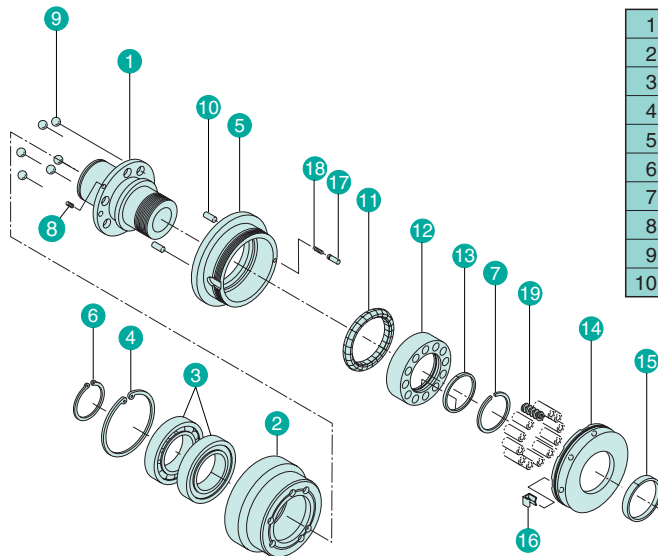


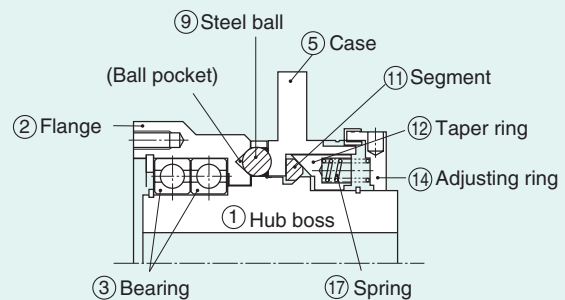
The TY series of torque releasers is available in A, D and AR types, to meet the users' needs more closely. The clutch mechanism is basically the same in all three types. The design and operating principle will be explained using type TY□A as the example.



1	Hub boss	11	Segment
2	Flange	12	Taper ring
3	Bearing	13	Slide ring
4	C-ring for hole	14	Adjusting ring
5	Case	15	Metal
6	C-ring for shaft	16	Clip
7	WR type snap ring	17	Pin
8	Hexagon socket head setscrew	18	Spring
9	Steel ball	19	Spring
10	Parallel pin		

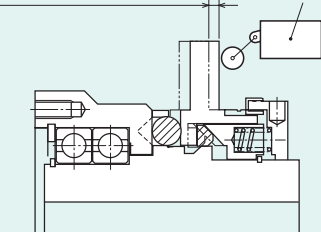
- (1) In normal operation, the steel balls ⑨ held by the hub boss ① are forced into the ball pocket of the hub boss ① by the spring ⑲, and the torque is transmitted from the hub boss ① through the steel balls ⑨ to the flange ②.
- (2) When an overload occurs, the steel balls ⑨ are pushed out along the sloping ball pocket in the flange ② in order to stop transmitting torque. In addition, the segment ⑪ moves up the hub boss slope against the force of the springs ⑲ to open the gap between the case ⑤ and the taper ring ⑫, finally reaching the peak of the hub boss. Consequently, the force needed to press the steel balls ⑨ against the ball pocket in the flange ② is removed and therefore the flange ② is free to rotate on the bearing ③. At this time, since the case ⑤ moves in the axial direction (toward the adjusting ring ⑭), you can use this motion to detect an overload by installing a limit switch, proximity switch or the like.
- (3) To resume operation, remove the cause of the overload and rotate the input side or the output side of the torque releaser until the marks on the hub boss ① and flange ② are aligned, and then press the case ⑤ against the flange ② to reset it.

