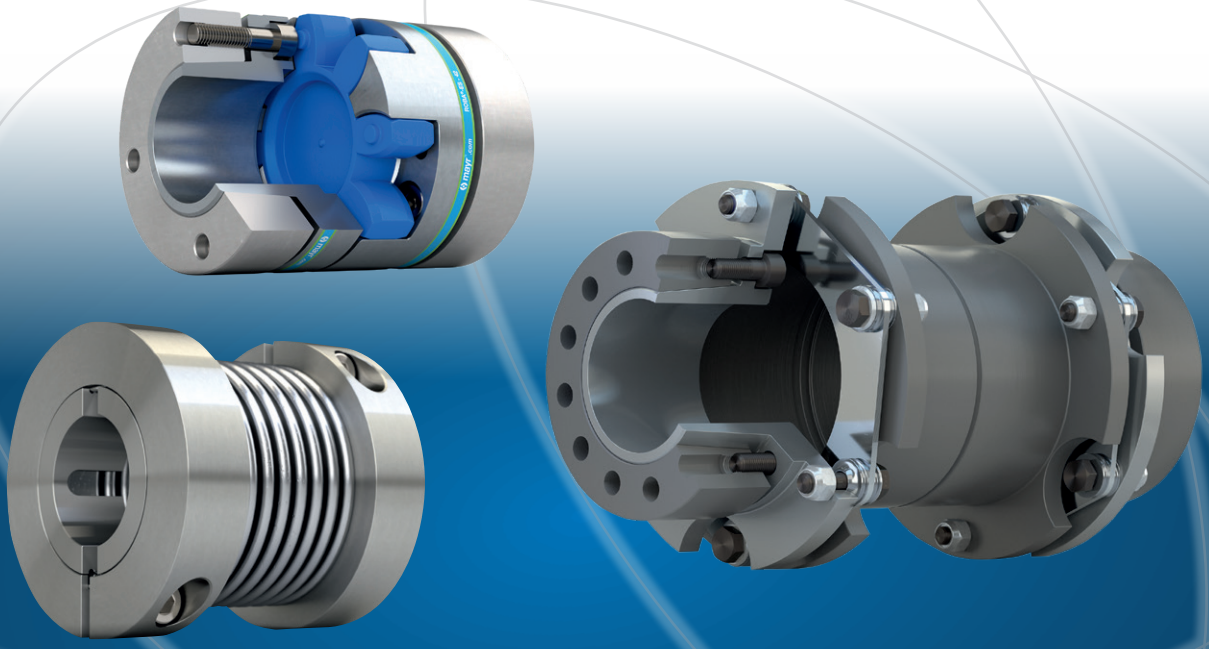
mayr®

your reliable partner



Shaft Couplings

IMG.900.V11.EN

www.mayr®.com

We safeguard the movements of this world

The Christian Mayr mill-construction business – founded in 1897.

Communications Centre mayr.com – opened in 2018.

Specialists in power transmission for more than a century

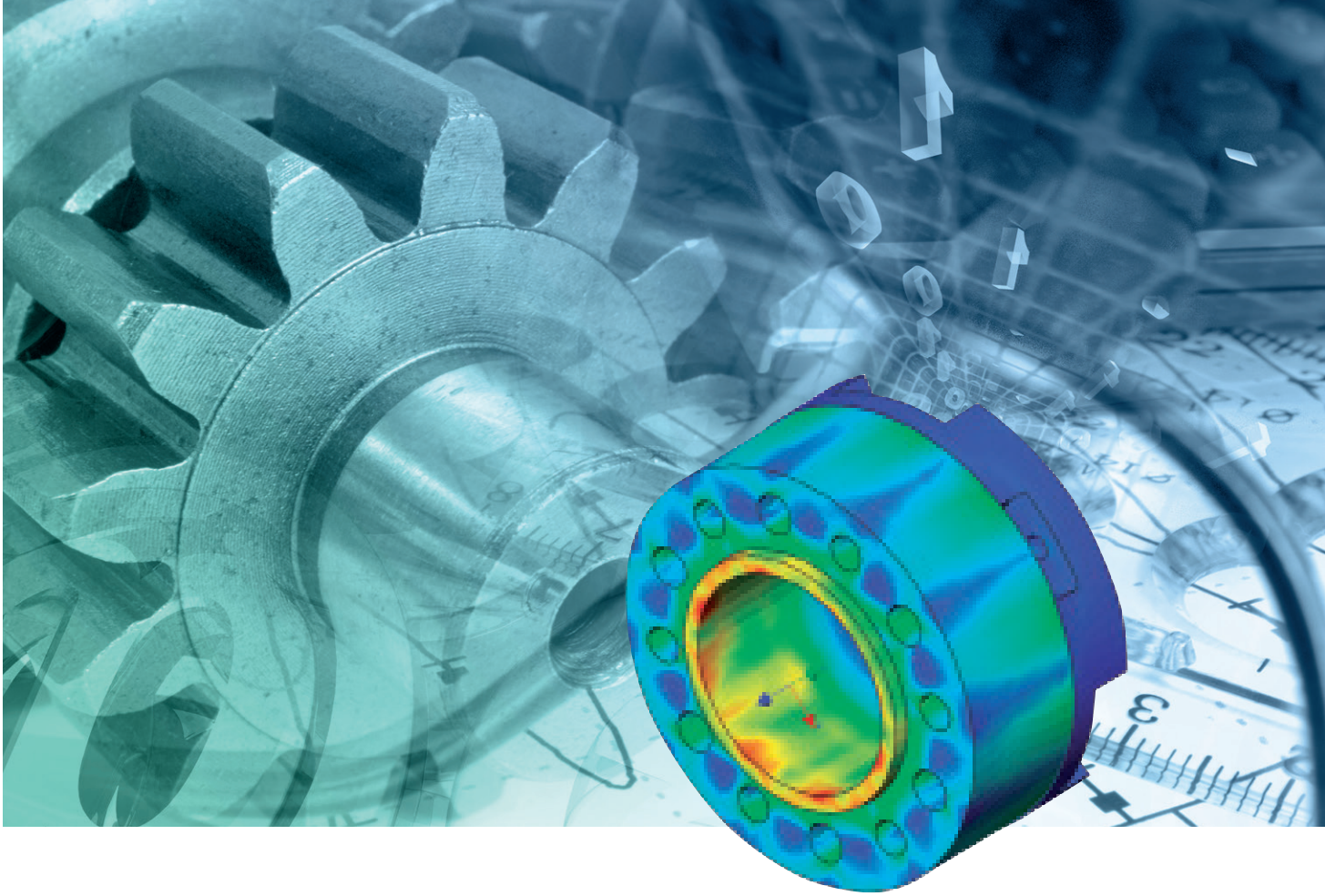
mayr® power transmission is one of the most traditional and yet most innovative German companies in the field of power transmission. From modest beginnings in the year 1897, the family enterprise from the Allgäu region has developed into the world market leader. Today, approximately 700 employees work at the headquarters in Mauerstetten; about 1200 employees work for the company worldwide.

An unsurpassed standard product range

mayr® power transmission offers a wide variety of torque limiters, safety brakes, backlash-free shaft misalignment compensation couplings and high-quality DC drives. Regarding customer-specific requirements, too, the company possesses the expertise to develop customized and economical solutions. This is why numerous renowned machine manufacturers trust in holistic solutions by *mayr*® power transmission.

Represented worldwide

With eight subsidiaries in Germany, sales offices in the USA, France, Great Britain, Italy, Singapore and Switzerland as well as 36 additional country representatives, *mayr*® is available in all important industrial areas, guaranteeing optimum customer service around the globe.



Tradition and innovation – the best of both worlds

Tradition and innovation do not contradict each other - on the contrary. They are the two supporting pillars which have guaranteed stability and reliability for generations. Long-term stability, independence as well as a good reputation and satisfied customers are important values for a family enterprise rich in tradition.

Therefore, we place emphasis on:

- Tested product quality,
- Optimum customer service,
- Comprehensive know-how,
- Global presence,
- Successful innovations and
- Effective cost management.

By pursuing our own objective of always offering our customers the technologically most advanced and most economical solution, we have been able to gain the trust of many leading industrial companies from all branches and from all over the world as a reliable partner.

Place your trust in our know-how and our more than 50 years of experience in torque limiters, safety brakes and shaft couplings.

