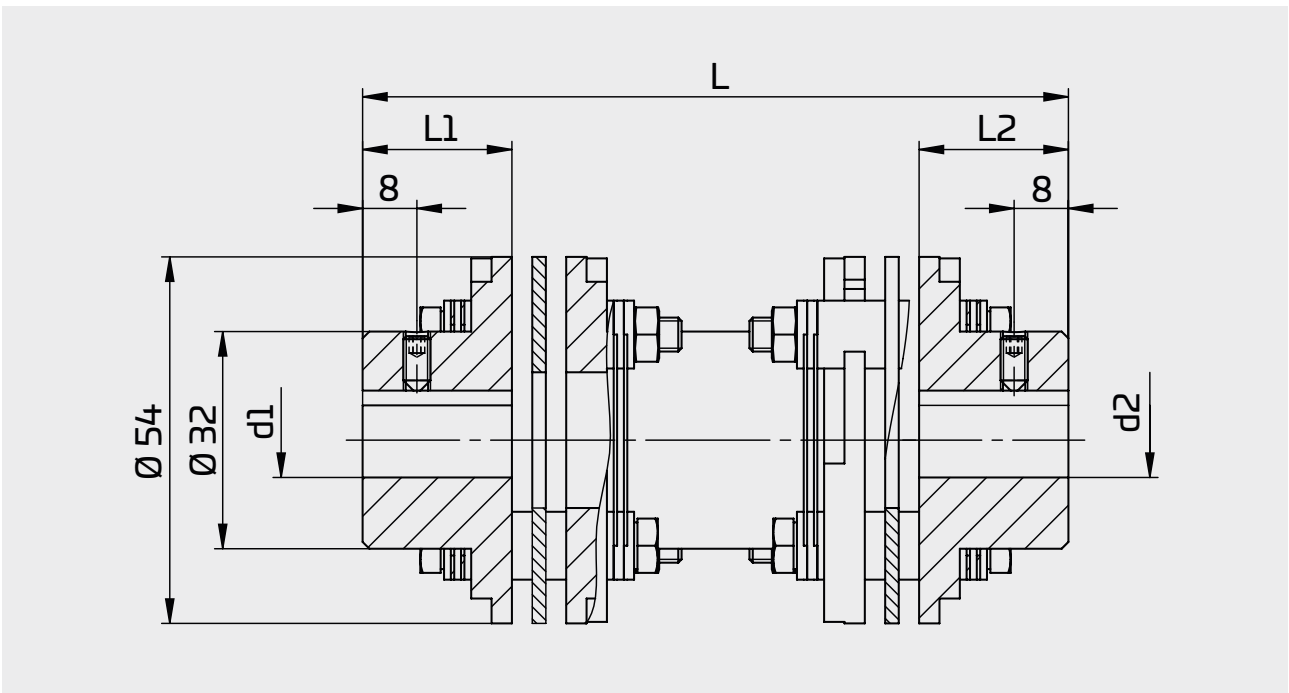
径向偏差 / Radial misalignment

0.5 mm



- 无腐蚀双节联轴器，优化编码器
- 用于功能安全型 (PL e) 的编码器安装
- 适合较大不对中的底座安装
- 无齿隙、抗扭转、失效安全
- 带滑键的可靠旋转传动
- 选项：隔离设计，带有防爆保护设计

- Non-corrosive double joint couplings, optimized for encoders
- For encoder installations with functional safety (PL e)
- Suitable for foot mountings with larger misalignment
- Backlash-free, torsion-resistant and fail-safe
- Reliable rotary transmission with feather key
- Options: isolated design, design with Ex protection*



HM 16 M 110367b

具有功能安全型的双节联轴器示例图

Sample drawing of a double joint coupling with functional safety

*防爆保护符合ATEX:

气体(1区和2区): EX II 2G EX h IIC T6 Gb

粉尘(21区和22区): EX II 2D EX h IIIC T85°C Db

*Ex protection acc. to ATEX:

Gas (Zones 1 and 2): EX II 2G EX h IIC T6 Gb

Dust (Zones 21 and 22): EX II 2D EX h IIIC T85°C Db

*防爆保护符合IECEX:

气体(1区和2区): Ex h IIC T6 Gb

粉尘(21区和22区): Ex h IIIC T85°C Db

*Ex protection acc. to with IECEX:

Gas (Zones 1 and 2): Ex h IIC T6 Gb

Dust (Zones 21 and 22): Ex h IIIC T85°C Db

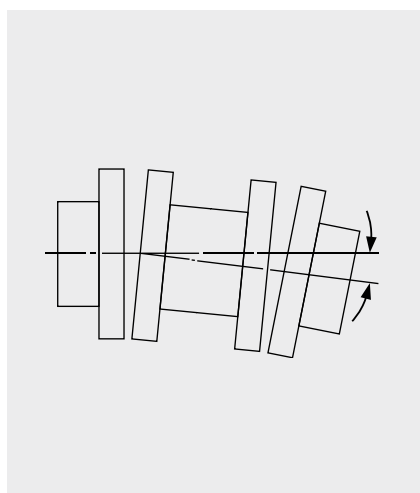
尺寸 / Dimensions

型号 / Type	L [mm]	L1 [mm]	L2 [mm]
HKDS 522*	104	22	22
HKDS 532*	112	30	22
HKDS 533*	120	30	30
HKDS 568*	68	15	15
HKDSI 522	104	22	19
HKDSI 532	112	30	22
HKDSI 533	120	30	30
HKDSI 568	68	15	15

*可获得具有防爆保护的设计 /

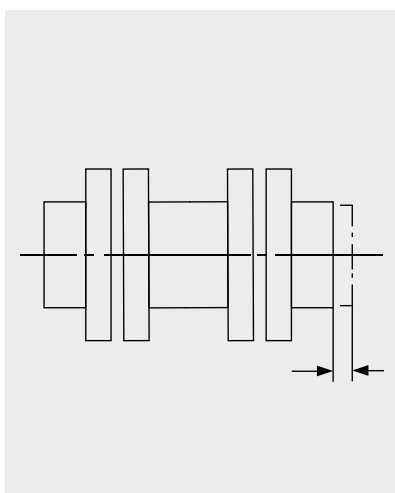
*Also available as a design with Ex protection

技术数据 / Technical data	
孔径 / Bore diameter	6 – 22 mm; 3/8" – 7/8"
重量约为 / Appr. weight	0.6 kg
转动惯量约为 / Appr. mass moment of inertia	1.9 kg cm ²
最大允许扭矩 / Max. permitted torque	3 Nm
最大速度 / Max. speed	6000 rpm
抗冲击 / Shock resistance	10 g (短时 / short-time 100 g)
抗振动 / Vibration resistance	3 g (短时 / short-time 20 g)
温度范围 / Temperature range	HODS 5...: -50°C to +120°C HKDSI 5...: -25°C to +85°C HODS 5... 防爆 / Ex protection: -50°C to +70°C