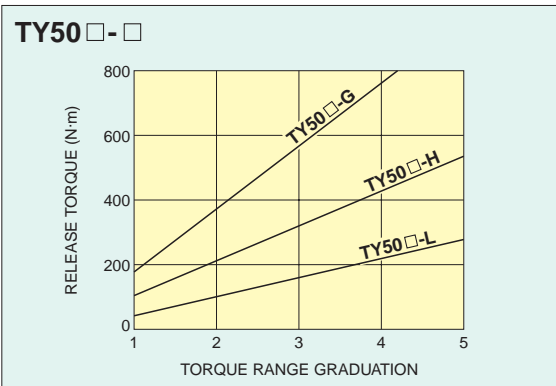
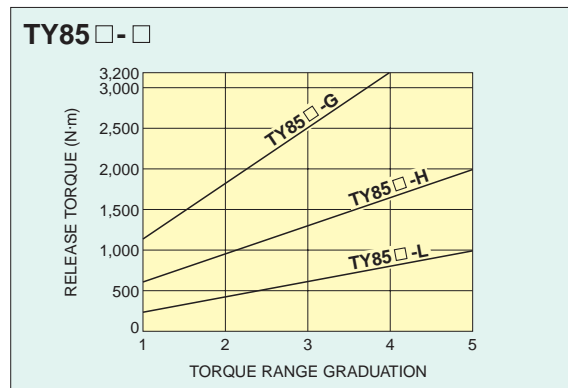
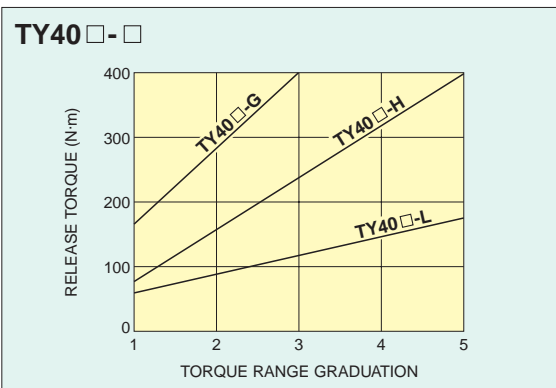
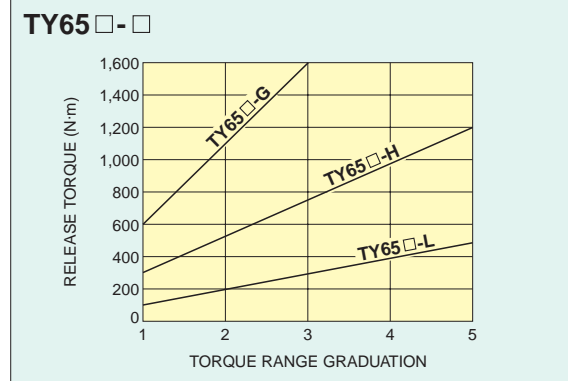
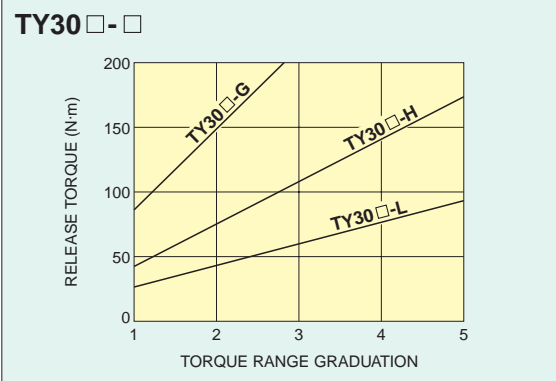
### In normal operation (when the torque releaser is set)



### When an overload occurs (when the torque is released)

The distance that the case moves when an overload occurs



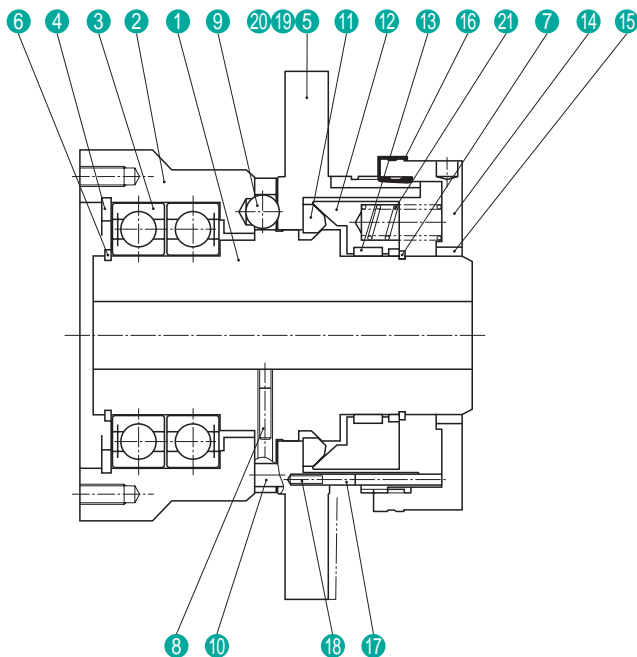


Torque can be varied proportionally according to number of springs.  
Number of springs can be used for minimum is three.