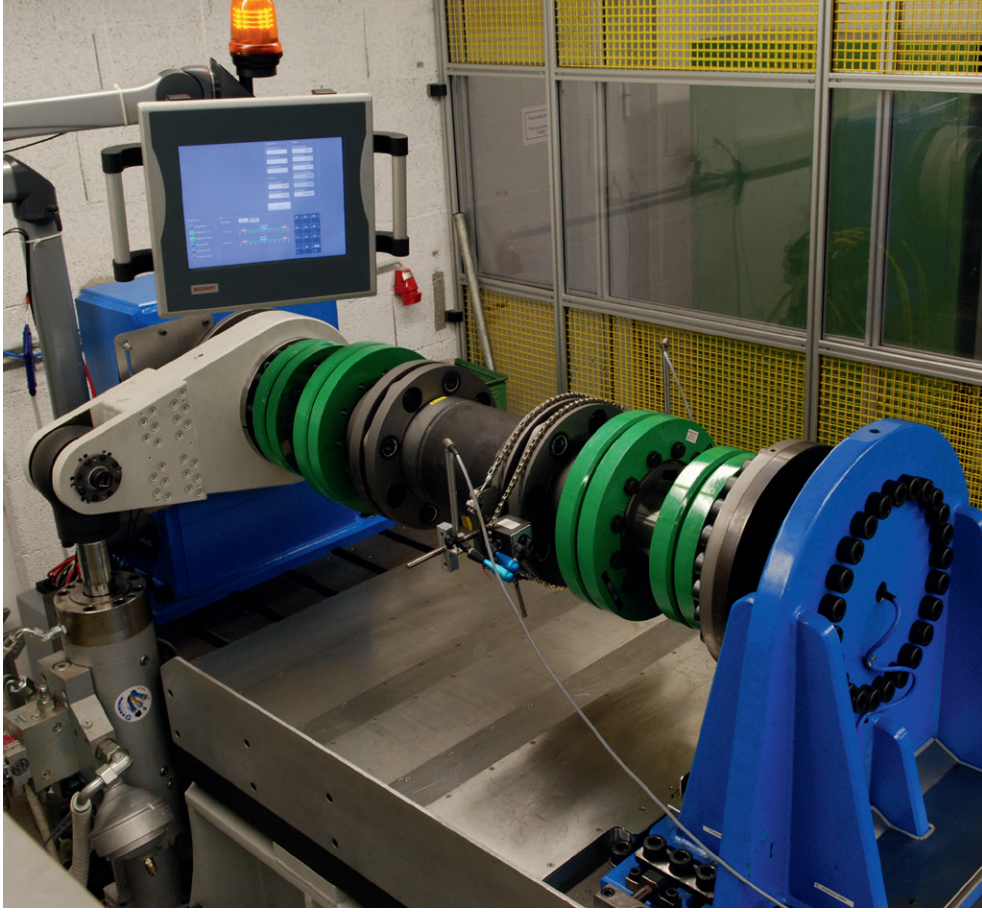
Never compromise on safety

We make no compromises where safety is concerned. Only top products of a perfect quality guarantee that no people are injured or machines damaged in case of malfunctions, collisions and other hazardous situations. The safety of your employees and machines is our motivation to always provide the best and most reliable clutches, couplings or brakes.

mayr® power transmission holds numerous ground-breaking patents, and is the global market or technological leader for

- application-optimised **safety brakes,** for example for passenger elevators, stage technology and gravity loaded axes
- **torque limiters** to protect against expensive overload damage and production losses and
- backlash-free **servo couplings**.

mayr®
your reliable partner



Overview: Backlash-Free Shaft Couplings
Types, Designs, Characteristics

Application field		Servo couplings	
		ROBA®-DS Servo couplings Page 6 	**primeflex®** Steel bellows couplings Page 8 
Flexible element		Disk pack	Steel bellows
Torque range	[Nm]	35 – 150	24 – 120
Max. permitted operating speed	[rpm]	22500	8000
Shaft diameter	[mm]	10 – 45	10 – 45
Max. permanent operation temperature	[°C]	100	120
ATEX design according to the directive 2014/34/EU		x	
Product Catalogue		K.950.V_ _._ _	P.933.V_ _._ _

Tested quality and reliability

mayr® products are subject to meticulous quality inspections. These include quality assurance measures during the design process as well as a comprehensive final inspection. Only the best, tested quality leaves our factory. All products are rigorously tested on test stands, and adjusted precisely to the requested values. An electronic database in which the measurement values are archived together with the associated serial numbers guarantees 100 % traceability. On request, we confirm the product characteristics with a test protocol.

The certification of our quality management according to DIN EN ISO 9001:2015 confirms the quality-consciousness of our colleagues at every level of the company.

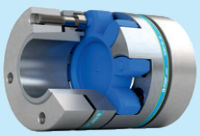
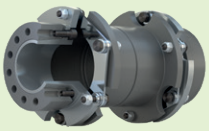
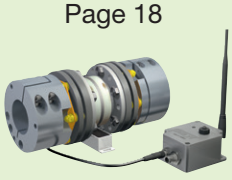
The Optimum Shaft Coupling for every Drive

Each drive has its own specific characteristics and therefore places different demands on the couplings which transmit the torque from one shaft to the second and which compensate for the resulting shaft misalignments. In most cases only backlash-free couplings are able to meet the requirements for high-speed, dynamic or reversing precision drives.

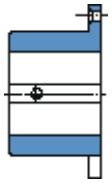
mayr® power transmission has three of the most established and most attractive backlash-free shaft couplings in its programme:

- **Disk pack couplings**,
- **Steel bellows couplings** and
- **Elastomer couplings**

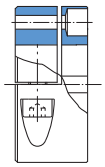
Therefore, *mayr*® offers an optimum solution for many different drives.

Servo couplings		**Industrial couplings**	**Heavy load couplings**	**Torque measurement couplings**
smartflex® Steel bellows couplings Page 10	**ROBA®-ES** Elastomer couplings Page 12	**ROBA®-DS** All-steel couplings Page 14	**ROBA®-DS** All-steel couplings Page 16	**ROBA®-DSM** Measurement couplings Page 18
				
Steel bellows	Elastomer	Disk pack	Disk pack	Disk pack
16 – 700	4 – 1250	190 – 24000	22000 – 110000	190 – 1600
10000	28000	13500	3600	9500
8 – 85	6 – 80	14 – 170	on request	14 – 110
120	100	250	250	70
	x	x		
K.932.V_ _._ _	K.940.V_ _._ _	K.950.V_ _._ _	K.950.V_ _._ _	K.950.V_ _._ _

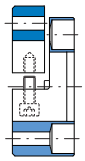
ROBA®-DS servo couplings Type 95_. _ _ _



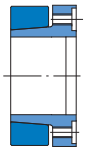
Key hub
Type 95_.0_ _



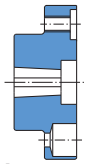
Clamping hub [1)]
Type 95_.4_ _



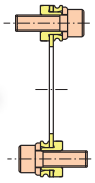
Split clamping hub [1)]
Type 95_.8_ _



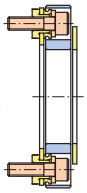
Shrink disk hub
Type 95_.2_ _



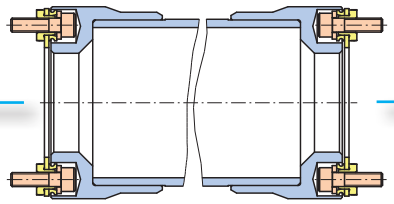
Hub with tapered bore
Type 95_.5_ _



Single-jointed coupling
Type 950._ _0

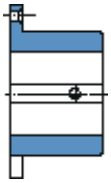


Double-jointed coupling
with connection plate
Type 951._ _1

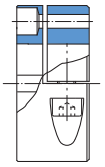


Double-jointed coupling
with sleeve (variable length)
Type 951._ _3

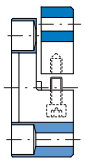
[1)] if required also available with keyway



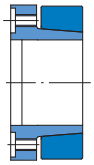
Key hub
Type 95_._0_



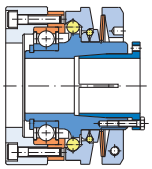
Clamping hub [1)]
Type 95_._4_



Split clamping hub [1)]
Type 95_._8_



Shrink disk hub
Type 95_._2_



EAS®-torque limiter
available as an option

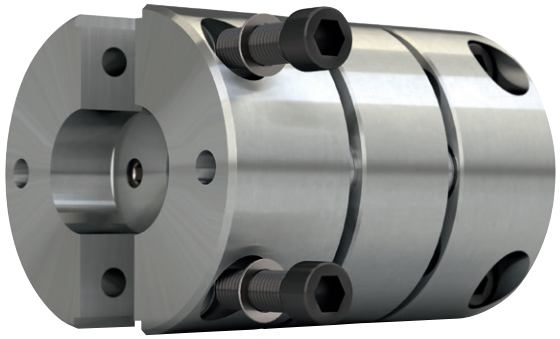
For detailed information, detailed technical data and dimensions, please see our product catalogue K.950.V_ _._ _.

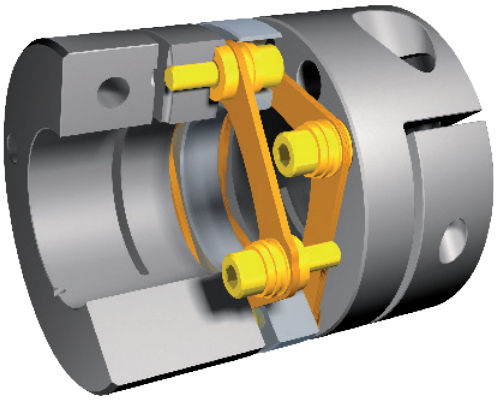
This catalogue is also available for download as a pdf file on our website www.mayr.com.

