Universal joints

Lenze
SELECTION

Contents

Introduction
Product portfolio 4-5
For precise power transmission in any situation 7
Universal joints overview 8

S-series 9
Universal joints S 10
Universal joints SA 11

G-series/H-series 12
Universal joints G/B 13
Universal joints GD/GBD 14
Universal joints GA/GBA 15
Universal joints GR 18

Universal joints H/HB 19
Universal joints HD/HBD 20
Universal joints HA/HBA 21
Universal joints HR 24

Universal joints X 25
Universal joints XD 26
Universal joints XA 27

Protective sleeves 28

Clamping hub CL1 29
Clamping hub CL2 30

Selection criteria – application of diagrams 31
Selection diagram S-G 32
Selection diagram H 33
Mounting instructions 34

Drive elements are our world.

Electromagnetically actuated clutches and brakes

Shaft couplings

Locking assemblies

Belt drives

Torque limiters

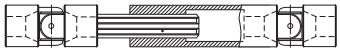
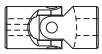
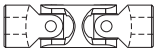
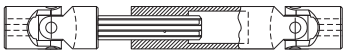
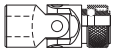
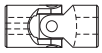
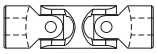
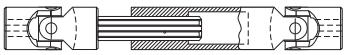
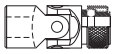
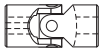
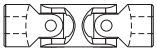
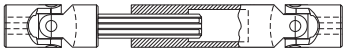
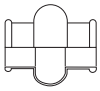
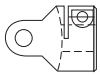
Universal joints

Linear motion

For precise power transmission in any situation.

Universal joints enable torque transmission between drives and outputs that are located at a distance from each other. Spatial angular deflection and changes in axial length are compensated to ensure functionality. Different versions – as well as individually adapted products, if required – ensure the optimum specifications for your application.

Overview

	Needle bearing	Sliding bushes	Stainless steel	Max. 1,000 min^{-1}	Max. 4,000 min^{-1}	Max. 45°	Max. 90°	Telescopic	Page	
 **S**		●		●		●			10	High-precision universal joints for maximum durability
 **SA**		●		●			●	●	11	
 **G/GB***		●		●					13	Up to 1,000 min^{-1} with wear-resistant anti-friction bushes. Maintenance-free.
 **GD/GBD***		●		●		●			14	
 **GA/GBA***		●		●			●	●	15	
 **GR**		●		●		●			18	
 **H/HB***	●				●	●			19	Up to 4,000 min^{-1} with roller bearers with lubrication for life. Maintenance-free.
 **HD/HBD***	●				●		●		20	
 **HA/HBA***	●				●		●	●	21	
 **HR**	●				●	●			24	
 **X**			●			●			25	Stainless steel – non-corrosive
 **XD**			●				●		26	
 **XA**			●				●	●	27	
 **M**									28	Protective sleeve resistant to acid, oil, lubricants, dust, moisture.
 **CL1**	●	●							29	For frequent and fast mounting and applications with vibrations.
CL2	●	●							30	

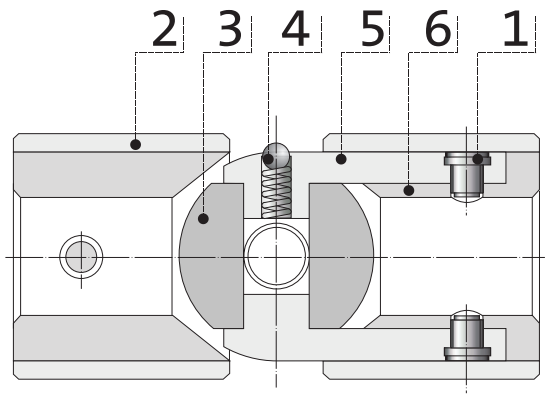
Key to types

D = double joint
A = telescopic
R = with quick release
X = in stainless steel
1 = with clamping screw without nut
2 = with clamping screw and nut

* According to DIN 808/7551
Design with reduced outside diameter

Universal joints

S-series



S-series
S-series universal joints are highly precise and durable. Integrated forked elements guarantee maximum durability. The sophisticated design, high-quality materials and modern production methods ensure that our universal joints reliably fulfil your requirements.

For components that are subjected to heavy use, special case-hardened CrNi steel is used.

In order to ensure efficient processing (bores, grooves, locking thread, etc.), the internal hubs (6) and external sleeves (2) are produced from unhardened construction steel.

A characteristic feature of this series is that no shaft journals or bolts are used. This is a particular advantage in case of impact loads, high torque or changes in direction.

The four forks (5) and the robust journals are produced from a single piece. This guarantees a very compact central element. (3) The journals are connected to the hardened bearing surface of the forks.

The mode of operation of the journals and bearing surface increases the effectiveness and power/torque transmission of the universal joint, even under the toughest conditions.

To avoid deflection, the forked elements are made as small as possible. Lubrication channels are integrated into the hollow space in the central element to allow grease to flow from the grease feed regulator on the exterior (4) to the exterior to the journals. The grease reservoir in the central element ensures permanent lubrication.

The sealed design prevents grease from leaking and contaminants from intruding. The recommended maximum speed is 1,000 min^{-1}.

S

High-quality S-series joints.

Basic element and forked element from a single piece of CrNi steel, case-hardened.
HRC >= 60, Rm >= 1,964 N/mm²

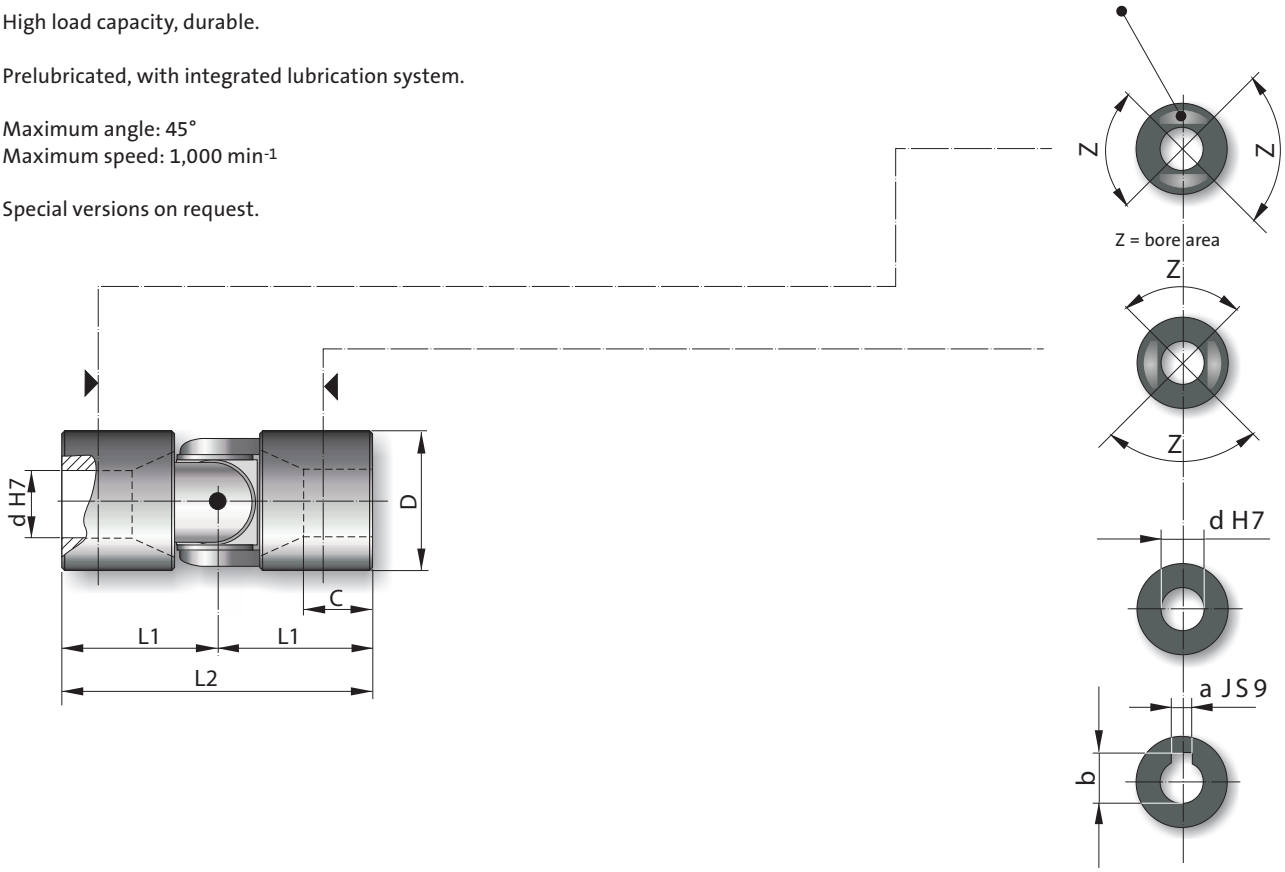
High load capacity, durable.

Prelubricated, with integrated lubrication system.

Maximum angle: 45°
Maximum speed: 1,000 min^{-1}

Special versions on request.

Hardened CrNi steel HRC 60



	Design	Dimensions [mm]					Design	Design	Dimensions [mm]		Weight [kg]
Type		**d**	**D**	**L2**	**L1**	**C**			**a**	**b**	
01S	01S 00	6	16	34	17	9	—	—	—	—	0.05
02S	02S 00	8	18	40	20	11	—	—	—	—	0.06
03S	03S 00	10	22	48	24	14	03S 1C	03S 2C	3	11.4	0.11
04S	04S 00	12	26	56	28	16	04S 1C	04S 2C	4	13.8	0.17
05S	05S 00	14	29	60	30	17	05S 1C	05S 2C	5	16.3	0.22
1S	1S 00	16	32	68	34	20	1S 1C	1S 2C	5	18.3	0.32
2S	2S 00	18	37	74	37	21	2S 1C	2S 2C	6	20.8	0.47
3S	3S 00	20	42	82	41	23	3S 1C	3S 2C	6	22.8	0.67
4S	4S 00	22	47	95	47.5	25	4S 1C	4S 2C	6	24.8	1
5S	5S 00	25	52	108	54	29	5S 1C	5S 2C	8	28.3	1.35
6S	6S 00	30	58	122	61	34	6S 1C	6S 2C	8	33.3	1.85

Telescopic universal joints

S-series

SA

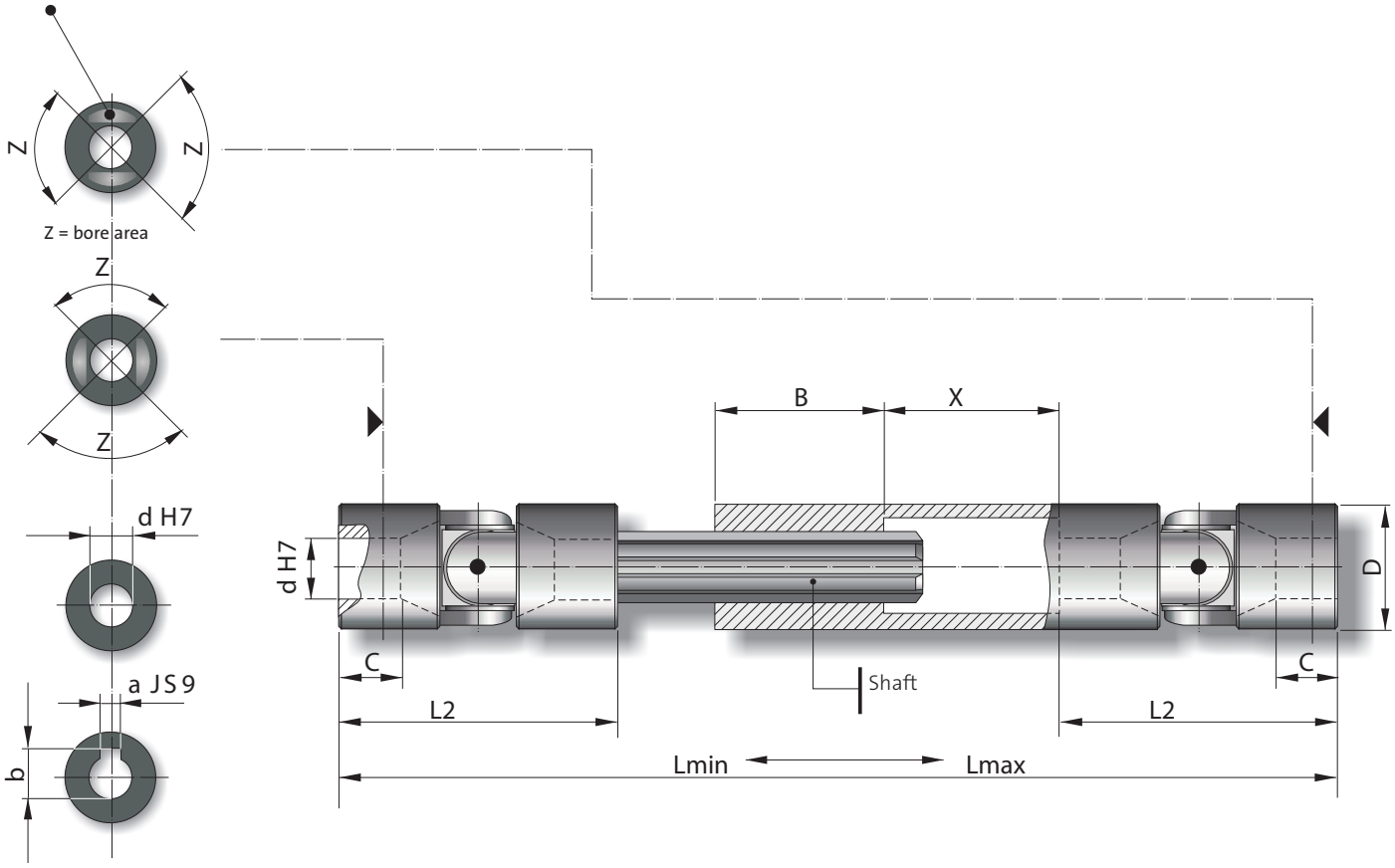
High-quality S-series joints.

