

Torque limiters

Manufactured by ComInTec



Lenze

Torque limiters | models for all requirements

Lenze torque limiters extend our product portfolio with a reliable supply of quality products backed by strong technical support.

Torque Limiters are available in a comprehensive range to suit different applications with variable characteristics of cost, accuracy, action and running conditions.



- Prevents damage to machinery
- Avoids extensive downtime
- Adjustable release torque
- Offset or in-line mounting
- Synchronisation possible



Friction



Simple and inexpensive torque limiters that work by springs pressing friction material onto a platewheel. They are steplessly adjustable and continue to deliver torque during and after an overload.

Page 4

EDF



Low cost ball type limiter with platewheel. EDF models synchronise input and output, are maintenance free, and allow an electrical signal of overload.

Page 10

Ball & Roller



Ball torque limiters are sensitive and allow an electrical signal on overload. Roller models achieve higher torques and synchronise input to output. Comprehensive mounting options are available.

Page 12

Backlash free



Available in ball designs, these precision torque limiters can connect to the shaft with locking bushes achieving a total absence of backlash. Very high sensitivity is available in negative spring versions.

Page 22

Pneumatic



Pneumatic models allow remote adjustment of the release torque and multi-level torque limiting. Friction models can act as clutches or tensioning devices. Roller models synchronise input to output and can fully disengage the drive.

Page 24

DSA axial



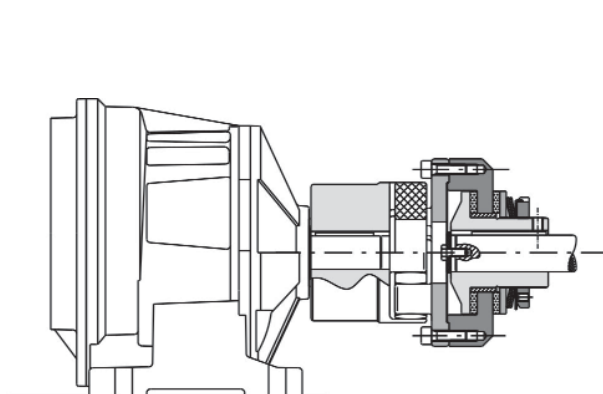
Axial force limiters can be used to protect from linear overloads, for example on gearbox torque arms. They work in both tension and compression and can be supplied in customised assemblies.

Page 27

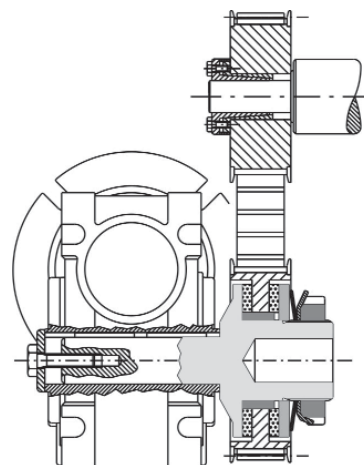
Torque limiters | selection & mounting

Model	Torque (Nm)	Max bores	Speed	Action on overload	Release torque accuracy	Special features	Page no.
Friction DSF	1-23000	140	Best at low speed	Drives with slightly reduced torque	Low-medium	Platewheels available	4
Ball EDF	13-1200	55	Suits up to medium speeds	Drives with reduced torque	Medium	Synchronises	10
Ball DSS	2.5-2050	68	Suits up to high speeds	Drives with reduced torque	High	Easy switch detection Sensitive	12
Roller DSR	10-12000	120	Up to medium speeds	Drives with reduced torque	High	Multiple synchronised re-engagement & free rotation options	12
Backlash free DSS/SG	5-750	50	Up to high speeds	Drives with reduced torque	High	Ultra-sensitive negative spring versions	22
Pneumatic DSR/F/AP (roller)	5-30000	120	Up to high speeds	Drives with reduced torque	High	Multi-level torque limiting possible	24
Pneumatic DSF/TF/AP (friction)	2-805	65	Best at low speeds	Maintains torque	Low-medium	Can disconnect and be used for tensioning	24
Axial DSA	Forces 30-7000N	-	-	Gives free stroke	High	Adjustable trip for tension and compression forces	27

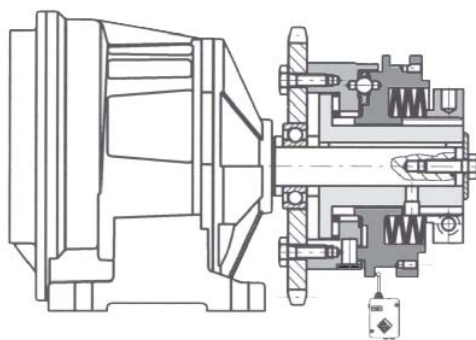
Mounting examples



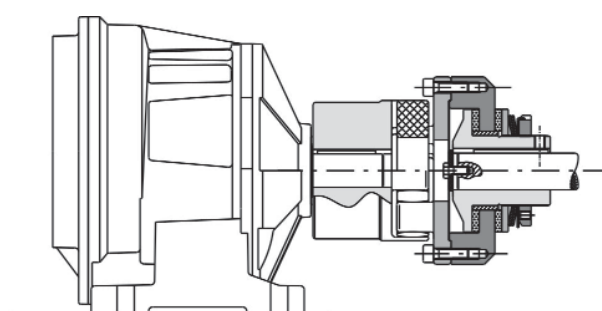
In-line connection with DSF/EX friction torque limiter and GAS torsionally soft jaw coupling.



Classic offset drive with DSF/EX/PR friction torque limiter.



Model SC with platewheel supported by customer supplied bearing.



Model DSS/DSR SC/GAS ball or roller torque limiter with in-line elastic coupling GAS.

Type DSF/EX | friction torque limiters

Friction torque limiters are simple low cost devices that remove shock loads and protect machinery from overload damage.



- Easy torque setting and wide torque range
- Bi-directional overload protection
- Fully machined, production certified ISO9001-2000
- Broad range of models & options
- Can be supplied assembled & torque preset

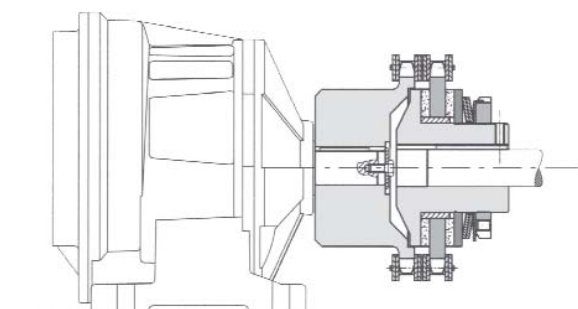


	DSF/EX	Standard model for offset drives by chainwheel, sprocket or gear.	2 to 23000Nm up to 140mm	Page 5
	DSF/EX/TAC	Chain coupling adaptor for in-line drives, simple & compact	2 to 23000Nm up to 140mm	Page 6
	DSF/EX/GAS	Curved jaw coupling adaptor for in-line drives, torsionally soft, high misalignment capacity, backlash free coupling	2 to 2600Nm up to 110mm	Page 7
	DSF/SI	Friction torque limiter with switch ring to allow microswitch detection of overload	2 to 8000Nm up to 100mm	Page 7
	DSF/EX/PR	Extended shaft torque limiter for mounting direct into hollow shaft gearboxes.	2 to 2600Nm 11 to 55mm	Page 8
	Platwheeler	Standard range of simplex platewheels to suit DSF/EX.	3/8 Z = 12 to 1 1/4 Z = 20	Page 9

Construction & operation

DSF/EX limiters are fully machined in steel with phosphated surface treatment. Anti-rust treatment and zinc plating available on request. Optional finish bores and keyways to DIN6885.

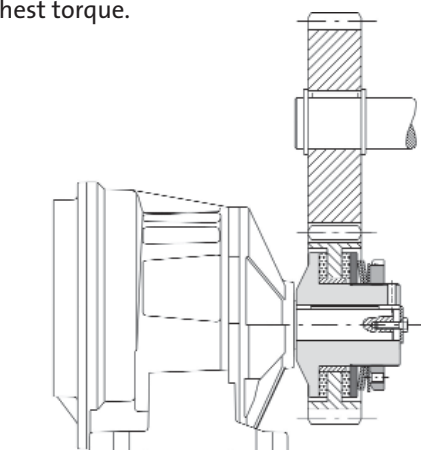
Torque is transmitted from input to output by spring force which compresses two friction discs onto a chainwheel, sprocket or gear. On overload these faces slip whilst the set drive torque is maintained. Alternative spring sets are offered.



Application

Friction torque limiters are best located on low speed shafts e.g. at the gearbox output. Maximum speeds are high but wear and damage can occur quickly if slipping is prolonged. Consider motion sensors to stop the drive.

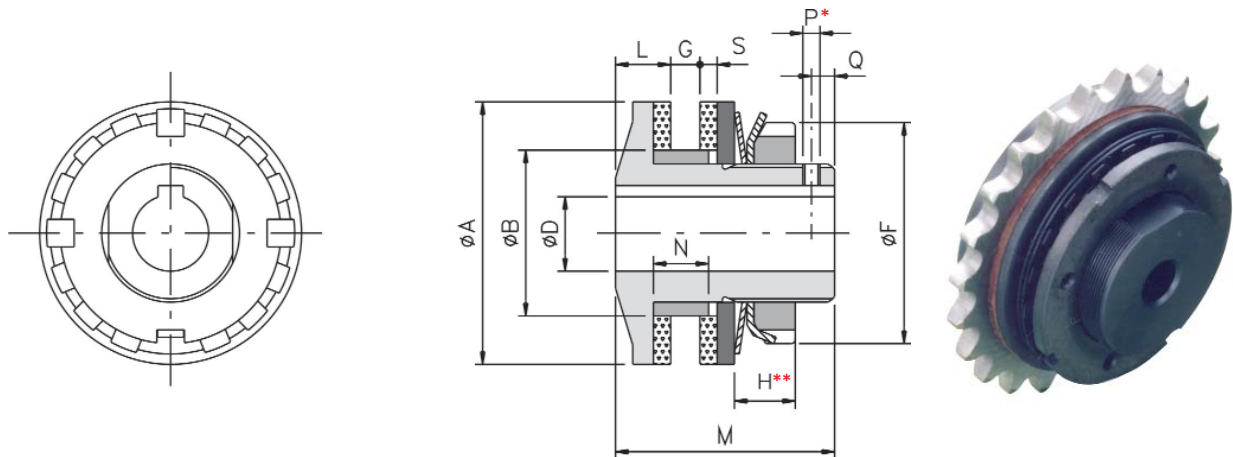
Allow for torque peaks in normal operation e.g. on-line starting of motors. We suggest a reserve of 25% above the highest torque.



Type DSF/EX Type DSF

friction torque limiters (sizes 25 to 170)

friction torque limiters (sizes 205 to 400)



Size A	Spring sets and torque ranges (Nm)				A	B h7	DH7 ØMax	F	G		L	M	N	S	Weight kg
	Low	Medium	High	Maximum					Min	Max					
00.25	A1S1 2-8	-	A2S2 2-12	A3S3 2-20	25	14	8	22	1	3	5	26	5.5	2	0.1
00.38	A1S1 2-14	-	A2S3 2-22	A3S3 15-34	38	24	12	32	1	5	8	33	8	2.5	0.2
0.50	A1S1 2-12	A1G1 4-40	A3G3 17-70	A3G3 23-100	50	36	20	44	1	6	10	35	10	3	0.4
1.70	A1S1 3-18	A1M1 9-35	A2G2 20-120	A3G3 60-210	70	45	25	63	1	10	15	55	15	4	1.1
2.90	A1S1 12-38	A1M1 13-105	A2G2 90-280	A3G3 185-450	90	60	38	82	3	12	16	60	17	4	2.2
3.115	A1S1 26-100	A1M1 65-280	A1G1 120-360	A3G3 210-950	115	72	45	105	5	16	18	70	21	4	3.7
4.140	A1S1 80-140	A1M1 100-240	A1G1 210-550	A3G3 390-1200	140	85	55	130	8	19	20	80	25	5	6.6
5.170	A1M1 150-250	A1G1 240-700	A2G2 300-1450	A3G3 1000-2600	170	98	65	158	10	22	22.5	95	28	5	10.9

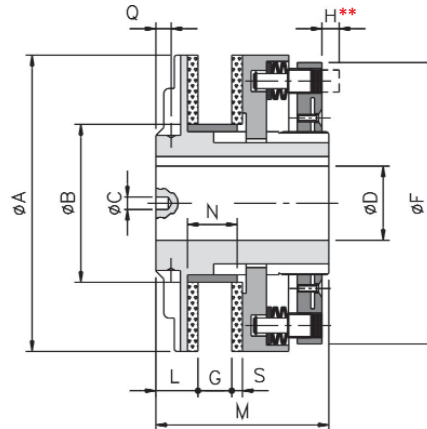
* grubscrews only with finished bores

** torque setting dimension, see page 9

Often torque limiters are available from stock with the highest torque setting.

