Couplings Overview

Friction Clutches

Friction Clutches Type B Axial Arrangement

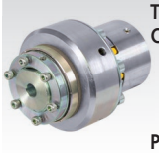
Page 394

Shaft diameter up to 8 mm.
Torque up to 1.3 Nm.

Friction Clutches Type C Transversal Flexibility

Page 394

Shaft diameter up to 8 mm.
Torque up to 1.3 Nm.



Sliding Hubs with Torsionally-Flexible Coupling

Page 395

Shaft diameter up to 35 mm.
Torque up to 140 Nm.

Multi-Disk Friction Clutches PD

Page 396

Shaft diameter up to 70 mm.
Torque up to 320 Nm.

Safety Clutches SI

Page 397

Shaft diameter up to 50 mm.
Torque up to 180 Nm.

Limit Switch for Safety Clutches

Page 397

Voltage 220 - 250 V AC.
Strength of current up to 10 A.

Safety Coupling CM for Very Exact Setting

Page 398

Shaft diameter up to 55 mm.
Torque up to 800 Nm.

Sliding Hubs

Slip hubs Type A Concentric Design

Page 394

Shaft diameter up to 8 mm.
Torque up to 1.3 Nm.

Sliding Hubs FS Simple Version

Page 399

Shaft diameter up to 65 mm.
Torque up to 1200 Nm.

Sliding Hubs FA Premium-Quality Version

Page 400

Shaft diameter up to 80 mm.
Torque up to 1200 Nm.

Sliding Hubs FA Premium-Quality Version with Clamp Hub

Page 401

Shaft diameter up to 40 mm.
Torque up to 280 Nm.

Sliding Hubs ROBA® Premium-Quality Version

Page 402

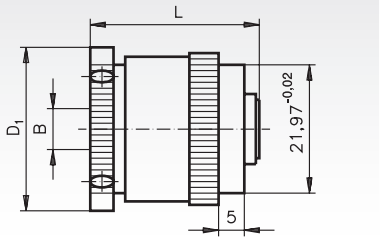
Other sizes and designs on request.

Connecting Shafts Page 766

Selection Tool
on the Internet at ***www.maedler.de***
in the section ***MÄDLER®-Tools***

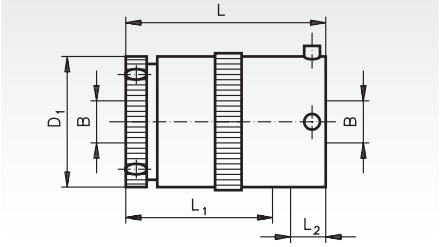
Type A - Concentric Arrangement

as sliding hub for a driving wheel



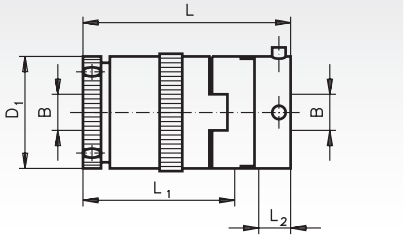
Type B - Axial Arrangement

to connect two shafts



Type C - Axial Arrangement

to connect two shafts with shaft misalignment

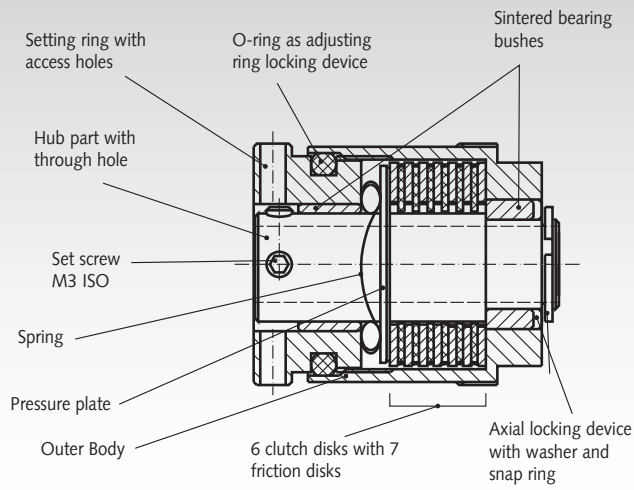


Material: Housing made of aluminium alloy with iridite NCP finish. Inner Hub made of steel.
Max. slip-speed 1,000 min^{-1}. Torsional backlash of the coupling below 2°.

Ordering Details: e.g.: Product No. 610 403 00, Friction Clutch, Type A, 6 mm Bore

Product No.	Type	Number of Friction Plates Pieces	L mm	L_1 mm	L_2 mm	D_1 mm	Bore $B^{+0.03}$ mm	Set Screw Size and Arrangement	Weight g	Product No. Spare Part Insert	Weight g
610 403 00	A	2	26,4		-	25,8	6	M 3x3,	37	-	-
610 404 00	A	2	26,4		-	25,8	8	2x90°	37	-	-
610 408 00	A	6	32,4		-	25,8	6	only	48	-	-
610 409 00	A	6	32,4		-	25,8	8	at 1 Side	48	-	-
610 423 00	B	2	36	25	9	25,8	6	M 3x3, 2x90°	50	-	-
610 424 00	B	2	36	25	9	25,8	8	at Side 1	50	-	-
610 428 00	B	6	42,5	31	9	25,8	6	M 4x4, 2x90°	61	-	-
610 429 00	B	6	42,5	31	9	25,8	8	at Side 2	61	-	-
610 443 00	C	2	46,5	25	8,6	25,8	6	M 3x3, 2x90°	57	**601 244 00**	2,7
610 444 00	C	2	46,5	25	8,6	25,8	8	at Side 1	57	**601 244 00**	2,7
610 448 00	C	6	53,4	31	8,6	25,8	6	M 4x4, 2x90°	83	**601 244 00**	2,7
610 449 00	C	6	53,4	31	8,6	25,8	8	at Side 2	83	**601 244 00**	2,7

Sectional drawing of a slip clutch with 6 clutch plates



Torque range with 2 friction plates 2.4 Ncm to 53.8 Ncm. Dissipation at 20°C ambient temperature up to 7 watts. **Torque range with 6 friction plates 7.8 Ncm to 132.4 Ncm.** Dissipation at 20°C ambient temperature up to 8.6 Watt. Maximum permissible temperature at the surface for all sizes during operation 80°C.

An adjusting ring - screwed to the outer body - serves to adjust the torque. This ring acts via a disk spring onto the clutch or friction disks. Two sintered bearing sleeves serve as bearing housing to inner component. An O-Ring seals the hub off against dirt and with its friction force it also makes sure that the adjusting ring is not moved unintentionally. **The power can be connected to either the hub or the housing.**

Depending on the specific application, the friction clutch can be employed as torque limiter, as overrunning clutch or as brake. As the generation of heat is basically a function including the slip torque and the employed torque, the following formula was derived:

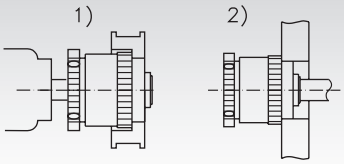
$$\frac{\text{Slippage (min}^{-1}\text{) x Torque (Ncm)}}{955} = \text{Heat Dissipation in Watts}$$

As the connected components (shafts, gears, etc.) support the heat dissipation, in case of doubt please calculate the effective surface temperature under adverse operating conditions. The permissible temperatures are stated above.