ROBA®-DS – servo couplings

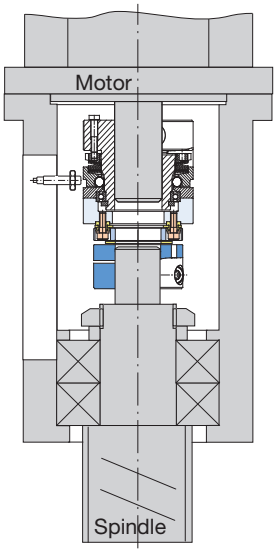
Characteristics and Advantages

- ROBA®-DS servo couplings are made of steel and high-strength aluminium alloys – the basis of these extremely compact designs.
- Due to their high performance density, they transmit high torques at comparably low volumes.
- Their low mass moment of inertia also predestines ROBA®-DS servo couplings for highly dynamic drive systems with high speeds.
- The flexible disk pack compensates for shaft misalignments and transmits the torque backlash-free with a high torsional rigidity.
- ROBA®-DS servo couplings are absolutely wear-free and maintenance-free.





Installation Example



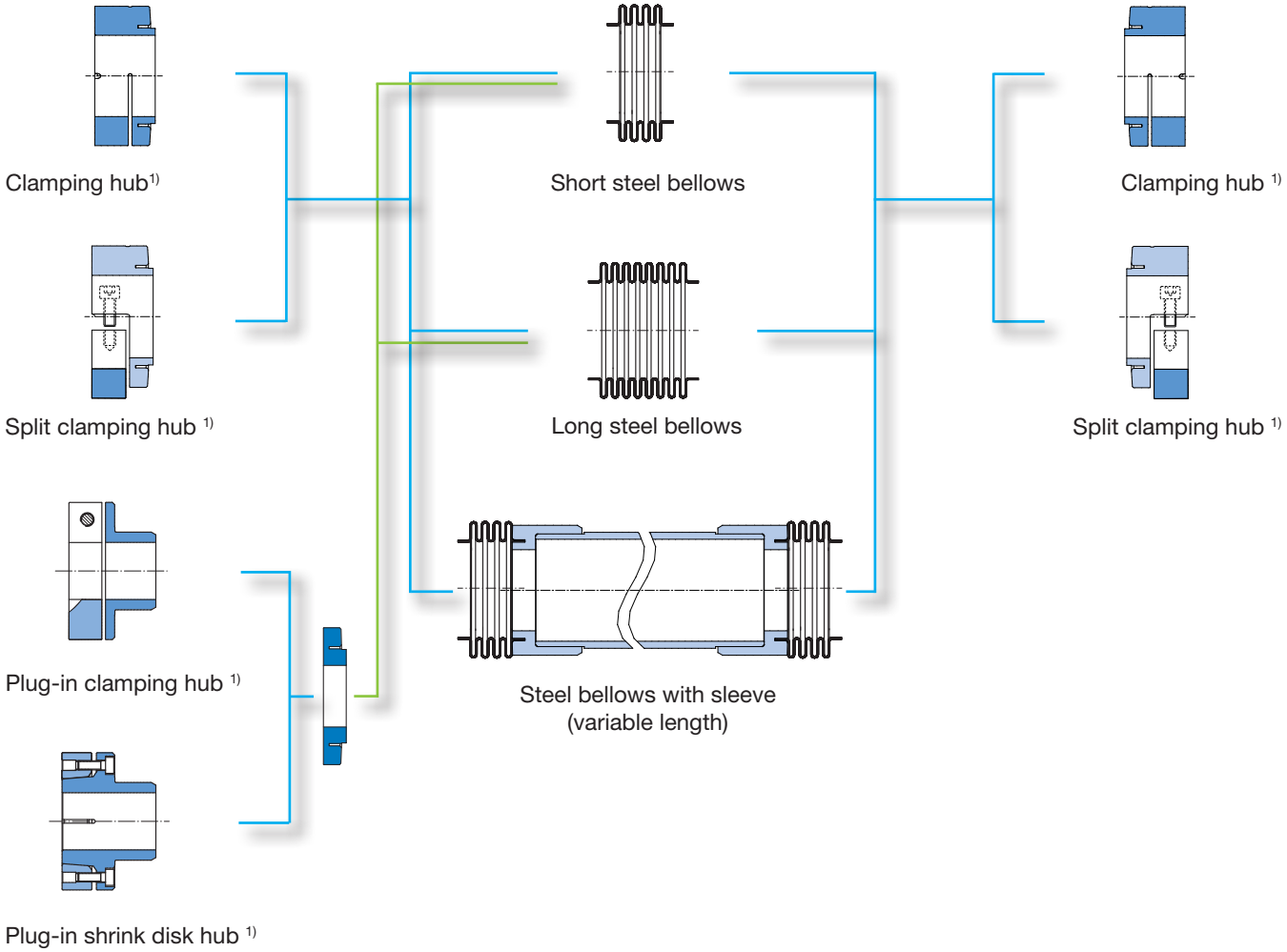
ROBA®-DS shaft coupling combined with an EAS®-torque limiter.
Backlash-free and torsionally rigid torque transmission between the motor shaft and the spindle shaft.
Compensation of axial, radial and angular shaft misalignments.

Technical Data, Dimensions					Size			
					3	6	10	15
Nominal torque [1]			T_{KN}	[Nm]	35	60	100	150
Peak torque [2]			T_{KS}	[Nm]	52	90	150	225
Alternating torque			T_{KW}	[Nm]	21	36	60	90
Outer diameter				[mm]	45	56	69	79
Clamping hub	**Minimum bore**			[mm]	10	14	19	25
	Maximum bore			[mm]	20	28	35	42
	Maximum speed [3]		n_{max}	[rpm]	13500	10800	9000	7800
	Length single-jointed coupling			[mm]	48.5	52.6	66.9	69.9
	Min. length double-jointed coupling			[mm]	59	64.7	79.3	82.8
Permitted misalignments [4]	Axial displacement [5] [6]		ΔK_a	[mm]	0.5	0.7	0.9	1.1
	Radial misalignment [5]	with connection plate	ΔK_r	[mm]	0.15	0.15	0.2	0.2
		with special sleeve	ΔK_{rH}	[mm]	Please contact the manufacturer.			
	Angular misalignment per disk pack		ΔK_w	[°]	1.0	1.0	1.0	1.0
Torsional spring rigidity		Disk pack	$C_{T\,LP}$	$[10^3 \frac{Nm}{rad}]$	17	35	60	145

1) Valid for max. permitted shaft misalignments.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with special sleeve.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings with 2 disk packs.
6) Only permitted as a static or virtually static value.

Also available in ATEX design according to the directive 2014/34/EU.

primeflex® – steel bellows couplings



1) If required also available with keyway

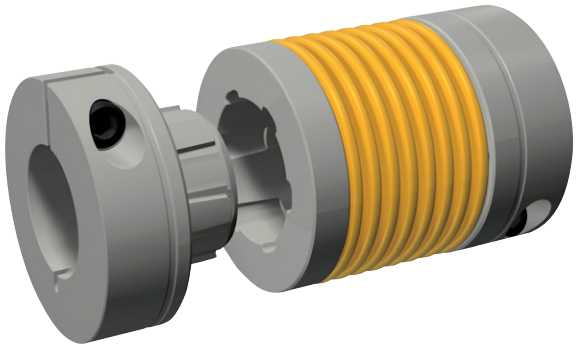
For detailed information, detailed technical data and dimensions, please see our product catalogue P.933.V_ _._ _.

This catalogue is also available for download as a pdf file on our website www.mayr.com.

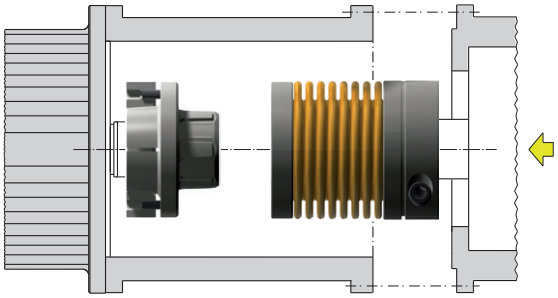
primeflex® – steel bellows couplings

Characteristics and Advantages

- Plug-in connection
- Backlash-free
- Can be de-installed even after longer operating periods without damaging the steel bellows
- Extremely compact and very high performance density
- Easy to install via clamping or shrink disk connections
- Frictionally-locking und positive locking shaft-hub connections
- Excellent misalignment compensation capability
- Can be variably dimensioned via the modular system
- Cost-effective