## TY□A Type



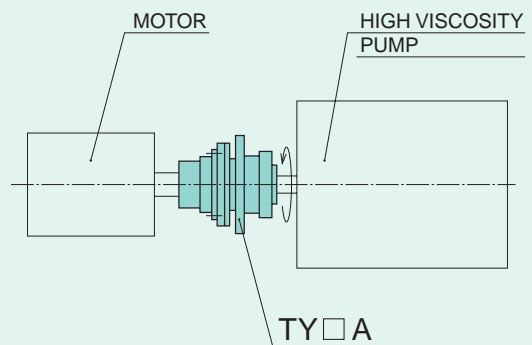
TY30A



### ● ADOPTION EXAMPLES



HIGH VISCOSITY PUMP

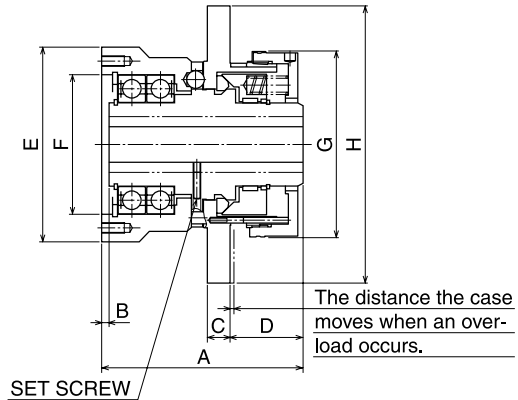
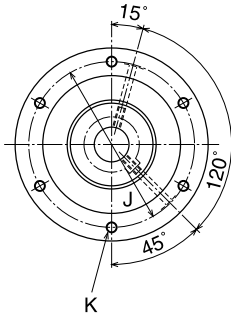


### ● NAMES OF PARTS

1	Hub boss
2	Flange
3	Bearing
4	C-ring for hole
5	Case
6	C-ring for shaft
7	WR type stopper ring
8	Hexagon socket head setscrew
9	Steel ball
10	Parallel pin
11	Segment
12	Taper ring
13	Slide ring
14	Adjusting ring
15	Metal
16	Clip
17	Pin
18	Spring
19	Model name plate
20	Name plate
21	Spring

\*Dimensions and specifications might be changed for improvement without notice.

## TY□A Type



### ● DIMENSION TABLE

MODEL	A	B	C	D	φE	φF	φG	φH	MOUNTING BOLT	
									J PCD	K BOLT SIZE
TY30A-L · H · G	110	4	12	40.4	105 <sup>+0</sup> <sub>-0.035</sub>	75 <sup>+0.030</sup> <sub>-0</sub>	102	150	90	6-M6×12L
TY40A-L · H · G	123	4	12	42.3	130 <sup>+0</sup> <sub>-0.040</sub>	95 <sup>+0.035</sup> <sub>-0</sub>	122	175	115	6-M8×16L
TY50A-L · H · G	145	5	16	49.9	155 <sup>+0</sup> <sub>-0.040</sub>	115 <sup>+0.035</sup> <sub>-0</sub>	147	210	135	6-M10×20L
TY65A-L · H · G	170	5	20	56.7	198 <sup>+0</sup> <sub>-0.046</sub>	150 <sup>+0.040</sup> <sub>-0</sub>	183	250	175	6-M12×24L
TY85A-L · H · G	225	5	20	84.3	258 <sup>+0</sup> <sub>-0.046</sub>	200 <sup>+0.046</sup> <sub>-0</sub>	232	330	230	6-M16×32L

### ● SPECIFICATIONS

MODEL	TORQUE RANGE N·m	SPRING COLOR × QTY	MAX SPEED min <sup>-1</sup>	INERTIA MOMENT kg·m <sup>2</sup>	WEIGHT kg	MAX HOLE DIA φ mm	STANDARD HOLE DIA φ mm	PREPARED HOLE DIA φ mm	SET SCREW	RELEASE DISTANCE mm
TY30A-L	26 ~ 94	WHITE×16	2,200	9.3×10 <sup>-3</sup>	5.0	30	30H7×8Js9	19	2-M4	2.4
TY30A-H	43 ~ 170	R E DX 8								
TY30A-G	89 ~ 200	R E DX 16								
TY40A-L	56 ~ 180	WHITE×16	1,800	22×10 <sup>-3</sup>	8.0	40	40H7×12Js9	24	2-M5	2.8
TY40A-H	67 ~ 400	R E DX 8								
TY40A-G	160 ~ 400	R E DX 16								
TY50A-L	50 ~ 290	WHITE×16	1,800	56.7×10 <sup>-3</sup>	16.0	50	50H7×14Js9	34	2-M6	3.6
TY50A-H	100 ~ 520	R E DX 8								
TY50A-G	180 ~ 800	R E DX 16								
TY65A-L	110 ~ 440	WHITE×16	1,800	155.2×10 <sup>-3</sup>	37.0	65	65H7×18Js9	38	2-M10	4.8
TY65A-H	270 ~ 1,200	R E DX 8								
TY65A-G	580 ~ 1,600	R E DX 16								
TY85A-L	290 ~ 1,000	YELLOW×16	1,800	566×10 <sup>-3</sup>	64.0	85	85H7×22Js9	48	2-M12	5.8
TY85A-H	580 ~ 2,000	R E DX 8								
TY85A-G	1,100 ~ 3,200	R E DX 16								