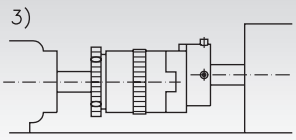
Special designs: the modular-design principle used in slip clutches leads to many different designs and possible connecting parts, e.g., special flanges and other components, according to drawings.

ATTENTION: the adjusting screws can damage the adjusting ring if they are loosened too far. 3/4 to 1 turn is sufficient.

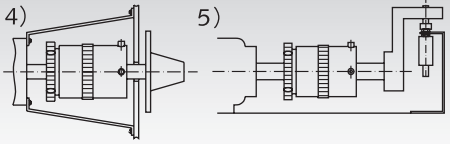
Concentric mounting (type A)



Axial arrangement, both shafts outside (type C)



Axial arrangement, one shaft outside (type B)



1) Pulley or sprocket (bondage recommend), shaft also used as bearing.
2) Mounted to the housing as permanent brake and shaft bearing.
3) Connection electronic engine and gear box, with assembly-related shaft misalignment.

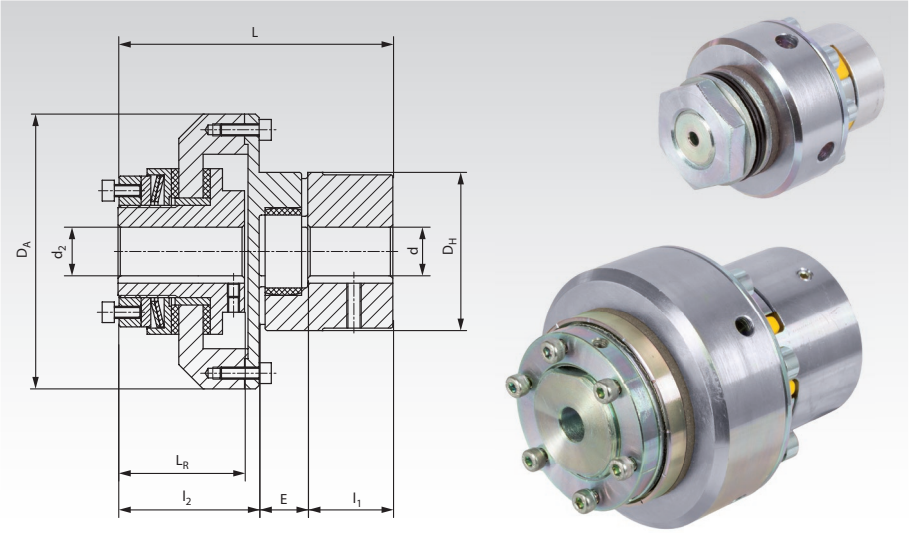
4) Shaft of a multi-turn potentiometer divided with slip clutches. No overrevving.
5) Protecting a lever key from damage using a slip clutch.

Sliding Hubs with Torsionally-Flexible Coupling RNR

Material: Sliding hub: steel, zinc-plated and chromated, rust-proof friction pads.

Elastic coupling: coupling hub steel (size 00 from aluminium), spider (plastic insert) Polyurethane. Hardness 92° Shore A (optional 98° Shore A).

- The slipping torque can be adjusted with common assembly tools for screws.
- The elastic coupling can be mounted in axial direction.
- Torque can be altered after mounting.
- By mounting additional springs, the torque range can be increased. (additional springs have to be ordered separately).
- Customized bores and feather-key grooves available at extra charge.



Ordering Details: e.g.: Product No. 612 199 00, Sliding Hub RNR with Torsionally-Flexible Coupling

Product No.	Size	d ; d_2	$d_{max.}$ mm	$d_{2\,max.}$ mm	D_A mm	D_H mm	l_1 mm	E mm	l_2 mm	L_R mm	L mm	Weight kg
612 199 00	00	4,8	16	10	44	30	11	13	35	31	59	0,35
612 200 00	0	5,7	25	20	63	40	25	16	37	33	78	0,90
612 201 00	01	10	35	22	80	55	30	18	50	45	98	1,95
612 202 00	1	10	40	25	98	65	35	20	58	52	113	3,10
612 203 00	2	14	48	35	120	80	45	24	64	57	133	5,50

Size	Torque of Sliding Hub Standard [1] Nm	Optional [2] Nm	Optional [2] Nm	Torque Coupling T_{KN} [3] Nm	Torque Coupling $T_{Kmax.}$ [4] Nm	Speed max. min^{-1}
00	0,5 - 5	1 - 10	- -	7,5	15	10.000
0	2,0 - 10	4 - 20	- -	10,0	20	8.500
01	5,0 - 35	10 - 70	60 - 105	35,0	70	6.600
1	20,0 - 75	40 - 150	130 - 200	95,0	190	5.600
2	25,0 - 140	50 - 280	250 - 400	190,0	380	4.300

[1] With one disc spring (standard version).
[2] With second or third disc spring (order separately).
[3] Nominal torque of the elastic coupling with standard spider 92° Shore A.
[4] Maximum torque of the elastic coupling with standard spider 92° Shore A.

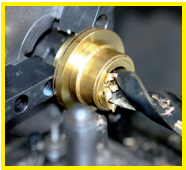
Replacement Friction Discs and additional Disc Springs

Matching Coupling Product No.	Size	Product No. Friction Disc[1]	Outer Ø mm	Weight g	Product No. Disc Spring	Outer Ø mm	Weight g
612 199 00	00	**612 100 01**	30	2	**612 100 02**	30	5
612 200 00	0	**612 100 11**	45	3	**612 100 12**	42,5	5
612 201 00	01	**612 101 01**	58	10	**612 101 02**	53,1	10
612 202 00	1	**612 101 11**	68	13	**612 101 12**	61,5	20
612 203 00	2	**612 102 01**	88	21	**612 102 02**	79,5	40

[1] 2 pieces required.

