

# Disc Spring Torque Limiters

## Standard Mini



## Heavy Duty ZBC & NBC



## General Selection

Type	Available Functions						Torque Range Nm	Ø mm		Available Forms	Max Speed	Torque Accuracy	Service Life	Moment of Inertia	Surface Plating	Available Stop Switch	Catalog Page
	Zero Backlash	Quick Guard	Synchronous	Continuous	Free Running	Remotely Adjust		Bore + Keyway	Clamping Element								
	①	②	③	④	⑤												
ZBC	X	X	X				3-740	8-50	10-60	H, J, K, L, M, N, P, R, T	High	High	High	Low	Phosphatation. Chemical Nickel upon request	A, B, C	
NBC	X	X	X			.65-440	6 - 45	6 - 50	H, J, K, L	High	Medium			D			
Standard		X	X	X	X	2.5-8200	7 - 110*		A, B, C, D		Low			A, B, C			
Mini		X	X			2.5-450	7 - 45		E, F, G	See available functions							
ZBC Pneumatic	X	X	X		X	X	4-530	8 - 55*	Upon request	V, W	Very high		Low	Zinc plating	A, B, C		
Securex							.5-10000	5-120		T, C	Low	Low	Low	Medium	Zinc plating		

\* d max with keyway seat according to DIN 6885/3

① Angular Backlash between input and output close to zero.

② Re-engage automatically in a random angular position when the overload is removed. For Medium-High Speed. Quick Guard R for high torque - low speed.

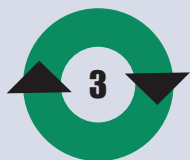
③ Synchronous Re-engage automatically after 360° in the same angular position every time. For medium speed.

④ Continuous In case of overload the switch give a signal without interruption of the torque transmission. For very high speed.

⑤ Free Running In case of overload input and output are disconnected and output runs to idle. For very high speeds. Manual re-engagement.

# Standard Disc Spring Torque Limiters

## Selection Icons



- Very low backlash
- low moment of inertia
- Minimised dimensions & weight
- Reduced wear for longer lifetime
- ZBC for heavy duty
- NBC fo light duty



### Quick Guard

1. Disengages at pre-set torque
2. Automatically re-engages as load reduces – 15 degrees of rotation



### Synchronous

1. Re-engages after 360 degrees



### Continuous

1. Drive does not fully disengage to ensure torque transmission is not interrupted
2. Micro-switch is activated
3. Manual/electronic re-set required



### Free Running

1. Drive fully disengages
2. Manual reset required to re-engage drive

During normal running torque is continuously transmitted from the hub to the flange through balls or rollers held in indentations in matching halves of a carrier flange by disc springs. As the torque exceeds a pre-set limit the balls or rollers are forced out of their indentations, allowing the flange sections to rotate separately. At this point the torque being transmitted is negligible and a limit switch is activated to signal emergency stop of the motor. In Quick Guard versions re-engagement is automatic as soon as the torque has fallen below the pre-set value. Synchronous versions also re-engage automatically but after one full revolution has been completed. In the Continuous version, the rollers are prevented from fully disengaging and a switch is activated to signal motor stop. The Free Running version also disengages the drive at a pre-set torque value but must be manually re-set to re-engage the drive.

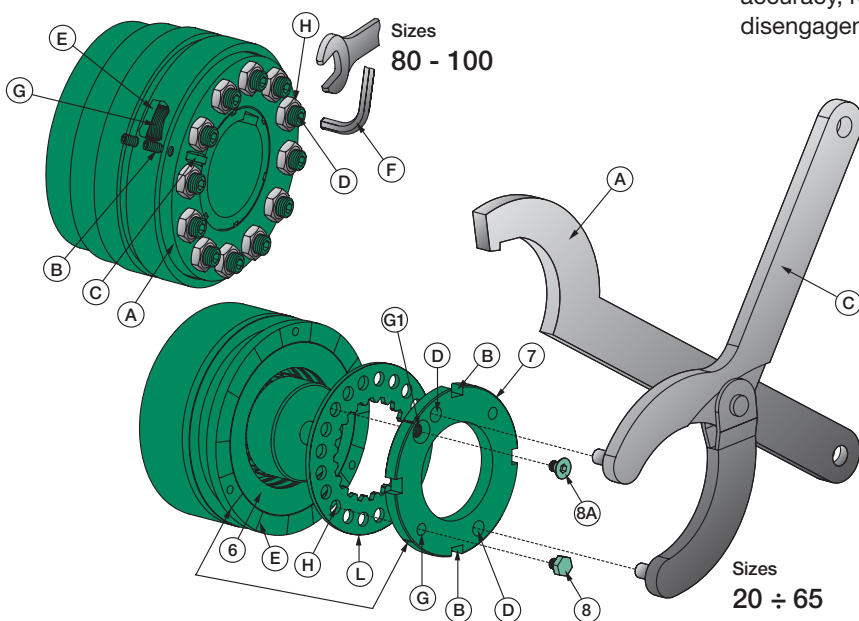
## Torque Adjustment

### Sizes 20 ÷ 65

Manually tighten the nut (7) until contacts the disc springs (6). Insert wrench (A) in to the seats (B) or the wrench (C) in to the holes (D) and tighten the nut clockwise for the number of indents (E) corresponding to the request disengagement torque (according with the torque diagram supplied together with the torque limiter). Tighten the screw (8) or (8a) in the threaded hole (G) or (G1) of the nut (7) in correspondence with one of the holes (H) on the locking washer (L).

### Sizes 80 ÷ 100

Manually turn the nut (A) up to the end of the stroke, then go back anticlockwise until the 3+3 locking screws (B), are aligned to 3 of the 6 splines (C) on the hub. Tighten the 3+3 locking screws (B), to positively secure the nut (A) to the hub. Manually tighten the adjusting screws (D) until they contact the mobile element (E). Insert the wrench (F) and uniformly tighten the adjusting screws (D) at the same level for the number of revolutions corresponding to the requested disengagement torque, according to the torque diagram of the cup springs packs (G). Secure the adjusting screws (D) by means of the lock-nuts (H). To guarantee the optimum accuracy, recheck the preset slip-torque after the first disengagements.