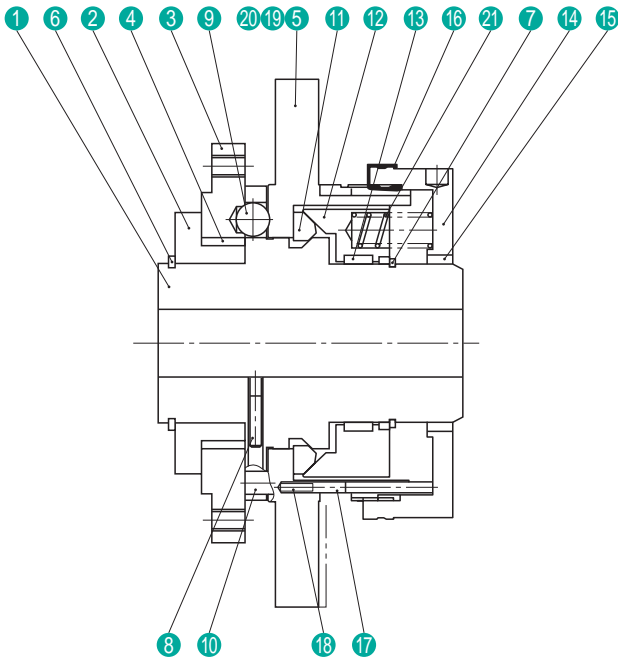
- The operating torque varies according to the number of springs used.  
Up to three springs can be used.

\*Dimensions and specifications are subject to change without prior notice.

## TY□D Type



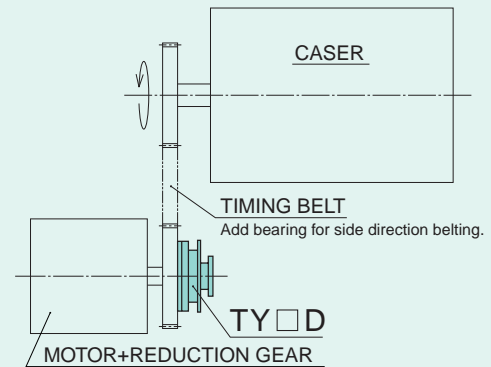
TY30D



### ● ADOPTION EXAMPLES



CASER

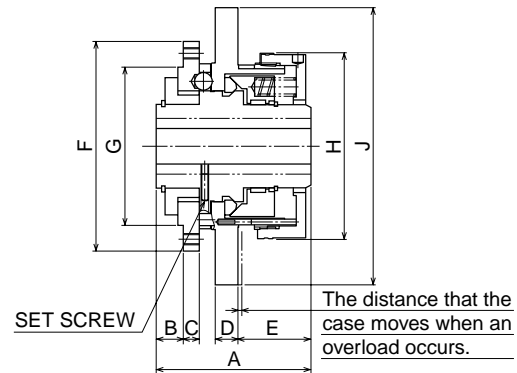
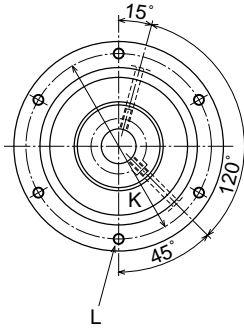


### ● NAMES OF PARTS

1	Hub boss
2	Thrust ring
3	Flange
4	Metal
5	Case
6	C-ring for shaft
7	WR type stopper ring
8	Hexagon socket head setscrew
9	Steel ball
10	Parallel pin
11	Segment
12	Taper ring
13	Slide ring
14	Adjusting ring
15	Metal
16	Clip
17	Pin
18	Spring
19	Model name plate
20	Name plate
21	Spring

\*Dimensions and specifications might be changed for improvement without notice.

## TY□D Type



### ● DIMENSION TABLE

MODEL	A	B	C	D	E	φF	φG	φH	φJ	MOUNTING BOLT	
										K PCD	L BOLT SIZE
TY30D-L · H · G	85	15	9	12	40.4	113	85 <sup>+0</sup> <sub>-0.035</sub>	102	150	100	6-M6
TY40D-L · H · G	95	18	10	12	42.3	134	105 <sup>+0</sup> <sub>-0.035</sub>	122	175	120	6-M8
TY50D-L · H · G	115	24	10	16	49.9	168	130 <sup>+0</sup> <sub>-0.040</sub>	147	210	150	6-M10

### ● SPECIFICATIONS

MODEL	TORQUE RANGE N·m	SPRING COLOR × QTY	MAX SPEED min <sup>-1</sup>	INERTIA MOMENT kg·m <sup>2</sup>	WEIGHT kg	MAX HOLE DIA φ mm	STANDARD HOLE DIA φ mm	PREPARED HOLE DIA φ mm	SET SCREW	RELEASE DISTANCE mm
TY30D-L	26 ~ 94	WHITE × 16	400	7.6 × 10 <sup>-3</sup>	4.0	30	30H × 8Js9	19	2-M4	2.4
TY30D-H	43 ~ 170	R E D × 8								
TY30D-G	89 ~ 200	R E D × 16								
TY40D-L	56 ~ 180	WHITE × 16	310	17.7 × 10 <sup>-3</sup>	7.0	40	40H7 × 12Js9	24	2-M5	2.8
TY40D-H	67 ~ 400	R E D × 8								
TY40D-G	160 ~ 400	R E D × 16								
TY50D-L	50 ~ 290	WHITE × 16	240	46.9 × 10 <sup>-3</sup>	14.0	50	50H7 × 14Js9	34	2-M6	3.6
TY50D-H	100 ~ 520	R E D × 8								
TY50D-G	180 ~ 800	R E D × 16								