Bores for C spanner

C	
Ø	Pcd
10	135
10	165
10	210
12	220
12	270



Size A	Spring sets and torque ranges (Nm)			A	B h7	DH7		F	G		L	M	N	Q	S	Weight kg
	A4M1 Low	A4G1 Medium	A4G2 High			ØPilot	ØMax		Min	Max						
6.205	300-1200	500-2400	1000-4800	205	120	40	80	193	18	26	27	110	32	8.5-M8	5	20.1
7.240	500-2000	1000-4000	2000-8000	240	145	50	100	230	21	29	27	116	35	8.5-M10	5	30.9
8.300	800-3500	1500-7000	3000-14000	300	175	60	120	287	21	33	29	123	40	8.5-M10	6	49.1
9.340	1000-4500	2000-9000	4000-18000	340	205	60	130	325	23	33	41	158	40	12-M12	6	85.5
10.400	1500-5000	3000-11000	5000-23000	400	230	60	140	388	23	35	46	167	42	13-M13	6	124.5

Ordering example

Qty 5 friction torque limiters size 2.90 with A1M1 springs for torque range 13-105Nm, finish bored 38mm with keyway.

Type code: **DSF/EX_2.90_A1M1_38H7+keyway**

Torque limiters can be supplied with pilot bores or finished bores to H7 tolerance and keyway to DIN6885 with H9 tolerance. Grub screws on request

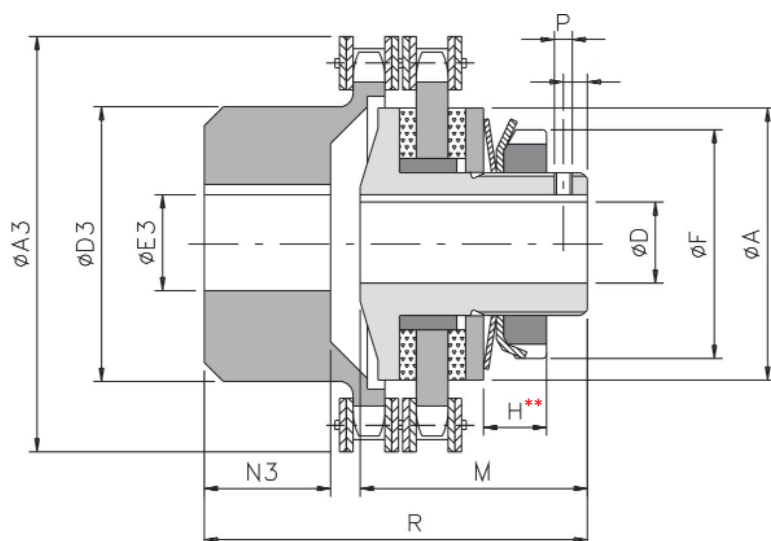
Note: These weights refer to the torque limiter with pilot bore.

Type DSF/EX/TAC

Type DSF/TAC

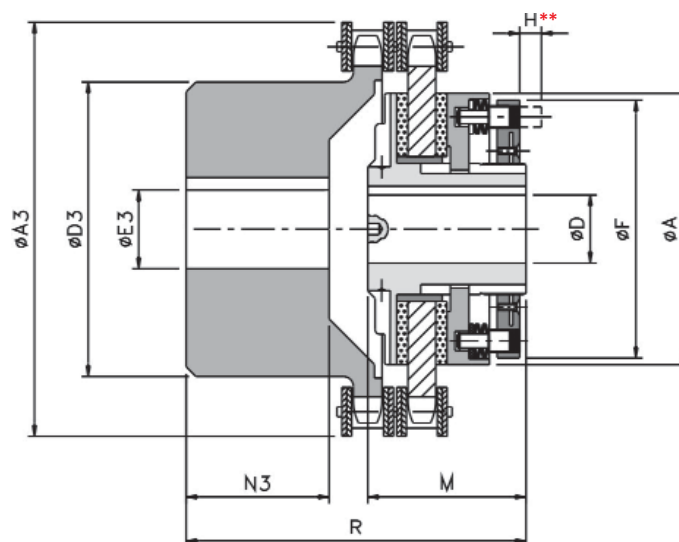
chain type coupling (size 25 to 170)

chain type coupling (size 205 to 400)



Size	Torque Nm	M	R	A3	D3	E3 H7 øPilot	øMax	N3	P	Q	Weight Kg
00.25	2-20	26	39	45	23	8	12	9	M3	3	0.2
00.38	2-34	33	56	57	37	10	20	20	M3	3	0.6
0.50	2-100	35	59	75	50	12	24	19	M4	4	1.1
1.70	2-210	55	87	101	70	16	30	29	M6	6	2.8
2.90	6-450	60	103	126	90	20	42	38	M6	6	5.9
3.115	12-950	70	131	159	110	20	50	56	M6	6	11.1
4.140	80-1200	80	147	184	130	28	60	59	M8	8	20.3
5.170	150-2600	95	189	216	130	30	68	88	M8	8	31.0

** torque setting dimension, see page 9



Size	Torque Nm	M	R	A3	D3	E3 H7 øPilot	øMax	N3	Weight Kg
6.205	300-4800	110	219	291	150	40	90	103	54.6
7.240	500-8000	116	244	312	170	50	110	124	76.7
8.300	800-14000	123	273	374	200	50	140	147	125.5
9.340	1000-18000	158	329	423	210	60	150	165	165
10.400	1500-23000	167	357	475	240	60	160	191	240

** torque setting dimension, see page 9

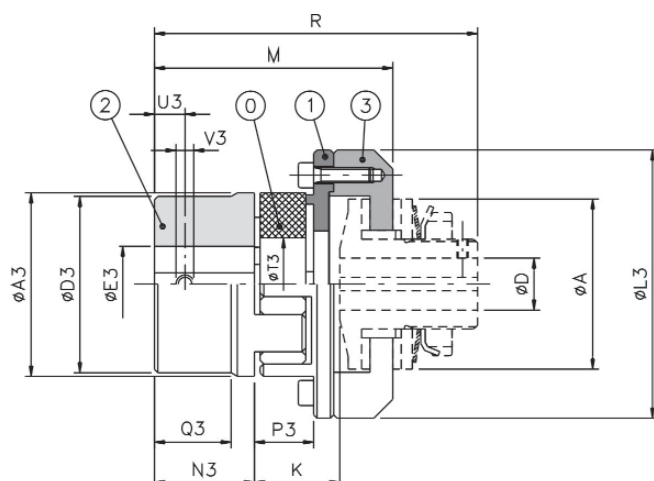
Ordering example

Coupling parts only, order torque limiter from page 5.

Qty 5 chain type couplings for friction torque limiters size 1.70, finish bore 25mm H7 with keyway.

Type code: **DSF/EX/TAC_1.70_25H7+keyway**

Type DSF/EX/GAS | curved jaw coupling



- 0 - elastic element (std. red, 98 shore - A)
- 1 - flange
- 2 - hub
- 3 - connection flange

Torque limiter size	GAS coupling size	Nominal torque (Nm)	Max torque (Nm)	K	R	W	A3	D3	E3 øMax	L3	N3	Q3	T3	U3	V3
00.38	00 (19)	17	34	26	85	64	40	40	25	58	25	-	18	10	M5
0.50	0 (24)	60	120	28.5	96	74.5	55	53	35	74	30	24	27	10	M5
1.70	2 (38)	325	650	35	135	104	80	78	48	107	45	37	38	15	M8
2.90	3 (42)	450	900	40	151	115.5	95	93	55	132	50	40	46	20	M8
3.115	5 (55)	685	1370	48	184	143.5	120	118	74	164	65	52	60	20	M10
4.140	7 (75)	1465	2930	61	232	181	160	158	95	208	85	69	80	25	M10
5.170	8 (90)	3600	7200	67.5	265	207.5	200	180	110	248	100	81	100	30	M12

Ordering example

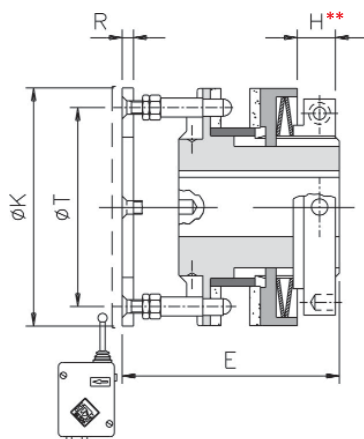
Coupling parts only, order torque limiter from page 5.

Qty 5 curved jaw couplings for friction torque limiters size 1.70, coupling size 2 (38), finish bore 42mm H7 with keyway.

Type code: **DSF/EX/GAS_2 (38)_42H7+keyway**

GAS coupling size	Misalignment		
	Angular	Axial	Radial
00	1° 18'	1	0.4
0	1° 18'	1	0.8
2	1° 18'	1.4	1
3	1° 18'	1.6	1
5	1° 18'	1.8	1.4
7	1° 18'	2.5	1.8
8	1° 18'	2.8	1.8

Type DSF/SI | friction torque limiter with switch ring

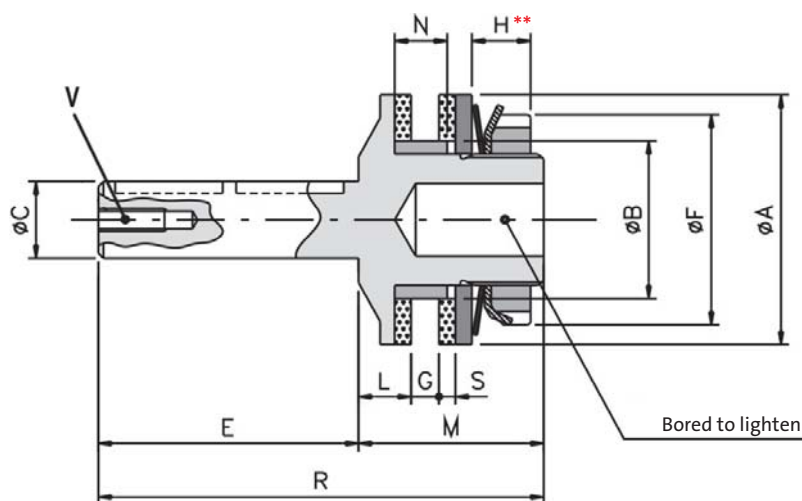


Size	E	K	R	T
1.70	75	70	3	56
2.90	80	90	3	72
3.115	89	115	4	90
4.140	103	140	4	104
5.170	116	170	4	120
6.205	124	205	4	150
7.240	131	240	6	190

The switch ring ØK allows overloads to be detected by a microswitch such as the EM1 on page 13. The DSF/SI requires plate wheels that are modified to accept the sensor pins.

Other dimensions and torque ranges are the same as type DSF/EX on page 5.