## Torque Adjustment

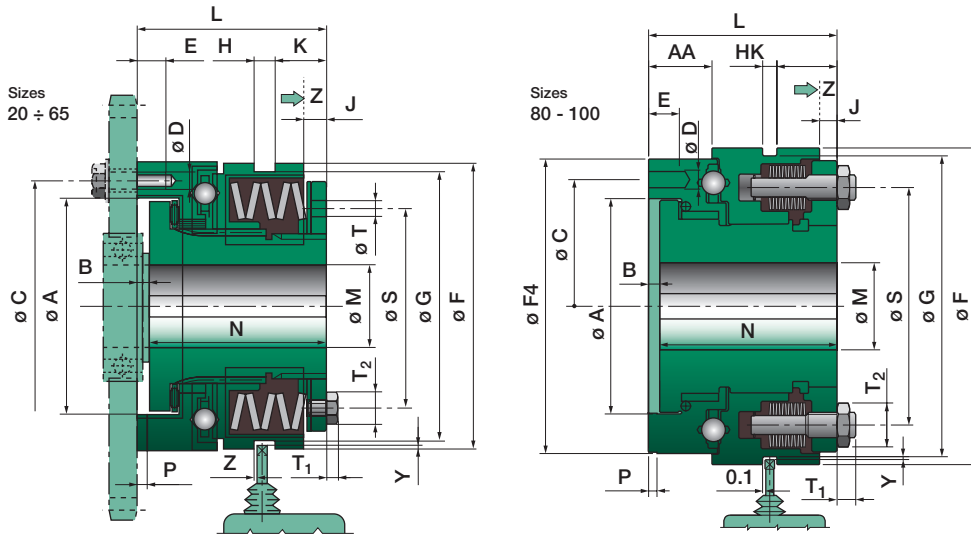
Stock availability c/w bore H7 and keyway Js9 - DIN 6885/1 (mm)						
Grand Size ø M <sup>H7</sup>	20	25	35	45	55	65
19	X	X				
20	X	X				
24		X				
25		X	X			
30			X			
35			X	X		
40				X		
45				X		
50					X	
55					X	
60						X
70*						X

\* Keyway seat acc. to DIN 6885/3

# Standard Disc Spring Torque Limiters – Type A

## Basic Type

For connection shaft-drive component such as gear or pulley, supported on the shaft



## Dimensions

Size	Overall Dimensions																						
	A	B	C	D	E	F	F <sub>4</sub>	G	H	K	J	L	M		N	P	S	T	T <sub>1</sub>	T <sub>2</sub>	Y	AA	
	Min		Max		Min		Max		Min		Max		Min		Max		Min		Max		Min		Max
20	41	4	48	6xM5	6.5	55	—	50	9	7.5	3	38.5	7	20	34.5	3.1	38.5	5	3	7	2	—	
25	60	4	70	6xM5	8	82	—	72.5	9	11.5	6	52	10	25	48	3.1	54	6	3.5	8	2	—	
35	78	5	89	6xM6	10	100	—	90.5	9	12	5	61	14	35	56	3.6	70	6	4	10	2	—	
45	90.5	5	105	6xM8	12	120	—	112	10	21	8.5	78	18	45	73	4.1	84	6	4	10	2	—	
55	105	6.5	125	6xM10	15	146	—	140	9	27	11	100	24	55	93.5	4.1	108	7	5.5	13	2	—	
65	120.5	6.5	155	6xM12	17	176	—	170	9	33	12	113.5	30	70*	107	4.6	129	10	5.5	13	2	—	
80	136	7	160	6xM12	20	200	186	190	9	39 <sup>⑤</sup>	14 <sup>⑤</sup>	119 <sup>⑤</sup>	40	80	112 <sup>⑤</sup>	5.3	150	—	15	24	2	26	
100	168	8	200	6xM16	25	240	231	230	9	46 <sup>⑤</sup>	15 <sup>⑤</sup>	141 <sup>⑤</sup>	50	110*	133 <sup>⑤</sup>	5.8	186	—	21	30	2	30	

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L = 134, N = 127

⑤ Free Running 100: K = 64, J = 33, L = 159, N = 151

## How to order:

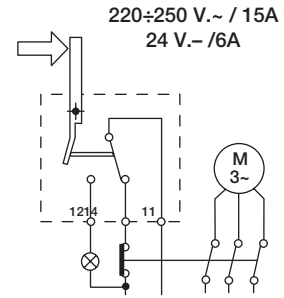
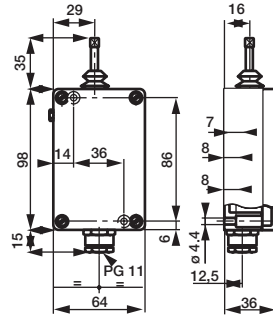
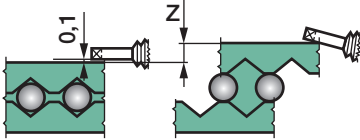
Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type A

## Basic Type

### EMERGENCY STOP SWITCH Type A



### Arrangement Possibilities

Range	Size	Code	Disc Springs			
			Size	Arrangement		Free Running A-B-C-D
				Standard A-B-C-D	Free Running A-B-C-D	
Quick Guard	20	S-Light	20/65	6 x 1s	2 x 1s	1
			80	3 Packs		3 Packs
			100	3 Packs		3 Packs
Quick Guard R	25	M-Medium	20/65	5 x 1m	2 x 1m	1
			80	6 Packs		6 Packs
			100	6 Packs		6 Packs
Synchronous	35	M-Medium	20/65	5 x 1m	2 x 1m	1
			80	6 Packs		6 Packs
			100	6 Packs		6 Packs
Continuous*	45	L-Heavy	20	5 x 1m	2 x 1l	1
			25/65	5 x 1l	2 x 1l	1
			80	12 Packs		12 Packs
Free Running*	65	LL-R-Heavy	20	4 x 1l	1	1
			25/65	3 x 2l	1	1
			80	12 Packs		12 Packs
			100	12 Packs		12 Packs
			100	12 Packs		12 Packs