Spiders for RNR

Matching Coupling Product No.	Size	Product No. Spare Part Spider 92° Shore, yellow	Torque Nom. Nm	Torque max. Nm	Product No. Optional Spider 98° Shore, red	Torque Nom. Nm	Torque max. Nm	Weight g
612 199 00	00 (14)	**605 092 14**	7,5	15	**605 098 14**	12,5	25	5
612 200 00	0 (19)	**605 092 19**	10	20	**605 098 19**	17	34	7
612 201 00	01 (24)	**605 092 24**	35	70	**605 098 24**	60	120	22
612 202 00	1 (28)	**605 092 28**	95	190	**605 098 28**	160	320	32
612 203 00	2 (38)	**605 092 38**	190	380	**605 098 38**	325	650	58



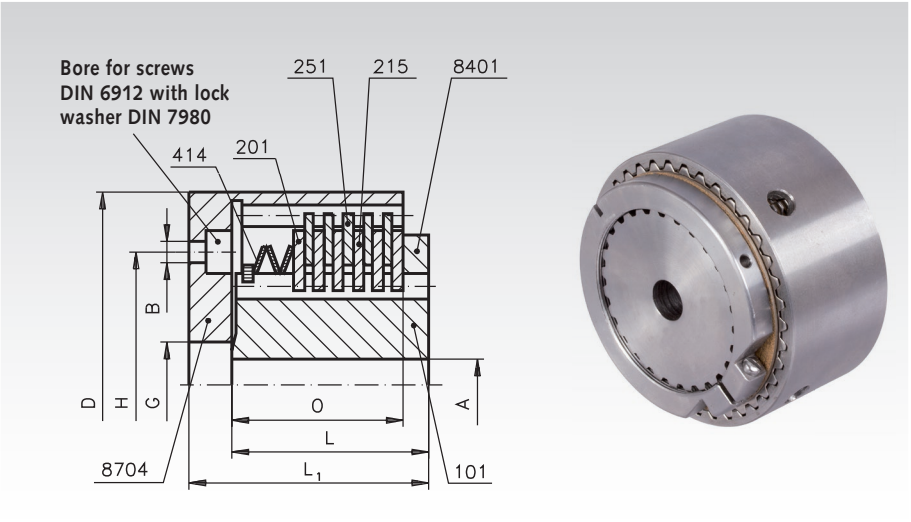
Reworking within 24h-service possible. Custom made parts on request.

Multi-Plate Friction Clutches PD

Material: Steel.

Multi-plate friction clutches have proven to deliver an optimal performance when used with slow-starting machines. They are also used as safety couplings. The occurring torque peaks are levelled out by friction clutches. The disk pairing is steel/sintered bronze, with the inner plates of the pairings lined. The composition of the lining means up to 400°C can be withstood short term. At permanent load, however, only up to 250°C. Sintered clutch plates have the advantage of an almost constant friction coefficient even with fast growing circumferential speeds and higher temperatures. The assembly can be used for dry and wet operation. Advantages of these couplings are: Practical dimensions. Easy adjustment and re-adjustment. Inner and outer plates with special splines.

Couplings are available pre-drilled H7 ex stock.
Customized bores and feather-key grooves available at extra charge



Product No.	Torque* Dry Nm	Torque* Wet Nm	Bore. A Pre-bore mm	Bore. A H7 max. mm	B mm	D mm	G^{H7} mm	H mm	L mm	L_1 mm	O mm	Speed max. min^{-1}	Weight kg	Product No. Spare Plates Compl. Set	Weight Spare Part g
611 001 00	14	6	10	20[1)]	3x for M5	55	22	34	28	36	22	3000	0,44	**611 011 00**	71
611 002 00	33	14	12	25[2)]	3x for M5	67	32	44	35	43	28	3000	0,81	**611 012 00**	140
611 003 00	62	26	12	40[3)]	4x for M6	82	45	58	40	48	30	3000	1,45	**611 013 00**	227
611 004 00	126	54	25	42	4x for M6	100	62	76	45	53	36	2500	2,24	**611 014 00**	339
611 005 00	230	100	25	55	4x for M8	120	72	90	55	65	42	2500	3,97	**611 015 00**	703
611 006 00	380	160	25	70	6x for M10	145	85	110	65	77	53	2500	5,82	**611 016 00**	1558

[1)] From Bore 17 mm only with flat feather key-grooves according to DIN 6885/3.
[2)] From Bore 22 mm only with flat feather key-grooves according to DIN 6885/3.
[3)] From Bore 38 mm only with flat feather key-grooves according to DIN 6885/3.
* Max. transmittable torque for dry or wet operation. The minimum adjustable torque is at about 50% of the maximum value.

Construction and Mounting

The disk-mount 101 is equipped with splines, guiding the sinter-plates 215. The casing 8704 also has splines, which guide the outer plates 251 made from steel. The last component of the disk pack is a pressure plate 201. The disk spring 414 together with the adjusting screw 8401 lead to the friction grip of the disk pack. During assembly please make sure that the disk-mount 101 and the casing are securely fixed in axial direction. When connecting 2 shaft ends, one shaft has to be mounted inside the housing 8704 supported by a centering bearing. The disk-mount 101 must not rub against the casing 8704, but against the sleeve or the bearing ring. Make sure no oil or fat enters the disk pack. For readjustment loosen the locking screw in the nut 8401. Turning left will increase the torque, turning left leads to a reduction. After re-setting always re-tighten the locking screw. When ordering spare parts always state the factory number 8401 on the adjusting screw .

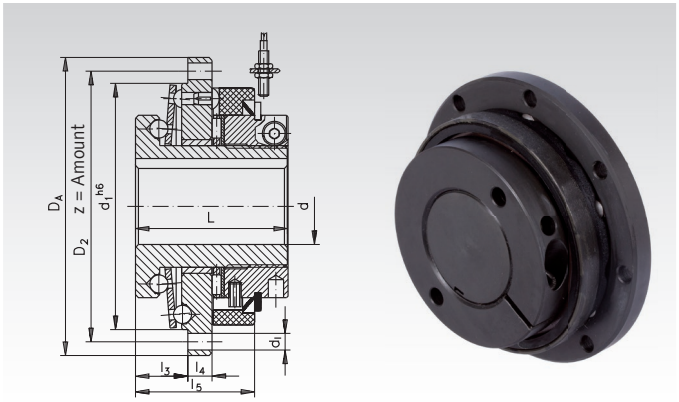
Reworking within 24h-service possible. Custom made parts on request.

Safety Clutchs SI

Material: Steel.

This clutch is a backlash-free overload system operating on the positive principle. It works with the recently developed principle of the "punched disk spring". At overload the disk spring disengages, the torque flow is interrupted. After the overload has passed, the clutch re-engages on its own.
The axial movement of the shift ring can be used to trigger a limit switch/sensor turning off the engine (travel 2mm).
Customer components (e.g. sprockets, pulleys) can be easily integrated; special components, as needed for the common systems, are not required here.

Customized bores and feather-key grooves available at extra charge.



Ordering Details: e.g.: Product No. 612 720 00, Safety Clutch SI, 6-20 Nm

Product No.	Torque Nm	$d_{max.}$ mm	L mm	D_A mm	D_2, z mm	d_I mm	d_1 mm	l_3 mm	l_4 mm	l_5 mm	*Speed max. min^{-1}	Weight kg
612 720 00	6 - 20	20	45	80	71, z= 8	4,5	65	16	6	35	1500	0,69
612 725 00	20 - 60	25	50	98	89, z= 8	5,5	81	17	8	39	1500	1,26
612 735 00	25 - 80	35	60	120	110, z=12	5,5	102	21	10	42	1500	1,89
612 750 00	60 - 180	50	70	162	152, z=12	6,6	142	25	13	56	1500	3,93

* Higher speeds possible if technical data is transmitted.