Type DSF/EX/PR | friction torque limiter for hollow shaft gearboxes



Grand Size	Spring sets and torque ranges (Nm)				A	B h7	C h7	E	G		M	R	V	Weight (kg)
	Low	Medium	High	Maximum					Min	Max				
00.38	A1S1 2-14	-	A2S2 2-22	A3S3 15-34	38	24	11	48	2.5	5	33	81	M4x10	0.2
0.50	A1S1 2-12	A1G1 4-40	A2G2 17-70	A3S3 23-100	50	36	14	53	3.5	6	35	88	M5x13	0.4
1.70	A1S1 3-18	A1M1 9-35	A2G2 20-120	A3G3 60-210	70	45	18	62	5	10	55	117	M6x16	1.1
							19	78				133		1.1
							24	90				145		1.3
							25	80				135		1.2
2.90	A1S1 12-38	A1M1 13-105	A2G2 90-280	A3G3 185-450	90	60	25	90	7	12	60	150	M8x20	2.1
							28	110				170		2.3
3.115	A1S1 26-100	A1G1 65-280	A1G1 120-360	A3G3 210-950	115	72	32	120	9	16	70	190	M10x25	3.7
							38	138				208		3.9
4.140	A1S1 80-140	A1G1 100-240	A1G1 210-550	A3G3 390-1200	140	85	42	152	13	19	80	232	M12x32	6.9
							45	163				243		7.2
							48	178				258		7.7
5.170	A1M1 150-250	A1G1 240-700	A2G2 300-1450	A3G3 1000-2600	170	98	50	173	15	22	95	268	M16x40	11.5
							55	208				303		12.7

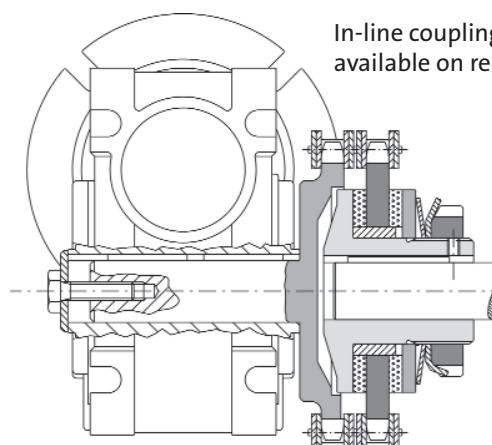
** torque setting dimension, see page 9

For other dimensions see model DSF/EX on page 5.

Ordering example

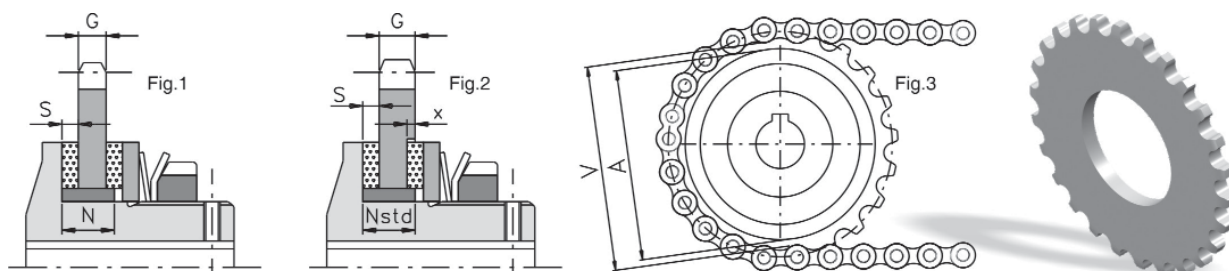
Qty 2 friction torque limiters for hollow shaft gearboxes size 3.115 with A1S1 springs for torque range 26-100Nm and suiting gearbox bore diameter 32mm.

Type code: DSF/EX/PR_3.115_A1S1_32H7+keyway



In-line coupling versions available on request.

Platewheels | selection



Platewheels or the support bushing will sometimes require modification.

For thinner platewheels (Fig.1) apply the rule $N=S+G+1$. Machine down the bushing if required.

For thicker platewheels, to make $N=S+G+1$ it may be necessary to reduce the thickness of the platewheel (Fig.2).

Observe the clearance between chain inside diameter V and the torque limiter body A.

Size	Pitch	G	z	dp	S	N Std	A	V	Std platewheel part number
00.25	3/8	5.1	12	36.80	2	5.5	25	28	580419851P05
00.38	3/8	5.1	16	48.82	2.5	8	38	41	580406900P05
0.50	3/8	5.1	20	60.89	3	10	50	53	580406400P05
		7.0	16	65.10					580406500P05 580406700P05
1.70	3/8	5.1	28	85.07	4	15	70	73	580404000P05
	1/2	7.0	22	89.24					580403700P05
	5/8	8.9	19	96.45					580404200P05
2.90	1/2	7.0	26	105.36	4	17	90	94	580404700P05
	5/8	8.9	22	111.55					580404600P05
	3/4	10.9	18	109.71					580440700P05
3.115	5/8	8.9	38	192.24	4	21	115	119	580404800P05
	3/4	10.9	23	139.90					580404900P05
	1"	16.0	17	138.22					580440200P05
4.140	1"	16.0	20	162.38	5	25	140	140	580440300P05
5.170	1"	16.0	24	194.59	5	28	170	175	580440400P05
	1" 1/4	18.3	20	202.98					580417200P05

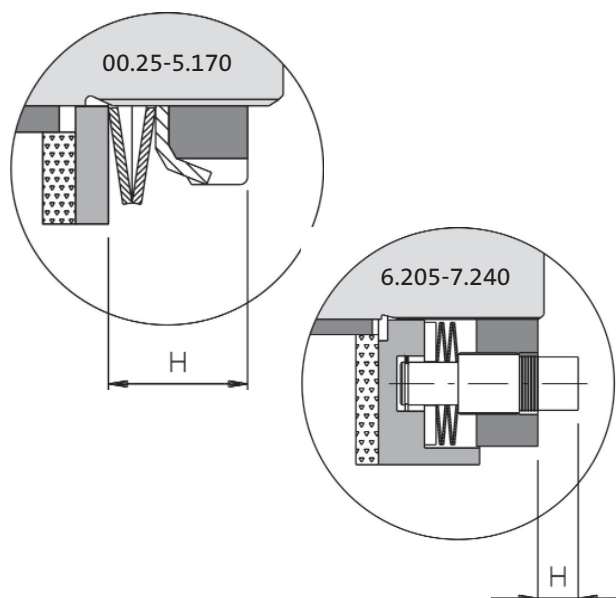
Other sizes of platewheels are available on request for volume applications.

Torque setting | pre-setting

We recommend setting the torque by finding the slip point in actual operation and then increasing the torque until slip ceases.

However the slip torque can be pre-set by positioning the adjuster nut (or the guide pins on sizes 6.205, 7.240) to dimension H, details supplied on our instruction sheets.

Complete torque limiter assemblies can be supplied preset in the factory.



Type EDF/F | low cost ball torque limiters

The EDF/F range fits between the low cost DSF/EX friction torque limiters and the high performance DSS & DSR ball/roller ranges.

EDF/F limiters give mid-range performance at attractive prices with the advantage of axial release movement that can be detected with limit switches.



- Axial movement for overload detection
- Suitable for oily/dirty environment
- Maintenance free
- Synchronises input to output
- Low backlash

Type C on these pages uses a customised platewheel. Torque limiters must be ordered with the platewheel and a finished bore with keyway.

Type F (not detailed) features a flanged disc connection with tapped holes instead of the platewheel. This suits connection to other rotating parts instead of using a platewheel. Details on request.

In-line mounting with flexible chain type coupling is possible.

Speeds

Best results are achieved at low speeds, but EDF/F models can be run up to 1500r/min for the smallest size down to 500 r/min for the largest.

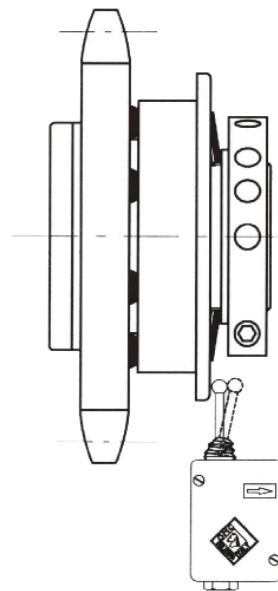
EDF/F/TAC



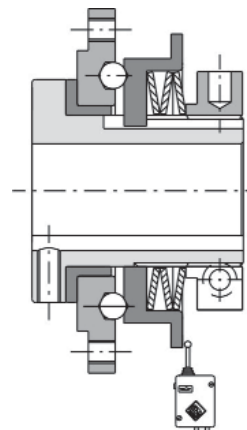
TAC chain couplings can be ordered separately from page 6. Specify EDF/F torque limiter with platewheel to suit.



EDF/F-C

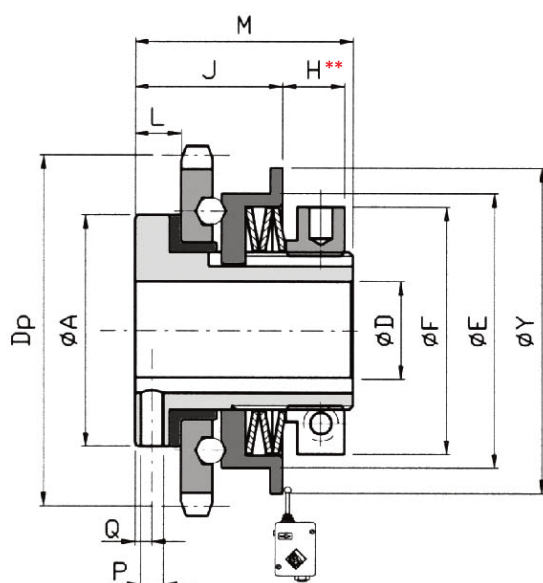


EDF/F-F



Version EDF/F-F with flange available on request.

Type EDF/F | low cost ball torque limiters



Size	Spring sets and torque ranges (Nm)			A	DH7		E	F	J	L	M	P	Q	Y	Weight Kg
	Low	Medium	High		øPilot	øMax									
00.38	A2S1 13-24	-	A4S2 21-46	30	-	12	38	35	21.5	6	33	M3	2	48	0.22
0.50	A2S1 8-21	A2M1 17-41	A4M2 29-84	40	-	20	50	42	27	8	42	M4	3	63	0.45
1.70	A2S1 8-32	A2G1 24-78	A4G2 44-153	59	-	25	70	63	37	11	55	M6	4	83	1.30
2.90	A2S1 27-54	A2G1 60-132	A4G2 111-370	72	-	38	90	82	42	12	61	M6	4.5	103	2.40
3.115	A3S1 37-125	A2G1 98-384	A4G2 171-760	89	18	45	115	104	50	14	71	M6	5.5	128	4.10
4.140	A3S1 108-294	A3G1 271-938	A4G2 460-1208	104	24	55	140	128	58	16	86	M8	6	153	6.90

** torque setting dimension, see page 9

Size	dp	Pitch	Platewheels		z	A*	V*	Stroke
			Thickness (mm)					
00.38	48.82	3/8	5.1	16	38	41	1	
0.50	60.89	3/8	5.1	20	50	53	1	
	66.93	3/8	5.1	22	50	53		
1.70	89.24	1/2	7	22	70	73	1.2	
2.90	109.71	3/4	10.9	18	90	94	1.5	
3.115	138.22	1	16	17	115	119	1.7	
4.140	162.38	1	16	20	140	144	2	

* See page 9 for other notes

Ordering example

Qty 2 EDF/F low cost ball torque limiters size 1.70 with A2G1 springs for torque range 24-78Nm, complete with 22 tooth 1/2" platewheel, finished bored 25mm with keyway.