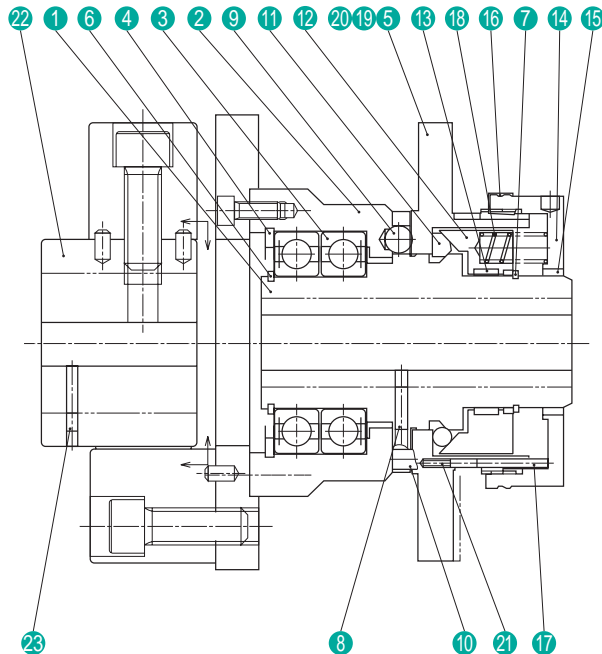
- The operating torque varies according to the number of springs used.  
Up to three springs can be used.

\*Dimensions and specifications are subject to change without prior notice.

## TY□AR Type



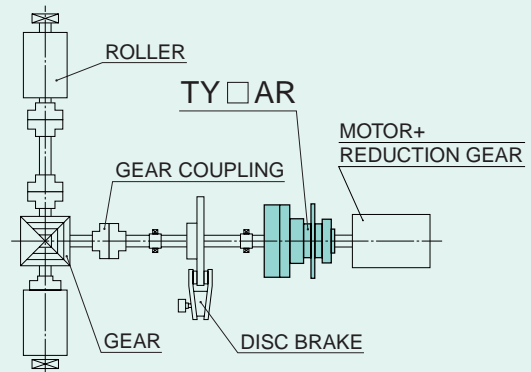
TY30AR



### ● ADOPTION EXAMPLES



MATERIAL HANDLING MACHINE

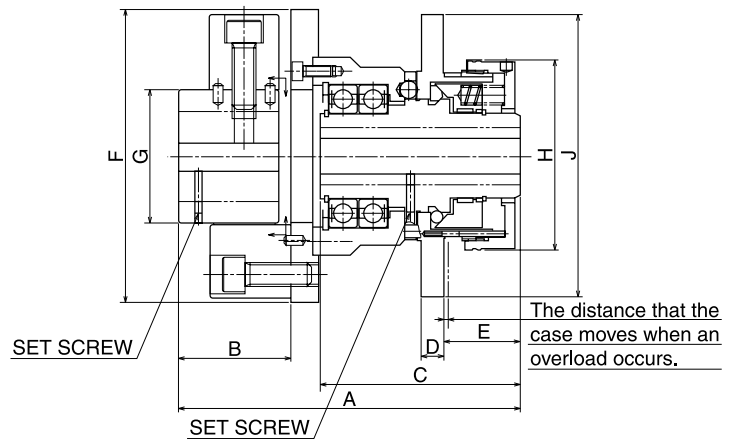
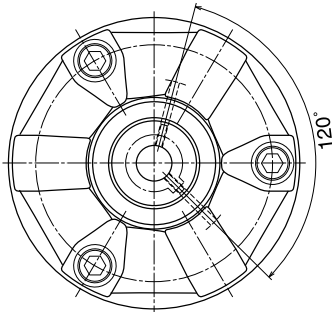


### ● NAMES OF PARTS

1	Hub boss
2	Flange
3	Bearing
4	C-ring for hole
5	Case
6	C-ring for shaft
7	WR type stopper ring
8	Hexagon socket head setscrew
9	Steel ball
10	Parallel pin
11	Segment
12	Taper ring
13	Slide ring
14	Adjusting ring
15	Metal
16	Clip
17	Pin
18	Spring
19	Model name plate
20	Name plate
21	Spring
22	Coupring
23	Hexagon socket head setscrew

\*Dimensions and specifications might be changed for improvement without notice.