### Emergency Stop Switch

Size	Z				
	(1) mm	(2) mm	(3) mm	(4) mm	(5) mm
20	1.4	1.2	0.6	1.6	—
25	2.3	1.8	0.8	2.3	—
35	2.4	2	1.1	3	—
45	2.7	2.2	1.2	3.5	—
55	3.7	2.5	1.2	3.8	2.5
65	4.6	3	1.6	4.5	3
80	5	3.5	2.5	—	3.5
100	5.5	4	2.7	—	4

(1) Quick Guard - (2) Synchronous - (3) Continuous - (4) Free Running - (5) Quick Guard-R

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

### Technical Characteristics

Size	Disengagement Torque							Maximum Speed – Standard A-B-C-D						
	Quick Guard Nm				Synchronous-Continuous-Free Running Nm			Quick Guard n/1'		Synchronous n/1'		Continuous n/1'		Free Running n/1'
	Springs Type							Springs Type						
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L	S-M	L	S-M-L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	3300	1800	1000	500	4000	3000	—
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	2900	1450	950	450	3900	2900	5000
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	2400	1200	800	400	3300	2400	4000
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	2000	1000	650	300	2800	2000	3500
55	50-100	100-200	200-500	400-1000	100-200	200-400	400-800	1600	850	550	250	2300	1600	3000
55R*	—	—	—	800-2000	—	—	800-2000**	—	90	—	90	—	700	—
65	85-250	230-600	300-1000	600-2000	170-450	350-900	600-1800	1400	700	400	150	1800	1400	2300
65R*	—	—	—	1200-3400	—	—	1200-3400**	—	70	—	70	—	600	—
80	180-480	360-960	720-1950	1600-3300	300-750	600-1500	1200-3000	1200	600	150	80	1500	1000	1600
80R*	—	—	—	2900-5800	—	—	2900-5800**	—	40	—	40	—	400	—
100	250-520	500-1050	1000-2100	2000-3600	550-1100	1100-2200	2200-4400	950	480	100	50	1300	800	1400
100R*	—	—	—	3000-8200	—	—	3000-8200**	—	30	—	30	—	300	—

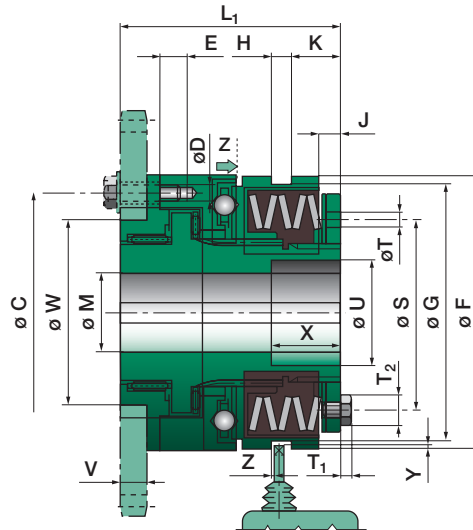
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Standard Disc Spring Torque Limiters – Type B

## with Roller Bearing Flange

With drive centering flange mounted on a roller bearing.  
Ready for mounting.



## Dimensions

Size	Overall Dimensions																			
	C	D	E	F	G	H	K	J	L <sub>1</sub>	M		S	T	T <sub>1</sub>	T <sub>2</sub>	U	V	W <sup>6</sup>	X	Y
										Min	Max									
20	48	6xM5	6.5	55	50	9	7.5	3	51	7	20	38.5	5	3	7	21	8	38	15	2
25	70	6xM5	8	82	72.5	9	11.5	6	70	10	25	54	6	3.5	8	26	10	50	20	2
35	89	6xM6	10	100	90.5	9	12	5	78	14	35	70	6	4	10	36	12	60	25	2
45	105	6xM8	12	120	112	10	21	8.5	96	18	45	84	6	4	10	46	12	80	30	2
55	125	6xM10	15	146	140	9	27	11	124.5	24	55	108	7	5.5	13	56	16	100	30	2
65	155	6xM12	17	176	170	9	33	12	140	30	70*	129	10	5.5	13	66	18	120	30	2
80	160	6xM12	20	200	190	9	39 <sup>⑤</sup>	14 <sup>⑤</sup>	150 <sup>⑤</sup>	40	80	150	—	15	24	82	20	130	25 <sup>⑤</sup>	2
100	200	6xM16	25	240	230	9	46 <sup>⑤</sup>	15 <sup>⑤</sup>	175 <sup>⑤</sup>	50	110*	186	—	21	30	111	25	160	35 <sup>⑤</sup>	2

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L<sub>1</sub> = 165, X = 40

⑤ Free Running 100: K = 64, J = 33, X = 53

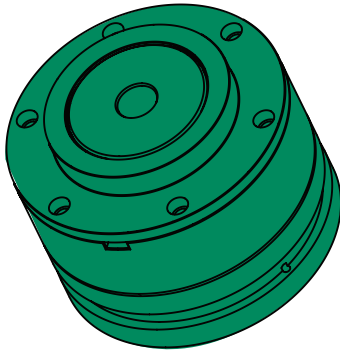
## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type B

with Roller Bearing Flange



## Arrangement Possibilities

Range	Size	Code	Size	Disc Springs			
				Arrangement			
				Standard A-B-C-D	Free Running A-B-C-D		
Quick Guard	20	S-Light	20/65	6 x 1s		2 x 1s	
			80	3 Packs		3 Packs	
			100	3 Packs		3 Packs	
Quick Guard R	25	M-Medium	20/65	5 x 1m		2 x 1m	
			80	6 Packs		6 Packs	
			100	6 Packs		6 Packs	
Synchronous	35	M-Medium	20/65	5 x 1m		2 x 1ℓ	
			80	6 Packs			
			100	6 Packs			
Continuous*	45	L-Heavy	20	5 x 1m		2 x 1ℓ	
			25/65	5 x 1ℓ			
			80	12 Packs			
Free Running*	55	L-Heavy	20	5 x 1m		2 x 1ℓ	
			25/65	5 x 1ℓ			
			80	12 Packs			
Free Running*	65	LL-R-Heavy	20	4 x 1ℓ		2 x 1ℓ	
			25/65	3 x 2ℓ			
			80	12 Packs			
Free Running*	80	LL-R-Heavy	20	4 x 1ℓ		2 x 1ℓ	
			25/65	3 x 2ℓ			
			80	12 Packs			
Free Running*	100	LL-R-Heavy	20	4 x 1ℓ		2 x 1ℓ	
			25/65	3 x 2ℓ			
			80	12 Packs			
Free Running*	100	LL-R-Heavy	20	4 x 1ℓ		2 x 1ℓ	
			25/65	3 x 2ℓ			
			80	12 Packs			