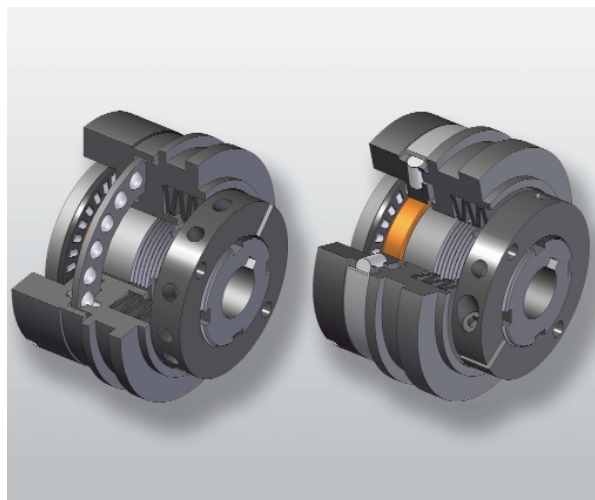
Type code: EDF/F_1.70_A2G1_25H7+keyway+platewheel 22T 1/2

Type DSS & DSR | ball & roller torque limiters

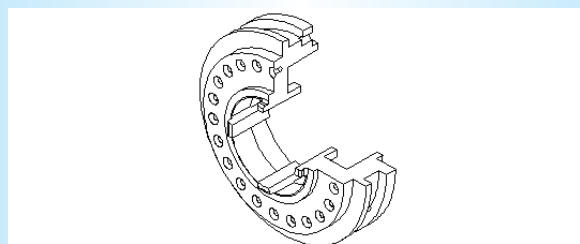
Externally similar, ball and roller torque limiters give axial movement on overload that can be detected by a limit switch. They are well enclosed and lubricated by grease, suited to wet and dirty environments. Switching accuracy is high. Ball type torque limiters suit medium to high speed applications. After overload they try to re-engage immediately. Roller torque limiters give higher torques and suit low to medium speeds. They engage in one fixed position, synchronising input to output.



- Accurate and sensitive overload detection, bi-directional
- Alternative spring sets for fine setting
- Models for offset and in-line drives
- Suits harsh conditions
- Residual torques 10-15% of setting after overload
- Limit switch available, see page 13

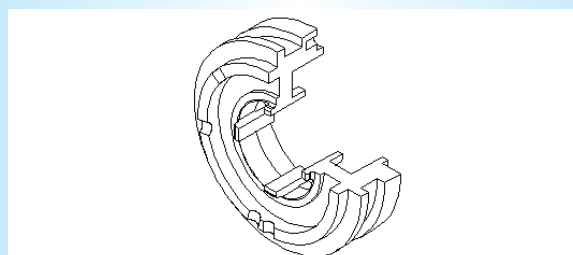


Type DSS Ball



A ring of ball bearings sits in sockets in two opposing drive rings under spring pressure. During normal running the balls remain in their sockets. As an overload occurs they ride out of their sockets then run round a ground track. Axial movement allows microswitch detection of overload. When the overload is removed, the balls re-engage at the next socket.

Type DSR/F Roller



Here the balls are replaced by rollers that sit in special slots. Function is the same as for the type DSS, but the rollers give higher torques and a more stable drive even with strong acceleration and sudden braking. Re-engagement occurs in synchronisation at 360°. It may be necessary to turn the drive at low speed in order to re-engage the torque limiter.

DSS/SC DSR/F/SC



Standard ball and roller models for customer adaption of sprockets/pulleys in offset drives.

Page 14

DSS/SC DSR/F/SC



Models with extended hub and either plain or roller bearings to suit wide pulleys and gears.

Page 16

DSS
DSR/F /SC/MC/FS



Models with short hub and roller bearing support for narrow sprockets.

Page 17

Coupling



A flexible coupling is needed for all in-line installations. Type GAS is standard, GEC is shorter and suits larger sizes, GTR is torsionally rigid.

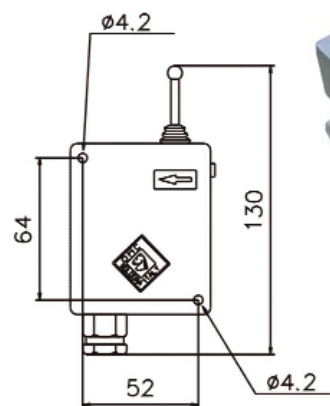
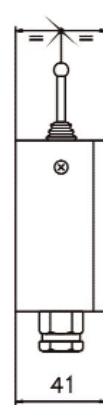
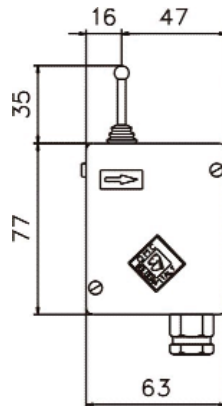
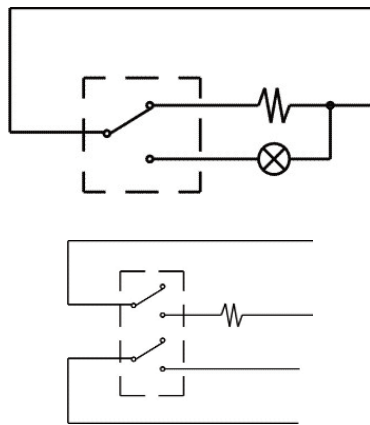
Page 18

Type DSS & DSR | Microswitch EM1 - EM2

Microswitch with finely adjustable lever to sense overload.

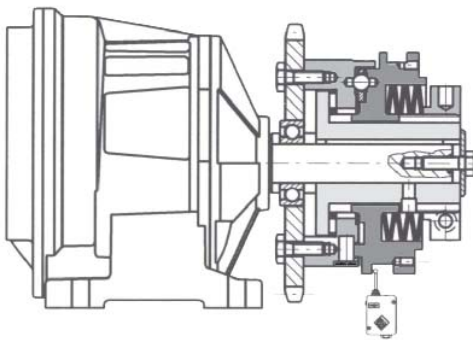
Microswitch EM1 with single contacts
Microswitch EM2 with twin contacts

Partnumber
200500700000
200500600000

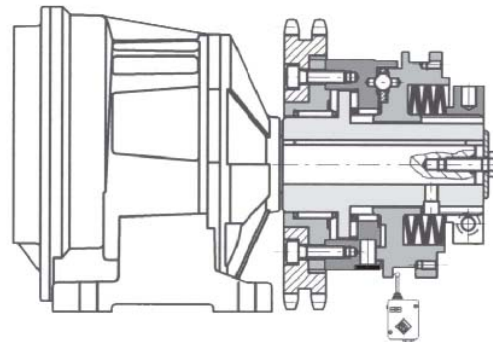


Electrical rating 15A-250VAC, 5A-24VDC, 0.2A-250VDC
operating temperature -10 to +85°C

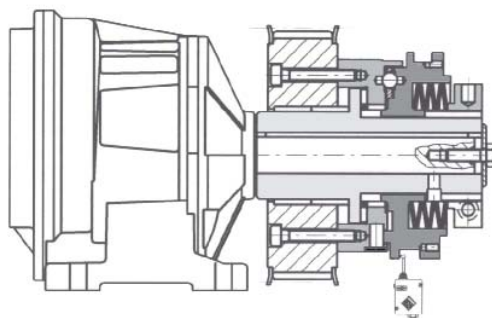
Lever arm stroke before contact 0.5mm.
Position adjustment range 6mm



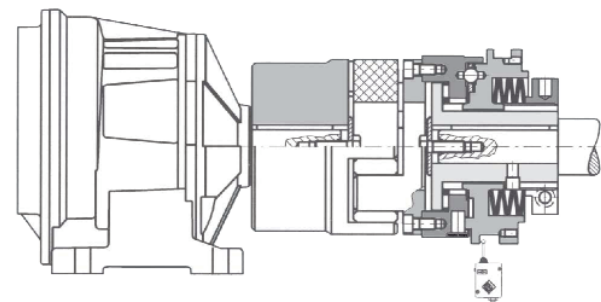
Model SC with platewheel supported by customer supplied bearing.



Model SC/MC/FS with chainwheel supported by flange and bearing integral in the torque limiter.



Model SC/ML with pulley supported by extended hub and plain bearing integral in the torque limiter.



Model GAS torsionally soft jaw coupling for in-line connection.

Mounting

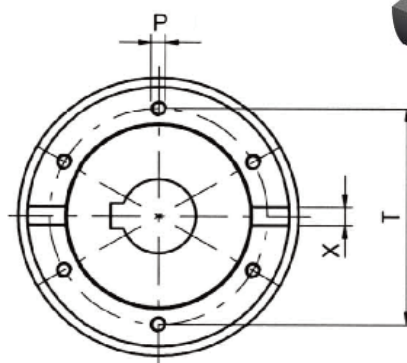
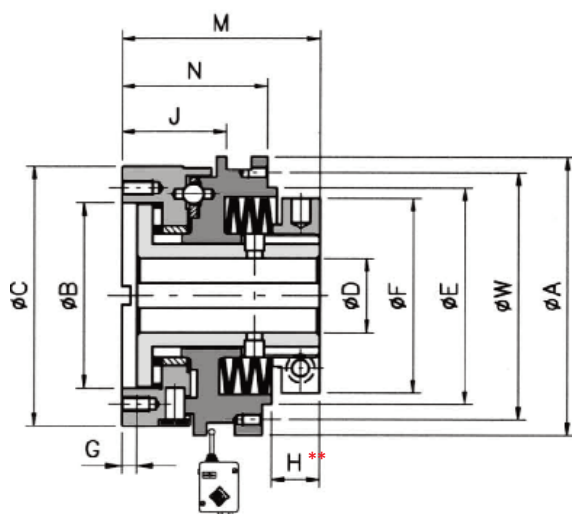
Fix the limiter to the shaft with a keyway and end restraint. Radial loads from belts or chains need to be supported by external bearings or the ML/FS versions to prevent wear and loss of switching accuracy.

Speeds

For long torque limiter life, position at low speeds. Limiters will work at higher speeds, for example 500-1500 r/min on medium sizes, but the motor must be braked to stop in 1-2 revolutions to prevent damage. Re-engagement speeds depend on system stiffness and can be as low as 10r/min.

Type DSS/SC Type DSR/F/SC

ball type torque limiter
roller type torque limiter



Size	Model	A	B H7	C	D H7		E	F	G	J	M	N	P	T	W	X	Weight kg
					ØPilot	ØMax											
0.56	DSS DSR	56	41	56	-	20*	48	42	3.8	21.5 20	46	32 31	M5x8 M5x7	48	-	6x3	0.5
1.90	DSS DSR	90	60	84	-	28*	70	63	5	33.5 27.5	63	47 45	M5x10 M5x9	70	80 (3xM4)	6x3	1.7
2.110	DSS DSR	110	78	104	-	38	89	82	6	39 36.5	76	54 52	M6x13	89	102 (6xM4)	8x3.5	2.9
3.130	DSS DSR	130	90.5	124	20	50*	112	104	6	47 45	88	65 64	M8x15	105	124 (6xM4)	10x4	4.9
4.160	DSS DSR	160	105	148	25	58*	137	128	8	58.5 54.5	107	76.5	M10x20 M10x18	125	149 (8xM4)	12x4	9.0
5.194	DSS DSR	194	120.5	176	28	68*	170	157	6.5	65 64.5	124.5	88 88.5	M12x20	155	184 (8xM4)	14x4.6	15.4

** torque setting dimension, see page 15

Size	Type DSS/SC Ball				Type DSR/F/SC Roller			
	Spring sets and torque ranges (Nm)				Spring sets and torque ranges (Nm)			
	Low	Medium	High	Maximum	Low	Medium	High	Maximum
0.56	A6S1 2.5-9.5	A6M1 7-16	-	A6M2 8-22	A6S1 10-20	A6M1 15-39	-	A6M2 30-72
1.90	A6S1 18-48	A5M1 24-55	A5G1 35-90	A6G2 55-155	A6S1 30-60	A5M1 45-100	A5G1 85-180	A6G2 170-350
2.110	A6S1 30-60	A5M1 35-100	A5G1 55-160	A6G2 80-290	A6S1 60-110	A5M1 80-200	A5G1 120-330	A6G2 345-620
3.130	A6S1 40-100	A5M1 65-250	A5G1 70-300	A6G2 130-540	A6S1 75-180	A5M1 120-430	A5G1 200-510	A6G2 430-900
4.160	A6G1 70-200	A5M1 90-325	A5G1 150-690	A6G2 300-1280	A6S1 160-335	A5M1 210-540	A5G1 330-1040	A6G2 750-1800
5.194	-	A5M1 125-420	A5G1 360-1040	A6G2 460-2050	-	A5M1 275-660	A5G1 540-1620	A6G2 1050-2800

Spring sets can be supplied as part of the torque limiter assembly or separately.