Limit Switch (Engine-Emergency-Stop Switch)

Ordering Details: e.g.: Product No. 612 605 00 Limit Switch

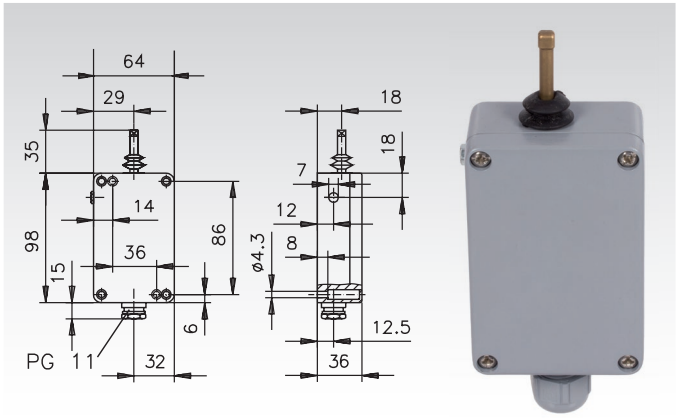
Product No.	Weight in g
612 605 00	324

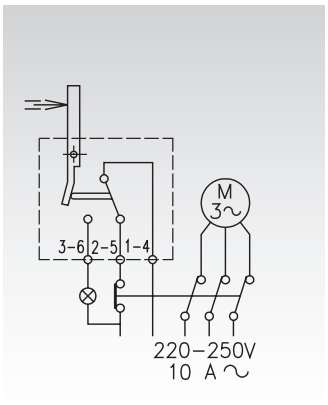
Material: Housing made from aluminium die-cast, painted grey, with rubber seal. Switch made from brass. Bellow made from neoprene (black). Housing screws zinc-plated. Cable connection made from plastic (grey).

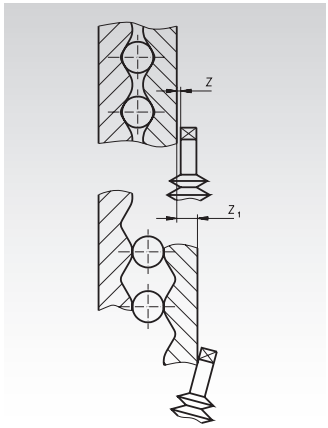
Electrical connection: 220-250V AC, 10 A.

Application: Robust limit switch for safety clutches SI (see above) and safety clutches CM (page 398) or similar applications. If the torque set on the clutch is exceeded, the clutch slips. At the same time the shift ring moves. The shift ring then triggers the switch and turns off the engine. This protects the entire drive system and prevents possible damage.

Mounting: On the back wall are two bores Ø 4.3 mm. These fit two screws M4 with internal hexagon, slot or cross recess (head-Ø up to 7 mm). The wall thickness around the mounting holes is 8 mm.





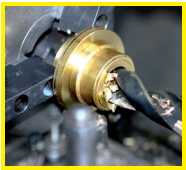


Dimension Z_1 for Limit Stop with Clutches SI

Product No. 612 720 00 to 612 750 00: 2 mm

Dimensions Z_1 for Limit Stop with Clutches CM

Size 20: 1.4 mm
Size 25: 2.3 mm
Size 35: 2.4 mm
Size 45: 2.7 mm
Size 55: 3.7 mm



Reworking within 24h-service possible. Custom made parts on request.

Safety Clutches CM

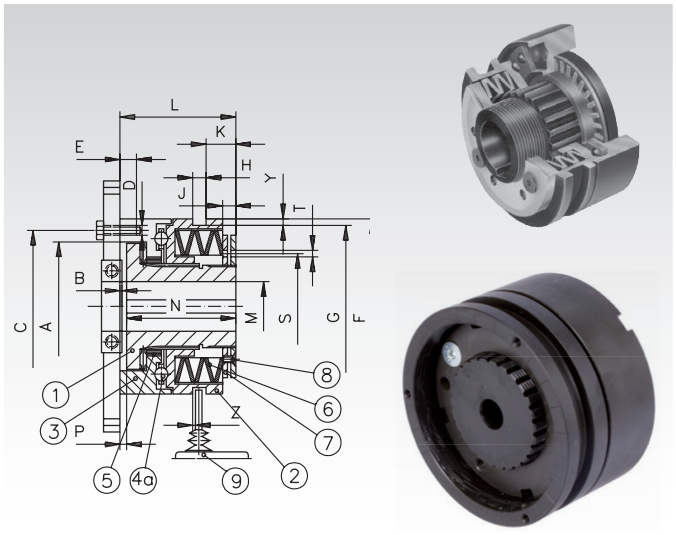
Material: Steel.

Overload system operating on the positive principle, available in 5 sizes. For each size there are 4 different disk-plate sets for different torque ranges. **The required disk-plate set has to be ordered separately and is supplied unassembled.**

When mounting simple driving elements, as sprockets, pulleys, etc., always make sure the shaft is supported.
Optimal protection against overloads.
Trigger torque can be adjusted.
High reproducibility of the triggering and re-engaging process.
Robust design, long service life, absolutely maintenance free.
Immediate free-wheeling of the drive. Automatic emergency stop of the driving unit through switch (to be ordered separately).
Not negatively affected by frequent triggering sequences.

The disk-plate sets (S, M, L or LL) and the limit switch (emergency-stop switch) for all sizes Product No. 612 605 00 (page 397) have to be ordered separately.

Customized bores and feather-key grooves available at extra charge.



Ordering Details: e.g.: Product No. 612 620 00, Safety Clutch CM, Size 20
Product No. 612 620 02, Disk-Plate Set M (essential information)

Product No.	Size	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	K mm	J mm	L mm	$M_{min.}$ mm	$M_{max.}$ mm	N mm	P mm	R mm	S mm	T mm	Y mm	Z mm	Weight kg
612 620 00	20	41	4	48	6xM5	6,5	55	50	9	7,5	3	38,5	7	20	35	3,1	6	38,5	5	2	0,3	0,5
612 625 00	25	60	4	70	6xM5	8	82	72	9	11,5	6	52	10	25	48	3,1	6	54	6	2	0,3	1,5
612 635 00	35	78	5	89	6xM6	10	100	91	9	12	6	61	14	35	56	3,6	8	70	6	2	0,5	2,9
612 645 00	45	90,5	5	105	6xM8	12	120	112	9	22	8,5	78	18	45	72	4,1	10	84	6	2	0,5	5,0
612 655 00	55	105	6,5	125	6xM10	15	146	140	9	27	11	100	24	55	93,5	4,1	14	108	10	2	0,8	9,8