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

Size	Disengagement Torque							Maximum Speed – Standard A-B-C-D						
	Quick Guard Nm				Synchronous-Continuous-Free Running Nm			Quick Guard n/1'	Synchronous n/1'	Continuous n/1'	Free Running n/1'			
	Springs Type							Springs Type						
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L	S-M	L	S-M-L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	3300	1800	1000	500	4000	3000	—
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	2900	1450	950	450	3900	2900	5000
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	2400	1200	800	400	3300	2400	4000
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	2000	1000	650	300	2800	2000	3500
55	50-100	100-200	200-500	400-1000	100-200	200-400	400-800	1600	850	550	250	2300	1600	3000
55R*	—	—	—	800-2000	—	—	800-2000**	—	90	—	90	—	700	—
65	85-250	230-600	300-1000	600-2000	170-450	350-900	600-1800	1400	700	400	150	1800	1400	2300
65R*	—	—	—	1200-3400	—	—	1200-3400**	—	70	—	70	—	600	—
80	180-480	360-960	720-1950	1600-3300	300-750	600-1500	1200-3000	1200	600	150	80	1500	1000	1600
80R*	—	—	—	2900-5800	—	—	2900-5800**	—	40	—	40	—	400	—
100	250-520	500-1050	1000-2100	2000-3600	550-1100	1100-2200	2200-4400	950	480	100	50	1300	800	1400
100R*	—	—	—	3000-8200	—	—	3000-8200**	—	30	—	30	—	300	—

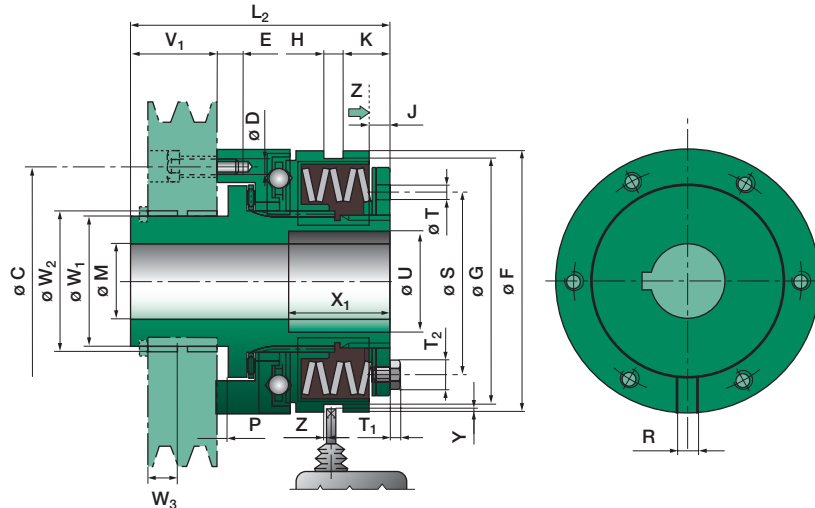
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Standard Disc Spring Torque Limiters – Type C

## with Extended Hubs

Bearing or bronze bushes can be mounted on it to support large drive components



## Dimensions

Size	Overall Dimensions																								
	C	D	E	F	G	H	K	J	L <sub>2</sub>	M		N	P	R	S	T	T <sub>1</sub>	T <sub>2</sub>	U	V <sub>1</sub>	W <sup>φ</sup> <sub>1</sub>	W <sup>φ</sup> <sub>2</sub>	W <sub>3</sub>	X <sub>1</sub>	Y
										Min	Max														
20	48	6xM5	6.5	55	50	9	7.5	3	66	7	20	34.5	3.1	6	38.5	5	3	7	21	27.5	28	36	10	25.5	2
25	70	6xM5	8	82	72.5	9	11.5	6	85	10	25	48	3.1	6	54	6	3.5	8	26	33	38	45	14	35	2
35	89	6xM6	10	100	90.5	9	12	5	100	14	35	56	3.6	8	70	6	4	10	36	39	52	60	16	45	2
45	105	6xM8	12	120	112	10	21	8.5	125	18	45	73	4.1	10	84	6	4	10	46	47	65	72	21	59	2
55	125	6xM10	15	146	140	9	27	11	152.5	24	55	93.5	4.1	12	108	7	5.5	13	56	52.5	78	85	25	60	2
65	155	6xM12	17	176	170	9	33	12	171	30	70*	107	4.6	14	129	10	5.5	13	66	57.5	90	100	25	60	2
80	160	6xM12	20	200	190	9	39 <sup>④</sup>	14 <sup>④</sup>	183 <sup>④</sup>	40	80	112 <sup>④</sup>	5.3	16	150	—	15	24	82	64	108	—	—	55 <sup>④</sup>	2
100	200	6xM16	25	240	230	9	46 <sup>⑤</sup>	15 <sup>⑤</sup>	213 <sup>⑤</sup>	50	110*	133 <sup>⑤</sup>	5.8	18	186	—	21	30	111	72	135	—	—	70 <sup>⑤</sup>	2