Ordering examples

Qty 4 ball type torque limiters type DSS/SC size 1.90 with A5M1 springs for torque range 24-55Nm, finish bore 25mm with keyway.

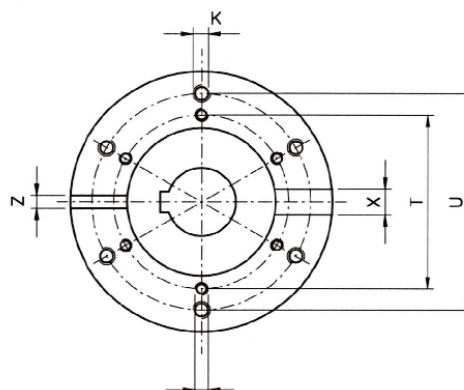
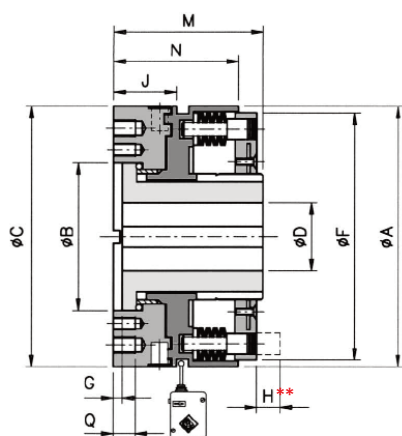
Type code: **DSS/SC_1.70_A5M1_25H7+keyway**

Qty 2 roller type torque limiters type DSR/F/SC size 3.130 with A5G1 springs for torque range 200-510Nm, finish bore 40mm with keyway.

Type code: **DSR/F/SC_3.130_A5G1_40H7+keyway**

To avoid difficult disassembly and re-assembly processes, these torque limiters should be ordered with finished bores and keyways.

Type DSR/F/SC | roller type torque limiters (sizes 240 & 280)



Size	Model	A	B H7	C	D H7		F	G	J	K	M	N	P	T	U	Z	X	Weight kg
6.240	DSR	240	136	240	50	90	227	8	57	M16x19	141	116	M12x19	160	200	16x5.1	18x5.1	25.3
7.280	DSR	280	198	280	50	120	263	8	82	-	200	159	M20x26	230	-	-	20x6.1	63.8

** torque setting dimension, see below.

Size	Spring sets & torque ranges (Nm)	
	Low	High
6.240	A12S1 1600-3800	A15G1 2000-8000
7.280	A14S1 2000-5600	A16G1 2500-12000

Ordering example

Qty 1 roller type torque limiter type DSR/F/SC size 6.240 with A15G1 spring set for torque 2000 to 8000Nm, finish bore 100mm with keyway.

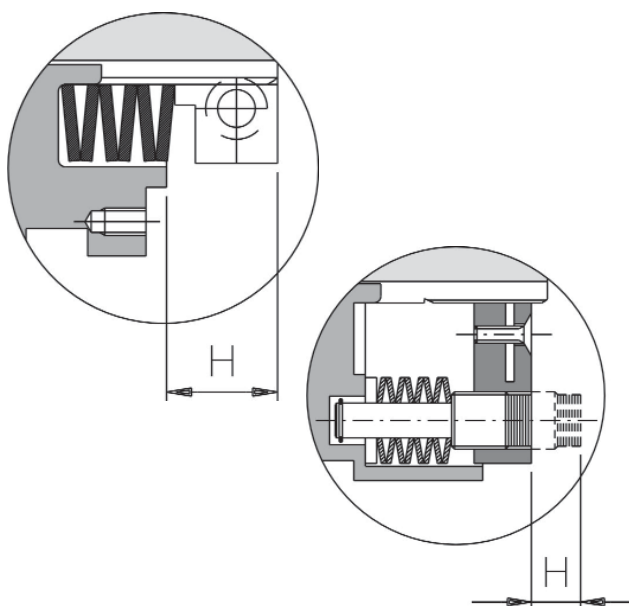
Type code: [DSR/F/SC_6.240_A15G1_100H7+keyway](#)

Torque setting | pre-setting

We recommend setting the torque by finding the slip point in actual operation and then increasing the torque until slip ceases.

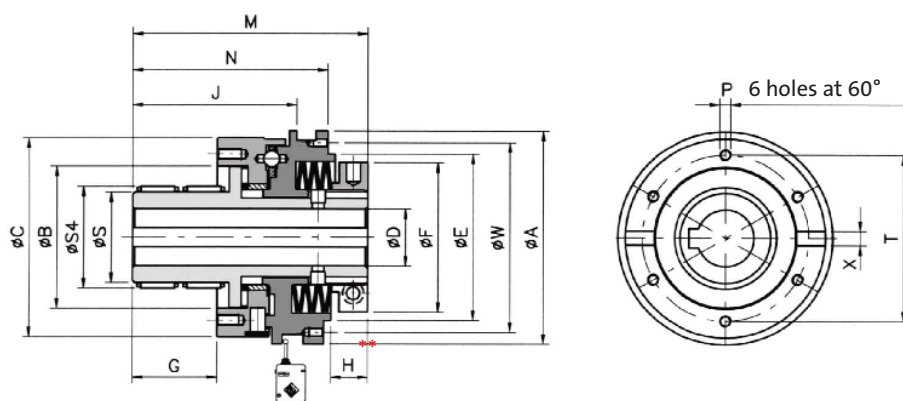
However, the slip torque can be pre-set by positioning the adjuster nut (or the guide pins on sizes 6.240, 7.280) to dimension H. Details are supplied on our instruction sheets.

Complete torque limiter assemblies can be supplied preset in the factory.



Type DSS/SC/ML Type DSR/F/SC/ML

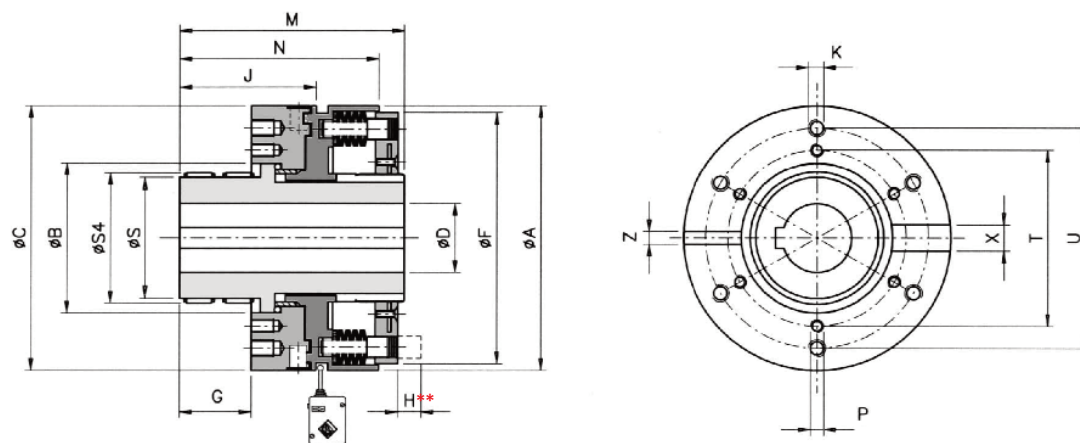
ball type with long hub & bearing
roller type with long hub & bearing



See pages 14-15 for spring sets

Size	Model	A	B H7	C	D H7 ØPilot ØMax*	E	F	G	J	M	N	P	S h8	S4 h7 bushing bearing	T	W	X	Weight kg
0.56	DSS DSR	56	41	56	- 20*	48	42	27.5	49 47.5	73.5	59.5 58.5	M5x8 M5x7	28	33 33	48	-	6x3	0.5
1.90	DSS DSR	90	60	84	- 28*	70	63	35	68.5 62.5	98	82 80	M5x10 M5x9	38	45 43	70	80 (3xM4)	6x3	1.9
2.110	DSS DSR	100	78	104	- 38*	89	82	38	77 74.5	114	92 90	M6x13	50	60 55	89	102 (6xM4)	8x3.5	3.2
3.130	DSS DSR	130	90.5	124	20 50*	112	104	47	94 92	135	112 111	M8x15	65	72 70	105	124 (6xM4)	10x4	5.4
4.160	DSS DSR	160	105	148	25 58*	137	128	53	111.5 107.5	160	129.5	M10x20 M10x18	75	85 83	125	149 (8xM4)	12x4	10.5
5.194	DSS DSR	194	120.5	176	28 68*	170	157	57.5	122.5 122	182	145.5 146	M12x20	90	98 98	155	184 (8xM4)	14x4.6	17.3

* Maximum bores require low profile keyways.



** torque setting dimension, see page 15

Size	Model	A	B H7	C	D H7 ØPilot ØMax	F	G	J	K	M	N	P	S h8	S4 h7	Z	T	U	X	Weight kg
6.240	DSR	240	136	240	50 90	227	64	122	M16x19	205	180	M12x19	110	118	16x5.1	160	200	18x5.1	30.3
7.280	DSR	280	198	280	50 120	263	82	164	-	282	241	M20x26	160	168	-	230	-	20x6.1	66.2

Ordering example

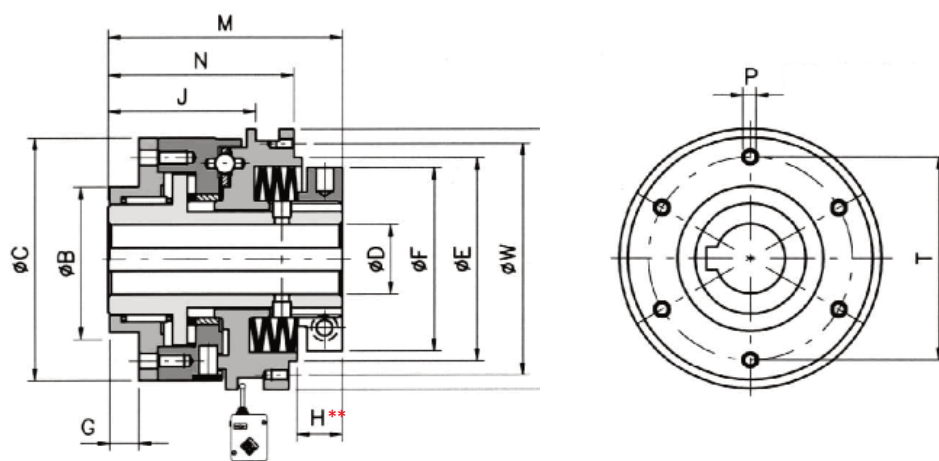
Qty 10 roller type torque limiters with long hub and taper roller bearing type DSR/F/SC/ML size 0.56 with A6M2 springs for torque range 30-72Nm, finish bore 15mm with keyway.

Type code: **DSR/F/SC/ML_0.56_A6M2_25H7+keyway**

These models should always be ordered with a finished bore and keyway.

Type DSS/SC/MC/FS Type DSR/F/SC/MC/FS

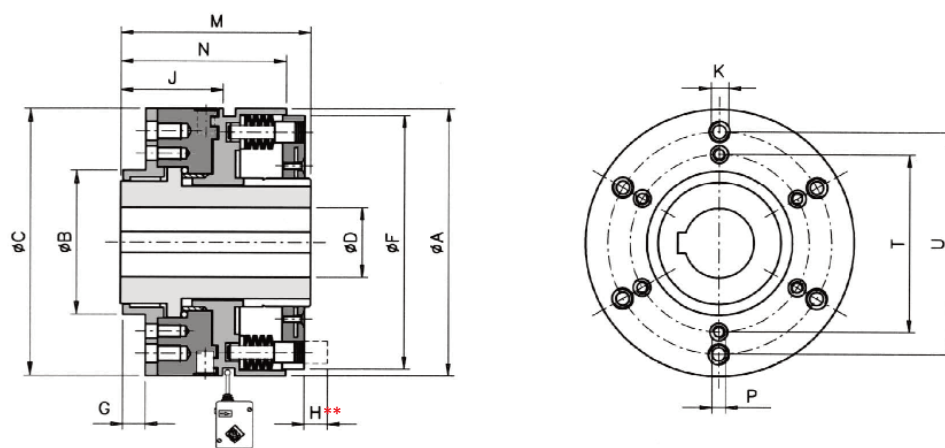
ball type with short hub & bearing
roller type with short hub & bearing



See pages 14-15 for spring sets

Size	Model	A	B H7	C	D H7 øPilot øMax		E	F	G	J	M	N	P	T	W	Weight kg
0.56	DSS DSR	56	38	56	-	20*	48	42	7.5	34.5 33	59	45 44	M5x8 M5x7	48	-	0.6
1.90	DSS DSR	90	50	84	-	28*	70	63	9.5	50.5 44.5	80	64 62	M5x10 M5x9	70	80 (3xM4)	2.1
2.110	DSS DSR	110	60	104	-	38*	89	82	11.5	56 53.5	93	71 69	M6x13	89	102 (6xM4)	3.5
3.130	DSS DSR	130	80	124	20	50*	112	104	11.5	65 63	106	83 82	M8x15	105	124 (6xM4)	5.7
4.160	DSS DSR	160	100	148	25	58*	137	128	15.5	83.5 79.5	132	101.5	M10x20 M10x18	125	149 (8xM4)	10.8
5.194	DSS DSR	194	120	176	28	68*	170	157	17.5	92.5 92	152	115.5 116	M12x20	155	184 (8xM4)	18

* Maximum bores require low profile keyways.