Min. and max. lengths on request.

$$L_{min} >= \frac{L_{max} + 2\,L2 + B}{2}$$

$$\text{Stroke } X >= \frac{L_{max} - 2\,L2 - B}{2}$$

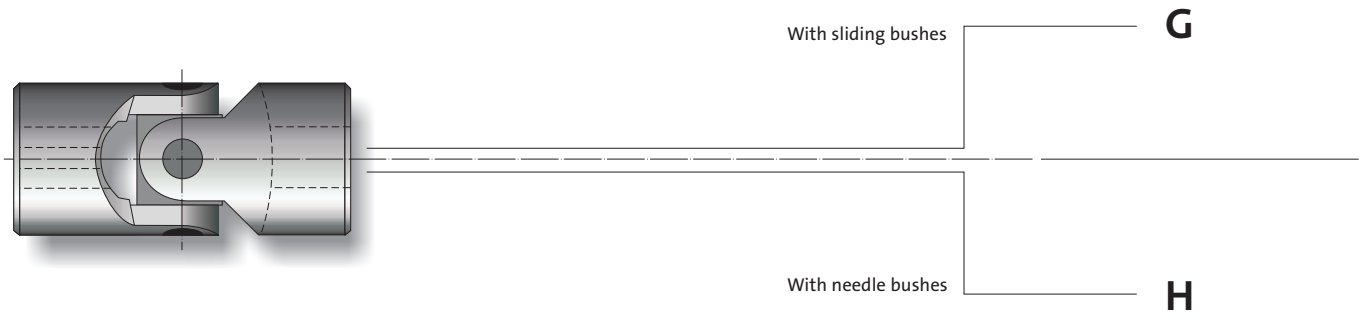
Hardened CrNi steel HRC 60



	Dimensions [mm]				Lmin	Lmax	x = Stroke	Dimensions [mm]			
Type	**d**	**D**	**L2**	**C**	**on request**		**on request**	**B**	**a**	**b**	**Shaft**
01SA	6	16	34	9	-	-	-	25	-	-	SW 8
02SA	8	18	40	11	-	-	-	25	-	-	SW 10
03SA	10	22	48	14	-	-	-	30	3	11.4	11 x 14 Z6
04SA	12	26	56	16	-	-	-	40	4	13.8	13 x 16 Z6
05SA	14	29	60	17	-	-	-	40	5	16.3	13 x 16 Z6
1SA	16	32	68	20	-	-	-	40	5	18.3	16 x 20 Z6
2SA	18	37	74	21	-	-	-	40	6	20.8	18 x 22 Z6
3SA	20	42	82	23	-	-	-	45	6	22.8	21 x 25 Z6
4SA	22	47	95	25	-	-	-	45	6	24.8	23 x 28 Z6
5SA	25	52	108	29	-	-	-	45	8	28.3	26 x 32 Z6
6SA	30	58	122	34	-	-	-	50	8	33.3	32 x 38 Z8

Universal joints with sliding bushes or needle bearings

In accordance with DIN 808



G-series
G-series Universal joints comprise a forked element, central element and two joint elements with a forked head. Four wear-resistant bushes are integrated between the journals of the forked element and the bores in the forks.

The four bushes have lubrication openings and a lubrication reservoir. The sealed design prevents lubricants from leaking and contaminants from intruding. This guarantees you maintenance-free operation and life-long lubrication.

The G-series is especially suited for low to medium speeds and the occurrence of peak loads and impact loads. It operates very smoothly and has a low friction factor. All joint surfaces are hardened and polished.

The maximum operating angle is 45° for single joints and 90° for double joints.

The speed limitation for the G-series is 1,000 min^{-1}.

H-series
H-series universal joints comprise a forked element, central element and two joint elements with a forked head. Four wear-resistant bushes are integrated between the journals of the forked element and the bores in the forks.

The four needle bearing bushes have lubrication openings and a lubrication reservoir. The sealed design prevents lubricants from leaking and contaminants from intruding. This guarantees you maintenance-free operation and life-long lubrication.

The H-series is especially suited for high speeds with low torque operates very smoothly and has a low friction factor. All joint surfaces are hardened and polished.

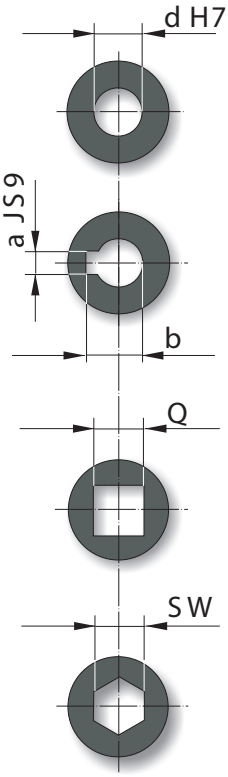
The maximum operating angle is 45° for single joints and 90° for double joints.

The speed limitation for the H-series is 4,000 min^{-1}.

Standard universal joints

G-series

G



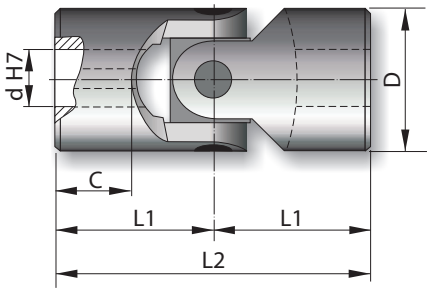
Wear-resistant slide bushes made of case-hardened steel.

Robust, precise and versatile. For a wide range of applications.

Maximum angle: 45°
Maximum speed: 1,000 min^{-1}

G according to DIN 808 – GB according to DIN 808/7551
GB universal joints are universal joints with a reduced external diameter.
Our experienced technicians are available to dimension them for you.

Special versions on request.



	Design	Dimensions [mm]					Design	Design	Dimensions [mm]		Design	Dimensions [mm]		Weight [kg]
Type		**d**	**D**	**L2**	**L1**	**C**			**a**	**b**		**Q**	**SW**	
01G	01G 00	6	16	34	17	8	01G 1C	01G 2C	2	7	01G 2Q	6	6	0.05
02G	02G 00	8	16	40	20	11	02G 1C	02G 2C	2	9	02G 2Q	8	8	0.05
03G	03G 00	10	22	48	24	12	03G 1C	03G 2C	3	11.4	03G 2Q	10	10	0.1
04G	04G 00	12	25	56	28	13	04G 1C	04G 2C	4	13.8	04G 2Q	12	12	0.16
05G	05G 00	14	28	60	30	14	05G 1C	05G 2C	5	16.3	05G 2Q	14	14	0.2
1G	1G 00	16	32	68	34	16	1G 1C	1G 2C	5	18.3	1G 2Q	16	16	0.3
2G	2G 00	18	36	74	37	17	2G 1C	2G 2C	6	20.8	2G 2Q	18	18	0.45
3G	3G 00	20	42	82	41	18	3G 1C	3G 2C	6	22.8	3G 2Q	20	20	0.6
4G	4G 00	22	45	95	47.5	22	4G 1C	4G 2C	6	24.8	4G 2Q	22	22	0.95
5G	5G 00	25	50	108	54	26	5G 1C	5G 2C	8	28.3	5G 2Q	25	25	1.2
6G	6G 00	30	58	122	61	29	6G 1C	6G 2C	8	33.3	6G 2Q	30	30	1.85
6G1	6G1 00	32	58	130	65	33	6G1 1C	6G1 2C	10	35.3	6G1 2Q	30	30	2
7G	7G 00	35	70	140	70	35	7G 1C	7G 2C	10	38.3	*	*	*	3.15
8G	8G 00	40	80	160	80	39	8G 1C	8G 2C	12	43.3	*	*	*	4.6
9G	9G 00	50	95	190	95	46	9G 1C	9G 2C	14	53.8	*	*	*	7.6
03GB	03GB 00	10	16	52	26	15	03GB 1C	03GB 2C	3	11.4	03GB 2Q	8	8	0.05
04GB	04GB 00	12	22	62	31	18	04GB 1C	04GB 2C	4	13.8	04GB 2Q	10	10	0.12
1GB	1GB 00	16	25	74	37	21	1GB 1C	1GB 2C	5	18.3	1GB 2Q	12	12	0.2
3GB	3GB 00	20	32	86	43	24	3GB 1C	3GB 2C	6	22.8	3GB 2Q	16	16	0.35
5GB	5GB 00	25	42	108	54	31	5GB 1C	5GB 2C	8	28.3	5GB 2Q	20	20	0.8
6GB	6GB 00	30	50	132	66	38	6GB 1C	6GB 2C	8	33.3	6GB 2Q	25	25	1.2
8GB	8GB 00	40	70	166	83	47	8GB 1C	8GB 2C	12	43.3	*	*	*	2.9

* On request

Standard double universal joints

G-series

GD

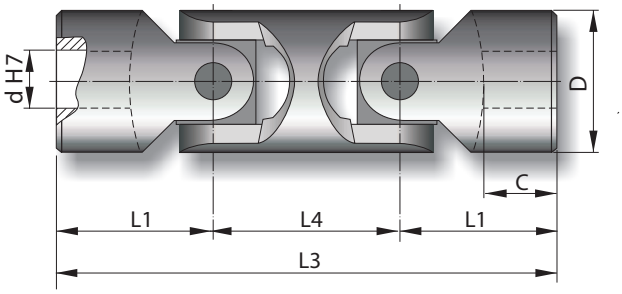
Wear-resistant slide bushes made of case-hardened steel.

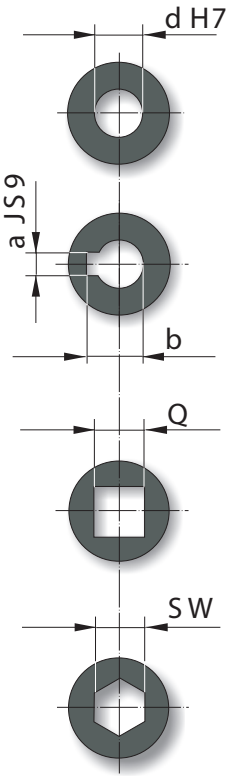
Robust, precise and versatile. For a wide range of applications.

Maximum angle: 90°
Maximum speed: 1,000 min^{-1}

GD according to DIN 808 – GBD according to DIN 808/7551
GBD universal joints are universal joints with a reduced external diameter.
Our experienced technicians are available to dimension them for you.

Special versions on request.