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D

③ Quick Guard 65R-type D

④ Free Running 80: K = 53, J = 29, L2 = 198, N = 127, X1 = 70

⑤ Free Running 100: K = 64, J = 33, L2 = 231, N = 151, X1 = 88

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45

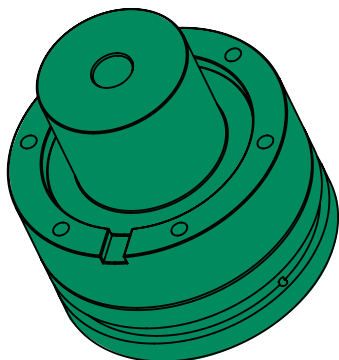
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —

Order Code: A100M90B+K

# Standard Disc Spring Torque Limiters – Type C

with Extended Hubs



## Arrangement Possibilities

Range	Size	Disc Springs					
		Code	Size	Arrangement			
				Standard A-B-C-D	Free Running A-B-C-D		
Quick Guard	20	S-Light	20/65	6 x 1s		2 x 1s	
			80	3 Packs		3 Packs	
			100	3 Packs		3 Packs	
Quick Guard R	25	M-Medium	20/65	5 x 1m		2 x 1m	
			80	6 Packs		6 Packs	
			100	6 Packs		6 Packs	
Synchronous	35	L-Heavy	20	5 x 1m		2 x 1ℓ	
			25/65	5 x 1ℓ			
			80	12 Packs			
Continuous*	45	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
Free Running*	55	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	65	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	80	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	100	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	100	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

Size	Disengagement Torque							Maximum Speed – Standard A-B-C-D						
	Quick Guard Nm				Synchronous-Continuous-Free Running Nm			Quick Guard n/1'	Synchronous n/1'	Continuous n/1'	Free Running n/1'			
	Springs Type							Springs Type						
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L	S-M	L	S-M-L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	3300	1800	1000	500	4000	3000	—
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	2900	1450	950	450	3900	2900	5000
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	2400	1200	800	400	3300	2400	4000
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	2000	1000	650	300	2800	2000	3500
55	50-100	100-200	200-500	400-1000	100-200	200-400	400-800	1600	850	550	250	2300	1600	3000
55R*	—	—	—	800-2000	—	—	800-2000**	—	90	—	90	—	700	—
65	85-250	230-600	300-1000	600-2000	170-450	350-900	600-1800	1400	700	400	150	1800	1400	2300
65R*	—	—	—	1200-3400	—	—	1200-3400**	—	70	—	70	—	600	—
80	180-480	360-960	720-1950	1600-3300	300-750	600-1500	1200-3000	1200	600	150	80	1500	1000	1600
80R*	—	—	—	2900-5800	—	—	2900-5800**	—	40	—	40	—	400	—
100	250-520	500-1050	1000-2100	2000-3600	550-1100	1100-2200	2200-4400	950	480	100	50	1300	800	1400
100R*	—	—	—	3000-8200	—	—	3000-8200**	—	30	—	30	—	300	—

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

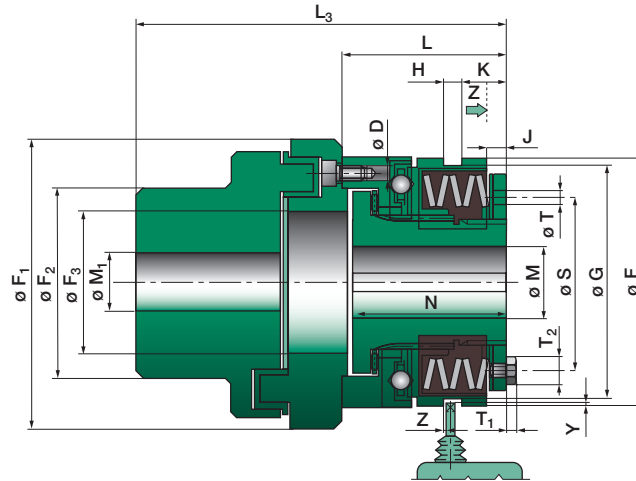
\*\* Not available in the Free Running range



# Standard Disc Spring Limiters – Type D

## with Elastic Coupling

For connecting two coaxial shafts



## Dimensions

Size	Overall Dimensions																			
	D	F	F <sub>1</sub>	F <sub>2</sub>	F <sub>3</sub>	G	H	K	J	L	L <sub>3</sub>	M		M <sub>1</sub>	N	S	T	T <sub>1</sub>	T <sub>2</sub>	Y
												Min	Max							
20	6xM5	55	67	46	33	50	9	7.5	3	38.5	86	7	20	30	34.5	38.5	5	3	7	2
25	6xM5	82	112	79	50	72.5	9	11.5	6	52	137.5	10	25	50	48	54	6	3.5	8	2
35	6xM6	100	112	79	60	90.5	9	12	5	61	147	14	35	50	56	70	6	4	10	2
45	6xM8	120	128	90	70	112	10	21	8.5	78	176.5	18	45	60	73	84	6	4	10	2
55	6xM10	146	148 <sup>①</sup>	90 <sup>①</sup>	70 <sup>①</sup>	140	9	27	11	100	211.5 <sup>①</sup>	24	55	60 <sup>①</sup>	93.5	108	7	5.5	13	2
65	6xM12	176	177 <sup>②③</sup>	107 <sup>②③</sup>	90 <sup>②③</sup>	170	9	33	12	113.5	242.5 <sup>②③</sup>	30	70*	70 <sup>②③</sup>	107	129	10	5.5	13	2
80	6xM12	200	225	180	113	190	9	39 <sup>④</sup>	14 <sup>④</sup>	119 <sup>④</sup>	299.5 <sup>④</sup>	40	80	115	112 <sup>④</sup>	150	—	15	24	2
100	6xM16	240	255	200	127	230	9	46 <sup>⑤</sup>	15 <sup>⑤</sup>	141 <sup>⑤</sup>	339 <sup>⑤</sup>	50	110*	125	133 <sup>⑤</sup>	186	—	21	30	2