** torque setting dimension, see page 15

Size	Model	A	B H7	C	D H7 øPilot øMax		E	F	G	J	K	M	N	P	T	U	Weight kg
6.240	DSR	240	130	240	50	90	227	18	83.5	83.5	M16x19	170	142.5	M12x19	160	200	29
7.280	DSR	280	190	280	50	120	263	30	130	130	-	248	140	M20x26	230	-	66

Ordering example

Qty 2 ball type torque limiters with short hub and taper roller bearing type DSS/SC/MC/FS size 4.160 with A5G1 springs for torque range 150-690Nm, finish bore 50mm with keyway.

Type code: **DSS/SC/MC/FS_4.160_A5G1_50H7+keyway**

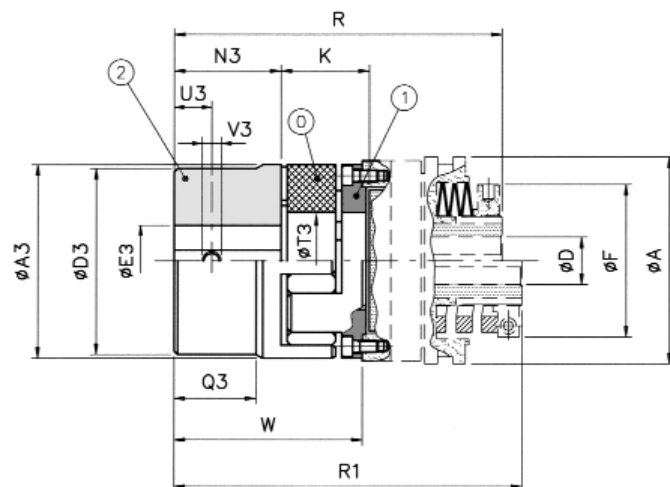
Type DSS/SC/GAS

Type DSR/F/SC/GAS

in-line ball torque limiter

in-line roller type limiter

Curved jaw couplings type GAS



0 - elastic element (Std. red 98 shore - A)

1 - flange

2 - hub

Different coupling element available on request

Suits temperature -40 to +125°C

Couplings parts only, order torque limiter from page 14.

Size					A3	D3	E3	N3	Q3	T3	U3	V3	R	R1	W	K	Weight
DSS	max	GAS	nominal	max			max										kg
DSR	torque		torque	torque													
(Nm)	(Nm)		(Nm)	(Nm)													
0.56	72	0	60	120	55	53	35	30	24	27	10	M5	103	121.5	57	31	1.1
1.90	350	2	325	650	80	78	48	45	37	38	15	M8	141	153	78	38	4.8
2.110	620	4	525	1050	105	103	62	56	45	51	20	M8	171	186	95	45	6.8
3.130	900	5	685	1370	120	118	74	65	52	60	20	M10	198	220	110	51	11.2
4.160	1800	7	1465	2930	160	158	95	85	69	80	25	M10	249	-	142	65	22.2
5.194	2800	8	3600	7200	200	180	110	100	81	100	30	M12	289	-	164	70.5	37.5

Ordering example

Coupling parts only, order torque limiter from page 14.

Qty 5 curved jaw couplings for ball and roller type torque limiters size 2.110, coupling size 4, finish bore 38mm with keyway.

Type code: **DSS/SC/GAS_4_38H7+keyway**

GAS coupling size	Misalignment type GAS		
	Angular	Axial	Radial
0 (24/28)	1° 18'	1	0.8
2 (38/45)	1° 18'	1.4	1
4 (48/60)	1° 18'	1.7	1.4
5 (55/70)	1° 18'	1.8	1.4
7 (75/90)	1° 18'	2.5	1.8
8 (90/100)	1° 18'	2.8	1.8

Type GEC misalignment capacity

Size	Misalignment Type GEC						Angle of twist at nom. tq.
	Angular		Axial		Radial		
							
	Continuous	Intermittent	Continuous	Intermittent	Continuous	Intermittent	
0	1°	1° 30'	± 0.7	± 1.5	0.5	0.7	2°
1	0° 48'	1°	± 0.7	± 1.5	0.5	0.7	2°
2	0° 36'	0° 48'	± 0.7	± 1.5	0.6	0.7	1° 45'
3	0° 30'	0° 42'	± 0.8	± 1.6	0.6	0.8	1° 15'
4	0° 24'	0° 30'	± 0.8	± 1.6	0.6	0.8	1°
5	0° 24'	0° 30'	± 0.8	± 1.6	0.6	0.8	1°
6	0° 24'	0° 30'	± 0.8	± 1.6	0.6	0.8	1°
7	0° 24'	0° 30'	± 0.8	± 1.6	0.6	0.8	1°

Type GTR misalignment capacity

Size	Misalignment Type GTR				Torsional Stiffness Nm/rad x 10 ⁻³
	Angular	Axial	Radial		
0	1°	1.40	0		80
1	0° 45'	0.80	0		117
2	0° 45'	0.95	0		156
3	0° 45'	1.25	0		415
4	0° 45'	1.45	0		970
5	0° 45'	1.65	0		1846

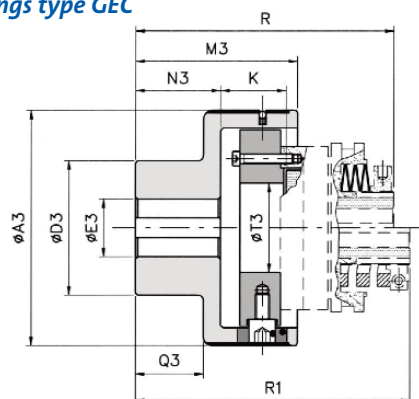
Type DSS/SC/GEC

in-line ball torque limiter

Type DSR/F/SC/GEC

in-line roller type limiter

Cartridge couplings type GEC



Suits temperatures up to 100°C
(170°C on request)

Couplings parts only, order torque limiter from page 14.

Size				A3	D3	E3 H7 øpilot ømax		M3	N3	Q3	T3	K	R	R1	Weight kg
DSS DSR	max torque (Nm)	GEC coupling	nominal torque (Nm)												
0.56	72	0	70	78	50	10	28	63.5	32	28	30	26.5	100.5	119	1.5
1.90	350	1	280	108	70	12	38	89	49	44	40	35	142	154	4.8
2.110	620	2	570	130	80	15	45	111	65	59	50	42	177	192	8.4
3.130	900	3	980	161	100	15	60	140	85	77	80	48	215	237	14.6
4.160	1800	4	2340	206	120	20	70	168	105	97	85	57	261	-	26.9
5.194	2800	5	3880	239	135	30	80	201	130	120	98	61.5	309.5	-	43
6.240	8000	6	15000	315	215	40	150	260	165	150	114	83	381	-	95
7.280	12000	7	30000	364	240	40	180	310	205	185	154	88	485	-	199

See facing page for misalignment

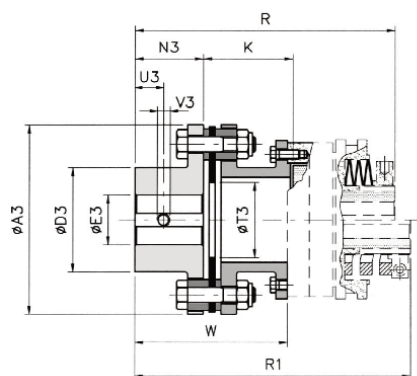
Type DSS/SC/GTR/S

in-line ball torque limiter

Type DSR/F/SC/GTR/S

in-line roller type limiter

Backlash free torsionally rigid metal disc couplings type GTR



Size				A3	D3	E3 øpilot ømax		N3	T3	U3	V3	R	R1	W	K	Weight kg
DSS DSR	Max torque (Nm)	GTR coupling	nominal torque (Nm)													
0.56	72	0	60 120	67	33	13	23	25	25	5	M5	108.5	-	62.5	41.5	1.2
1.90	350	1	180 360	93	50	13	35	45	32	10	M5	156	168	93	53	3.9
2.110	620	2	560 1120	126	70	17	50	60	45	10	M5	192.5	207.5	116.5	62.5	8.4
3.130	900	3	900 1800	143	84	17	58	70	50	15	M8	219.5	241.5	131.5	66	13.2
4.160	1800	4	1100 2200	162	105	17	75	85	70	15	M8	265.5	-	158.5	81.5	22
5.194	2800	5	2600 5200	206	118	20	85	100	75	20	M8	305.5	-	180.5	87	35.7

See facing page for misalignment

Type DSS & DSR | other models

Model	DSS	DSR/F	DSR	DSR/F/AM	DSS/TAS	DSR/TAS	DSR/SMO	DSR/F/SMO	DSR/F/RF
	Ball	Roller synchronised	Roller	Mechanical stop	Ball non-releasing	Roller non-releasing	Roller one way	Roller non-synchronised	Roller free rotation
Random re engaged	✓		✓				✓		
Timed re-engagement (standard at 360°, others on request)		✓						✓	✓
Stable transmission & high torques		✓	✓	✓		✓	✓	✓	✓
High sensitivity and fast release	✓				✓				
Retains synchronisation (rotation limited to 345°)				✓					
Axial movement without angular release					✓	✓			
One way/different torques by direction of rotation							✓	✓	
Suitable for high inertias									✓
Free rotation and manual re-engagement									✓

DSS and DSR torque limiters are constructed in turned steel to UNI EN/0083/98. Surfaces are phosphated. On request special surface treatments for food & pharmaceutical environments are possible.

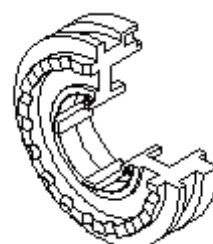
Type DSR | random re-engagement Type DSR/F | synchronised re-engagement

DSR models feature rollers in a number of slots around the drive ring. Re-engagement can occur at random with intervals of 15 to 22.5° depending on size.

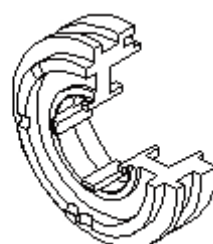
The more popular and standard roller torque limiter is the DSR/F which synchronises input to output with engagement that normally occurs once every 360°. Rollers are arranged in a patented distribution so that at least 3 equidistant rollers are in contact with the rolling surface. This achieves a balanced load on the bearings at all times.

On request multiple synchronised re-engagement positions are possible at 36°, 45°, 60°, 72°, 120° and 180°.

Once the machine has stopped, it may be necessary to manually turn the drive to achieve re-engagement, or run the machine at low speed.