Installation Example

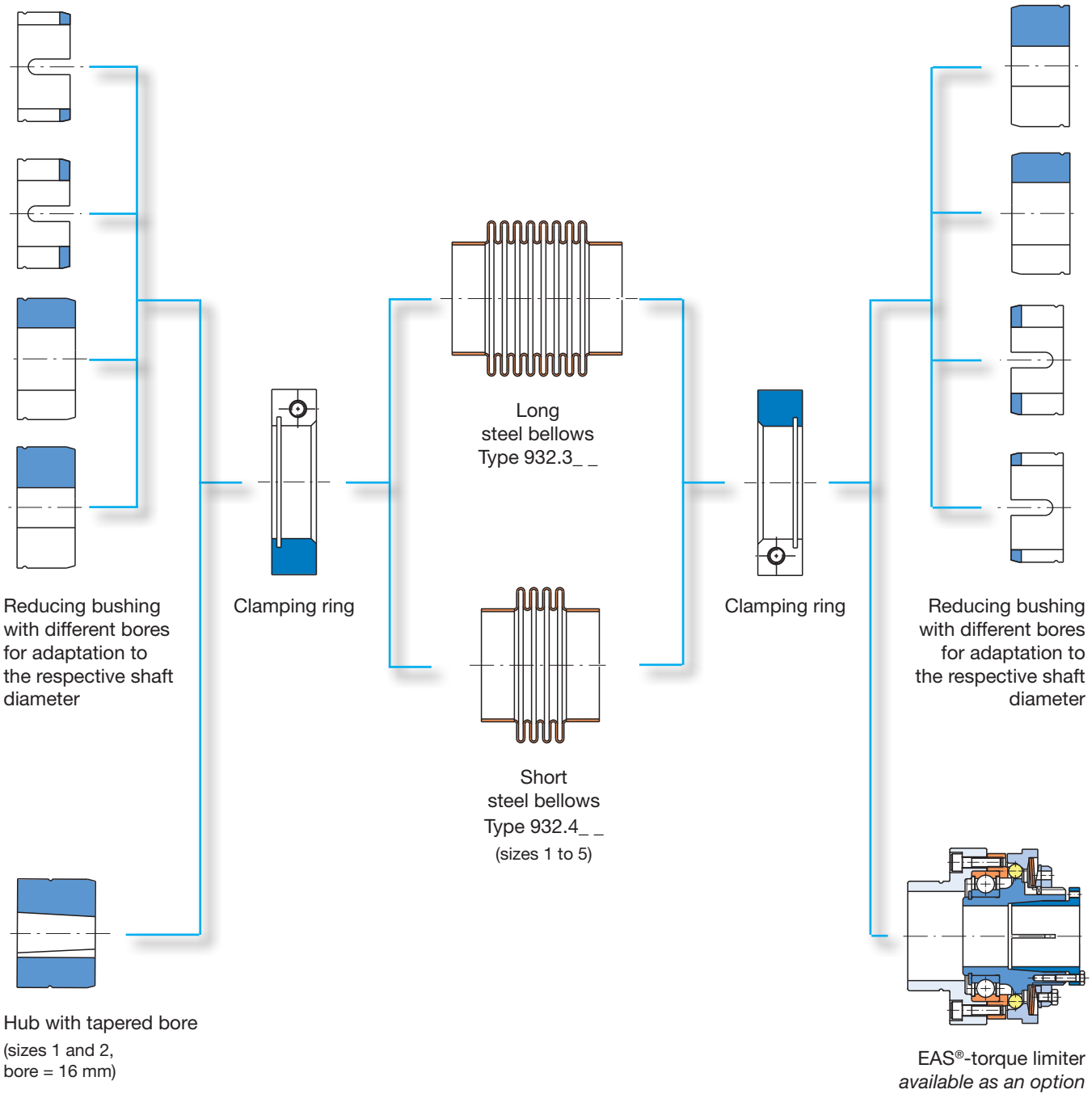


The primeflex®-steel bellows coupling transmits the torque backlash-free between the motor shaft and the gear shaft. By applying plug-in shrink disk hubs (see Installation Example) or plug-in clamping hubs, the primeflex®-steel bellows couplings can be mounted in areas which are difficult to access.

Technical Data, Dimensions					Size		
					1	2	3
Nominal torque			T_{KN}	[Nm]	24	60	120
Outer diameter				[mm]	47	60	79
Clamping hub	**Minimum bore**			[mm]	12	19	25
	Maximum bore			[mm]	25	35	45
	Maximum speed		n_{max}	[rpm]	8000	6000	4000
	Length	Long steel bellows		[mm]	77	93	117
		Short steel bellows		[mm]	62	74	92
Permitted [1] misalignments	Axial displacement	Long steel bellows	ΔK_a	[mm]	0.2	0.25	0.25
		Short steel bellows	ΔK_a	[mm]	0.1	0.15	0.15
	Radial misalignment	Long steel bellows	ΔK_r	[mm]	0.2	0.3	0.3
		Short steel bellows	ΔK_r	[mm]	0.1	0.1	0.1
	Angular misalignment	Long steel bellows	ΔK_w	[°]	1	1	1
		Short steel bellows	ΔK_w	[°]	1	1	1
Torsional spring rigidity		Long steel bellows	C_T	$[10^3 \frac{Nm}{rad}]$	9	22	50
		Short steel bellows	C_T	$[10^3 \frac{Nm}{rad}]$	18	44	100

1) The permitted misalignments may not simultaneously reach their maximum values.

smartflex® – steel bellows couplings



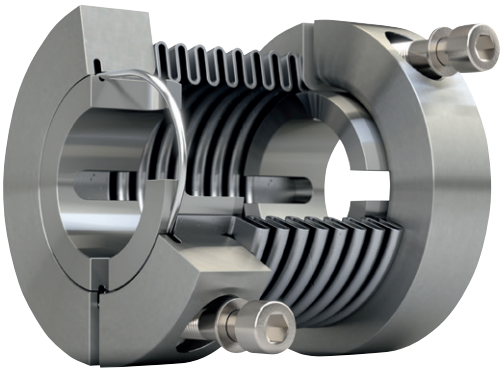
For detailed information, detailed technical data and dimensions, please see our product catalogue K.932.V_ _._ _.

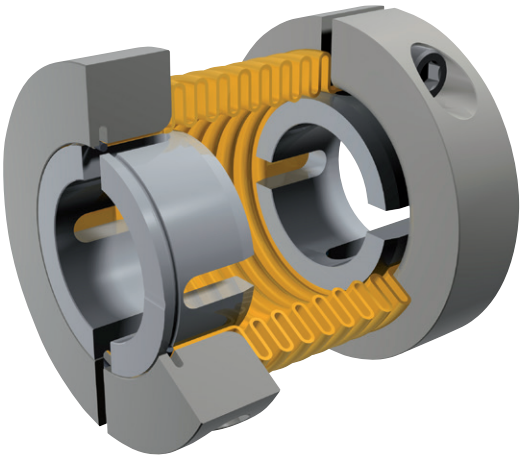
This catalogue is also available for download as a pdf file on our website www.mayr.com.

smartflex® – steel bellows couplings

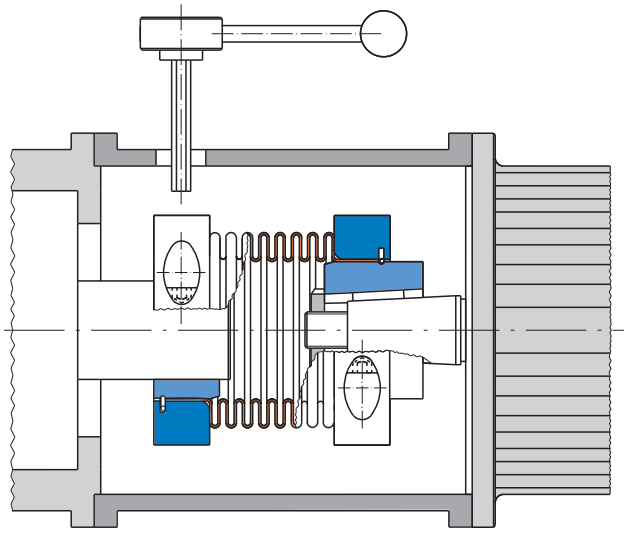
Characteristics and Advantages

- smartflex®-steel bellows couplings compensate for axial, angular and radial shaft misalignments.
- Backlash-free shaft attachment, backlash-free torque transmission and high torsional rigidity provide high precision in the drive line.
- The easy and fast shaft attachment saves installation time.
- Due to the ingeniously simple set-up, the price-performance ratio is extremely advantageous.
- On radial shaft misalignment, the misalignment compensation capability of smartflex®-couplings is up to three times higher than the misalignment compensation capability of common steel bellows couplings.
- The high misalignment compensation capability eliminates the most common accident cause on previous generations of steel bellows.
- A flexible modular system minimises storage and provides high availability.