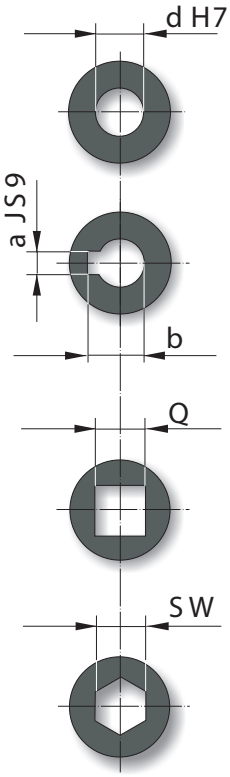
	Design	Dimensions [mm]						Design	Design	Dimensions [mm]		Design	Dimensions [mm]		Weight [kg]
Type		**d**	**D**	**L3**	**L1**	**L4**	**C**			**a**	**b**		**Q**	**SW**	
01GD	01GD 00	6	16	56	17	22	8	01GD 1C	01GD 2C	2	7	01GD 2Q	6	6	0.08
02GD	02GD 00	8	16	62	20	22	11	02GD 1C	02GD 2C	2	9	02GD 2Q	8	8	0.08
03GD	03GD 00	10	22	74	24	26	12	03GD 1C	03GD 2C	3	11.4	03GD 2Q	10	10	0.15
04GD	04GD 00	12	25	86	28	30	13	04GD 1C	04GD 2C	4	13.8	04GD 2Q	12	12	0.25
05GD	05GD 00	14	28	96	30	36	14	05GD 1C	05GD 2C	5	16.3	05GD 2Q	14	14	0.4
1GD	1GD 00	16	32	104	34	36	16	1GD 1C	1GD 2C	5	18.3	1GD 2Q	16	16	0.45
2GD	2GD 00	18	36	114	37	40	17	2GD 1C	2GD 2C	6	20.8	2GD 2Q	18	18	0.7
3GD	3GD 00	20	42	128	41	46	18	3GD 1C	3GD 2C	6	22.8	3GD 2Q	20	20	1
4GD	4GD 00	22	45	145	47.5	50	22	4GD 1C	4GD 2C	6	24.8	4GD 2Q	22	22	1.55
5GD	5GD 00	25	50	163	54	55	26	5GD 1C	5GD 2C	8	28.3	5GD 2Q	25	25	2
6GD	6GD 00	30	58	190	61	68	29	6GD 1C	6GD 2C	8	33.3	6GD 2Q	30	30	2.9
6GD1	6GD1 00	32	58	198	65	68	33	6GD1 1C	6GD1 2C	10	35.3	6GD1 2Q	30	30	3
7GD	7GD 00	35	70	212	70	72	35	7GD 1C	7GD 2C	10	38.3	*	*	*	4.75
8GD	8GD 00	40	80	245	80	85	39	8GD 1C	8GD 2C	12	43.3	*	*	*	7.2
9GD	9GD 00	50	95	290	95	100	46	9GD 1C	9GD 2C	14	53.8	*	*	*	12
03GBD	03GBD 00	10	16	74	26	22	15	03GBD 1C	03GBD 2C	3	11.4	03GBD 2Q	8	8	0.08
04GBD	04GBD 00	12	22	88	31	26	18	04GBD 1C	04GBD 2C	4	13.8	04GBD 2Q	10	10	0.2
1GBD	1GBD 00	16	25	104	37	30	21	1GBD 1C	1GBD 2C	5	18.3	1GBD 2Q	12	12	0.3
3GBD	3GBD 00	20	32	124	43	38	24	3GBD 1C	3GBD 2C	6	22.8	3GBD 2Q	16	16	0.5
5GBD	5GBD 00	25	42	156	54	48	31	5GBD 1C	5GBD 2C	8	28.3	5GBD 2Q	20	20	1.2
6GBD	6GBD 00	30	50	188	66	56	38	6GBD 1C	6GBD 2C	8	33.3	6GBD 2Q	25	25	1.7
8GBD	8GBD 00	40	70	238	83	72	47	8GBD 1C	8GBD 2C	12	43.3	*	*	*	4.3

* On request

Standard telescopic universal joints

G-series

GA



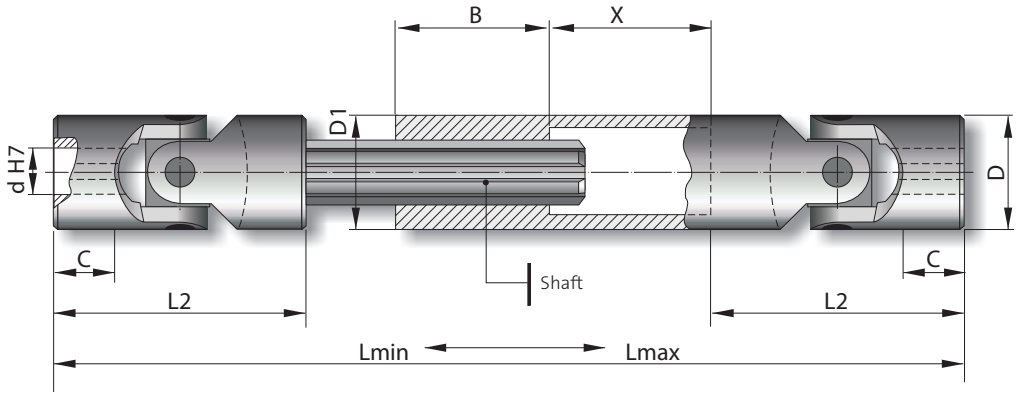
G-series joints with wear-resistant slide bushes.

Maximum angle: 90°
Maximum speed: 1,000 min^{-1}

GA according to DIN 808 – GAB according to DIN 808/7551
Large range of lengths for each size.

$$Lmin > = \frac{Lmax + 2\ L2 + B}{2}$$

$$Stroke\ X > = \frac{Lmax - 2\ L2 - B}{2}$$



	Dimensions [mm]				Lmin	Lmax	x = Stroke	Dimensions [mm]						
Type	**d**	**D**	**L2**	**C**	**on request**		**on request**	**B**	**a**	**b**	**Q**	**SW**	**D1**	**Shaft**
01GA	6	16	34	8	-	-	-	25	2	7	6	6	16	SW 8
02GA	8	16	40	11	-	-	-	25	2	9	8	8	16	SW 8
03GA	10	22	48	12	-	-	-	30	3	11.4	10	10	22	11 x 14 Z6
04GA	12	25	56	13	-	-	-	40	4	13.8	12	12	26	13 x 16 Z6
05GA	14	28	60	14	-	-	-	40	5	16.3	14	14	29	13 x 16 Z6
1GA	16	32	68	16	-	-	-	40	5	18.3	16	16	32	16 x 20 Z6
2GA	18	36	74	17	-	-	-	40	6	20.8	18	18	37	18 x 22 Z6
3GA	20	42	82	18	-	-	-	45	6	22.8	20	20	42	21 x 25 Z6
4GA	22	45	95	22	-	-	-	45	6	24.8	22	22	47	23 x 28 Z6
5GA	25	50	108	26	-	-	-	45	8	28.3	25	25	52	26 x 32 Z6
6GA	30	58	122	29	-	-	-	50	8	33.3	30	30	58	32 x 38 Z8
7GA	35	70	140	35	-	-	-	70	10	38.3	*	*	70	36 x 42 Z8
8GA	40	80	160	39	-	-	-	80	12	43.3	*	*	80	42 x 48 Z8
9GA	50	95	190	46	-	-	-	90	14	53.8	*	*	95	46 x 54 Z8
03GBA	10	16	52	15	-	-	-	25	3	11.4	8	8	16	SW 8
04GBA	12	22	62	18	-	-	-	30	4	13.8	10	10	22	11 x 14 Z6
1GBA	16	25	74	21	-	-	-	40	5	18.3	12	12	26	13 x 16 Z6
3GBA	20	32	86	24	-	-	-	40	6	22.8	16	16	32	16 x 20 Z6
5GBA	25	42	108	31	-	-	-	45	8	28.3	20	20	42	21 x 25 Z6
6GBA	30	50	132	38	-	-	-	45	8	33.3	25	25	52	26 x 32 Z6
8GBA	40	70	166	47	-	-	-	70	12	43.3	*	*	70	36 x 42 Z8

* On request

Standard telescopic universal joints

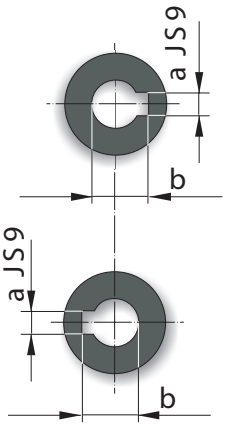
G-series

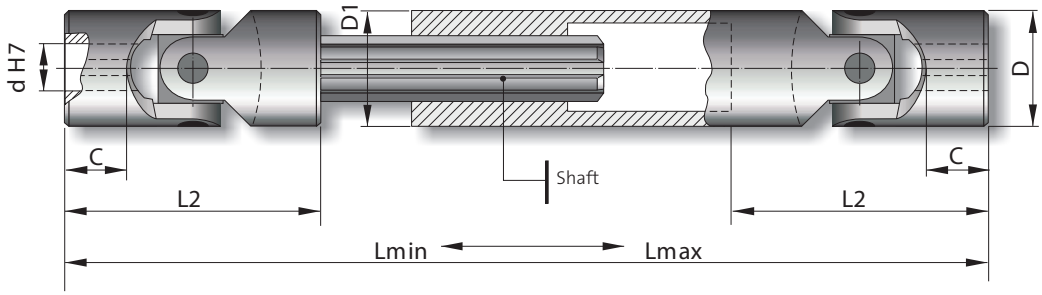
GA

G-series joints with wear-resistant slide bushes.

Maximum angle: 90°
Maximum speed: 1,000 min^{-1}

Large range of lengths for each size.





	Design	Dimensions [mm]											Weight [kg]
Type		**d**	**D**	**L2**	**C**	**Lmin**	**Lmax**	**Stroke**	**a**	**b**	**D1**	**Shaft**	
03GA1	03GA1 2C	10	22	48	12	140	170	30	3	11.4	22	11 x 14 Z6	0.31
03GA15	03GA15 2C	10	22	48	12	160	200	40	3	11.4	22	11 x 14 Z6	0.36
03GA2	03GA2 2C	10	22	48	12	180	240	60	3	11.4	22	11 x 14 Z6	0.38
03GA25	03GA25 2C	10	22	48	12	230	330	100	3	11.4	22	11 x 14 Z6	0.5
04GA1	04GA1 2C	12	25	56	13	160	190	30	4	13.8	26	13 x 16 Z6	0.5
04GA15	04GA15 2C	12	25	56	13	180	225	45	4	13.8	26	13 x 16 Z6	0.56
04GA2	04GA2 2C	12	25	56	13	200	270	70	4	13.8	26	13 x 16 Z6	0.62
04GA23	04GA23 2C	12	25	56	13	220	300	80	4	13.8	26	13 x 16 Z6	0.67
04GA26	04GA26 2C	12	25	56	13	250	355	105	4	13.8	26	13 x 16 Z6	0.76
04GA29	04GA29 2C	12	25	56	13	280	420	140	4	13.8	26	13 x 16 Z6	0.84
04GA32	04GA32 2C	12	25	56	13	300	450	150	4	13.8	26	13 x 16 Z6	0.9
05GA1	05GA1 2C	14	28	60	14	170	200	30	5	16.3	29	13 x 16 Z6	0.62
05GA15	05GA15 2C	14	28	60	14	180	220	40	5	16.3	29	13 x 16 Z6	0.64
05GA18	05GA18 2C	14	28	60	14	200	260	60	5	16.3	29	13 x 16 Z6	0.72
05GA2	05GA2 2C	14	28	60	14	220	300	80	5	16.3	29	13 x 16 Z6	0.78
05GA23	05GA23 2C	14	28	60	14	250	350	100	5	16.3	29	13 x 16 Z6	0.87
05GA26	05GA26 2C	14	28	60	14	280	420	140	5	16.3	29	13 x 16 Z6	0.96
05GA29	05GA29 2C	14	28	60	14	300	450	150	5	16.3	29	13 x 16 Z6	1.03
05GA32	05GA32 2C	14	28	60	14	350	550	200	5	16.3	29	13 x 16 Z6	1.17
05GA35	05GA35 2C	14	28	60	14	400	650	250	5	16.3	29	13 x 16 Z6	1.33