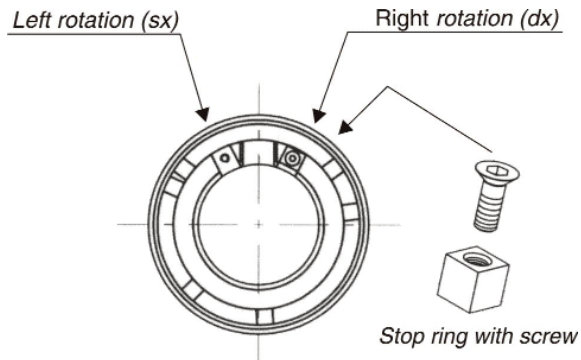


Type DSR



Type DSR/F

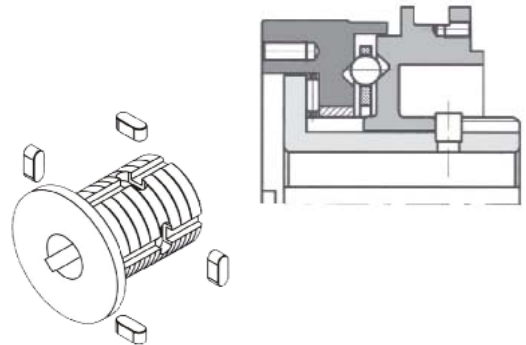
Type DSR/F/AM | mechanical stop



DSR/F/AM models are used where it is essential to maintain the timing between input and output. On overload the limiter releases but rotation between input and output is limited to 345° by a stop pin. This patented design allows time to switch off the drive. The stop pin is designed to transmit between 2.5 and 4 times rated torque depending on size.

Re-engagement is done by reversing the rotation until the original relationship is restored.

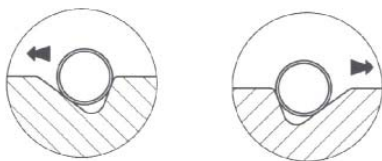
Type DSS/TAS | ball non-releasing DSR/TAS | roller non-releasing



TAS models utilise four stop pins in the hub to prevent full axial movement and dis-engagement of the drive.

On overload there is sufficient axial movement to be detected by a proximity switch but the balls or rollers do not come out of their sockets and the drive is maintained.

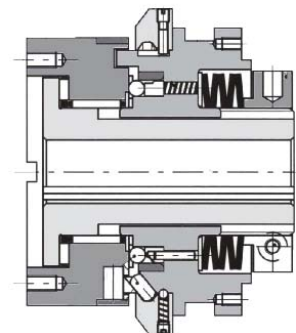
Type DSR/SMO | one way DSR/F/SMO | 1 way synchronised



The patented SMO designs use a special shape of slots that transmit high torque one direction and low torque in the other. They can be used as a one way clutch acting as a locked drive one-way and a low slip torque the other. Alternatively different torque limits can be set for the two directions.

It is important to specify the directions of rotation and required torques.

Type DSR/F/RF | free rotation



At high inertias torque limiters can suffer wear and damage before the drive can be stopped. The DSR/F/RF roller design achieves free release on overload. This patented design means that the machine can be brought to a stop without damage to the torque limiter.

Re-engagement occurs after an external ring is manually moved axially and the drive is rotated slowly.

Type DSS/SG | backlash free

These torque limiters eliminate spline and keyway connections to create a unit that is free of angular backlash. There are two versions - Positive and Negative - referring to the type of springs.



- Free of angular backlash
- Torques from 5 to 750Nm
- Self-contained & supplied assembled
- ML versions for long hubs
- Coupling version for in-line drives
- Suits oily & dirty conditions



Spring types

Positive version

Disc springs have a conventional and positive spring rate, that means higher compression results in higher force. Compared to negative spring versions, rated torques are higher. Models are less sensitive to transitory torques and vibrations. Torques are easy to adjust and set.

These torque limiters are best fitted to low speed shafts as prolonged running after overload will result in wear damage. Ideally the motor should be braked to a stop in 1-2 revolutions.

Negative version

The disc springs are designed so that the force drops sharply as they are compressed. This leads to extremely fast and sensitive machine protection. Torque transmission falls immediately. Furthermore a low residual torque means that these models can be run disengaged for periods of time.

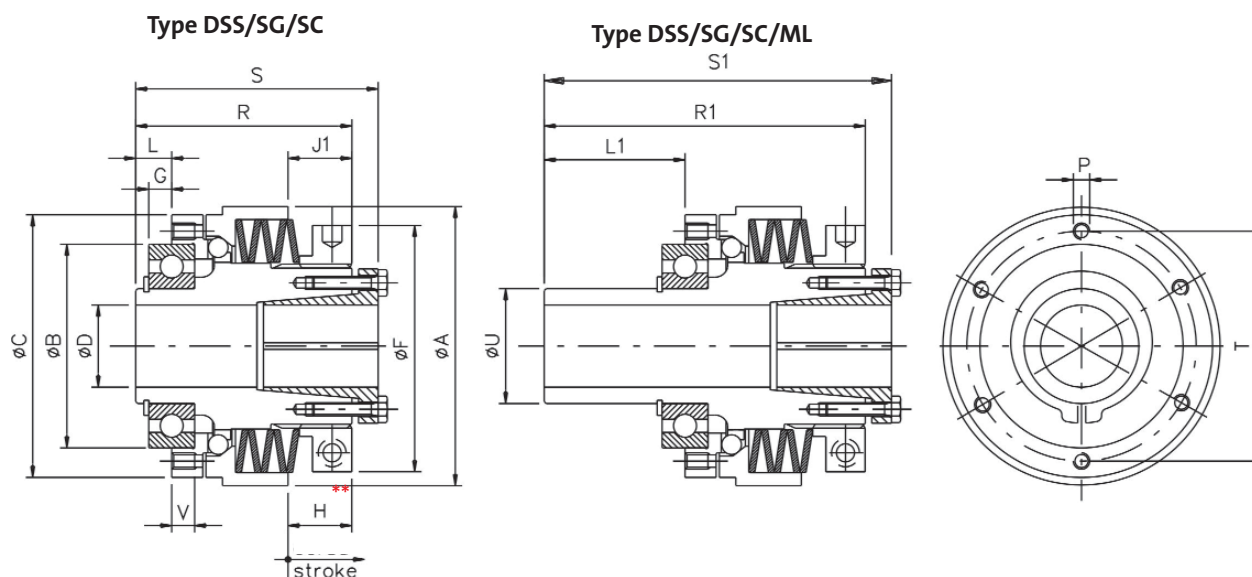
Axial lengths are very compact. Torque setting is more difficult and limiters are normally supplied pre-calibrated. Manual resetting after overload is needed.

Full information on negative spring versions is available on request.

Other options (details on request)

- Version/ML suits the connection of longer hubs
- Version/F synchronises input to output with engagement only at 360°
- Version /PI with synchronised engagement and dimensions suiting index boxes/rotary tables
- In-line assemblies with the GTR metal disc coupling or GAS/CCE backlash free jaw coupling
- Versions with keyway shaft connections instead of bushes
- Stainless steel construction or special surface treatments to resist aggressive environments

Type DSS/SG | backlash free positive version



Standard dimensions																	On request								
Size	A	B h5	C	D H7 ømax	F	G*	L	L1	J1	P	R	R1	S	S1	T	U h6	V	B h5	C	G	L	L1	P	T	V
0.63	70	42	65	20	63	4	7	32	18	6xM5	56.5	81.5	63.5	88.5	48	30	4	47	-	5	5	33	8xM4	56	5
1.80	85	62	80	25	75	7	11	43	19.5	6xM5	66	98	74	106	70	35	7	-	-	-	-	-	8xM5	71	-
2.96	100	75	96	35	82	9	14	55	20	6xM6	77.5	118.5	85.5	126.5	89	45	9	-	95	-	-	-	8xM6	85	-
3.116	115	90	116	42	104	8	14	67	16	6xM8	82	133	92	143	105	55	12	-	110	10	16	-	8xM6	100	10
4.138	140	100	138	50	128	6.5	14.5	69.5	22.5	6xM10	96	151	107	162	125	65	14	-	130	10	18	71.5	8xM8	116	11

* Fitting tolerance +0.1

Size	Torque (Nm)	Stroke (mm)	Weight (Kg) SC SC/ML		Inertia (Kg ^m ²)			Max speed recommended (rpm)	Locking assemblies	
					Flange side SC	Nut side			Screws	Tightening torque (Nm)
						SC	SC/ML			
0.63	5 - 75	1.1	1.1	1.2	0.00008	0.00034	0.00034	4000	6XM4	3
1.80	12 - 125	1.3	1.9	2	0.00029	0.00094	0.00094	3000	8XM4	3
2.96	17 - 200	1.5	3.4	3.7	0.00068	0.00221	0.00227	2500	10XM4	3
3.116	40 - 415	2	4.6	5	0.00129	0.00372	0.00389	2000	8XM5	5
4.138	75 - 750	2.2	8.1	8.7	0.00315	0.00902	0.00937	1200	8XM6	7.5

** torque setting dimension, see page 15

Ordering example

Qty 1 backlash free torque limiter with positive springs rate type DSS/SG/SC size 2.96, multiple re-engagement positions, finish bore 30mm with locking bush.

Type code: **DSS/SG/SC_2.96_MULTI_30H7+bush**

Type DSR/F/AP and DSR/TF/AP | pneumatic roller type torque limiter

Pneumatic torque limiters allow external adjustment of the release torque whilst running.



Type DSR/F/AP is a roller type torque limiter designed to give accurate release at preset variable torques.

Stationary field pneumatic cylinders are maintenance free.



Type DSR/TF/AP is a friction torque limiter that can be used in constant slip applications such as tensioning.

Type DSR/F/AP | pneumatic roller type torque limiter

These pneumatically operated torque limiters allow easy torque adjustment and accurate torque limiting. The patented design uses a pneumatic cylinder with 6 bar supply (up to 15 bar on request) to apply engagement force onto rollers similar to the DSR/F range. Re-engagement occurs in synchronisation at 360° (other multiple re-engagement positions on request).



- Release torque easily adjustable whilst running
- Can act as disconnect clutch
- Sensitive and fast acting
- EM microswitches detect overload (page 13)
- Re-engagement in synchronisation



Torque setting

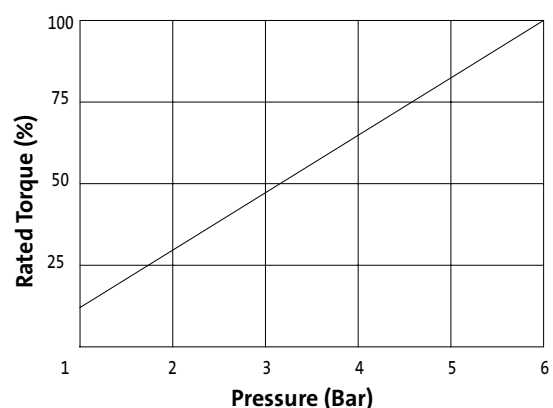
The relationship between release torque and applied pressure is virtually a straight line, and independent of speed. This permits fine adjustment when running to match exact process requirements.

If torque loads vary during the process, a two stage pneumatic circuit can be used, for example to achieve high limiting torques during starting and lower sensitive limits during the running of process.

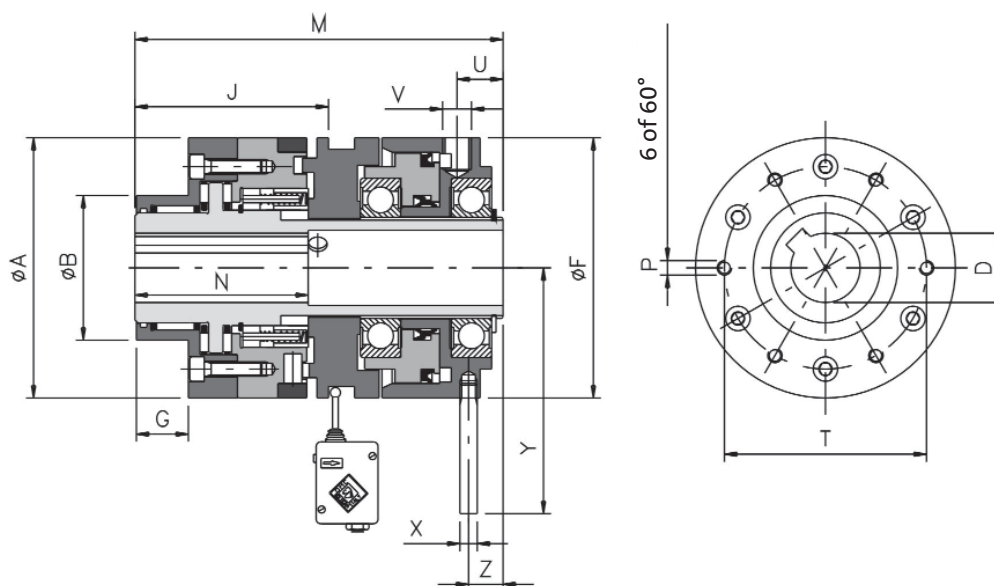
Release on overload is sensitive and fast as there are no springs to compress. Re-engagement at the synchronised position should be done at low speed.