Installation Example

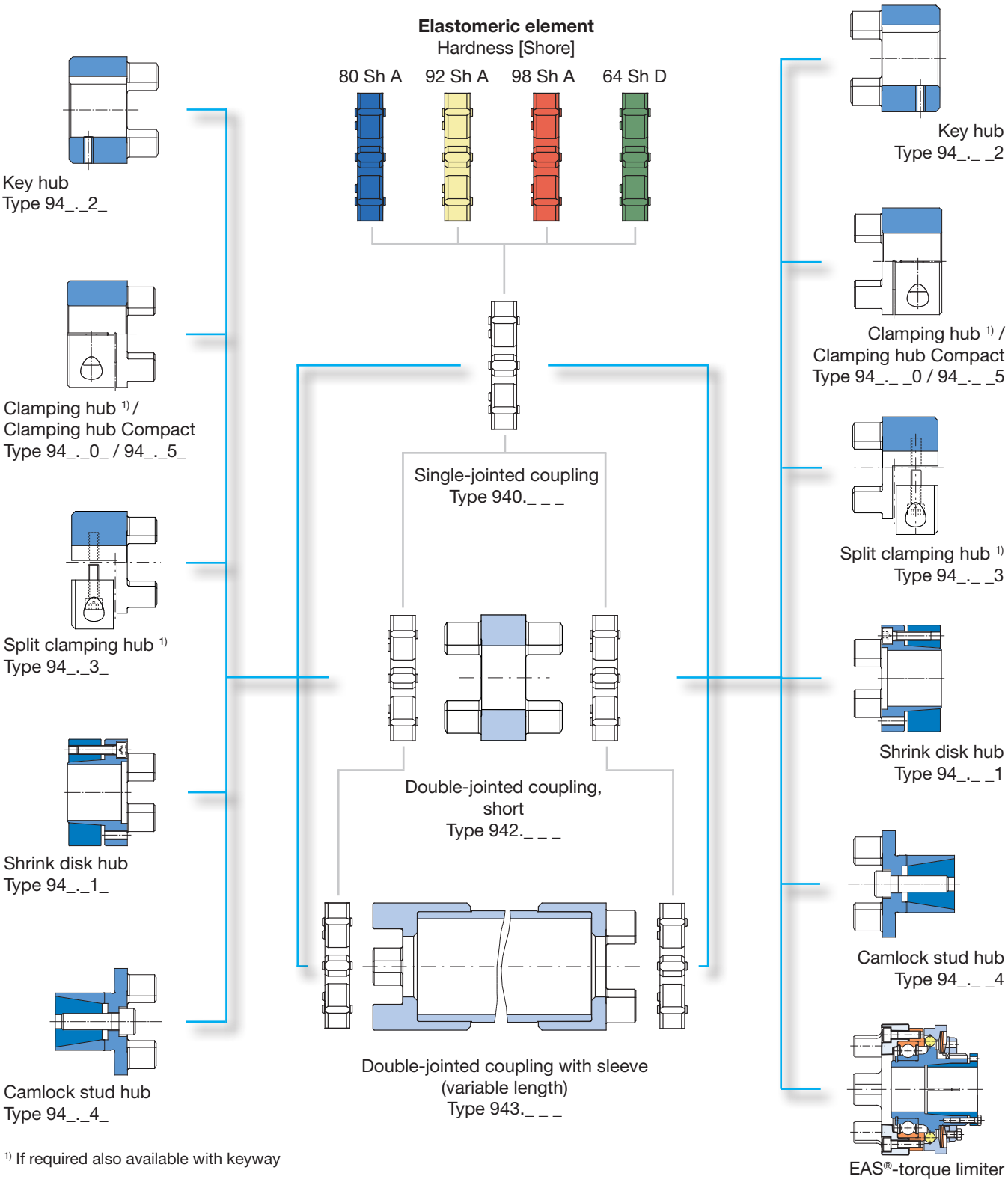


By applying clamping ring hubs, the smartflex®-steel bellows couplings can be mounted in areas which are difficult to access. Please provide an opening in the bell housing for the Allen wrench as depicted in the example.

Technical Data, Dimensions					Size					
					0	1	2	3	4	5
Nominal torque			T_{KN}	[Nm]	16	40	100	200	400	700
Outer diameter				[mm]	46	57	72	94	118	146
Reducing bushing	**Minimum bore**			[mm]	8	11	16	18	30	40
	Maximum bore			[mm]	19	25	36	50	62	85
	Maximum speed		n_{max}	[rpm]	10000	8000	6000	4000	3000	2500
	Length	Long steel bellows		[mm]	49.5	59.3	72	90.3	115	124
		Short steel bellows		[mm]	-	43.7	52.5	65.6	87	98
Permitted [1] misalignments	Axial displacement	Long steel bellows	ΔK_a	[mm]	0.4	0.6	0.8	0.8	0.8	0.6
		Short steel bellows	ΔK_a	[mm]	-	0.3	0.4	0.4	0.6	0.6
	Radial misalignment	Long steel bellows	ΔK_r	[mm]	0.3	0.4	0.5	0.5	0.5	0.5
		Short steel bellows	ΔK_r	[mm]	-	0.1	0.1	0.1	0.1	0.1
	Angular misalignment	Long steel bellows	ΔK_w	[°]	3	3	3	3	1.5	1.0
		Short steel bellows	ΔK_w	[°]	-	1.5	1.5	1.5	1.2	1.0
Torsional spring rigidity		Long steel bellows	C_T	$[10^3 \frac{Nm}{rad}]$	4	9	22	50	125	305
		Short steel bellows	C_T	$[10^3 \frac{Nm}{rad}]$	-	18	44	100	168	380

1) The permitted misalignments may not simultaneously reach their maximum values.

ROBA®-ES – elastomer couplings



1) If required also available with keyway

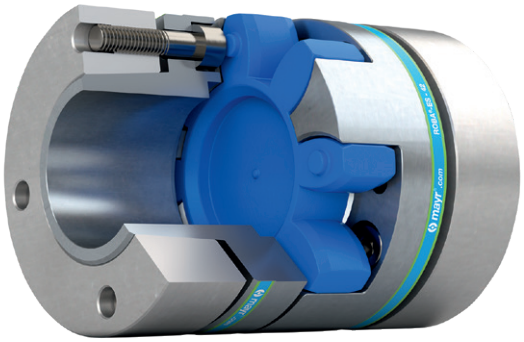
For detailed information, detailed technical data and dimensions, please see our product catalogue K.940.V_ _._ _.

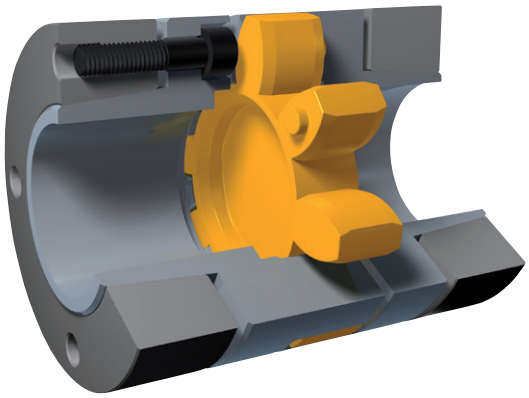
This catalogue is also available for download as a pdf file on our website www.mayr.com.

ROBA®-ES – elastomer couplings

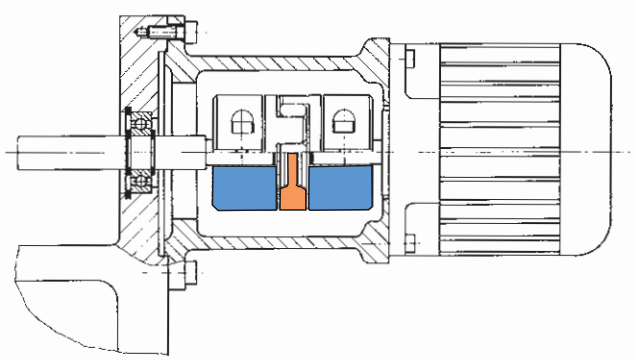
Characteristics and Advantages

- ROBA®-ES couplings transmit the torque backlash-free via pre-tensioned elastomeric elements and compensate for shaft misalignments.
- Rigidity and damping behaviour are variable due to four elastomeric elements per size in different Shore hardnesses.
- ROBA®-ES elastomer couplings are insertable and are, therefore, also suitable for blind assembly.
- The couplings are maintenance-free, media-resistant and temperature-resistant. This guarantees the highest operational safety.
- ROBA®-ES couplings are torsionally flexible within narrow areas. However, in comparison to the toothed belt drive, their rigidity is still 2 to 4 times higher.





Installation Example



The ROBA®-ES shaft coupling transmits the torque backlash-free between the motor shaft and the output shaft. It also compensates for axial, radial and angular shaft misalignments.

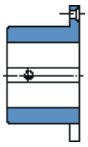
Technical Data, Dimensions					Size								
					14	19	24	28	38	42	48	55	65
Nominal torque	Elastomeric element hardness 98 Sh A		T_{KN}	[Nm]	13	17	60	160	325	450	525	685	1040
Peak torque	Elastomeric element hardness 98 Sh A		T_{KS}	[Nm]	26	34	120	320	650	900	1050	1370	2080
Alternating torque	Elastomeric element hardness 98 Sh A		T_{KW}	[Nm]	See coupling dimensioning in the current ROBA®-ES catalogue.								
Outer diameter				[mm]	30	40	55	65	80	95	105	120	135
Shrink disk hub	Minimum bore			[mm]	6	10	15	19	20	28	35	40	45
	Maximum bore			[mm]	14	20	28	38	45	50	60	70	75
	Maximum speed		n_{max}	[rpm]	28000	21000	15500	13200	10500	9000	8000	6300	5600
	Length single-jointed coupling			[mm]	50	66	78	90	114	126	140	160	185
Elastomeric element hardness 98 Sh A	Permitted misalignments 1)	Axial displacement	ΔK_a	[mm]	1.0	1.2	1.4	1.5	1.8	2.0	2.1	2.2	2.6
		Radial misalignment	ΔK_r	[mm]	0.09	0.06	0.1	0.11	0.12	0.14	0.16	0.17	0.18
		Angular misalignment	ΔK_w	[°]	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	Torsional spring rigidity	static	$C_{T\,stat.}$	[10^3 $\frac{Nm}{rad}$]	0.12	0.9	3.7	4.2	7.4	13.8	15.1	20.5	32.8
		dynamic	$C_{T\,dyn.}$	[10^3 $\frac{Nm}{rad}$]	0.3	2.2	7.6	10.1	19.9	31.1	44.9	48.2	67.4

1) The permitted misalignments may not simultaneously reach their maximum values.