## TY□AR Type



### ● DIMENSION TABLE

MODEL	A	B	C	D	E	φ F	φ G	φ H	φ J
TY30AR-L · H · G	180	58	122	12	40.4	155	70	102	150
TY40AR-L · H · G	203	64	139	12	42.3	175	85	122	175
TY50AR-L · H · G	240	76	164	16	49.9	205	100	147	210
TY65AR-L · H · G	287	92	195	20	56.7	260	125	183	250
TY85AR-L · H · G	363	108	255	20	84.3	340	160	232	330

### ● SPECIFICATIONS

MODEL	TORQUE RELEASER				COUPLING				RELEASE DISTANCE mm				
	TORQUE RANGE Nm	SPRING COLOR x QTY	MAX SPEED min <sup>-1</sup>	INERTIA MOMENT kg·m <sup>2</sup>	WEIGHT kg	MAX HOLE DIA φmm	STANDARD HOLE DIA φmm	PREPARED HOLE DIA φmm		SET SCREW	MAX HOLE DIA φmm	PREPARED HOLE DIA φmm	SET SCREW
TY30AR-L	26 ~ 94	WHITE x 16	2,200	20 × 10 <sup>-3</sup>	9.0	30	30H7x8Js9	19	2-M4	15	48	2-M4	2.4
TY30AR-H	43 ~ 170	R E D x 8											
TY30AR-G	89 ~ 200	R E D x 16											
TY40AR-L	56 ~ 180	WHITE x 16	1,800	44 × 10 <sup>-3</sup>	15.0	40	40H7x12Js9	24	2-M5	15	55	2-M5	2.8
TY40AR-H	67 ~ 400	R E D x 8											
TY40AR-G	160 ~ 400	R E D x 16											
TY50AR-L	50 ~ 290	WHITE x 16	1,800	107 × 10 <sup>-3</sup>	27.0	50	50H7x14Js9	34	2-M6	20	65	2-M6	3.6
TY50AR-H	100 ~ 520	R E D x 8											
TY50AR-G	180 ~ 800	R E D x 16											
TY65AR-L	110 ~ 440	WHITE x 16	1,800	319 × 10 <sup>-3</sup>	59.0	65	65H7x18Js9	38	2-M10	30	85	2-M10	4.8
TY65AR-H	270 ~ 1,200	R E D x 8											
TY65AR-G	580 ~ 1,600	R E D x 16											
TY85AR-L	290 ~ 1,000	YELLOW x 16	1,800	1,113 × 10 <sup>-3</sup>	106.0	85	85H7x22Js9	48	2-M12	40	115	2-M12	5.8
TY85AR-H	580 ~ 2,000	R E D x 8											
TY85AR-G	1,100 ~ 3,200	R E D x 16											

- The operating torque varies according to the number of springs used.  
Up to three springs can be used.

\*Dimensions and specifications are subject to change without prior notice.



■ **Applicable Sprockets**

The table shows the size of sprocket for roller chain that can be mounted on the torque releasor (TX□D, TX□E, TY□A, TY□D types).

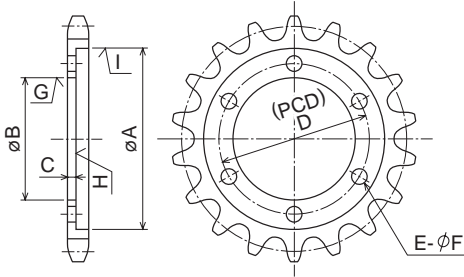
■ **TX□D, TX□E Types**

Torque releasor type		Nom.No.								
		#35	#41	#40	#50	#60	#80	#100	#120	#140
TX15	D	27-46T	21-35T	21-35T						
	E	27-46T	21-35T	21-35T						
TX20	D		26-45T	26-45T	21-36T					
	E		25-45T	25-45T	21-36T					
TX30	D			32-55T	26-45T	23-37T				
	E			30-55T	25-45T	21-37T				
TX40	D				30-54T	26-45T	20-33T			
	E				29-54T	25-45T	20-33T			
TX50	D					32-55T	25-41T	21-32T		
	E					29-55T	23-41T	19-32T		
TX65	E					28-51T	23-41T	20-34T	18-29T	
TX85	E					35-66T	29-53T	25-44T	22-37T	

■ **TY□A, TY□D Types**

Torque releasor type		Nom.No.						
		#40	#50	#60	#80	#100	#120	#140
TY30	A	30-55T	25-45T	21-37T				
	D	32-55T	30-45T	23-37T				
TY40	A		30-54T	25-45T	20-33T			
	D		30-54T	26-45T	20-33T			
TY50	A			29-55T	23-41T	19-33T		
	D			32-55T	25-41T	21-33T		
TY65	A				28-51T	23-41T	20-34T	18-29T
TY85	A				36-66T	29-53T	25-44T	22-37T