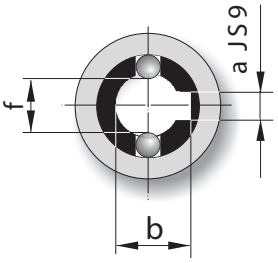
GA

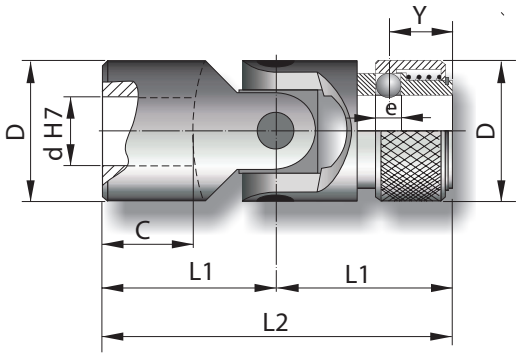
	Design	Dimensions [mm]											Weight [kg]
Type		**d**	**D**	**L2**	**C**	**Lmin**	**Lmax**	**Stroke**	**a**	**b**	**D1**	**Shaft**	
1GA1	1GA1 2C	16	32	68	16	190	220	30	5	18.3	32	16 x 20 Z6	0.9
1GA15	1GA15 2C	16	32	68	16	210	250	40	5	18.3	32	16 x 20 Z6	0.98
1GA2	1GA2 2C	16	32	68	16	240	320	80	5	18.3	32	16 x 20 Z6	1.1
1GA23	1GA23 2C	16	32	68	16	250	350	100	5	18.3	32	16 x 20 Z6	1.14
1GA26	1GA26 2C	16	32	68	16	275	390	115	5	18.3	32	16 x 20 Z6	1.24
1GA29	1GA29 2C	16	32	68	16	300	430	130	5	18.3	32	16 x 20 Z6	1.33
1GA32	1GA32 2C	16	32	68	16	380	590	210	5	18.3	32	16 x 20 Z6	1.6
1GA35	1GA35 2C	16	32	68	16	400	630	230	5	18.3	32	16 x 20 Z6	1.73
2GA1	2GA1 2C	18	36	74	17	230	280	50	6	20.8	37	18 x 22 Z6	1.35
2GA15	2GA15 2C	18	36	74	17	250	320	70	6	20.8	37	18 x 22 Z6	1.46
2GA18	2GA18 2C	18	36	74	17	270	370	100	6	20.8	37	18 x 22 Z6	1.55
2GA2	2GA2 2C	18	36	74	17	290	400	110	6	20.8	37	18 x 22 Z6	1.66
2GA23	2GA23 2C	18	36	74	17	300	415	115	6	20.8	37	18 x 22 Z6	1.71
2GA26	2GA26 2C	18	36	74	17	400	620	220	6	20.8	37	18 x 22 Z6	2.23
2GA29	2GA29 2C	18	36	74	17	500	820	320	6	20.8	37	18 x 22 Z6	2.75
3GA1	3GA1 2C	20	42	82	18	250	300	50	6	22.8	42	21 x 25 Z6	1.99
3GA15	3GA15 2C	20	42	82	18	270	340	70	6	22.8	42	21 x 25 Z6	2.12
3GA18	3GA18 2C	20	42	82	18	290	380	90	6	22.8	42	21 x 25 Z6	2.25
3GA2	3GA2 2C	20	42	82	18	320	440	120	6	22.8	42	21 x 25 Z6	2.46
3GA23	3GA23 2C	20	42	82	18	380	560	180	6	22.8	42	21 x 25 Z6	2.86
3GA26	3GA26 2C	20	42	82	18	420	640	220	6	22.8	42	21 x 25 Z6	3.13
3GA29	3GA29 2C	20	42	82	18	500	800	300	6	22.8	42	21 x 25 Z6	3.66
4GA05	4GA05 2C	22	45	95	22	250	280	30	6	24.8	47	23 x 28 Z6	2.35
4GA1	4GA1 2C	22	45	95	22	270	320	50	6	24.8	47	23 x 28 Z6	2.51
4GA15	4GA15 2C	22	45	95	22	290	350	60	6	24.8	47	23 x 28 Z6	2.67
4GA2	4GA2 2C	22	45	95	22	330	430	100	6	24.8	47	23 x 28 Z6	3
4GA23	4GA23 2C	22	45	95	22	350	470	120	6	24.8	47	23 x 28 Z6	3.16
4GA26	4GA26 2C	22	45	95	22	470	710	240	6	24.8	47	23 x 28 Z6	4.13
5GA1	5GA1 2C	25	50	108	26	295	345	50	8	28.3	52	26 x 32 Z6	3.39
5GA15	5GA15 2C	25	50	108	26	310	375	65	8	28.3	52	26 x 32 Z6	3.52
5GA2	5GA2 2C	25	50	108	26	350	450	100	8	28.3	52	26 x 32 Z6	3.92
5GA23	5GA23 2C	25	50	108	26	380	500	120	8	28.3	52	26 x 32 Z6	4.2
5GA26	5GA26 2C	25	50	108	26	420	590	170	8	28.3	52	26 x 32 Z6	4.59
5GA29	5GA29 2C	25	50	108	26	460	660	200	8	28.3	52	26 x 32 Z6	4.98
5GA32	5GA32 2C	25	50	108	26	500	745	245	8	28.3	52	26 x 32 Z6	5.37
6GA1	6GA1 2C	30	58	122	29	330	380	50	8	33.3	58	32 x 38 Z8	4.9
6GA15	6GA15 2C	30	58	122	29	350	420	70	8	33.3	58	32 x 38 Z8	5.17
6GA18	6GA18 2C	30	58	122	29	370	455	85	8	33.3	58	32 x 38 Z8	5.42
6GA2	6GA2 2C	30	58	122	29	400	510	110	8	33.3	58	32 x 38 Z8	5.85
6GA23	6GA23 2C	30	58	122	29	450	620	170	8	33.3	58	32 x 38 Z8	6.48
6GA26	6GA26 2C	30	58	122	29	500	720	220	8	33.3	58	32 x 38 Z8	7.14
6GA29	6GA29 2C	30	58	122	29	540	795	255	8	33.3	58	32 x 38 Z8	7.69

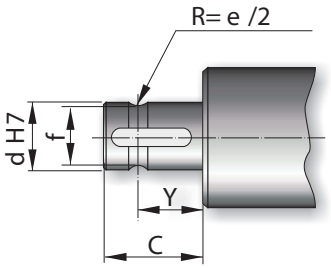
GR

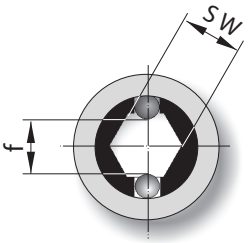
G-series universal joints with quick release for quick and easy mounting/ dismounting.

Maximum angle: 45°
Maximum speed: 1,000 min^{-1}









	Dimensions [mm]								Design	Dimensions [mm]		Design	Dimensions [mm]
Type	**d**	**D**	**L2**	**L1**	**C**	**Y**	**e**	**f**		**a**	**b**		**SW**
02GR	8	16	52	26	14	9.5	3.5	6.3	02GR 1C	2	9	02GR 1SW	8
03GR	10	22	62	31	17	11.5	4	8.7 (8)*	03GR 1C	3	11	03GR 1SW	10 (9.06)*
04GR	12	25	74	37	21	13.5	4	11 (10.5)*	04GR 1C	4	13.3	04GR 1SW	12 (11.15)*
05GR	14	25	74	37	21	13.5	4	13	05GR 1C	5	15.3	05GR 1SW	14
1GR	16	32	86	43	24	14	6.35	14.8	1GR 1C	5	17.3	1GR 1SW	16
2GR	18	36	96	48	28	19	8	16	2GR 1C	6	19.8	2GR 1SW	18
3GR	20	42	108	54	31	19	8	18	3GR 1C	6	22.8	3GR 1SW	20
4GR	22	45	120	60	34	20.5	10	20	4GR 1C	6	24.8	4GR 1SW	22
5GR	25	50	132	66	38	20.5	10	23	5GR 1C	8	28.3	5GR 1SW	25
6GR	30	58	166	83	49	25	10	28	6GR 1C	8	33.3	6GR 1SW	30

* Values in brackets are optional measurements

Universal joints for high speeds with needle bearings

H-series

H

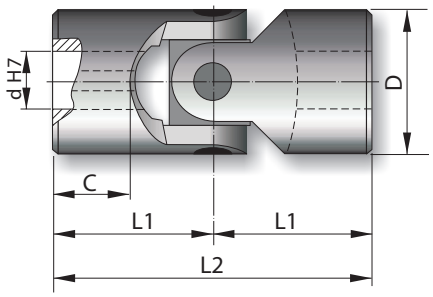
H-series joints for high speeds with needle bearings that are lubricated for life. Maintenance-free!

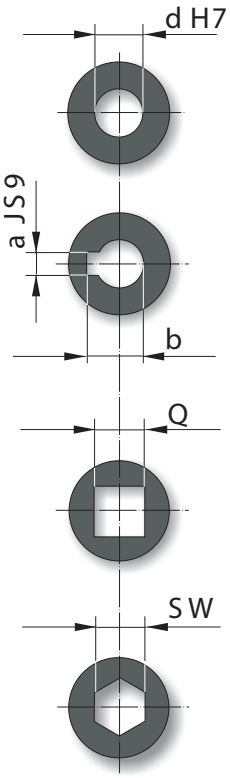
Precise and versatile, smooth and even operation. Suitable for a wide range of applications.

Maximum angle: 45°
Maximum speed: 4,000 min^{-1}

H according to DIN 808 – HB according to DIN 808/7551
HB universal joints are universal joints with a reduced external diameter.
Our experienced technicians are available to dimension them for you.

Special versions on request.





	Design	Dimensions [mm]					Design	Design	Dimensions [mm]		Design	Dimensions [mm]		Weight [kg]
Type		**d**	**D**	**L2**	**L1**	**C**			**a**	**b**		**Q**	**SW**	
03H	03H 00	10	22	48	24	12	03H 1C	03H 2C	3	11.4	03H 2Q	10	10	0.1
04H	04H 00	12	25	56	28	13	04H 1C	04H 2C	4	13.8	04H 2Q	12	12	0.16
05H	05H 00	14	28	60	30	14	05H 1C	05H 2C	5	16.3	05H 2Q	14	14	0.2
1H	1H 00	16	32	68	34	16	1H 1C	1H 2C	5	18.3	1H 2Q	16	16	0.3
2H	2H 00	18	36	74	37	17	2H 1C	2H 2C	6	20.8	2H 2Q	18	18	0.45
3H	3H 00	20	42	82	41	18	3H 1C	3H 2C	6	22.8	3H 2Q	20	20	0.6
4H	4H 00	22	45	95	47.5	22	4H 1C	4H 2C	6	24.8	4H 2Q	22	22	0.95
5H	5H 00	25	50	108	54	26	5H 1C	5H 2C	8	28.3	5H 2Q	25	25	1.2
6H	6H 00	30	58	122	61	29	6H 1C	6H 2C	8	33.3	6H 2Q	30	30	1.85
6H1	6H1 00	32	58	130	65	33	6H1 1C	6H1 2C	10	35.3	6H1 2Q	30	30	2
7H	7H 00	35	70	140	70	35	7H 1C	7H 2C	10	38.3	*	*	*	3.15
8H	8H 00	40	80	160	80	39	8H 1C	8H 2C	12	43.3	*	*	*	4.6
9H	9H 00	50	95	190	95	46	9H 1C	9H 2C	14	53.8	*	*	*	7.6
04HB	04HB 00	12	22	62	31	18	04HB 1C	04HB 2C	4	13.8	04HB 2Q	10	10	0.12
1HB	1HB 00	16	25	74	37	21	1HB 1C	1HB 2C	5	18.3	1HB 2Q	12	12	0.2
3HB	3HB 00	20	32	86	43	24	3HB 1C	3HB 2C	6	22.8	3HB 2Q	16	16	0.35
5HB	5HB 00	25	42	108	54	31	5HB 1C	5HB 2C	8	28.3	5HB 2Q	20	20	0.8
6HB	6HB 00	30	50	132	66	38	6HB 1C	6HB 2C	8	33.3	6HB 2Q	25	25	1.2
8HB	8HB 00	40	70	166	83	47	8HB 1C	8HB 2C	12	43.3	*	*	*	2.9

* On request

Double universal joints for high speeds with needle bearings

H-series

HD

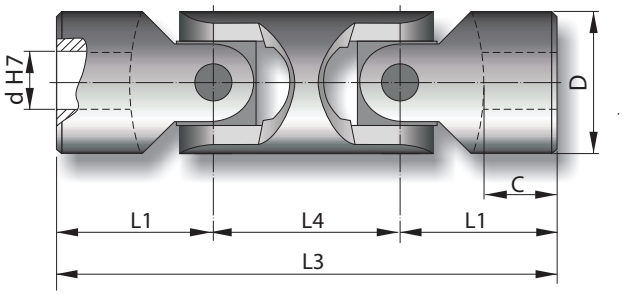
H-series joints for high speeds with needle bearings that are lubricated for life. Maintenance-free!