Technical Data and Product No. of Disk-Plate Sets

		Nm for Disk-Plate Sets						Max. Speed	
Product No.	**Product No**	S	**Product No.**	M	**Product No.**	L	**Product No.**	LL	S-M	L-LL
612 620 00	**612 620 01**	2,5 - 5	**612 620 02***	5 - 10	**612 620 02***	10 - 20	**612 620 04**	20 - 40	3300	1800
612 625 00	**612 625 01**	6,0 - 12	**612 625 02**	12 - 25	**612 625 03**	25 - 60	**612 625 04**	60 - 100	2890	1450
612 635 00	**612 635 01**	12,0 - 25	**612 635 02**	25 - 50	**612 635 03**	50 - 120	**612 635 04**	120 - 200	2350	1200
612 645 00	**612 645 01**	25,0 - 50	**612 645 02**	50 - 100	**612 645 03**	100 - 250	**612 645 04**	250 - 400	2000	1000
612 655 00	**612 655 01**	50,0 - 100	**612 655 02**	100 - 200	**612 655 03**	200 - 500	**612 655 04**	500 - 800	1650	850

* This spring set covers both torque ranges M and L (only for size 20).

Possible Disk-Plate Sets

S (light)		M (medium)		L (heavy)		LL (very heavy)	
Size 20 - 55	6 x 1S	**Size 20 - 55**	5 x 1M	**Size 20**	5 x 1M	**Size 20**	4 x 1L
				Size 25 - 55	5 x 1L	**Size 25 - 55**	3 x 2L

Functioning

At normal operating conditions, the safety clutch transmits the torque from the driving shaft via the ball race onto the flange (3). The balls (4a) are pressed into the CNC-milled recesses in part (2) and (3) by the disk plates (6). In case of overload, i.e., if the torque request exceeds the preset limit, the clutch halves are separated; the remaining transmitted torque is very low. When the balls are lifted out of the recesses, against the spring pressure, the clutch part number (2) is moved in axial direction. This movement can be used to trigger an emergency-stop switch (9) for an engine. The clutch re-engages on its own as soon as the torque requirement falls below the set limit. Torque adjustment: By screwing in the torque-adjusting nut (7) all disk plates are further pretensioned (6). As soon as the desired pretension is achieved, the adjusting screw has to be fixed in position with the set screws (8).

Operating Factors

This table shows the operating factor that should - dependent on the type of application - be used as basis for calculating the correct size.

Operating Conditions

Centrifugal Moment	Uniform	Shock	Reversing
Low	1,4	1,7	2,0
Medium	1,7	2,0	2,3
High	2,0	2,4	2,6

Reworking within 24h-service possible. Custom made parts on request.

Sliding Hubs FS

Material:

Hub: Steel, zinc-plated and yellow passivated. Spring: Steel, black.

The sliding hubs can be delivered ex stock, pre-drilled with a bush of the length in **bold print**.

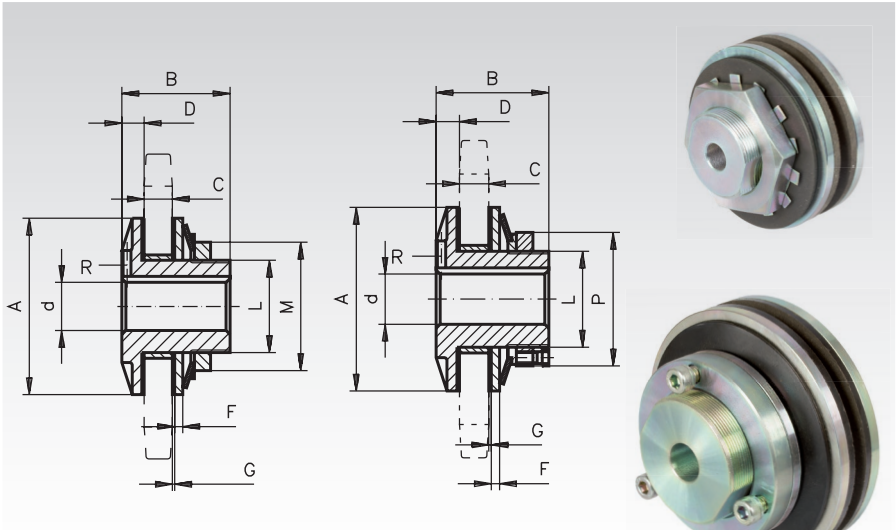
Required bush length:
The required bush length depends on the width of the component to be joined.

Up to Prod. No. 612 006 00:
Bush length 4.2 mm for a component width of 5.3 to 6.0 mm.

From Prod. No. 612 010 00:
Bush length in mm = 1.5 x G + C.

Other bush lengths and customized bores or feather-key grooves against extra charge.

Ordering Details: e.g.: Product No. 612 000 00, Sliding Hub FS



Up to No. 612 040 00 with hexagonal nut

From No. 612 050 00 with round nut

Product No.	Torques min. Nm	Torques max. Nm	Bores d Pilot B.* mm	Bores d min. mm	Bores d max. mm	AØ mm	B mm	C max. mm	D mm	F mm	G mm	LØ mm	M mm	PØ mm	R mm	Available Bush Lengths L1 mm	Available Bush Lengths L2 mm	Available Bush Lengths L3 mm	Bore of the mounted Parts +0.05 mm	Weight kg
612 000 00	0,5	5	3,7	4	10	30	31	6	8,5	2	2,5	M16	SW 27	-	M4	**4,2**	-	-	21,00	0,15
612 001 00	1	10	3,7	4	10	30	31	6	8,5	2	2,5	M16	SW 27	-	M4	**4,2**	-	-	21,00	0,17
612 005 00	2	10	5,7	6	20	45	33	7	8,5	2	2,5	M30	SW 41	-	M4	**4,2**	-	-	34,00	0,35
612 006 00	4	20	5,7	6	20	45	33	7	8,5	2	2,5	M30	SW 41	-	M4	**4,2**	-	-	34,00	0,37
612 010 00	7	34	10 H8	10	22	64	48	9	16	5	4	M35	SW 50	-	M5	**10,3**	12,2	14	41,33	0,70
612 020 00	14	68	10 H8	10	22	64	48	9	16	5	4	M35	SW 50	-	M5	**10,3**	12,2	14	41,33	0,72
612 030 00	20	90	13 H8	13	25	90	62	16	19	5	4	M42	SW 60	-	M6	10,3	**13,7**	21	49,28	1,36
612 040 00	40	180	13 H8	13	25	90	62	16	19	5	4	M42	SW 60	-	M6	10,3	**13,7**	21	49,28	1,40
612 050 00	50	300	19 H8	19	40	127	76	16	21	6	4	M63	-	92	M8	**16**	19,5	21	73,10	3,36
612 060 00	100	600	19 H8	19	40	127	76	16	21	6	4	M63	-	92	M8	**16**	19,5	21	73,10	3,70
612 070 00	115	690	24 H8	24	60	178	98	28	25	6	5	M95	-	133	M10	17	**20,6**	22	104,88	8,60
612 080 00	230	1360	24 H8	24	60	178	98	28	25	6	5	M95	-	133	M10	17	**20,6**	22	104,88	8,90

* ca.-dimensions.