\* Mmax with keyway seat according to DIN 6885/3

① Quick Guard 55R-type D: M1max = 90, F1 = 198, F2 = 140, F3 = 90, L3 = 257

② Quick Guard 65LL, Synchronous 65L, Continuous 65L, Free Running 65L-type D: M1max = 90, F1 = 198, F2 = 140, F3 = 90, L3 = 272

③ Quick Guard 65R-type D: M1max = 115, F1 = 225, F2 = 180, F3 = 113, L3 = 312

④ Free Running 80: K = 53, J = 29, L = 134, L3 = 314.5, N = 127

⑤ Free Running 100: K = 64, J = 33, L = 159, L3 = 357, N = 151

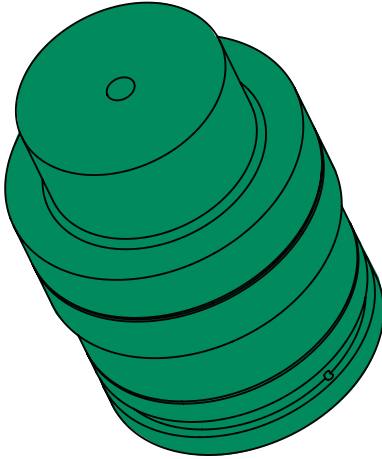
## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

# Standard Disc Spring Limiters – Type D

with Elastic Coupling



## Arrangement Possibilities

Range	Size	Disc Springs					
		Code	Size	Arrangement			
				Standard A-B-C-D	Free Running A-B-C-D		
Quick Guard	20	S-Light	20/65	6 x 1s		2 x 1s	
			80	3 Packs		3 Packs	
			100	3 Packs		3 Packs	
Quick Guard R	25	M-Medium	20/65	5 x 1m		2 x 1m	
			80	6 Packs		6 Packs	
			100	6 Packs		6 Packs	
Synchronous	45	L-Heavy	20	5 x 1m		2 x 1ℓ	
			25/65	5 x 1ℓ			
			80	12 Packs			
Continuous*	55	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
Free Running*	65	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	80	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			
	100	LL-R-Heavy	20	4 x 1ℓ		12 Packs	12 Packs
			25/65	3 x 2ℓ			
			80	12 Packs			

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Technical Characteristics

Size	Disengagement Torque							Maximum Speed – Standard A-B-C-D						
	Quick Guard Nm				Synchronous-Continuous-Free Running Nm			Quick Guard n/1'	Synchronous n/1'	Continuous n/1'	Free Running n/1'			
	Springs Type							Springs Type						
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L	S-M	L	S-M-L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	3300	1800	1000	500	4000	3000	—
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	2900	1450	950	450	3900	2900	5000
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	2400	1200	800	400	3300	2400	4000
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	2000	1000	650	300	2800	2000	3500
55	50-100	100-200	200-500	400-1000	100-200	200-400	400-800	1600	850	550	250	2300	1600	3000
55R*	—	—	—	800-2000	—	—	800-2000**	—	90	—	90	—	700	—
65	85-250	230-600	300-1000	600-2000	170-450	350-900	600-1800	1400	700	400	150	1800	1400	2300
65R*	—	—	—	1200-3400	—	—	1200-3400**	—	70	—	70	—	600	—
80	180-480	360-960	720-1950	1600-3300	300-750	600-1500	1200-3000	1200	600	150	80	1500	1000	1600
80R*	—	—	—	2900-5800	—	—	2900-5800**	—	40	—	40	—	400	—
100	250-520	500-1050	1000-2100	2000-3600	550-1100	1100-2200	2200-4400	950	480	100	50	1300	800	1400
100R*	—	—	—	3000-8200	—	—	3000-8200**	—	30	—	30	—	300	—

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

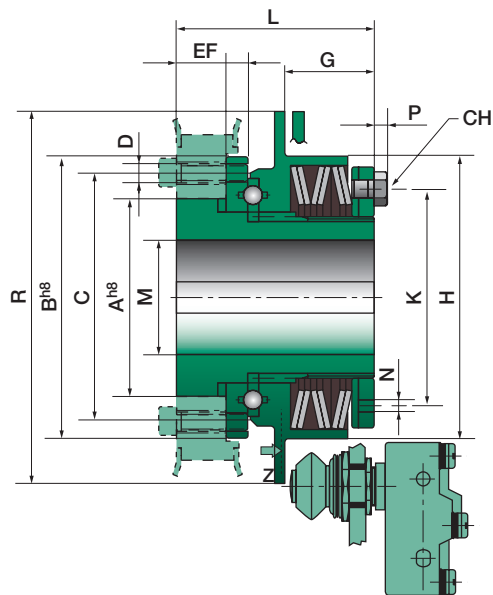
# Mini Disc Spring Torque Limiters – Type E

## Basic Type Mini

For connection shaft-drive component such as gear or pulley, supported on the shaft



For maximum speed 900 rpm, low radial forces. Axial forces are not admitted. For frequent interventions a bushing should be mounted.



## Dimensions

Size	Overall Dimensions															
	A <sup>h8</sup>	B <sup>h8</sup>	C	D	E	F	G	H	K	L	M		N	P	R	CH
	Min		Max													
20	36	55	46	6xM5	11.5	5.5	21.7	50.5	38.5	50	7	20	5	2.8	80	7
25	46	70	59	6xM5	16.5	7	23.2	70.5	54	57	10	25	6	3.5	100	8
35	64	90	80	6xM6	16.5	7	29	88	70	65	14	35	6	4	120	10
45	78	115	100	6xM6	22	8	34.5	110	84	81	18	45	6	4	150	10