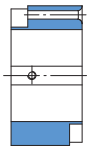
Also available in ATEX design according to the directive 2014/34/EU.

ROBA® – DS backlash-free all-steel couplings

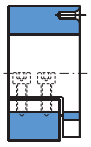
Key hub
Type 95_.**0**_ _
All sizes



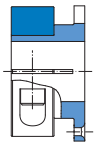
Key hub, large
Type 95_.**1**_ _
Sizes 16 to 160

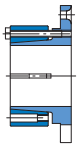


Clamping hub
Type 95_.**5**_ _
Sizes 16 to 160

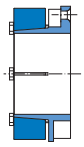


Clamping ring hub
Type 95_.**4**_ _
Sizes 16 to 160
Disk pack HF



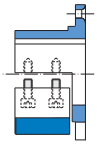


Shrink disk hub large
Type 95_.**9**_ _
Sizes 16 to 160

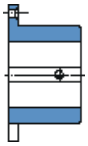


Flange
Type 95_.**6**_ _
All sizes

Split clamping hub
Type 95_.**8**_ _
All sizes, double-jointed couplings
Disk pack HF



Key hub, internal
Type 95_.**7**_ _
Sizes 180 to 2200
Only with sleeve 1

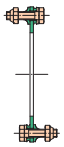


Single-jointed coupling
without connection plate or sleeve
Type 95_._ _**0**

Disk pack HT

Type 95**2**._ _0
for single-jointed couplings

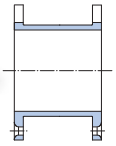
Type 95**3**._ _ _
for double-jointed couplings



Connection plate
Type 95_._ _**1**

Disk pack HT

Type 95**3**._ _ _

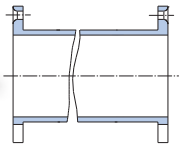


Sleeve 1
Type 95_._ _**2**

Disk pack HF

Type 95**0**._ _0
for single-jointed couplings

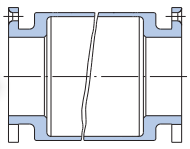
Type 95**1**._ _ _
for double-jointed couplings



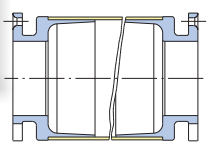
Sleeve S
Type 95_._ _**3**

Disk pack HF

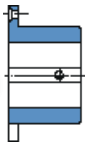
Type 95**1**._ _ _



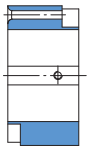
Sleeve CRD
Type 95_._ _**4**



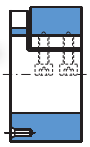
CFRP sleeve
Type 95_._ _**5**



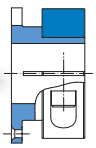
Key hub
Type 95_._**0**_
All sizes



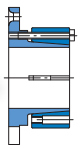
Key hub, large
Type 95_._**1**_
Sizes 16 to 160



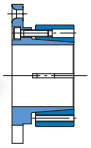
Clamping hub
Type 95_._**5**_
Sizes 16 to 160



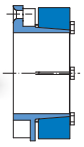
Clamping ring hub
Type 95_._**4**_
Sizes 16 to 160
Disk pack HF



Shrink disk hub External clamping
Type 95_._**2**_
All sizes

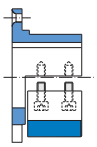


Shrink disk hub Internal clamping
Type 95_._**3**_
Sizes 16 to 160

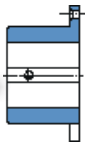


Shrink disk hub, large
Type 95_._**9**_
Sizes 16 to 160

Flange
Type 95_._**6**_
All sizes



Split clamping hub
Type 95_._**8**_
All sizes, double-jointed couplings
Disk pack HF



Key hub, internal
Type 95_._**7**_
Sizes 180 to 2200
Only with sleeve 1

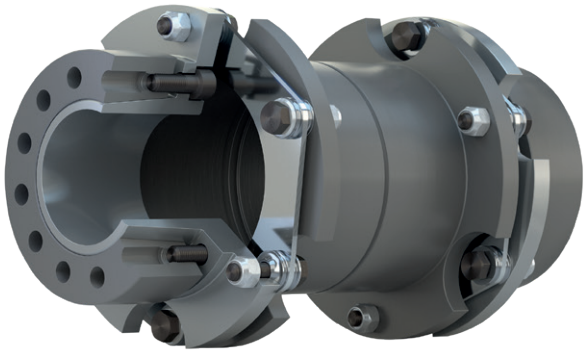
For detailed information, detailed technical data and dimensions, please see our product catalogue K.950.V_ _._ _.

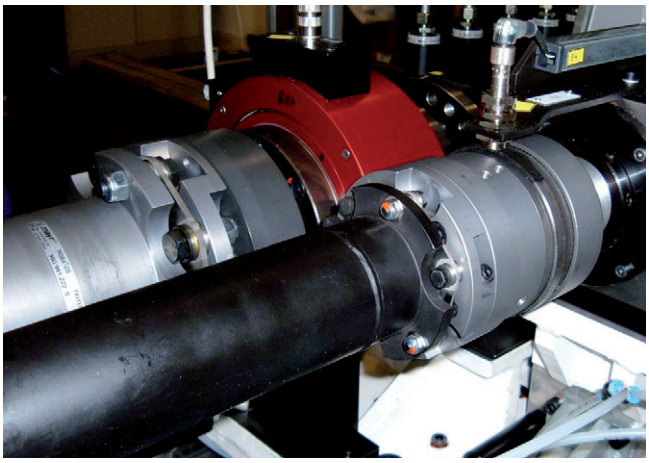
This catalogue is also available for download as a pdf file on our website www.mayr.com.

ROBA® – DS backlash-free all-steel couplings

Characteristics and Advantages

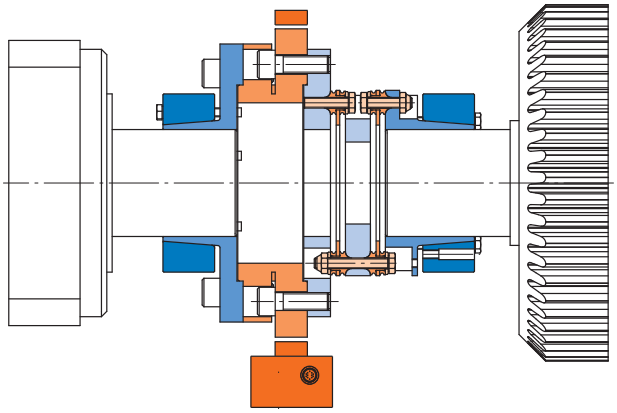
- ROBA®-DS couplings are not sensitive to alternating loads up to the full nominal torque.
- Due to their high performance density, they have a low mass moment of inertia.
- Backlash-free torque transmission with a constantly high torsional rigidity up to the nominal torque
- The full nominal torque can be used, even on alternating torques and shaft misalignments.
- High misalignment compensation capability at low restoring forces
- ROBA®-DS couplings are extremely robust and can therefore be used even under difficult conditions.
- A wide range of variants for optimum configuration





ROBA®-DS shaft coupling combined with an EAS®-torque limiter in a gear test stand manufactured by the company EGM (Entwicklungsgesellschaft für Montagetechnik GmbH).

Installation Example



By using special adaptor flanges, different measuring flanges (for torque measurement) can be integrated into ROBA®-DS couplings.