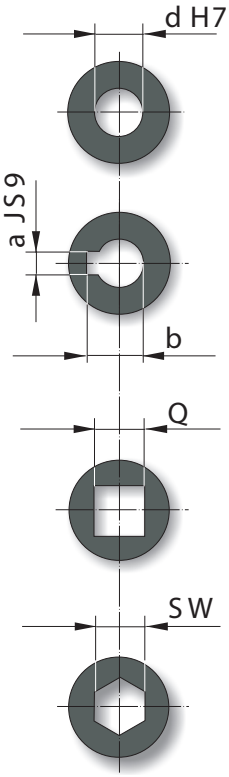
Precise and versatile, smooth and even operation. Suitable for a wide range of applications.

Maximum angle: 90°
Maximum speed: 4,000 min^{-1}

HD according to DIN 808 – HBD according to DIN 808/7551
HBD universal joints are universal joints with a reduced external diameter.
Our experienced technicians are available to dimension them for you.

Special versions on request.





	Design	Dimensions [mm]						Design	Design	Dimensions [mm]		Design	Dimensions [mm]		Weight [kg]
Type		**d**	**D**	**L3**	**L1**	**L4**	**C**			**a**	**b**		**Q**	**SW**	
03HD	03HD 00	10	22	74	24	26	12	03HD 1C	03HD 2C	3	11.4	03HD 2Q	10	10	0.15
04HD	04HD 00	12	25	86	28	30	13	04HD 1C	04HD 2C	4	13.8	04HD 2Q	12	12	0.25
05HD	05HD 00	14	28	96	30	36	14	05HD 1C	05HD 2C	5	16.3	05HD 2Q	14	14	0.4
1HD	1HD 00	16	32	104	34	36	16	1HD 1C	1HD 2C	5	18.3	1HD 2Q	16	16	0.45
2HD	2HD 00	18	36	114	37	40	17	2HD 1C	2HD 2C	6	20.8	2HD 2Q	18	18	0.7
3HD	3HD 00	20	42	128	41	46	18	3HD 1C	3HD 2C	6	22.8	3HD 2Q	20	20	1
4HD	4HD 00	22	45	145	47.5	50	22	4HD 1C	4HD 2C	6	24.8	4HD 2Q	22	22	1.55
5HD	5HD 00	25	50	163	54	55	26	5HD 1C	5HD 2C	8	28.3	5HD 2Q	25	25	2
6HD	6HD 00	30	58	190	61	68	29	6HD 1C	6HD 2C	8	33.3	6HD 2Q	30	30	2.9
6HD1	6HD1 00	32	58	198	65	68	33	6HD1 1C	6HD1 2C	10	35.3	6HD1 2Q	30	30	3
7HD	7HD 00	35	70	212	70	72	35	7HD 1C	7HD 2C	10	38.3	*	*	*	4.75
8HD	8HD 00	40	80	245	80	85	39	8HD 1C	8HD 2C	12	43.3	*	*	*	7.2
9HD	9HD 00	50	95	290	95	100	46	9HD 1C	9HD 2C	14	53.8	*	*	*	12
04HBD	04HBD 00	12	22	88	31	26	18	04HBD 1C	04HBD 2C	4	13.8	04HBD 2Q	10	10	0.2
1HBD	1HBD 00	16	25	104	37	30	21	1HBD 1C	1HBD 2C	5	18.3	1HBD 2Q	12	12	0.3
3HBD	3HBD 00	20	32	124	43	38	24	3HBD 1C	3HBD 2C	6	22.8	3HBD 2Q	16	16	0.5
5HBD	5HBD 00	25	42	156	54	48	31	5HBD 1C	5HBD 2C	8	28.3	5HBD 2Q	20	20	1.2
6HBD	6HBD 00	30	50	188	66	56	38	6HBD 1C	6HBD 2C	8	33.3	6HBD 2Q	25	25	1.7
8HBD	8HBD 00	40	70	238	83	72	47	8HBD 1C	8HBD 2C	12	43.3	*	*	*	4.3

* On request

HA

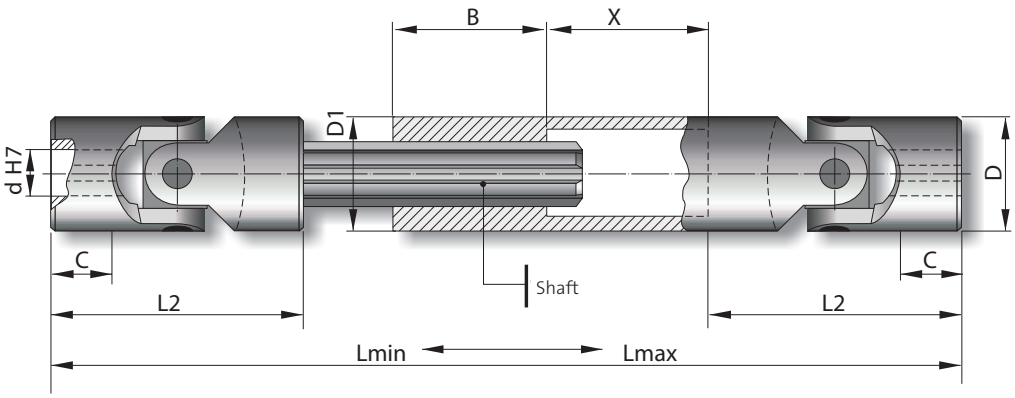
H-series joints for high speeds with needle bearings that are lubricated for life. Maintenance-free!

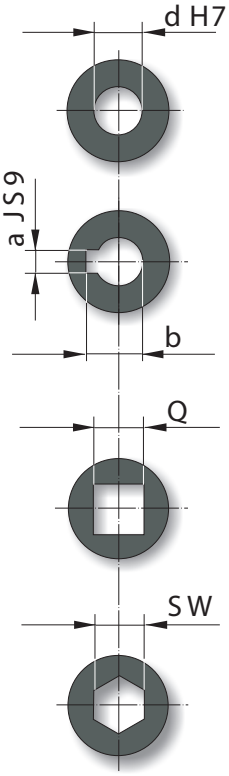
Maximum angle: 90°
Maximum speed: 4,000 min^{-1}

HA according to DIN 808 – HBA according to DIN 808/7551

$$Lmin >= \frac{Lmax + 2\,L2 + B}{2}$$

$$Stroke\ X >= \frac{Lmax - 2\,L2 - B}{2}$$





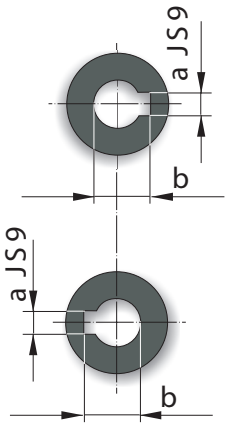
	Dimensions [mm]				Lmin	Lmax	x = Stroke	Dimensions [mm]						
Type	**d**	**D**	**L2**	**C**	**on request**		**on request**	**B**	**a**	**b**	**Q**	**SW**	**D1**	**Shaft**
03HA	10	22	48	12	-	-	-	30	3	11.4	10	10	22	11 x 14 Z6
04HA	12	25	56	13	-	-	-	40	4	13.8	12	12	26	13 x 16 Z6
05HA	14	28	60	14	-	-	-	40	5	16.3	14	14	29	13 x 16 Z6
1HA	16	32	68	16	-	-	-	40	5	18.3	16	16	32	16 x 20 Z6
2HA	18	36	74	17	-	-	-	40	6	20.8	18	18	37	18 x 22 Z6
3HA	20	42	82	18	-	-	-	45	6	22.8	20	20	42	21 x 25 Z6
4HA	22	45	95	22	-	-	-	45	6	24.8	22	22	47	23 x 28 Z6
5HA	25	50	108	26	-	-	-	45	8	28.3	25	25	52	26 x 32 Z6
6HA	30	58	122	29	-	-	-	50	8	33.3	30	30	58	32 x 38 Z8
7HA	35	70	140	35	-	-	-	70	10	38.3	*	*	70	36 x 42 Z8
8HA	40	80	160	39	-	-	-	80	12	43.3	*	*	80	42 x 48 Z8
9HA	50	95	190	46	-	-	-	90	14	53.8	*	*	95	46 x 54 Z8
04HBA	12	22	62	18	-	-	-	30	4	13.8	10	10	22	11 x 14 Z6
1HBA	16	25	74	21	-	-	-	40	5	18.3	12	12	26	13 x 16 Z6
3HBA	20	32	86	24	-	-	-	40	6	22.8	16	16	32	16 x 20 Z6
5HBA	25	42	108	31	-	-	-	45	8	28.3	20	20	42	21 x 25 Z6
6HBA	30	50	132	38	-	-	-	45	8	33.3	25	25	52	26 x 32 Z6
8HBA	40	70	166	47	-	-	-	70	12	43.3	*	*	70	36 x 42 Z8

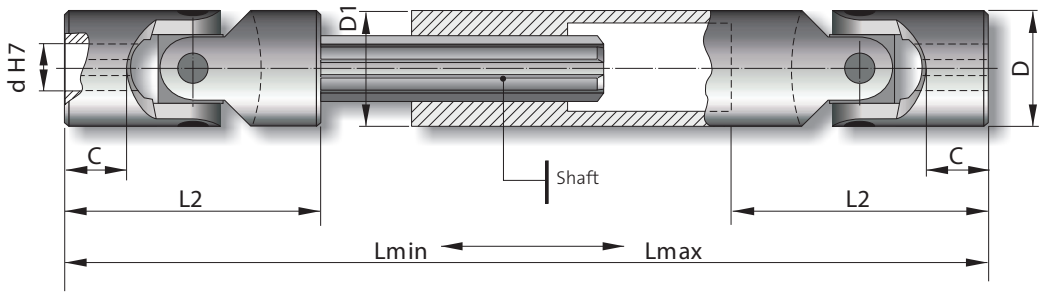
* On request

HA

H-series joints for high speeds with needle bearings that are lubricated for life. Maintenance-free!

Large range of lengths for each size.