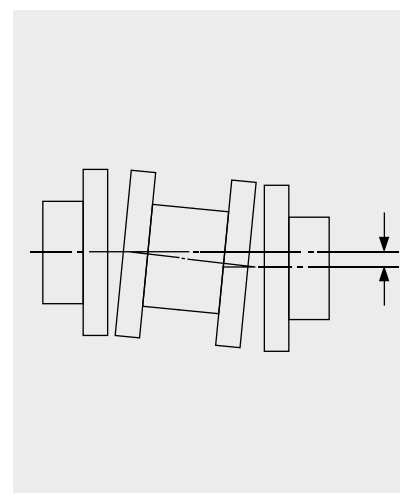
角度偏差 /
Angular misalignment

-



轴向偏差 /
Axial misalignment

±1.5 mm

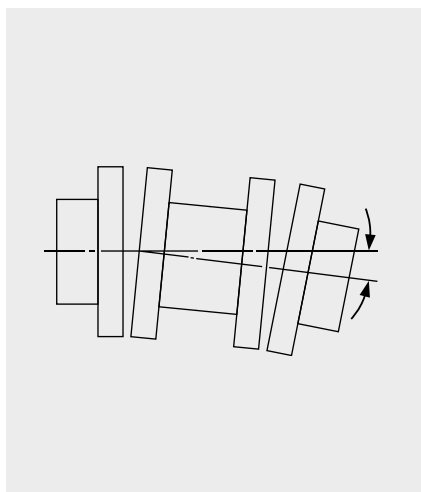


径向偏差 /
Radial misalignment

0.5 mm

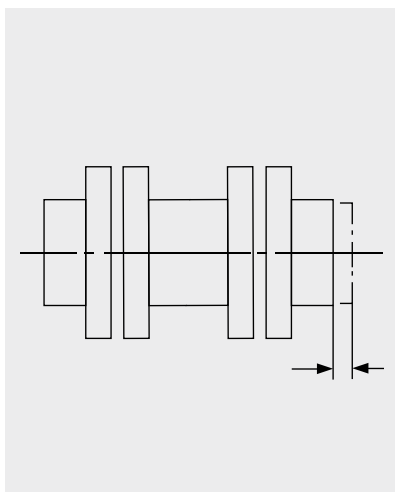
尺寸 / Dimensions

型号 / Type	L [mm]	dK [mm]	dZ [mm]	技术数据 / Technical data	
HKI 97-112	112	20-32 锥型轴 / taper 1:20	-	孔径 / Bore diameter	14 - 32 mm
HKI 97-112	112	-	14 - 28	重量约为 / Appr. weight	2.9 kg
				转动惯量约为 / Appr. mass moment of inertia	28 kg cm ²
				最大允许扭矩 / Max. permitted torque	100 Nm
				最大速度 / Max. speed	12000 rpm
				抗冲击 / Shock resistance	10 g (短时 / short-time 100 g)
				抗振动 / Vibration resistance	3 g (短时 / short-time 20 g)
				温度范围 / Temperature range	-40 °C to +110 °C



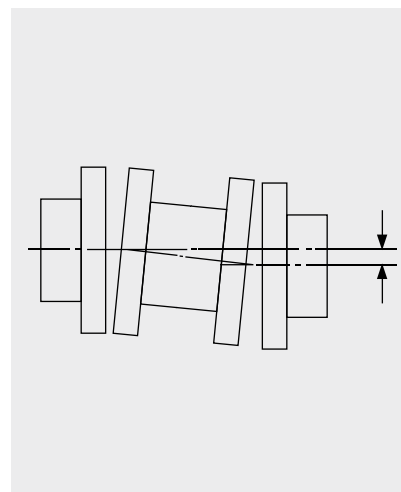
角度偏差 /
Angular misalignment

-



轴向偏差 /
Axial misalignment

± 2 mm



径向偏差 /
Radial misalignment

1.0 mm



CPS



- 不腐蚀插入式联轴器，适用于短轴距离
- 用于较大不对中的编码器安装（平行/轴向）
- 无齿隙、抗扭转、坚固和隔离
- 温度范围-30°C至+80°C
- 带键槽或夹紧

- Non-corrosive plug-in coupling, ideal for short shaft distances
- For encoder installations with high misalignment (parallel/ axial)
- Backlash-free, torsion-resistant, robust and isolated
- Temperature range -30°C to +80°C
- With feather keyway or clamping