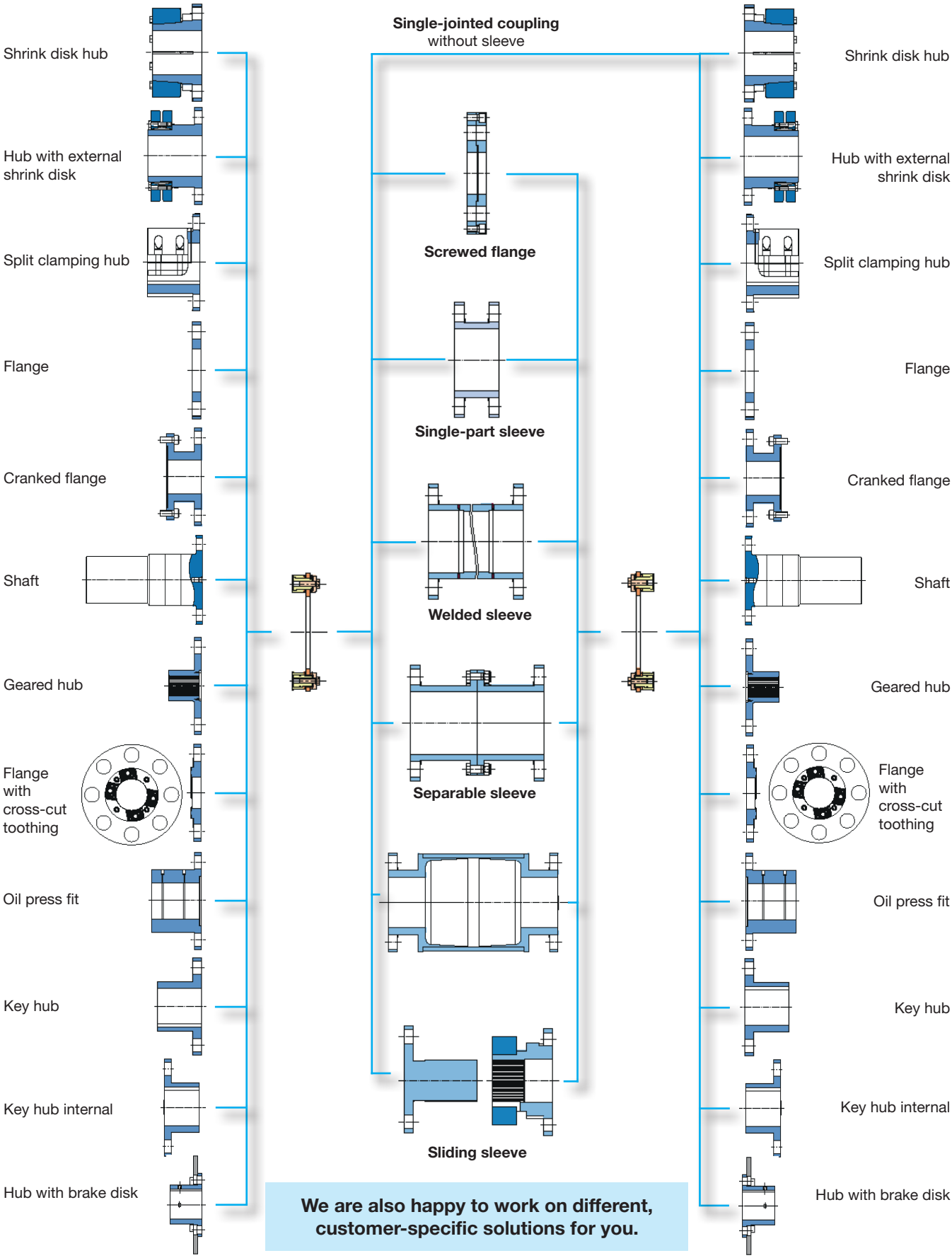
Technical Data, Dimensions				Size											
				16	25	40	64	100	160	180	300	500	850	1400	2200
Nominal torque [1]		T_{KN}	[Nm]	190	290	450	720	1000	1600	2100	3500	5800	9500	15000	24000
Peak torque [2]		T_{KS}	[Nm]	285	435	675	1080	1500	2400	3150	5250	8700	14250	22500	36000
Outer diameter			[mm]	77	89	104	123	143	167	143	167	198	234	274	314
Shrink disk hub	Minimum bore		[mm]	14	20	25	30	35	40	42	50	60	70	80	100
	Maximum bore		[mm]	45	52	60	70	90	100	75	85	100	120	140	170
	Maximum speed [3]	n_{max}	[rpm]	13600	11800	10100	8500	7300	6200	7300	6200	5200	4400	3800	3300
	Min. length single-jointed coupling		[mm]	77.1	87.2	98.4	109.6	120	131.6	141.2	161.2	202	244	276	317.8
	Min. length double-jointed coupling		[mm]	96.2	106.4	120.8	137.2	148	165.2	172.4	194.4	242	295	334	383.6
Permitted misalignments [4]	Axial displacement [5] [6]	ΔK_a	[mm]	1.1	1.3	1.5	1.8	2.1	2.5	1.0	1.2	1.4	1.6	1.9	2.2
	Radial misalignment [5] with connection plate	ΔK_r	[mm]	0.3	0.3	0.4	0.45	0.45	0.55	0.25	0.25	0.35	0.4	0.5	0.55
	Radial misalignment [5] with sleeve 1	ΔK_{rH}	[mm]	1.0	1.2	1.5	1.8	2.1	2.2	1.2	1.25	1.35	1.7	2	2.6
	Radial misalignment [5] with special sleeve	ΔK_{rH}	[mm]	Please contact the manufacturer.											
	Angular misalignment per disk pack	ΔK_w	[°]	1.0	1.0	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	0.5
Torsional spring rigidity	Disk pack	$C_{T\,LP}$	$[10^3 \frac{Nm}{rad}]$	145	280	301	748	1135	1920	3000	3480	11900	20600	30150	46800

1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction, max. load cycles ≤ 10^5.
3) Not valid for coupling with special sleeve.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings with 2 disk packs.
6) Only permitted as a static or virtually static value.

Also available in ATEX design according to the directive 2014/34/EU.

Also available in rustproof design.

ROBA®-DS – heavy load couplings
Modular Structure

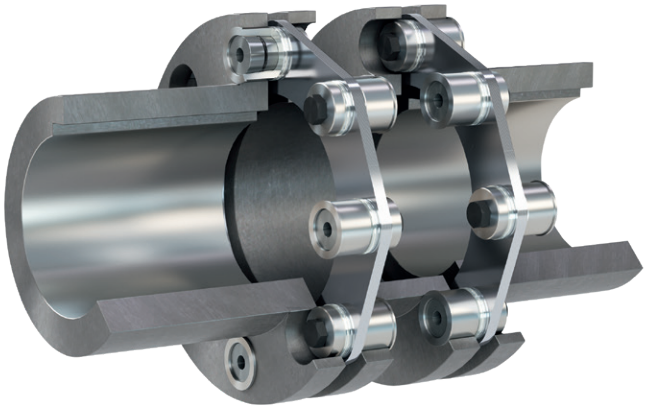


We are also happy to work on different, customer-specific solutions for you.

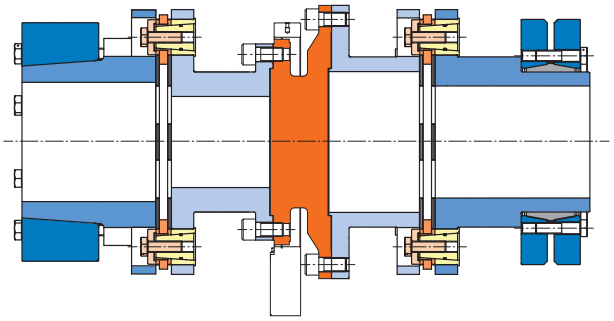
ROBA®-DS – heavy load couplings

Characteristics and Advantages

- Low screw tightening torques
- Can be installed / de-installed radially
- Easy and quick installation / de-installation
- No hydraulic installation tools required; can be installed with a torque wrench
- Backlash-free torque transmission
- FEM-optimized disk shape
- High torsional rigidity
- High performance density
- Compensation of axial, angular and radial misalignments
- Wear and maintenance-free
- High flexibility through customer-specific hubs and sleeves