	Design	Dimensions [mm]											Weight [kg]
Type		**d**	**D**	**L2**	**C**	**Lmin**	**Lmax**	**Stroke**	**a**	**b**	**D1**	**Shaft**	
03HA1	03HA1 2C	10	22	48	12	140	170	30	3	11.4	22	11 x 14 Z6	0.31
03HA15	03HA15 2C	10	22	48	12	160	200	40	3	11.4	22	11 x 14 Z6	0.36
03HA2	03HA2 2C	10	22	48	12	180	240	60	3	11.4	22	11 x 14 Z6	0.38
03HA25	03HA25 2C	10	22	48	12	230	330	100	3	11.4	22	11 x 14 Z6	0.5
04HA1	04HA1 2C	12	25	56	13	160	190	30	4	13.8	26	13 x 16 Z6	0.5
04HA15	04HA15 2C	12	25	56	13	180	225	45	4	13.8	26	13 x 16 Z6	0.56
04HA2	04HA2 2C	12	25	56	13	200	270	70	4	13.8	26	13 x 16 Z6	0.62
04HA23	04HA23 2C	12	25	56	13	220	300	80	4	13.8	26	13 x 16 Z6	0.67
04HA26	04HA26 2C	12	25	56	13	250	355	105	4	13.8	26	13 x 16 Z6	0.76
04HA29	04HA29 2C	12	25	56	13	280	420	140	4	13.8	26	13 x 16 Z6	0.84
04HA32	04HA32 2C	12	25	56	13	300	450	150	4	13.8	26	13 x 16 Z6	0.9
05HA1	05HA1 2C	14	28	60	14	170	200	30	5	16.3	29	13 x 16 Z6	0.62
05HA15	05HA15 2C	14	28	60	14	180	220	40	5	16.3	29	13 x 16 Z6	0.64
05HA18	05HA18 2C	14	28	60	14	200	260	60	5	16.3	29	13 x 16 Z6	0.72
05HA2	05HA2 2C	14	28	60	14	220	300	80	5	16.3	29	13 x 16 Z6	0.78
05HA23	05HA23 2C	14	28	60	14	250	350	100	5	16.3	29	13 x 16 Z6	0.87
05HA26	05HA26 2C	14	28	60	14	280	420	140	5	16.3	29	13 x 16 Z6	0.96
05HA29	05HA29 2C	14	28	60	14	300	450	150	5	16.3	29	13 x 16 Z6	1.03
05HA32	05HA32 2C	14	28	60	14	350	550	200	5	16.3	29	13 x 16 Z6	1.17
05HA35	05HA35 2C	14	28	60	14	400	650	250	5	16.3	29	13 x 16 Z6	1.33

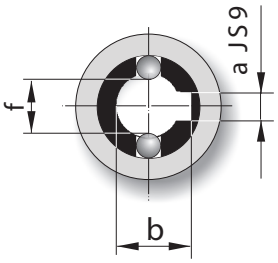
HA

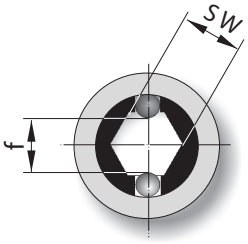
	Design	Dimensions [mm]											Weight [kg]
Type		**d**	**D**	**L2**	**C**	**Lmin**	**Lmax**	**Stroke**	**a**	**b**	**D1**	**Shaft**	
1HA1	1HA1 2C	16	32	68	16	190	220	30	5	18.3	32	16 x 20 Z6	0.9
1HA15	1HA15 2C	16	32	68	16	210	250	40	5	18.3	32	16 x 20 Z6	0.98
1HA2	1HA2 2C	16	32	68	16	240	320	80	5	18.3	32	16 x 20 Z6	1.1
1HA23	1HA23 2C	16	32	68	16	250	350	100	5	18.3	32	16 x 20 Z6	1.14
1HA26	1HA26 2C	16	32	68	16	275	390	115	5	18.3	32	16 x 20 Z6	1.24
1HA29	1HA29 2C	16	32	68	16	300	430	130	5	18.3	32	16 x 20 Z6	1.33
1HA32	1HA32 2C	16	32	68	16	380	590	210	5	18.3	32	16 x 20 Z6	1.6
1HA35	1HA35 2C	16	32	68	16	400	630	230	5	18.3	32	16 x 20 Z6	1.73
2HA1	2HA1 2C	18	36	74	17	230	280	50	6	20.8	37	18 x 22 Z6	1.35
2HA15	2HA15 2C	18	36	74	17	250	320	70	6	20.8	37	18 x 22 Z6	1.46
2HA18	2HA18 2C	18	36	74	17	270	370	100	6	20.8	37	18 x 22 Z6	1.55
2HA2	2HA2 2C	18	36	74	17	290	400	110	6	20.8	37	18 x 22 Z6	1.66
2HA23	2HA23 2C	18	36	74	17	300	415	115	6	20.8	37	18 x 22 Z6	1.71
2HA26	2HA26 2C	18	36	74	17	400	620	220	6	20.8	37	18 x 22 Z6	2.23
2HA29	2HA29 2C	18	36	74	17	500	820	320	6	20.8	37	18 x 22 Z6	2.75
3HA1	3HA1 2C	20	42	82	18	250	300	50	6	22.8	42	21 x 25 Z6	1.99
3HA15	3HA15 2C	20	42	82	18	270	340	70	6	22.8	42	21 x 25 Z6	2.12
3HA18	3HA18 2C	20	42	82	18	290	380	90	6	22.8	42	21 x 25 Z6	2.25
3HA2	3HA2 2C	20	42	82	18	320	440	120	6	22.8	42	21 x 25 Z6	2.46
3HA23	3HA23 2C	20	42	82	18	380	560	180	6	22.8	42	21 x 25 Z6	2.86
3HA26	3HA26 2C	20	42	82	18	420	640	220	6	22.8	42	21 x 25 Z6	3.13
3HA29	3HA29 2C	20	42	82	18	500	800	300	6	22.8	42	21 x 25 Z6	3.66
4HA05	4HA05 2C	22	45	95	22	250	280	30	6	24.8	47	23 x 28 Z6	2.35
4HA1	4HA1 2C	22	45	95	22	270	320	50	6	24.8	47	23 x 28 Z6	2.51
4HA15	4HA15 2C	22	45	95	22	290	350	60	6	24.8	47	23 x 28 Z6	2.67
4HA2	4HA2 2C	22	45	95	22	330	430	100	6	24.8	47	23 x 28 Z6	3
4HA23	4HA23 2C	22	45	95	22	350	470	120	6	24.8	47	23 x 28 Z6	3.16
4HA26	4HA26 2C	22	45	95	22	470	710	240	6	24.8	47	23 x 28 Z6	4.13
5HA1	5HA1 2C	25	50	108	26	295	345	50	8	28.3	52	26 x 32 Z6	3.39
5HA15	5HA15 2C	25	50	108	26	310	375	65	8	28.3	52	26 x 32 Z6	3.52
5HA2	5HA2 2C	25	50	108	26	350	450	100	8	28.3	52	26 x 32 Z6	3.92
5HA23	5HA23 2C	25	50	108	26	380	500	120	8	28.3	52	26 x 32 Z6	4.2
5HA26	5HA26 2C	25	50	108	26	420	590	170	8	28.3	52	26 x 32 Z6	4.59
5HA29	5HA29 2C	25	50	108	26	460	660	200	8	28.3	52	26 x 32 Z6	4.98
5HA32	5HA32 2C	25	50	108	26	500	745	245	8	28.3	52	26 x 32 Z6	5.37
6HA1	6HA1 2C	30	58	122	29	330	380	50	8	33.3	58	32 x 38 Z8	4.9
6HA15	6HA15 2C	30	58	122	29	350	420	70	8	33.3	58	32 x 38 Z8	5.17
6HA18	6HA18 2C	30	58	122	29	370	455	85	8	33.3	58	32 x 38 Z8	5.42
6HA2	6HA2 2C	30	58	122	29	400	510	110	8	33.3	58	32 x 38 Z8	5.85
6HA23	6HA23 2C	30	58	122	29	450	620	170	8	33.3	58	32 x 38 Z8	6.48
6HA26	6HA26 2C	30	58	122	29	500	720	220	8	33.3	58	32 x 38 Z8	7.14
6HA29	6HA29 2C	30	58	122	29	540	795	255	8	33.3	58	32 x 38 Z8	7.69

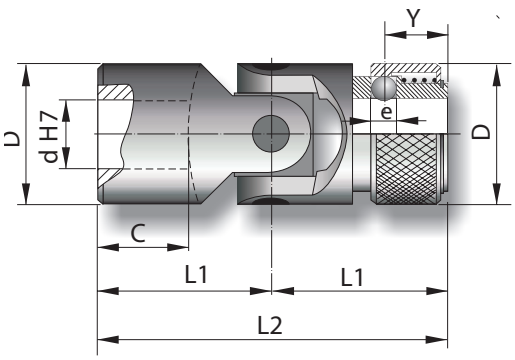
HR

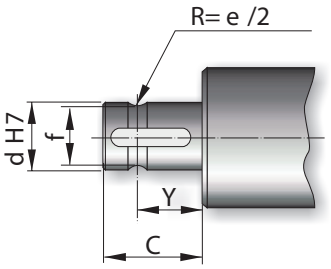
G-series universal joints with quick release for quick and easy mounting/ dismounting.

Maximum angle: 45°
Maximum speed: 1,000 min^{-1}









	Dimensions [mm]								Design	Dimensions [mm]		Design	Dimensions [mm]
Type	**d**	**D**	**L2**	**L1**	**C**	**Y**	**e**	**f**		**a**	**b**		**SW**
03HR	10	22	62	31	17	11.5	4	8.7 (8)*	03HR 1C	3	11	03HR 1SW	10 (9.06)*
04HR	12	25	74	37	21	13.5	4	11 (10.5)*	04HR 1C	4	13.3	04HR 1SW	12 (11.15)*
05HR	14	25	74	37	21	13.5	4	13	05HR 1C	5	15.3	05HR 1SW	14
1HR	16	32	86	43	24	14	6.35	14.8	1HR 1C	5	17.3	1HR 1SW	16
2HR	18	36	96	48	28	19	8	16	2HR 1C	6	19.8	2HR 1SW	18
3HR	20	42	108	54	31	19	8	18	3HR 1C	6	22.8	3HR 1SW	20
4HR	22	45	120	60	34	20.5	10	20	4HR 1C	6	24.8	4HR 1SW	22
5HR	25	50	132	66	38	20.5	10	23	5HR 1C	8	28.3	5HR 1SW	25
6HR	30	58	166	83	49	25	10	28	6HR 1C	8	33.3	6HR 1SW	30

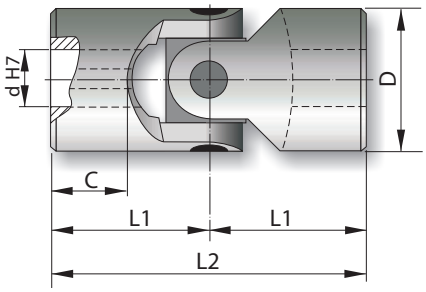
* Values in brackets are optional measurements

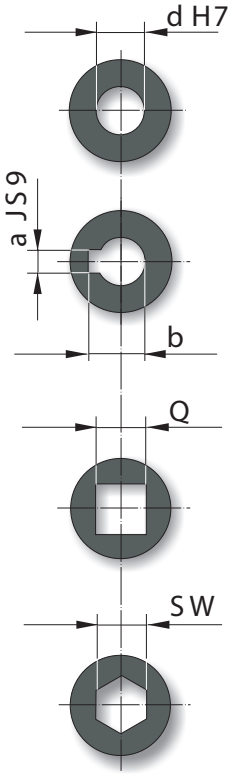
X

Non-corrosive

Maximum angle: 45°

Special versions on request.





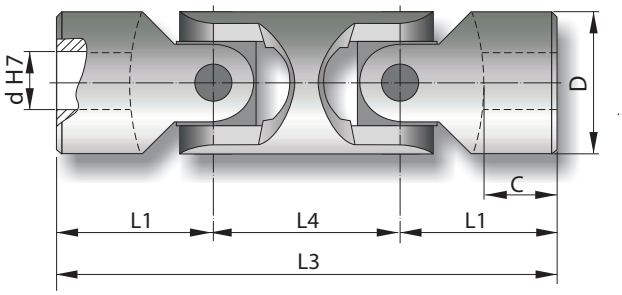
	Design	Dimensions [mm]									Weight [kg]
Type		**d**	**D**	**L2**	**L1**	**C**	**a**	**b**	**Q**	**SW**	
01X	01X 00	6	16	34	17	8	2	7	6	6	0.05
02X	02X 00	8	16	40	20	11	2	9	8	8	0.05
03X	03X 00	10	22	48	24	12	3	11.4	10	10	0.1
04X	04X 00	12	25	56	28	13	4	13.8	12	12	0.16
1X	1X 00	16	32	68	34	16	5	18.3	16	16	0.3
3X	3X 00	20	42	82	41	18	6	22.8	20	20	0.6
5X	5X 00	25	50	108	54	26	8	28.3	25	25	1.2
6X	6X 00	30	58	122	61	29	8	33.3	30	30	1.85

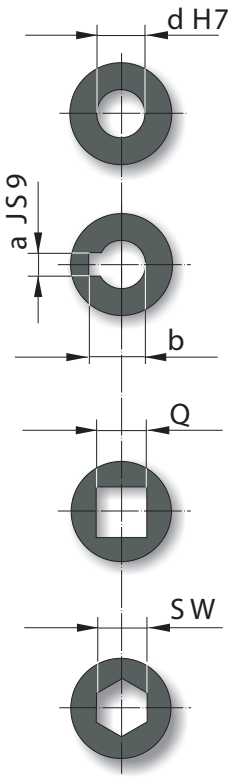
XD

Non-corrosive

Maximum angle: 90°

Special versions on request.