Matching Sliding Hub Product No.	**Product No.** Friction Disc*	Weight g	**Product No.** Disc Spring	Weight g	**Product No.** Threaded Ring or Adjusting Screw	Weight g	**Product No.** Bushes Length 1	Weight g	**Product No.** Bushes Length 2	Weight g	**Product No.** Bushes Length 3	Weight g
612 000 00	**612 003 00**	2	**612 004 00**	3	**612 000 07**	9	**612 000 02**	3	-	-	-	-
612 001 00	**612 003 00**	2	**612 004 00**	3	**612 000 07**	9	**612 000 02**	3	-	-	-	-
612 005 00	**612 007 00**	4	**612 008 00**	5	**612 005 07**	44	**612 005 02**	10	-	-	-	-
612 006 00	**612 007 00**	4	**612 008 00**	5	**612 005 07**	44	**612 005 02**	10	-	-	-	-
612 010 00	**612 015 00**	12	**612 016 00**	15	**612 017 00**	80	**612 012 00**	25	**612 013 00**	40	**612 014 00**	50
612 020 00	**612 015 00**	12	**612 016 00**	15	**612 017 00**	80	**612 012 00**	25	**612 013 00**	40	**612 014 00**	50
612 030 00	**612 035 00**	30	**612 036 00**	45	**612 037 00**	140	**612 032 00**	37	**612 033 00**	44	**612 034 00**	85
612 040 00	**612 035 00**	30	**612 036 00**	45	**612 037 00**	140	**612 032 00**	37	**612 033 00**	44	**612 034 00**	85
612 050 00	**612 055 00**	60	**612 056 00**	120	**612 057 00**	320	**612 052 00**	97	**612 053 00**	135	**612 054 00**	200
612 060 00	**612 055 00**	60	**612 056 00**	120	**612 057 00**	320	**612 052 00**	97	**612 053 00**	135	**612 054 00**	200
612 070 00	**612 075 00**	140	**612 076 00**	280	**612 077 00**	660	**612 072 00**	103	**612 073 00**	183	**612 074 00**	300
612 080 00	**612 075 00**	140	**612 076 00**	280	**612 077 00**	660	**612 072 00**	103	**612 073 00**	183	**612 074 00**	300

* 2 pieces required.

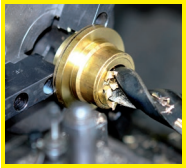
General

The sliding hubs FS are safety devices working on the positive principle. In case of overload, the disk clamped between the friction disks starts slipping and thus keeps the torque within the permissible limits. The power reengages automatically as soon as normal load is reached again. The hubs are cadmium plated for rust-protection. The drive disk is mounted on a maintenance-free bush made from sintered metal. Up to product no. 612 040 00, the torque is set with a hexagon adjusting screw. From product no. 612 050 00 the torque is set with a threaded ring with 3 hexagon nuts. On first use, the sliding hubs should be run in for about 250 turns at a speed of 60 min^{-1}. This should be done at a hub setting of 70-80% of the max. torque for one plate disk. Wear due to frequent slipping reduces the set torque. The figures in the table are calculated for dry operation.

With oil the load can be reduced by 50%. Higher torques, at the same outer diameter, can be achieved with a second spring disk.

Exception: Product No. 612 000 00 has 2 springs,
Product No. 612 001 00 has 4 springs.

Mounting instruction at **www.maedler.de** in the section **Downloads**.



Reworking within 24h-service possible. Custom made parts on request.

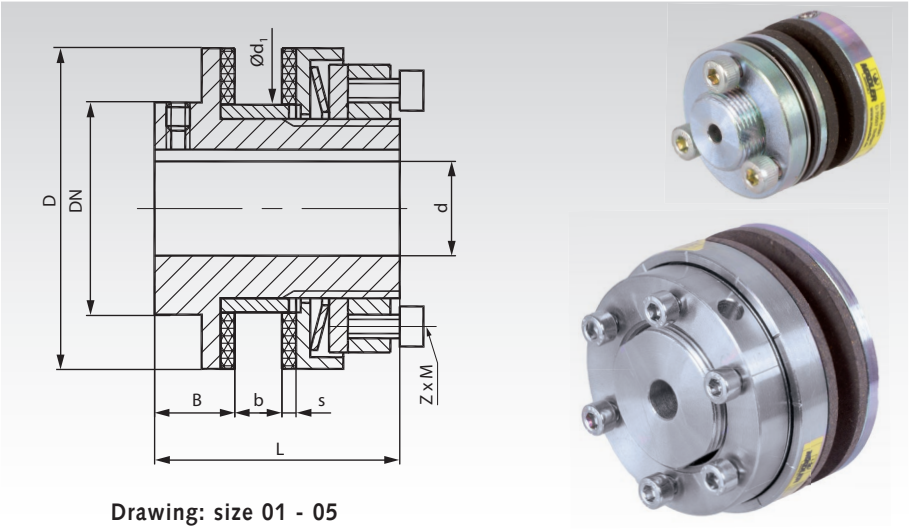
Sliding Hubs FA as Torque Limiters for Chain-, Gear- and Belt Drive-wheels

Material: Steel, zinc-plated and chromated.

- High-quality version.
- The slipping torque can be adjusted with common assembly tools for screws, also after mounting.
- By mounting additional springs, the torque range can be increased. (additional springs have to be ordered separately).
- The hubs are delivered with pilt bore and max. bush length. Customized bores, key-ways and bush lengths at extra charge.

Required bush length:
The bush length required depends on the width of the component to be joined. To calculate the bush length take the width of the component and add 1.5 times the thickness of the friction disc, plus an additional 0.5mm.

Bush length in mm = 1.5 x s + b + 0.5.