Installation Example



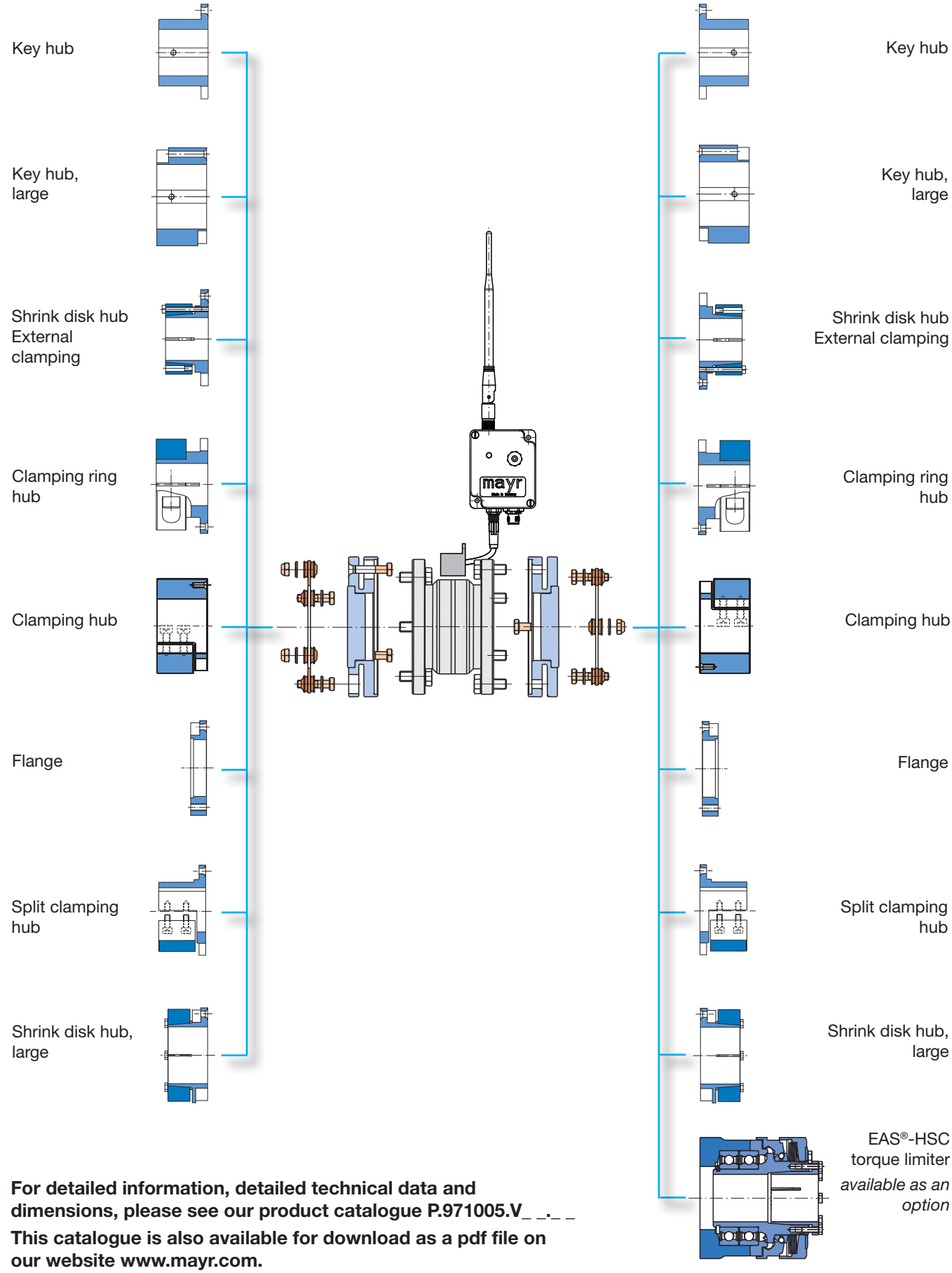
The measurement flange is positioned between the two disk packs. This way, the measurement flange can be de-installed radially with the sleeve, for example for calibration, without de-installing the hubs. Backlash-free shaft-hub connection via shrink disk hub or hub with external shrink disks ensures maximum precision.

Technical Data, Dimensions				Size				
				2200	3300	5000	7300	11000
Alternating torque [1]		T_{KW}	[Nm]	14700	22000	33300	48700	73300
Nominal torque [2]		T_{KN}	[Nm]	22000	33000	50000	73000	110000
Peak torque [3]		T_{KS}	[Nm]	44000	66000	100000	146000	220000
Outer diameter			[mm]	290	332	378	431	492
Maximum speed		n_{max}	[rpm]	3600	3100	2700	2400	2100
Permitted [4] misalignments	Axial displacement [5]	ΔK_a	[mm]	1.6	1.7	2.1	2.3	2.3
	Radial misalignment with special sleeve	ΔK_{rH}	[mm]	Please contact the manufacturer.				
	Angular misalignment per disk pack	ΔK_w	[°]	0.4	0.4	0.4	0.4	0.3

1) Valid for changing load direction as well as for max. permitted shaft misalignment.
2) Valid for unchanging load direction as well as for max. permitted shaft misalignment.
3) Valid for unchanging load direction, max. load cycles ≤ 10^5.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings with 2 disk packs.

For detailed information, detailed technical data and dimensions, please see our product catalogue K.950.V_ _._ _.
This catalogue is also available for download as a pdf file on our website www.mayr.com.

ROBA®-DSM – Modular Structure



For detailed information, detailed technical data and dimensions, please see our product catalogue P.971005.V_ _._ _

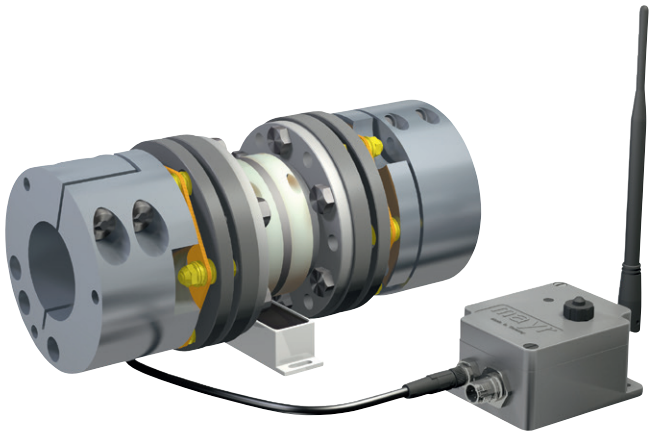
This catalogue is also available for download as a pdf file on our website www.mayr.com.

ROBA®-DSM – the measuring machine element

The areas of application for this torque measurement coupling range from test stand construction through use in serial production machines right up to condition monitoring. The system permits uncomplicated condition monitoring of machines and systems.

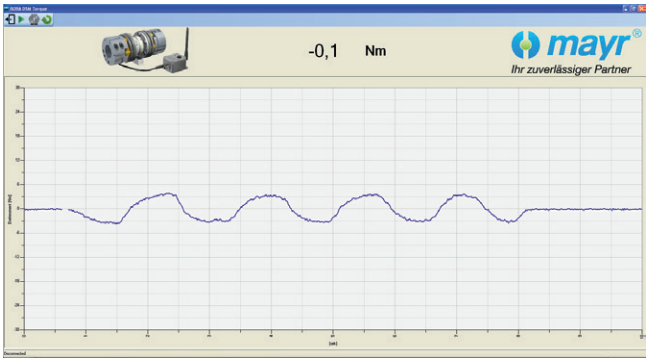
Valuable data for maximum productivity

- Machine performance data
- Unpermitted operating conditions lying outside the specifications (in case of a defect or reclaim)
- Utilisation or runtime of the machine
- Current operating conditions and condition changes to the machine for preventative maintenance purposes
- Dynamic maintenance intervals dependent on the utilisation



Highlights and system advantages

- Direct PC connection possible (USB connection)
- Software for visualisation of the measurement values available as an option
- Use without bearings
- Simple installation and set-up
- Low space requirements on the drive line, no torque support required
- Resistant to vibrations and distance changes on the energy transmitter
- Housing and plug-in connector suitable for industrial purposes (protected against water spray)
- High measuring rate of 7000 measurements per second permits the recording of highly-dynamic loads
- Operation of strain sensor without battery via contactless power supply



Technical Data, Dimensions				Size			
				16	40	100	160
Nominal torque [1) 2)]		T_{KN}	[Nm]	190	450	800	1600
Peak torque [3)]		T_{KS}	[Nm]	285	675	1200	2400
Ultimate torque		T_{KB}	[Nm]	570	1350	2400	4800
Clamping hub	**Minimum bore**	$d_{K\,min}$	[mm]	20	25	32	40
	Maximum bore	$d_{K\,max}$	[mm]	45	60	90	100
	Maximum speed	n_{max}	[rpm]	9500	7000	5100	4300
	Length torque measurement coupling		[mm]	178.2	230.8	292	329.2
Permitted misalignments [4)]	Perm. axial displacement [5) 6)]	ΔK_a	[mm]	0.8	1.1	1.5	1.7
	Perm. angular misalignment [7)]	ΔK_w	[mm]	0.7	0.7	0.7	0.7
	Perm. radial misalignment [5)]	ΔK_r	[mm]	1.1	1.3	1.6	1.8
Spring Rigidities	Total torsional rigidity		[10^3 Nm/rad]	36.2	114.3	320	585
	Angular spring rigidity [7)]		[Nm/rad]	229	298	1089	1990

Technical Data for Measuring System	
Supply voltage	24 VDC (±10 %)
Max. current consumption	1 A
Measuring signal output (rotational direction right positive, 10V refers to T_{KN})	0 ... ±10 V
Nominal temperature range	-20 °C to +70 °C
Temperature drift, zero point	0,04 % of final value / K
Temperature drift, measured value	0.03 % of final value / K

Technical Data for Measuring System	
Max. total error	< 1 % of final value (< 0.5 % via USB)
Bandwidth	3 kHz (-3 dB)
Max. dyn. load	100 % of T_{KN}
Protection	Receiver/stator IP65 Strain sensor IP52
Permitted speed	0 ... n_{max}
Connection	M12 plug, 4-pole

1) Other torques and construction sizes available on request.
2) Valid for changing load direction as well as for max. permitted shaft misalignment. The following applies for split clamping hubs: Valid for unchanging load direction as well as for max. permitted shaft misalignment. When the load direction changes, max. 60% of the stated nominal torque is permitted.
3) Valid for unchanging load direction, max. load cycles ≤ 10^5.
4) The permitted misalignments may not simultaneously reach their maximum values.
5) The values refer to couplings with 2 disk packs.
6) Only permitted as a static or virtually static value.
7) The values refer to 1 disk pack.

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You can find the complete contact details for the representative responsible for your area in the Contact section at www.mayr.com

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