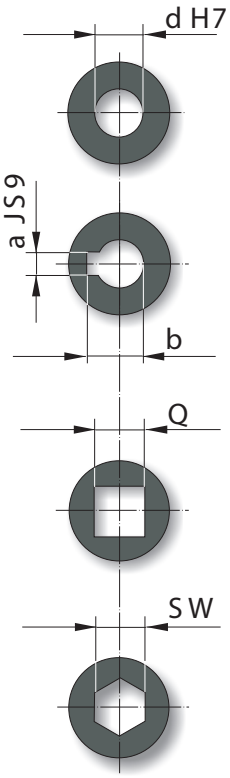
	Design	Dimensions [mm]										Weight [kg]
Type		**d**	**D**	**L3**	**L1**	**L4**	**C**	**a**	**b**	**Q**	**SW**	
01XD	01XD 00	6	16	56	17	22	8	2	7	6	6	0.08
02XD	02XD 00	8	16	62	20	22	11	2	9	8	8	0.08
03XD	03XD 00	10	22	74	24	26	12	3	11.4	10	10	0.15
04XD	04XD 00	12	25	86	28	30	13	4	13.8	12	12	0.25
1XD	1XD 00	16	32	104	34	36	16	5	18.3	16	16	0.45
3XD	3XD 00	20	42	128	41	46	18	6	22.8	20	20	1
5XD	5XD 00	25	50	163	54	55	26	8	28.3	25	25	2
6XD	6XD 00	30	58	190	61	68	29	8	33.3	30	30	2.9

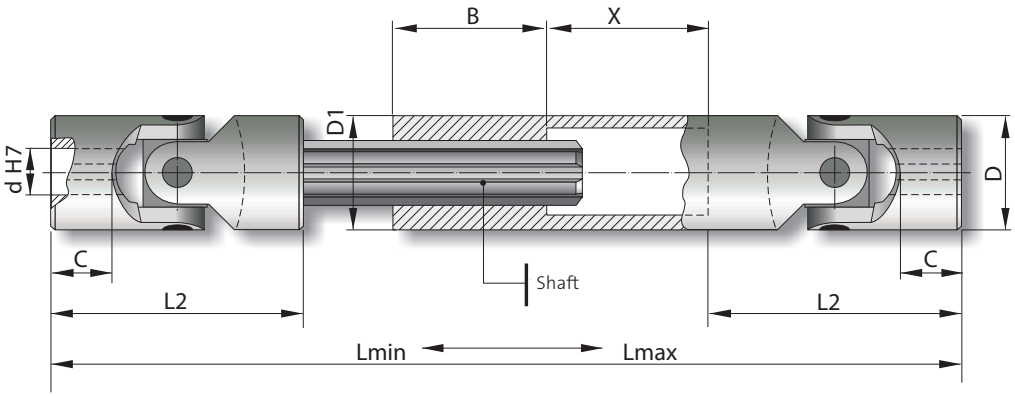
XA

Non-corrosive

Material: AISI 304 EN 1.4301

Min. and max. lengths and special versions on request.



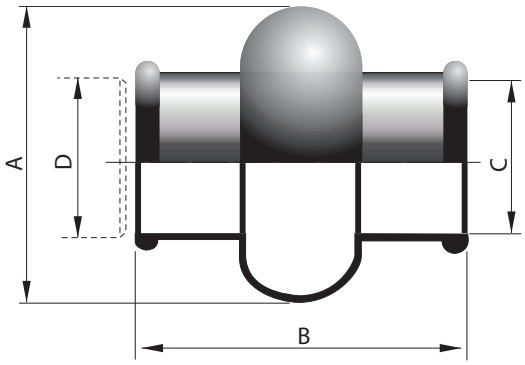


	Dimensions [mm]				Lmin	Lmax	x = Stroke	Dimensions [mm]						
Type	**d**	**D**	**L2**	**C**	**on request**		**on request**	**B**	**a**	**b**	**Q**	**SW**	**D1**	**Shaft**
03XA	10	22	48	12	-	-	-	25	3	11.4	10	10	22	11 x 14 Z6
04XA	12	25	56	13	-	-	-	30	4	13.8	12	12	26	13 x 16 Z6
1XA	16	32	68	16	-	-	-	30	5	18.3	16	16	33	16 x 20 Z6
3XA	20	42	82	18	-	-	-	40	6	22.8	20	20	42	21 x 25 Z6
5XA	25	50	108	26	-	-	-	40	8	28.3	25	25	48	26 x 32 Z6
6XA	30	58	122	29	-	-	-	40	8	33.3	30	30	59	32 x 38 Z8

M

The protective sleeves are made of a special neoprene compound and are resistant to acid, oil, lubricants, dust and moisture.

The protective sleeves are filled with grease to ensure permanent lubrication.



	Dimensions [mm]			
Type	**A**	**B**	**C**	**D***
01M	28	34	15	16
02M	32	40	16.5	18
03M	40	45	20.5	22
04M	48	50	24.5	25/26
05M	52	56	27.5	28/29
1M	56	65	30.5	32
2M	66	72	35.5	36/37
3M	75	82	40	42
4M	84	95	45	45/47
5M	92	108	50	50/52
6M	100	122	56	58

* Universal joints external diameter

Clamping hub

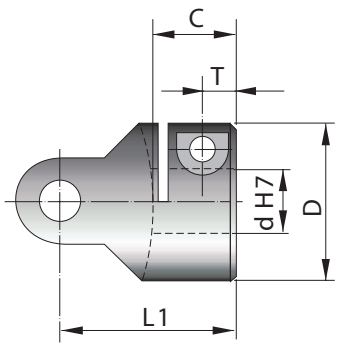
Type CL1

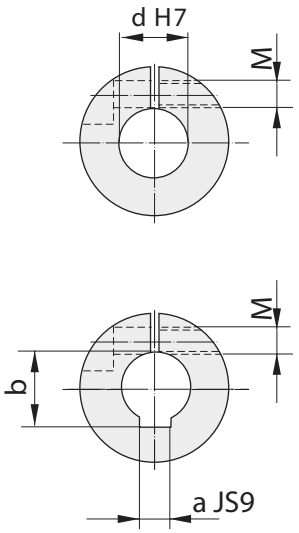
CL1

The clamping hub version is perfectly suited for frequent and fast mounting. Clamping hubs are also used for applications with vibrations. The connection is backlash-free.

Suitable for simple and length-adjustable joints and double joints in the G and H-series. Affixed with a clamping screw without a nut.

Special versions on request.





	Dimensions [mm]								
Type	**d**	**D**	**L1**	**C**	**a**	**b**	**M**	**T**	**Ta* [Nm]**
03CL1	10	22	24	12	3	11.4	M4	5	5
04CL1	12	25	28	13	4	13.8	M4	6	5
05CL1	14	28	30	14	5	16.3	M4	6	5
1CL1	16	32	34	16	5	18.3	M5	7	9
2CL1	18	36	37	17	6	20.8	M5	7	9
3CL1	20	42	41	18	6	22.8	M6	8	16
4CL1	22	45	47.5	22	6	24.8	M6	8	16
5CL1	25	50	54	26	8	28.3	M6	9.5	16
6CL1	30	58	61	29	8	33.3	M8	11	36
7CL1	35	70	70	35	10	38.3	M8	13	36
8CL1	40	80	80	39	12	43.3	M10	14	65
9CL1	50	95	95	46	14	53.8	M12	17.5	100

* Max. tightening torque of clamping screw

Clamping hub

Type CL2

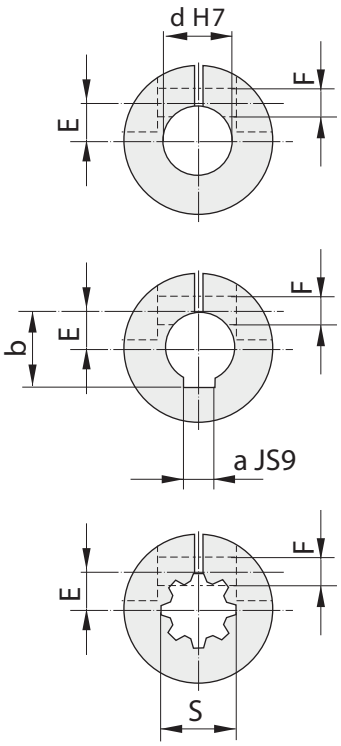
CL2

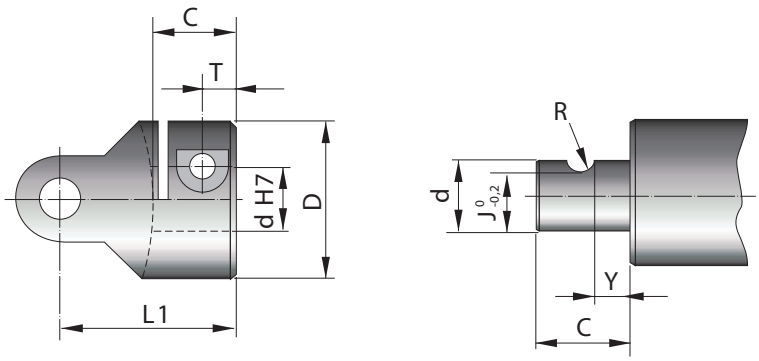
The clamping hub version is perfectly suited for frequent and fast mounting. Clamping hubs are also used for applications with vibrations. The connection is backlash-free.

Suitable for simple and length-adjustable joints and double joints in the G and H-series.

Affixed with a clamping screw and nut.

Special versions on request.





	Dimensions [mm]													
Type	**d**	**D**	**L1**	**C**	**a**	**b**	**F**	**T**	**E**	**J**	**R**	**Y**	**Ta* [Nm]**	**S DIN 5482**
1CL2	16	32	43	24	5	18.3	ø 5.2	7.5	8	13.4	3	4.5	M5 = 9	17 x 14 Z9
2CL2	18	36	37	17	6	20.8	ø 5.2	7.5	9	15.4	3	4.5	M5 = 9	18 x 15 Z10
3CL3	20	42	41	18	6	22.8	ø 5.2	8	10	17.5	3	5	M5 = 9	20 x 17 Z12
5CL5	25	50	54	26	8	28.3	ø 6.2	9.5	12.5	21.9	3.5	6.1	M6 = 16	25 x 22 Z14

* Max. tightening torque of clamping screw

S | G | H

If two unaligned shafts are connected with a simple universal joint and a shaft rotates with uniform angular speed, the other shaft will move non-uniformly. This non-uniformity – also known as cardan error – leads to angular acceleration/deceleration in the form of sine-like oscillations.

The size of the cardan error depends on the operating angle. Simple universal joints are only used where a non-uniform rotational motion is permitted. Rotational motion, it is necessary to use either two identical joints opposite each other at the same angles, or a double joint.

The irregularities caused by the first joint are compensated for by the second joint. The double joint has a shorter mounting length.

Application of diagrams
The selection of universal joints does not only depend on the largest torque that has to be transmitted – various operating conditions such as angles, speeds, impact load etc. must also be taken into account.