Drawing: size 01 - 05

Ordering Details: e.g.: Product No. 612 100 00, Sliding Hub FA size 00

Product No	Size	Torque range 1 Spring[1] Nm	Torque range 2 Springs[2] Nm	Speed max. min^{-1}	Bore Pilot mm	Bore $d_{max.}$ mm	D mm	DN mm	B mm	Bore of Sprocket d_1^{H8} mm	Width $b_{min.}$ mm	Width $b_{max.}$ mm	Bush length min. mm	Bush length max. mm	s mm	L mm	Screws Z x M mm	Weight prebored kg
612 100 00	00	0,5-5	1-10	10000	3,7	10	30	-	8,5	21	2	6	6	10	2,5	31	3x M4	0,1
612 100 10	0	2-10	4-20	8500	5,7	20	45	-	8,5	35	2	6	6	10	2,5	33	6x M4	0,3
612 101 00	01	5-35	10-70	6600	10	22	58	40	16	40	3	8	8	13	3	45	6x M4	0,6
612 101 10	1	20-75	40-150	5600	10	25	68	45	17	44	3	10	8	15	3	52	6x M5	0,9
612 102 00	2	25-140	50-280	4300	14	35	88	58	19	58	4	12	9	17	3	57	6x M6	1,8
612 103 00	3	50-300	100-600	3300	18	45	115	75	21	72	5	15	11	21,5	4	68	6x M8	3,4
612 104 00	4	90-600	180-1200	2700	24	55	140	90	23	85	6	18	12	24,5	4	78	6x M8	5,5
612 105 00	5	280-800	800-1600	2200	28	65	170	102	29	98	8	20	16	28	5	92	6x M8	8,8
612 106 00	6	300-1200	600-2400	1900	38	80	200	120	31	116	8	23	16	31	5	102	8x M20	14,0
612 107 00	7	600-2200	1200-4400	1600	45	100	240	150	33	144	8	25	16	33	5	113	12x M20	22,6
612 108 00	8	900-3400	1800-6800	1300	58	120	285	180	35	170	8	25	16	33	5	115	16x M20	33,6

[1] With one disc spring (standard version). [2] With second disc spring (order separately).

Replacement Friction Discs and additional Disc Springs

Matching Sliding Hub Product No.	Size	Outer Ø mm	Product No. Friction Disc[1]	Weight g	Product No. Disc Spring	Weight g
612 100 00	00	30	**612 100 01**	2	**612 100 02**	5
612 100 10	0	45	**612 100 11**	3	**612 100 12**	5
612 101 00	01	58	**612 101 01**	10	**612 101 02**	10
612 101 10	1	68	**612 101 11**	13	**612 101 12**	20
612 102 00	2	88	**612 102 01**	21	**612 102 02**	40
612 103 00	3	115	**612 103 01**	51	**612 103 02**	100
612 104 00	4	140	**612 104 01**	79	**612 104 02**	200
612 105 00	5	170	**612 105 01**	157	**612 105 02**	400
612 106 00	6	200	**612 106 01**	216	**612 106 02**[2]	320
612 107 00	7	240	**612 107 01**	250	**612 107 02**[3]	480
612 108 00	8	285	**612 108 01**	400	**612 108 02**[4]	640

[1] 2 pieces required. [2] Set with 16 springs. [3] Set with 24 springs. [4] Set with 32 springs.

Remarkes to the versions

The pictures above show size 01 to 5.
Sizes 00 and 0 are on the left side without hub.
From size 6, instead of the central disc spring, there are pairs of little disc springs around each preload screw.

Customized bores, keyways and bush lengths are available at extra charge.

Technical Explanations

The driving element (sprocket or pulley) is pushed onto the bush and clamped between the friction discs, supported by the round adjusting nut, the pressure plate, preload screws and the disk spring. The harder the disk spring is compressed by the pressure plate, the higher is the torque at which the driving element slips. The exact adjustment values for the torque can be found in the table stuck onto the sliding hubs.

Mounting instruction at **www.maedler.de** in the section **Downloads**.

Torque – Increase

The torque values refer to the sprocket version with ground surfaces. Non-ground surfaces lead to faster wear of the friction disks.

Wear due to frequent slipping reduces the set torque.

At all sizes, the specified torque can be doubled by the addition of a (second) disc spring. The torque ranges with one or two disc springs are shown in the table.

At sizes from 01 to 5, the specified torque can be tripled by the addition of a (third) disc spring. The minimum torque setting is then approx. 65% of the maximum value.

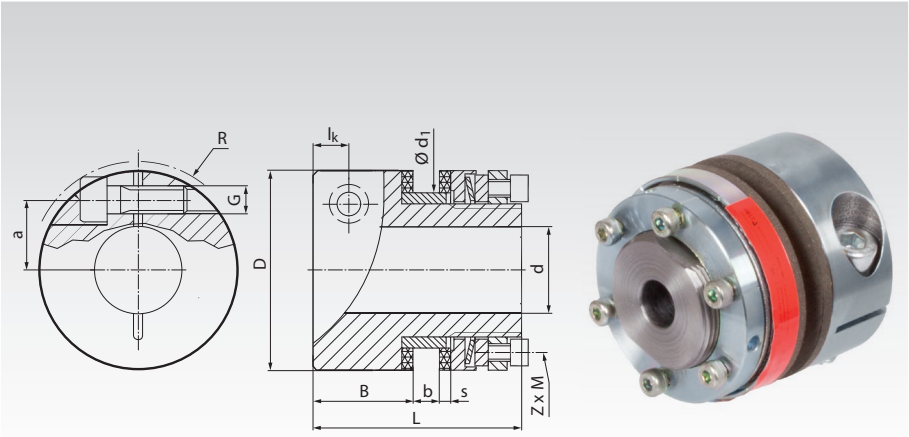
Sliding Hubs FAK as Torque Limiters, with Clamp Hub

Material: Steel, zinc-plated and chromated.

- Clamp hub version.
- The slipping torque can be adjusted with common assembly tools for screws, also after mounting.
- By mounting an additional springs the torque range can be increased (additional spring has to be ordered separately).
- The hubs are delivered with pilt bore and max. bush length. Customized bores, keyways and bush lengths at extra charge.

Required bush length:
The bush length required depends on the width of the component to be joined. To calculate the bush length take the width of the component and add 1.5 times the thickness of the friction disc, plus an additional 0.5mm.

Bush length in mm = 1.5 x s + b + 0.5.



Ordering Details: e.g.: Product No. 612 110 10, Sliding Hub FAK size 0

Product No.	Size	Torque range 1 Spring[1] Nm	Torque range 2 Springs[2] Nm	Speed max. min^{-1}	Bore Pilot mm	Bore $d_{max.}$ mm	D mm	B mm	Bore of Sprocket d_1^{H8} mm	Width $b_{min.}$ mm	Width $b_{max.}$ mm	Bush length min. mm	Bush length max. mm	s mm	L mm	Screws Z x M mm	Weight prebored kg
612 110 10	0	2 - 10	4 - 20	8500	10	22	45	21,5	35	2	6	6	10	2,5	46	6x M4	0,3
612 111 00	01	5 - 35	10 - 70	6600	10	25	58	26	40	3	8	8	13	3	55	6x M4	0,6
612 111 10	1	20 - 75	40 - 150	5600	18	28	68	30	44	3	10	8	15	3	65	6x M5	0,9
612 112 00	2	25 - 140	50 - 280	4300	18	40	88	34	58	4	12	9	17	3	72	6x M6	1,8

Clamp Screw Dimensions and Fastening Torque

Size	R mm	G mm	T_A Nm	l_K mm	a mm
0	50	M6	16	8	16
01	62	M8	41	10	19
1	74	M10	83	12	22
2	93	M12	145	14	30

[1] With one disc spring (standard version).
[2] With second disc spring (order separately).