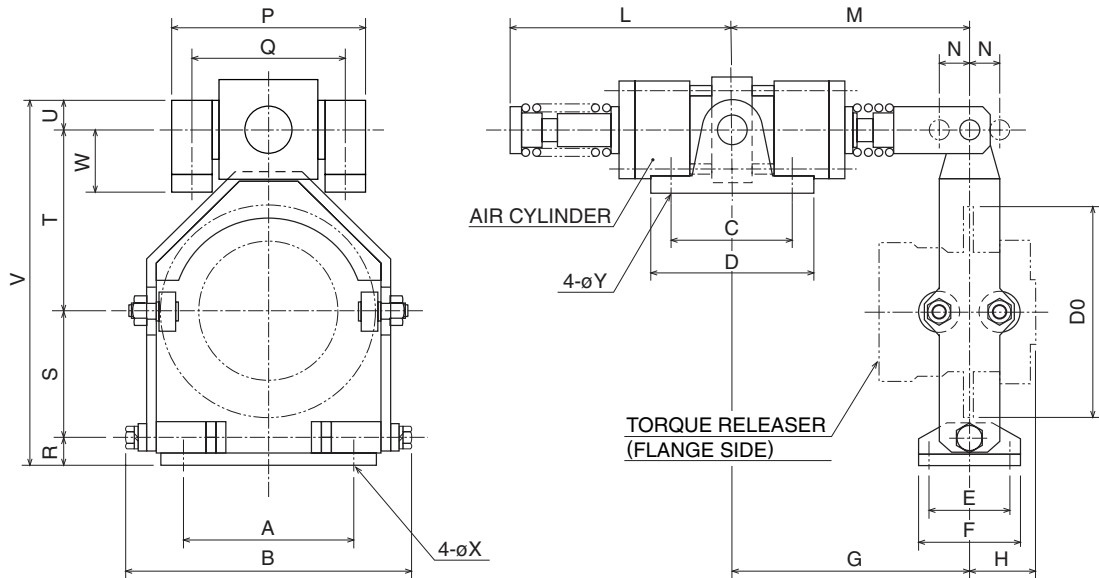
■ **Sprocket processing dimensions**



Torque releasor type		Nom.No.								
		A	B	C	D	E-F	G	H	I	
TX15	D	70	50H7 <sup>+0.025</sup> <sub>-0</sub>	3	60	6-5.5	▽▽▽	▽▽	▽	
	E	70	35H7 <sup>+0.025</sup> <sub>-0</sub>	3	58	6-5.5	▽▽▽	▽▽	▽	
TX20	D	89	65H7 <sup>+0.030</sup> <sub>-0</sub>	3	75	6-6.6	▽▽▽	▽▽	▽	
	E	86	45H7 <sup>+0.025</sup> <sub>-0</sub>	3	72	6-6.6	▽▽▽	▽▽	▽	
TX30	D	114	85H7 <sup>+0.035</sup> <sub>-0</sub>	5	100	6-6.6	▽▽▽	▽▽	▽	
	E	105	60H7 <sup>+0.030</sup> <sub>-0</sub>	5	90	6-6.6	▽▽▽	▽▽	▽	
TX40	D	135	105H7 <sup>+0.035</sup> <sub>-0</sub>	5	120	6-9	▽▽▽	▽▽	▽	
	E	127	75H7 <sup>+0.030</sup> <sub>-0</sub>	5	110	6-9	▽▽▽	▽▽	▽	
TX50	D	169	130H7 <sup>+0.040</sup> <sub>-0</sub>	8	150	6-11	▽▽▽	▽▽	▽	
	E	156	90H7 <sup>+0.035</sup> <sub>-0</sub>	8	135	6-11	▽▽▽	▽▽	▽	
TX65	E	199	120H7 <sup>+0.035</sup> <sub>-0</sub>	8	175	6-14	▽▽▽	▽▽	▽	
TX85	E	255	150H7 <sup>+0.040</sup> <sub>-0</sub>	8	225	6-18	▽▽▽	▽▽	▽	

Torque releasor type		Nom.No.								
		A	B	C	D	E-F	G	H	I	
TY30	A	105H7 <sup>+0.035</sup> <sub>-0</sub>	75 or less	5	90	6-6.6	~	▽▽	▽▽▽	
	D	114	85H7 <sup>+0.035</sup> <sub>-0</sub>	5	100	6-6.6	▽▽▽	▽▽	▽	
TY40	A	130H7 <sup>+0.040</sup> <sub>-0</sub>	95 or less	5	115	6-9	~	▽▽	▽▽▽	
	D	135	105H7 <sup>+0.035</sup> <sub>-0</sub>	5	120	6-9	▽▽▽	▽▽	▽	
TY50	A	155H7 <sup>+0.040</sup> <sub>-0</sub>	115 or less	8	135	6-11	~	▽▽	▽▽▽	
	D	169	130H7 <sup>+0.040</sup> <sub>-0</sub>	8	150	6-11	▽▽▽	▽▽	▽	
TY65	A	198H7 <sup>+0.046</sup> <sub>-0</sub>	150 or less	8	175	6-14	~	▽▽	▽▽▽	
TY85	A	258H7 <sup>+0.052</sup> <sub>-0</sub>	200 or less	8	230	6-18	~	▽▽	▽▽▽	

\*Dimensions and specifications might be changed for improvement without notice.