Other options (details on request)

- Models with inline couplings, either the GTR metal disc coupling or the GEC cartridge couplings
- Shaft connection by backlash free locking bushes instead of keyways
- Version with ball bearings on the flange end, better suiting long periods of disengaged running



Type DSR/F/AP | pneumatic roller type torque limiter



Grand size	A	Standard flange				D H7 øMax	F	J	M	N	U	V	Z	X	Y
		B h7	G	P	T										
0.56	56	38	10	6xM5	48	18	56	56	97	45	11.5	1/8 BSP	7.5	6	63
1.90	90	50	18	6xM5	70	25	90	67.5	128	60	15	1/4 BSP	11	6	80
2.110	110	60	20	6xM6	89	38	110	85	148	70	17.5	1/4 BSP	13.5	8	105
3.130	130	80	19	6xM8	105	45	130	90.5	160	100	18.5	1/4 BSP	14.5	8	115
4.160	160	100	22	6xM10	125	55	160	109	192	115	25	1/4 BSP	17	10	146
5.194	194	120	26	6xM12	155	65	215	125	202	145	26.5	1/4 BSP	18	12	184
6.240 CB	240	Available on request		6xM16	200	90	290	Available on request	305	Available on request					
6.240 CA	240			6xM16	200	90	290		355						
7.280 CB	280			6xM20	230	120	345		320						
7.280 CA	280			6xM20	230	120	345		375						

Grand size	Torque (Nm)			Weight (kg)	Inertia ømax (kgm²)		Max speed (rpm)
	Standard 1 - 6 bar	On request 10 bar 15 bar			Flange side	hub side	
0.56	7-29	45	70	1.5	0.00015	0.00030	11000
1.90	20-115	185	280	5.0	0.00179	0.00260	7000
2.110	15-195	330	480	9.0	0.00512	0.00683	5000
3.130	25-310	520	780	13.3	0.01092	0.01413	4300
4.160	55-530	900	1335	19.0	0.03088	0.03879	3600
5.194	330-1600	2600	3970	35.8	0.05957	0.09306	3200
6.240 CB	1100-5800	(Max 6 bar)		Available on request			
6.240 CA	3400-15000	(Max 5 bar)					
7.280 CB	1500-7500	(Max 6 bar)					
7.280 CA	7000-30000	(Max 6 bar)					

CB are low torque models, CA are high torque models.

These models must be supplied with finished bores and keyways.

Ordering example

Qty 3 pneumatic roller torque limiters type DSR/F/AP size 4.160 for 6 bar operation with torque range 55 to 530Nm, finish bore 50mm with keyway.

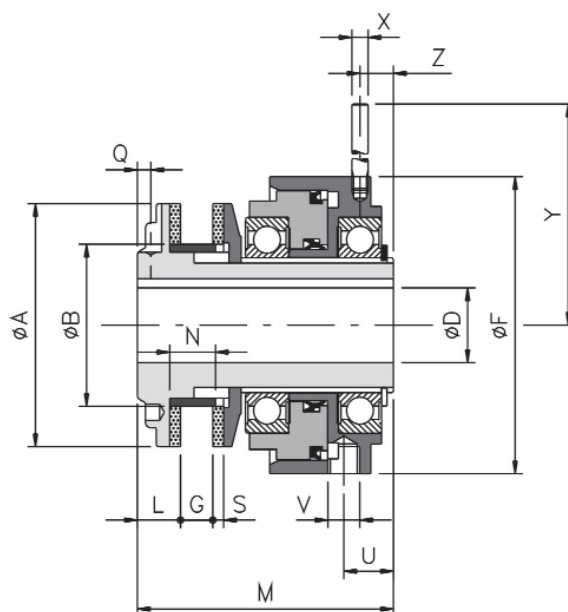
Type code: **DSR/F/AP_4.160_6bar_50H7+keyway**

Type DSF/TF/AP | pneumatic friction torque limiter

This new patented design uses pneumatic actuation with friction transmission for tensioning, braking and torque limiting. A head with a pneumatic piston acts on friction discs and a platewheel similar to model DSF/EX.



- Easily adjustable torques 2-804Nm
- Straight line relationship torque - pressure
- Can provide constant torque, e.g. for tensioning
- Maintenance free at low/medium speeds
- Also available with TAC or GEC coupling for in-line drives



Size	Torque range Nm		A	B h7	D H7 ømax	F	G		L	M	N	Q	S	U	V	Z	X	Y	Weight kg
	Standard (1-6 bar)	On request (10 bar)					Min	Max											
0.50	1.7-14.3	20	50	36	19	56	3.5	6	11	62	10	3.5-M4	3	11	1/8"	7	6	63	0.7
1.70	20-59	91	70	45	25	90	5	10	15	85	15	4.5-M4	4	14.5	1/4"	10.5	6	80	2.4
2.90	30-82	124	90	60	38	110	7	12	16	95	17	5-M6	4	17.8	1/4"	13.5	8	105	4.3
3.115	41-139	218	115	72	45	130	9	16	18	112	21	5-M6	4	18.5	1/4"	14.5	8	115	7.0
4.140	48-215	348	140	85	55	160	11	19	20	128	25	6-M6	5	24.5	1/4"	16.5	10	146	11.9
5.170	199-535	804	170	98	65	215	15	22	22.5	140	28	6.5-M8	5	25.5	1/4"	18	12	184	19.8

Ordering example

Qty 2 pneumatic friction torque limiters size 2.90 for torque range 30-82Nm, finish bore 30mm with keyway.

Type code: **DSF/TF/AP_2.90_30H7+keyway**

These models must be supplied with finished bores and keyways.

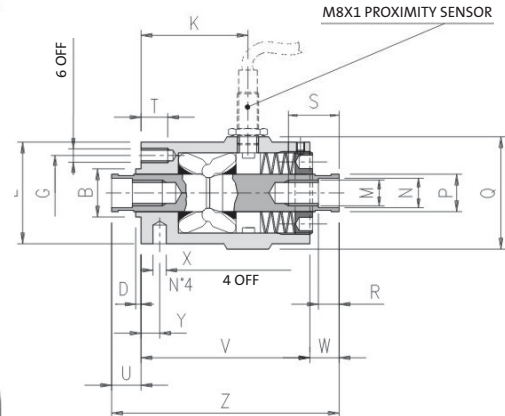
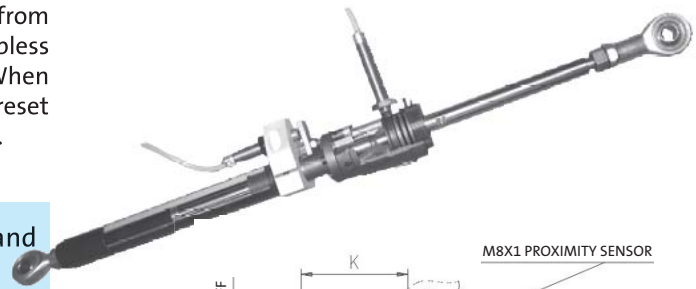
On request the DSF/TF/AP can be supplied for mounting onto hollow shaft gearboxes.

Type DSA | linear slide force limiter

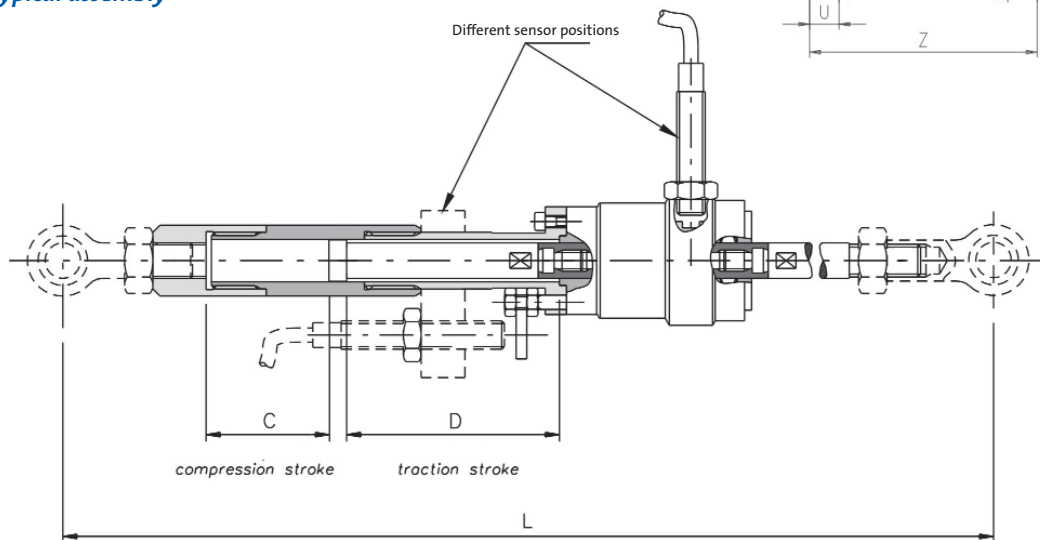
Frequently used for torque arm mounting of gearboxes, the DSA linear slide torque limiters give protection from both tensile and compressive linear overloads. Stepless load adjustment is achieved by an adjuster nut. When the set load is exceeded, the limiter enters a free, preset stroke and a proximity switch detects the overload.



- Limits for both tension and compression forces
- Adjustable release forces
- Backlash free
- Automatic re-engagement
- Proximity switch signal on overload
- Available as customised assembly



Typical assembly

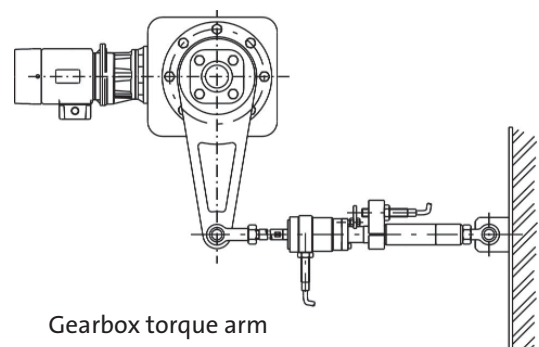
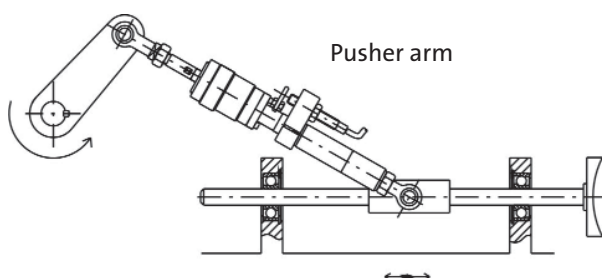


Different force ranges and free strokes are available.

Other dimensions on request.

DSA force limiters can be supplied as complete assembled with rod ends, customised assembled lengths, proximity switch and pre-set force limit. Speak to your Lenze representative.

Size	Force range (N)			M	NH7	P	Q	V	Z	Stroke ranges (mm)		L (+5)
	Low	Medium	High							Compression (C)	Traction (D)	
1	ST 30-120	SQ 40-480	A6G1 310-1400	M6 x 0.75	7	10	36.5	50	66	6-100		213-465
2	A6S1 350-1250	-	A7G1 350-3200	M10x0.75	11	14	42	61	85	9-100		263-510
3	A6S1 800-3200	-	A6G1 1200-7000	M12x1	13	20	56	78	105	12-100		316-578





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