Replacement Friction Discs and additional Disc Springs

Matching Sliding Hub Product No.	Size	Outer Ø mm	Product No. Friction Disc[1]	Weight g	Product No. Disc Spring	Weight g
612 110 10	0	45	**612 100 11**	3	**612 100 12**	5
612 111 00	01	58	**612 101 01**	10	**612 101 02**	10
612 111 10	1	68	**612 101 11**	13	**612 101 12**	20
612 112 00	2	88	**612 102 01**	21	**612 102 02**	40

[1] 2 pieces required.

Remarkes to the versions

The pictures above show size 01 to 2.
Size 0 is on the left side without hub.

Customized bores, keyways and bush lengths are available at extra charge.

Technical Explanations

The driving element (sprocket or pulley) is pushed onto the bush and clamped between the friction discs, supported by the round adjusting nut, the pressure plate, preload screws and the disk spring. The harder the disk spring is compressed by the pressure plate, the higher is the torque at which the driving element slips. The exact adjustment values for the torque can be found in the table stuck onto the sliding hubs.

Torque – Increase

The torque values refer to the sprocket version with ground surfaces. Non-ground surfaces lead to faster wear of the friction disks.

Wear due to frequent slipping reduces the set torque.

At all sizes, the specified torque can be doubled by the addition of a (second) disc spring. The torque ranges with one or two disc springs are shown in the table.

Operating Instructions at www.maedler.de in the section Downloads

ROBA®-Sliding Hubs as Torque Limiters for Chain-, Gear- and Belt Drive-wheels

Material: Steel, zinc-phosphated.

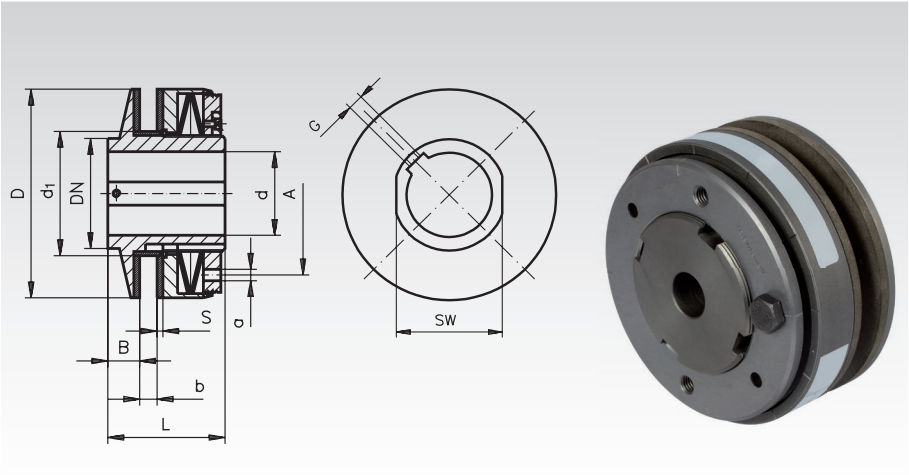
ROBA®-sliding hubs are high-quality machine components. They are machined all-round and zinc-phosphated, i.e. rust-proof. They are of fully-closed design.

The sliding hubs are delivered pre-drilled with the max bush length (for b_{max}).

Required bush length:
The bush length required depends on the width of the component to be joined. To calculate the bush length take the width of the component and add 1.5 times the thickness of the friction lining, plus an additional 0.5mm.

Bush length in mm = b + 1.5 x s + 0.5.

Other bush lengths, customized bores feather-key grooves and setscrew-threads available at extra charge.



Pictured version for up to 700 Nm max.

Ordering Details: e.g.: Product No. 612 300 00, ROBA-Sliding Hub

Product No.	Size	Torque min. Nm	Torque max. Nm	Speed max. min^{-1}	Clamping Tool A mm	Clamping Tool $a^{-0,2}$ mm	B mm	$b_{min.}$ mm	$b_{max.}$ mm	D mm	DN mm	Sprocket Bore d_1^{H8} mm	d max. mm	Pilot Bore mm	Set Screw G mm	L mm	SW mm	Lining S mm	Weight Pre-drilled g
612 300 00	0	2	10	8500	37	3	8,5	2	6	45	45	35	20[1)]	6	M4	33	-	2,5	300
612 320 00	1	14	70	5600	50	5	17	3	10	68	45	44	25	10	M*	52	41	3	900
612 340 00	2	26	130	4300	67	6	19	4	12	88	58	58	35	14	M**	57	50	3	1600
612 360 00	3	50	250	3300	84	6	21	5	15	115	75	72	45	18	M***	68	65	4	3100
612 380 00	4	110	550	2700	104	7	23	6	18	140	90	85	55	24	M8	78	80	4	5400
612 400 00	5	140	700	2200	125	8	29	8	20	170	102	98	65	28	M8	92	90	5	9000
612 420 00	6	240	1200	1900	150	8	31	8	23	200	120	116	80	38	M8	102	105	5	12400

M* Up to Ø12 M4, above Ø12 M5, above Ø17 M6.
M** Up to Ø 17 M5, above Ø 17 M6.
M*** Up to Ø 22 M6, above Ø 22 M8.

[1)] Above Ø19 only with keyway DIN6885/3.

Replacement Friction Linings and Face Spanners

Matching Product No.	Product No. Spare Part Friction Lining*	Weight g	Product No. Face Spanner	Weight g
612 300 00	**612 301 00**	3	**612 302 00**	114
612 320 00	**612 321 00**	13	**612 322 00**	159
612 340 00	**612 341 00**	21	**612 342 00**	240
612 360 00	**612 361 00**	51	**612 342 00**	240
612 380 00	**612 381 00**	79	**612 382 00**	750
612 400 00	**612 401 00**	157	**612 402 00**	1700
612 420 00	**612 421 00**	216	**612 402 00**	1700

* 2 pieces required.

Technical Explanations

The driving element (sprocket or pulley) is pushed onto the bush and clamped between the friction disks, supported by the pressure plate, the disk springs and the adjusting nut. The harder the disk springs are compressed by the adjusting nuts, the higher is the torque at which the driving element slips. The exact adjustment values for the torque can be found in the table stuck onto the sliding hubs.

The torque values refer to the sprocket version with ground surfaces. Non-ground surfaces lead to faster wear of the friction disks.

Wear due to frequent slipping reduces the set torque.

Torque – Increase

Changing the series stacking shown to a parallel stacking the maximum torque can be doubled. The minimum torque setting is then approx. 50% of the maximum value.

For product no. 612 320 00 to 612 400 00 the specified torque can be tripled by the addition of a (third) spring washer. The minimum torque setting is then approx. 65% of the maximum value.

For Product No. 612 360 00 to 612 400 00 this requires a special adjusting nut, and the pressure plate has to be shortened (both against surcharge).