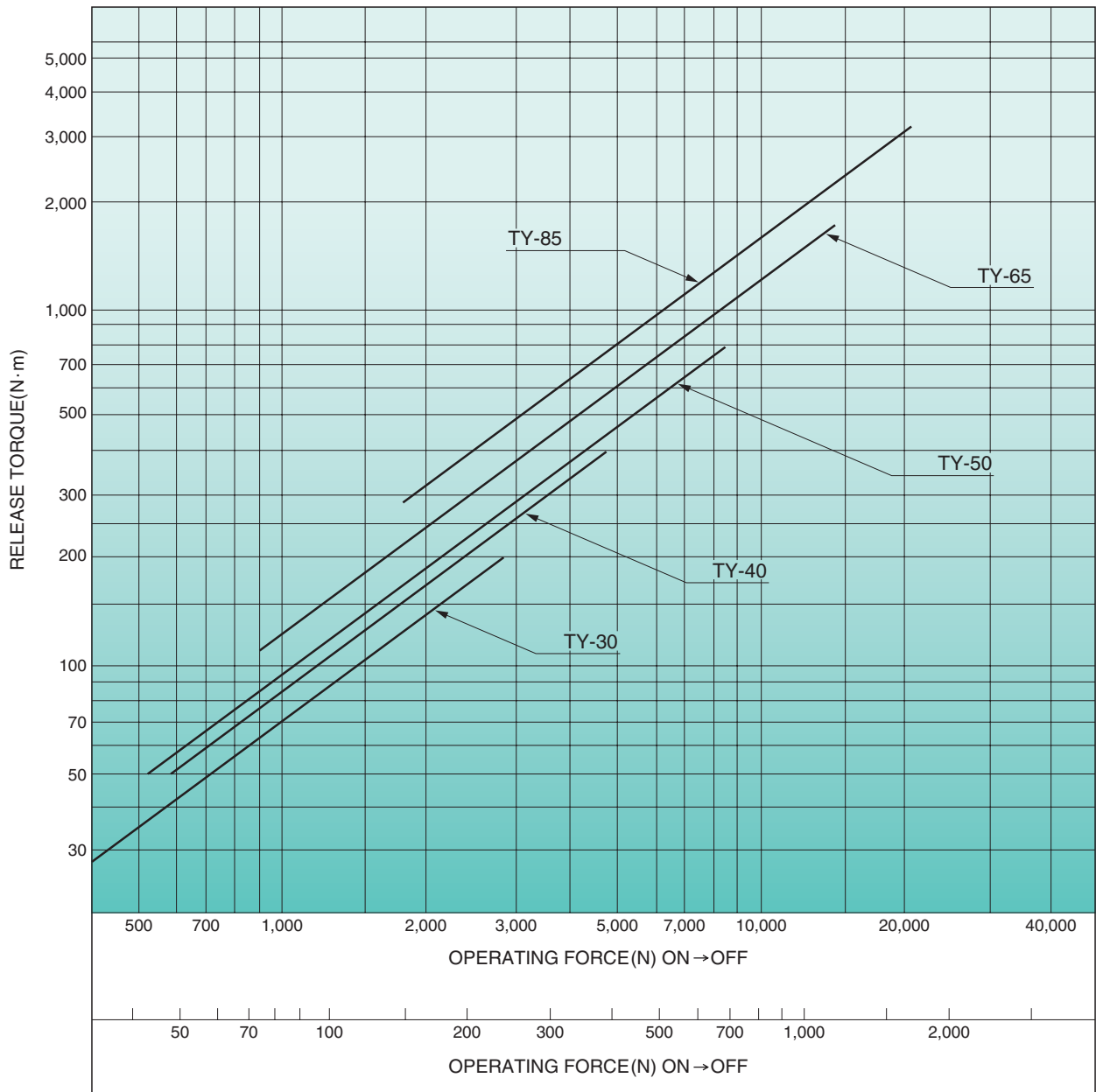


● DIMENSION TABLE

MODEL	A	B	C	D	E	F	G	H	L	M	N	P	Q	R	S
TY30	120	189	70	100	55	75	169	45.5	124	169	15	150	130	20	90
TY40	140	219	90	120	65	90	177	46.5	147	177	15	192	166	25	110
TY50	180	266	90	120	80	110	182	56.0	152	182	17.5	214	188	30	130
TY65	220	321	105	145	100	130	222	64.5	182	222	22.5	236	203	35	150
TY85	290	398	140	185	100	130	246	91.0	201	246	25	294	253	35	190

MODEL	T	U	V	W	øX	øY	øD0	AIR CYLINDER SPECIFICATION ømm
TY30	135	18	263	55	10	11	150	63x30ST
TY40	165	25	325	75	12	13.5	175	80x30ST
TY50	195	25	380	75	14	13.5	210	100x35ST
TY65	225	32	442	85	14	18	250	125x45ST
TY85	285	40	550	130	18	22	330	160x50ST

\*Dimensions and specifications are subject to change without prior notice.



\*Dimensions and specifications are subject to change without prior notice.