## Technical Characteristics

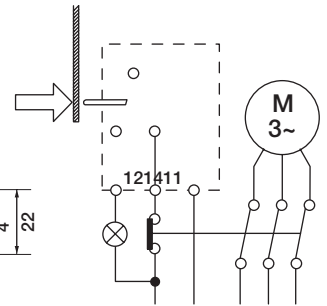
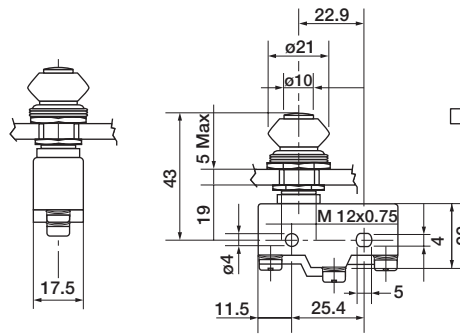
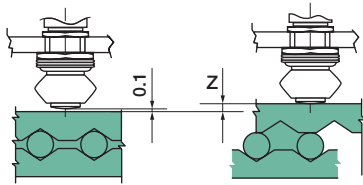
Size	Disengagement Torque							Maximum Speed – Mini E-F-G			
	Quick Guard Nm			Synchronous-Continuous-Free Running Nm				Quick Guard n/1'		Synchronous n/1'	
	Springs Type							Springs Type			
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	800	800	700	500
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	800	700	700	450
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	800	600	700	400
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	800	500	650	300

\* The R type need screws quality 12.9 in the connection torque limiter-transmission  
 \*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type E

Basic Type Mini

220÷250 V.~ / 15A  
24 V.- / 6A



## Arrangement Possibilities

Range	Size	Disc Springs			
		Code	Size	Arrangement	
				Mini E-F-G	
Quick Guard	20	S-Light	20/65	5 x 1s	
			80		
			100		
Quick Guard R	20	M-Medium	20/65	3 x 1m	
			80		
Synchronous	25	L-Heavy	20	3 x 1m	
			25/65	3 x 1l	
Continuous*	35	LL-R-Heavy	80		
			100		
Free Running*	45	LL-R-Heavy	20	3 x 1l	
			25/65	3 x 2l	
			80		
			100		

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Emergency Stop Switch

Size	Z	
	(1) mm	(2) mm
20	1.4	1.2
25	1.4	1.2
35	2.4	1.8
45	2.4	2

(1) Quick Guard Mini  
(2) Synchronous Mini

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

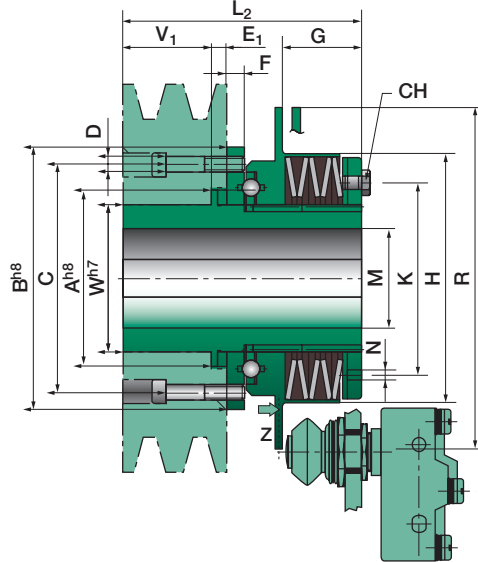
# Mini Disc Spring Torque Limiters – Type F

## Mini with Extended Hub

For connection shaft-drive component such as gear or pulley, supported on the shaft



For maximum speed 900 rpm, low radial forces. Axial forces are not admitted. For frequent interventions a bushing should be mounted.



## Dimensions

Size	Overall Dimensions																
	A <sup>h8</sup>	B <sup>h8</sup>	C	D	E <sub>1</sub>	F	G	H	K	L <sub>2</sub>	M		N	R	V <sub>1</sub>	W <sup>h7</sup>	CH
	Min		Max														
20	36	55	46	6xM5	4.5	5.5	21.7	50.5	38.5	83.5	7	20	5	80	40.5	30	7
25	46	70	59	6xM5	5.5	7	23.2	70.5	54	94	10	25	6	100	48	35	8
35	64	90	80	6xM6	6.5	7	29	88	70	108	14	35	6	120	53	50	10
45	78	115	100	6xM6	8	8	34.5	110	84	127	18	45	6	150	60	65	10

## Technical Characteristics

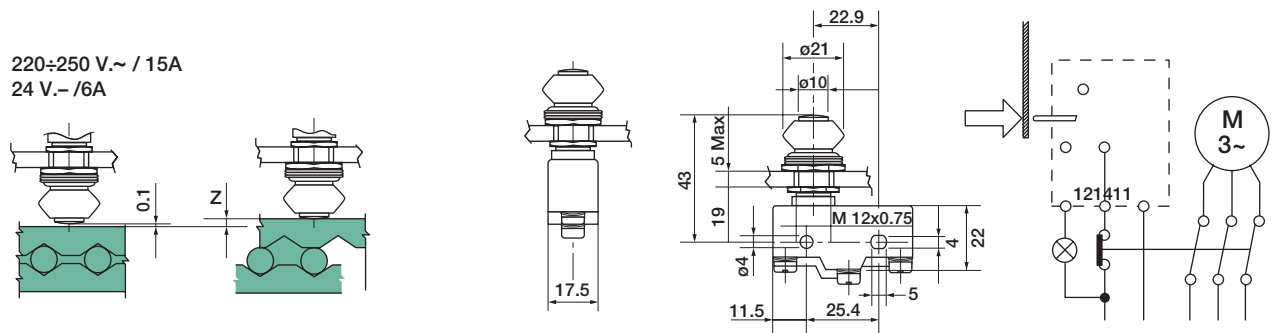
Size	Disengagement Torque							Maximum Speed – Mini E-F-G			
	Quick Guard Nm			Synchronous-Continuous-Free Running Nm				Quick Guard n/1'		Synchronous n/1'	
	Springs Type							Springs Type			
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	800	800	700	500
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	800	700	700	450
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	800	600	700	400
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	800	500	650	300

\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type F

## Mini with Extended Hub



### Arrangement Possibilities

Range	Size	Disc Springs			
		Code	Size	Arrangement	
				Mini E-F-G	
Quick Guard	20	S-Light	20/65	5 x 1s	
			80		
			100		
Quick Guard R	20	M-Medium	20/65	3 x 1m	
			80		
Synchronous	25	L-Heavy	20	3 x 1m	
			25/65	3 x 1l	
Continuous*	45	LL-R-Heavy	80		
			100		
Free Running*	45	LL-R-Heavy	20	3 x 1l	
			25/65	3 x 2l	
			80		
			100		