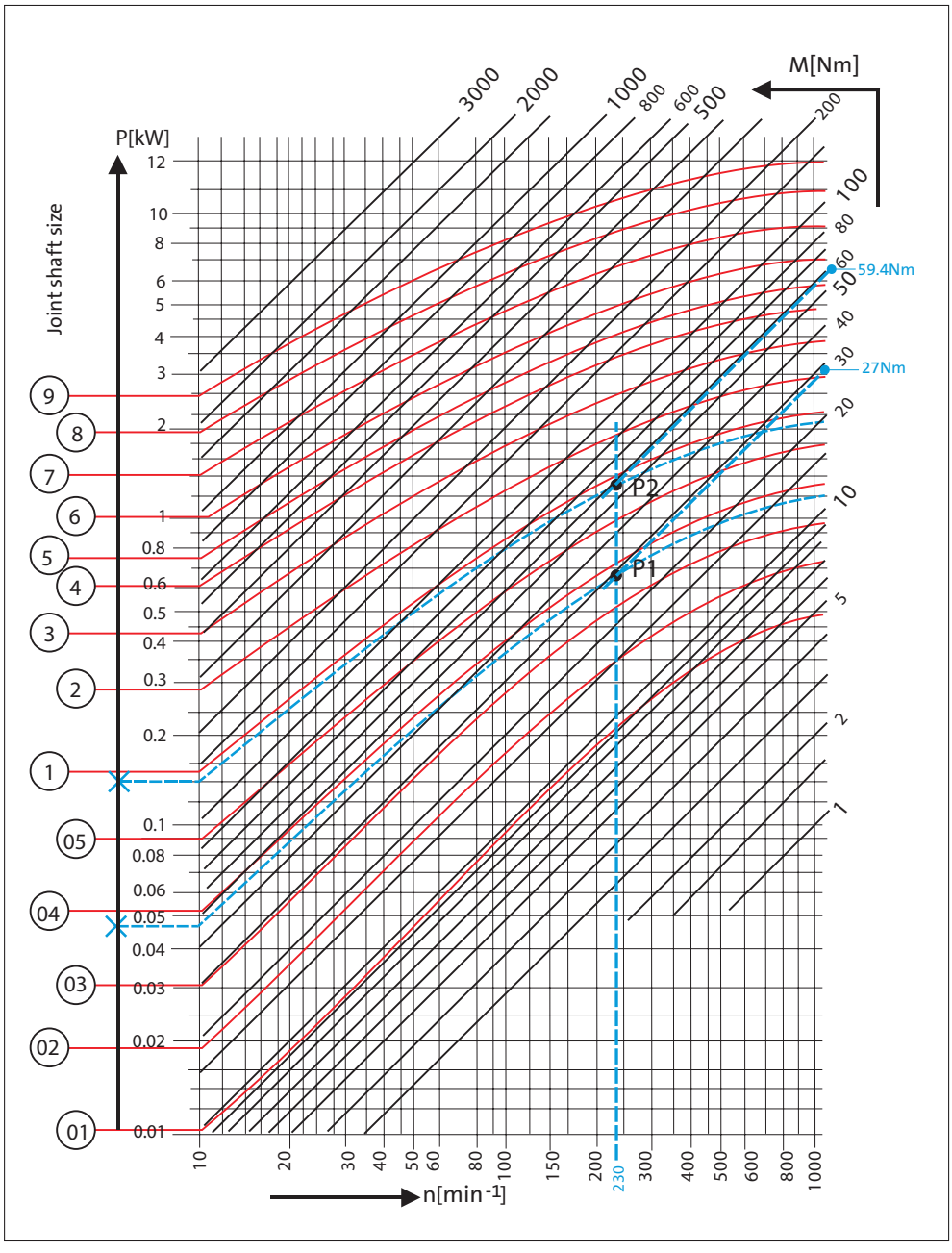
Our diagrams displayed on the following pages serve to make an initial, approximate calculation of the universal joint size needed and to provide you with calculation guidelines.

Application of diagrams

S | G

The dimensioning of the universal joints is carried out in accordance with the drive power or the drive torque, taking account of the operating angle and the corresponding correction factor.

Torque [Nm] = 9,550 x power [kW] / speed [min^{-1}]



Calculation example 1:

Drive power: 0.65 kW
Operating speed: 230 min^{-1}
Operating angle 10°
Correction factor 1

M = 9,550 x 0.65 / 230 x 1 = 27 Nm

Torque corresponds to size 04

Calculation example 2:

Drive power: 0.65 kW
Operating speed: 230 min^{-1}
Operating angle 30°
Correction factor 2.2

M = 9,550 x 0.65 / 230 x 2.2 = 59.4 Nm

Torque corresponds to size 1

Our technicians will be happy to help you dimension universal joints with with a reduced external diameter.

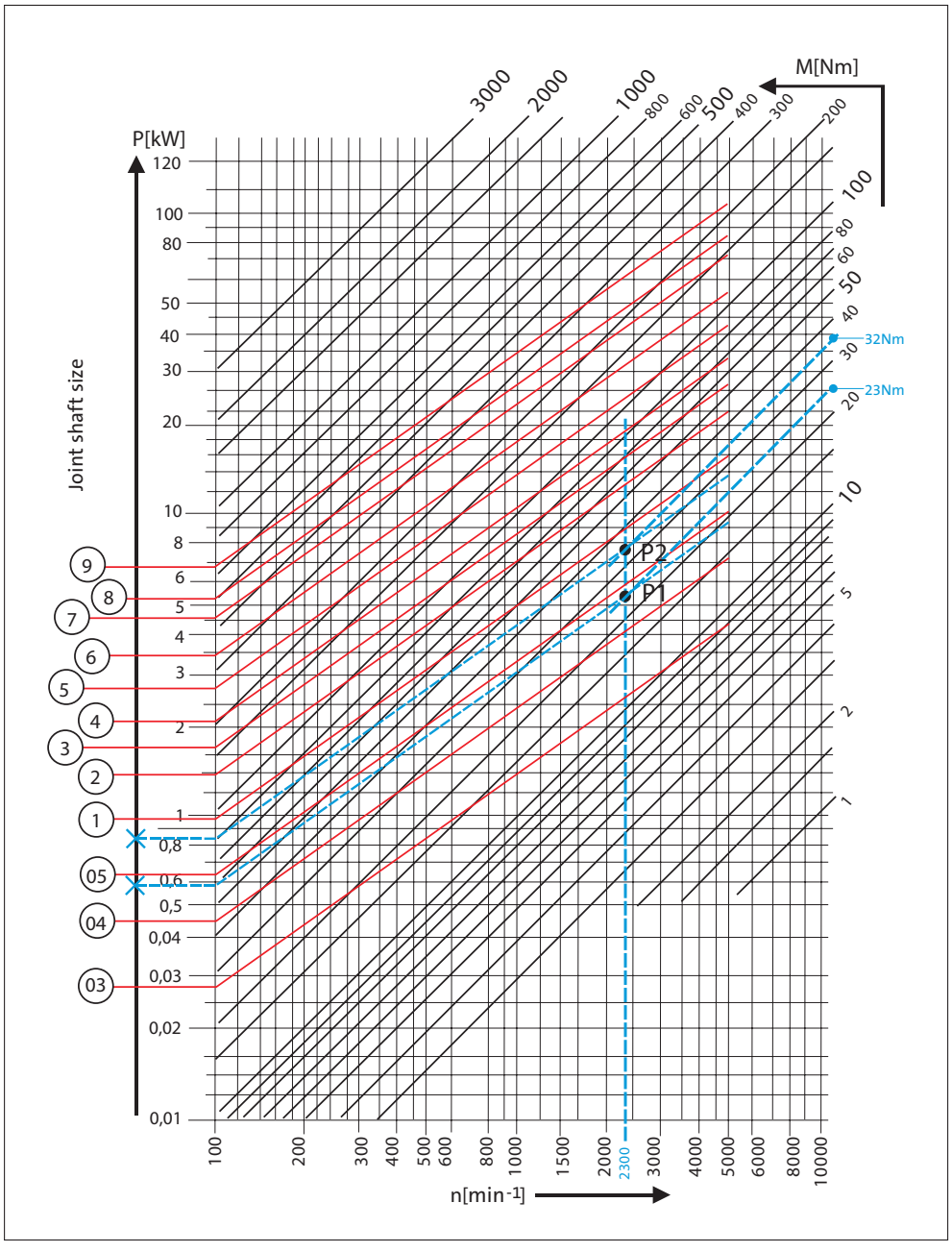
Angle	5°	10°	15°	20°	25°	30°	35°	40°	45°
Correction factor	0.8	1.0	1.25	1.5	1.8	2.2	2.6	3.3	4.0

Application of diagrams

H

The dimensioning of the universal joints is carried out in accordance with the drive power or the drive torque, taking account of the operating angle and the corresponding correction factor.

Torque [Nm] = 9.550 x power [kW] / speed[min^{-1}]



Calculation example 1:

Drive power: 5.5 kW
Operating speed: 2300 min^{-1}
Operating angle 10°
Correction factor 1

M = 9,550 x 5.5 / 2,300 x 1 = 23 Nm

Torque corresponds to size 05

Calculation example 2:

Drive power: 5.5 kW
Operating speed: 2,300 min^{-1}
Operating angle 25°
Correction factor 1.4

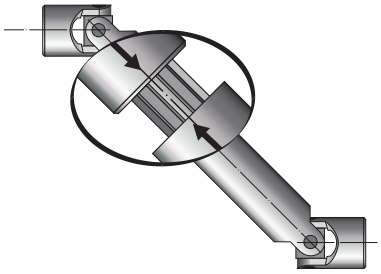
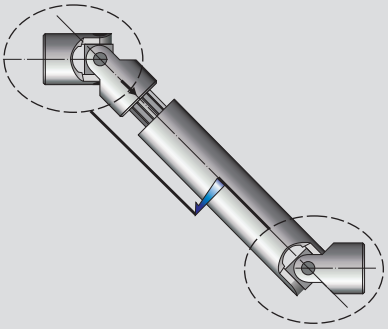
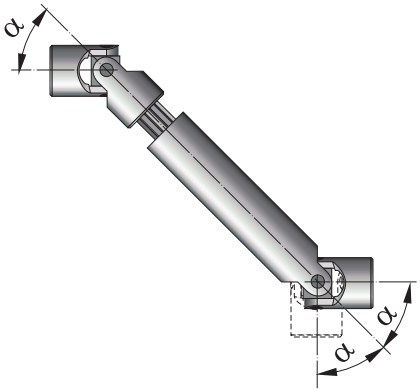
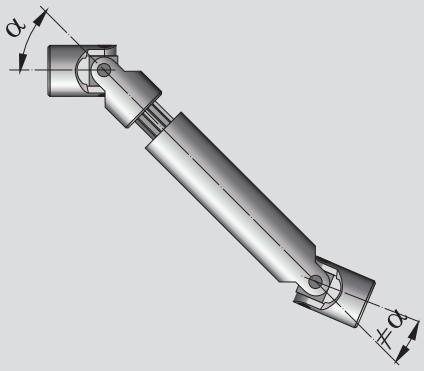
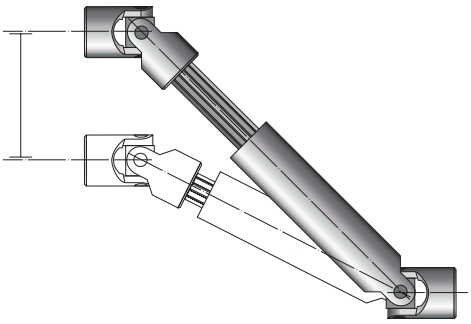
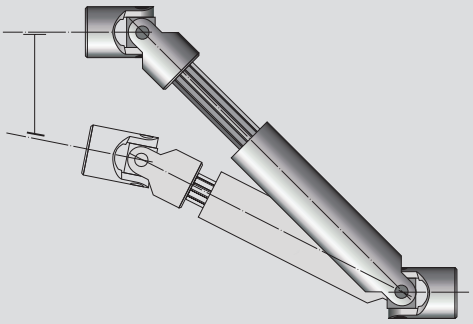
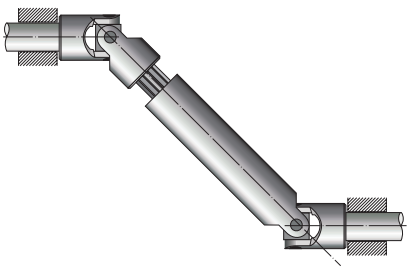
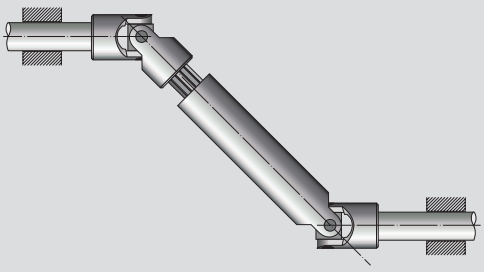
M = 9,550 x 5.5 / 2,300 x 1.4 = 32 Nm

Torque corresponds to size 1

Our technicians will be happy to help you dimension universal joints with a reduced external diameter.

Angle	5°	10°	15°	20°	25°	30°	35°	40°	45°
Correction factor	0.8	1.0	1.1	1.25	1.4	2.0	2.5	3.3	4.0

Mounting instructions

	Right	Wrong
Forked head alignment When using two single joints, the alignment of the internal forks must be taken into account. With length-adjustable shafts, it must also be ensured that the arrow markings line up.		
Identical angles The operating angles of the universal joints must be identical.		
Parallel position The shafts must only be positioned in parallel or symmetrically. In order to avoid damage, the pin bores must not be drilled level with the forks.		
Support The shaft bearings should be positioned as close as possible to the joints.		

13474655