型号 / Type	长度 / Length [mm]	ØD [mm]	最大速度 / Max. speed [rpm]	角偏差 / Angular misalignment	轴向偏差 / Axial misalignment [mm]	径向偏差 / Radial misalignment [mm]	Ø 孔径 / Bore hole [mm] F9
CPS 10.1	25.5	25	22000	1.5°	±0.5	+0.7	6-12
CPS 10.2	31	25	22000	1°	±0.5	+0.7	6-12
CPS 15.1	30	37	15000	1.5°	±0.7	+1	6-20
CPS 15.2	38	37	15000	1°	±0.7	+1	6-20
CPS 23.1	45	56	10000	1.5°	±1	+1.5	10-30
CPS 23.2	57	56	10000	1°	±1	+1.5	10-30

中间法兰 / Intermediate flanges



- 在机器外壳上为实心轴编码器量身定制法兰安装
 - 单独设计 (法兰长度/机械接口)
 - 耐腐蚀铝外壳
 - 选项: 功能安全型 (PL e) 作为为编码器安装部件
- Tailor-made flange mounting of solid shaft encoders on machine housings
 - Individual design (flange length / mechanical interface)
 - Corrosion-resistant aluminum housing
 - Optional: as a safety component for encoder installations with functional safety (PL e)

技术数据 / Technical data

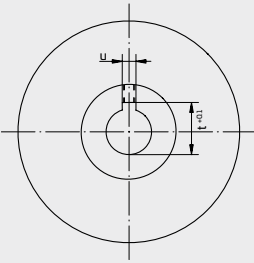
长度 / Length	最大 / max. 250 mm
适配盘 / Adapter disc	孔圆直径 ≥ 85 mm, 中心直径 ≥ 65 mm / Hole circle $\varnothing \geq 85$ mm / centering $\varnothing \geq 65$ mm
抗冲击 / Shock resistance	高达100g短时 54 g永久, 编码器重量4.2 kg / 54 g permanently with an encoder weight up to 4.2 kg
抗振动 / Vibration resistance	高达可达20g短时 / up to 20 g short-time / 17 g 永久, 编码器重量为4.2 kg / 17 g permanently with an encoder weight up to 4.2 kg
温度范围 / Temperature range	-25 °C 到 / to +85 °C

型号码 / Type code

	HK				5		-	/		
抗扭联轴器 / Torsion-resistant couplings										
设计 / Design										
- = 单节联轴器 / single joint coupling										
D = 双节联轴器 / double joint coupling										
选项 / Option										
- = 标准 / standard										
S = 用于安全型应用 / for safety applications										
选项 / Option										
- = 标准 / standard										
I = 绝缘 / isolated										
型号码 / Type number										
参见前几页的相应表格 / see corresponding tables on the previous pages										
轮毂孔 1 / Hub bore 1										
∅ = 参见第19页的表格 / cf. table on page 19										
紧固 / Fastening										
- = 带键 / with feather key										
K = 带夹紧孔 / with clamping hub										
轮毂孔 2 / Hub bore 2										
∅ = 参见第19页的表格 / see table on p. 19										
紧固 / Fastening										
- = 带键 / with feather key										
K = 带夹紧孔 / with clamping hub										

CPS联轴器类型概述：见第16页 / Type overview CPS couplings: see p. 16

轮毂孔 / Hub bores

编码器轴径 / Encoder shaft diameter	驱动轴直径 / Drive shaft diameter	t (键槽深度) / t (feather keyway depth)	u (键槽宽度) / u (feather keyway width)	
 <p>其它尺寸按要求 (HKSI/HKDSI只有11/14 mm 可以)</p> <p>11/14 mm Other dimensions on request (with the HKSI/ HKDSI: only 11/14 mm possible)</p>	6	7.2	2	
	7	8.2	2	
	8	9.2	2	
	9	10.8	3	
	10	11.8	3	
	11	12.8	4	
	12	13.8	4	
	13	15.3	5	
	14	16.3	5	
	15	17.3	5	
	16	18.3	5	
	17	19.8	6	
	18	20.8	6	
	19	21.8	6	
	20	22.8	6	
	21	23.8	6	
	22	24.8	6	
	3/8", 1/2", 5/8", 3/4", 7/8"	根据客户规格 / Acc. to customer specification		

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