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

### Emergency Stop Switch

Size	Z	
	(1) mm	(2) mm
20	1.4	1.2
25	1.4	1.2
35	2.4	1.8
45	2.4	2

(1) Quick Guard Mini  
(2) Synchronous Mini

### How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M– Ø90 —  
Order Code: A100M90B+K

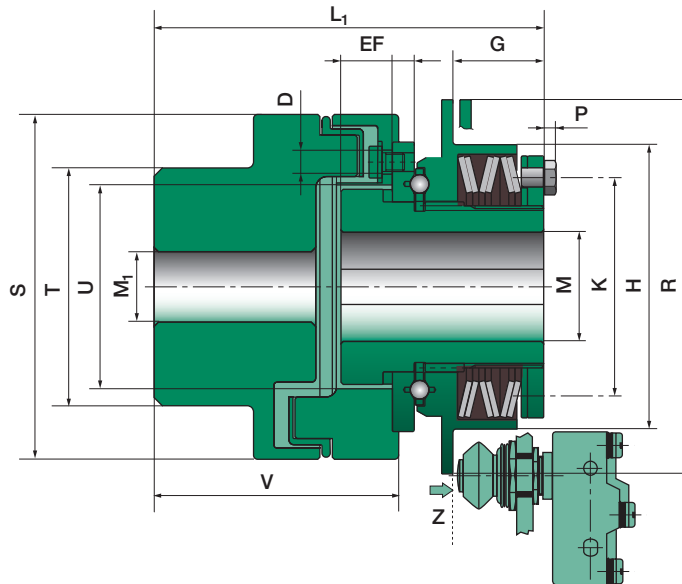
# Mini Disc Spring Torque Limiters – Type G

## Mini with Elastic Coupling

For connecting two coaxial shafts



For maximum speed 900 rpm, low radial forces. Axial forces are not admitted. For frequent interventions a bushing should be mounted.



## Dimensions

Size	Overall Dimensions															
	D	E	F	G	H	K	L <sub>1</sub>	M		M <sub>1</sub> Max	P	R	S	T	U	V
								Min	Max							
20	6xM5	11.5	5.5	21.7	50.5	38.5	84.5	7	20	30	2.8	80	67	46	37	47.5
25	6xM5	16.5	7	23.2	70.5	54	98	10	25	35	3.5	100	82	53	48	59
35	6xM6	16.5	7	29	88	70	132	14	35	50	4	120	112	79	66	85.5
45	6xM6	22	8	34.5	110	84	155.5	18	45	60	4	150	128	90	79	98.5

## Technical Characteristics

Size	Disengagement Torque							Maximum Speed – Mini E-F-G			
	Quick Guard Nm			Synchronous-Continuous-Free Running Nm				Quick Guard n/1'		Synchronous n/1'	
	Springs Type							Springs Type			
	S	M	L	LL	S	M	L	S-M	L-LL	S-M	L
20	2.5-5	5-10	10-20	20-40	5-10	10-20	20-40	800	800	700	500
25	6-12	12-25	25-55	55-100	12-25	25-50	50-100	800	700	700	450
35	12-25	25-50	50-120	120-200	25-50	50-100	100-200	800	600	700	400
45	25-50	50-100	100-250	200-450	50-100	100-200	200-450	800	500	650	300

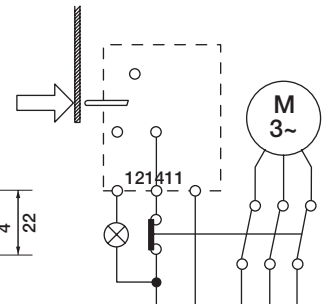
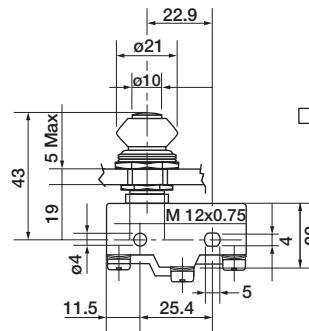
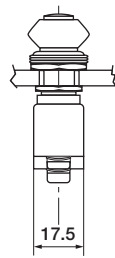
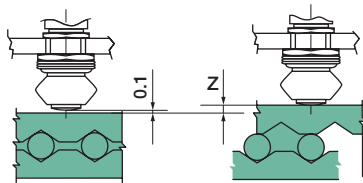
\* The R type need screws quality 12.9 in the connection torque limiter-transmission

\*\* Not available in the Free Running range

# Mini Disc Spring Torque Limiters – Type G

Mini with Elastic Coupling

220÷250 V.~ / 15A  
24 V.- / 6A



## Arrangement Possibilities

Range	Size	Disc Springs			
		Code	Size	Arrangement	
				Mini E-F-G	
Quick Guard	20	S-Light	20/65	5 x 1s	
			80		
			100		
Quick Guard R	20	M-Medium	20/65	3 x 1m	
			80		
Synchronous	25	L-Heavy	20	3 x 1m	
			25/65	3 x 1l	
Continuous*	45	LL-R-Heavy	80		
			100		
Free Running*	45	LL-R-Heavy	20	3 x 1l	
			25/65	3 x 2l	
			80		
			100		

\* Available only in the form A, B, C, D

A-basic type, B-with roller bearing flange, C-with extended hub, D-with elastic coupling, E-Mini basic type, F-for large transmissions, G-with elastic coupling

## Emergency Stop Switch

Size	Z	
	(1) mm	(2) mm
20	1.4	1.2
25	1.4	1.2
35	2.4	1.8
45	2.4	2

(1) Quick Guard Mini  
(2) Synchronous Mini

## How to order:

Standard Quick Guard Type D – Size 45 – Springs LL – Ø40 – Ø 45  
Order Code: D45LL40B+K

Standard Synchronous Type A – Size 100 – Springs M – Ø90 —  
Order Code: A100M90B+K