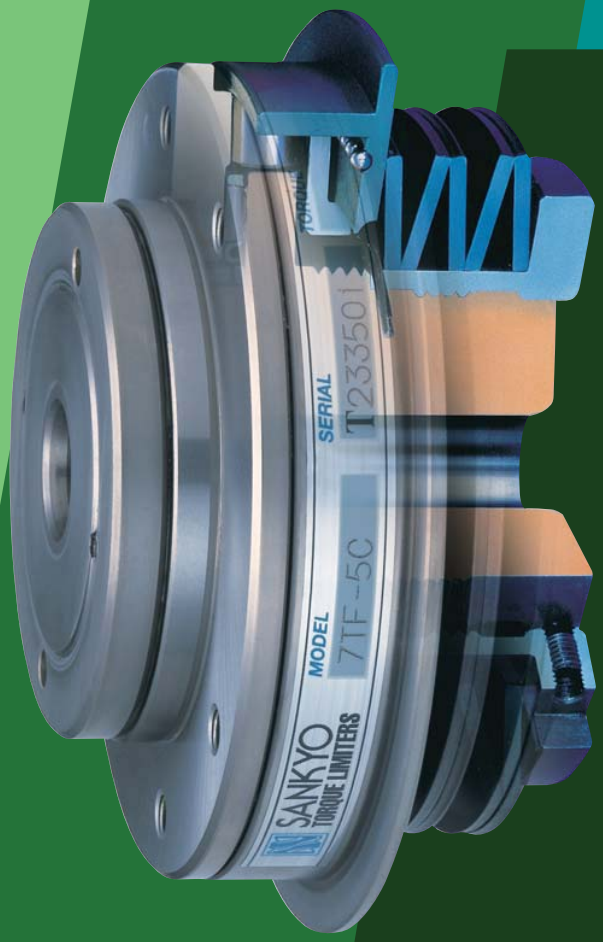
Reliable, Accurate Overload Protector

TORQUE LIMITERS

SANDEX™



- *FLANGE TYPE*
- *COUPLING TYPE*

SANKYO
AMERICA, INC.

TC Series (Shaft to Shaft Type) Torque Limiting Clutch

Features, Operation & Mounting

SANKYO Innovation

Features

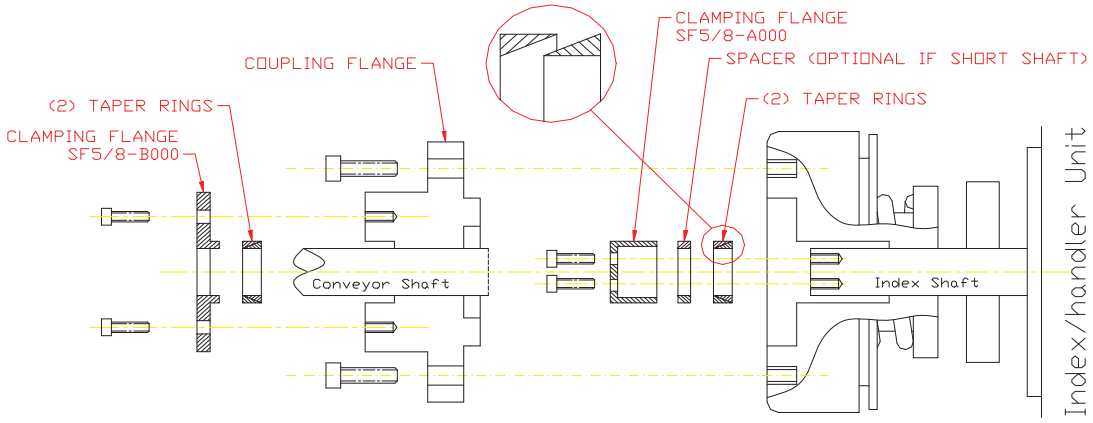
Sankyo's coupling type **TC Series** adjustable clutch has the same characteristics of a low backlash flexible coupler. Our innovative design compensates for shaft angular misalignment, offset parallelism and shaft end clearance error. Our patented detent ball design enhances lubrication while reducing the pocket vacuum to eliminating inconsistent torque overloads. Hardened metal components accommodate rotational shock loads during speed ramps to reduce pocket wear. Torque settings are easily adjusted with a spanner wrench or exchanging multiple springs to create a new overload range. Nine hardened pockets are machined to tolerance, which produces low backlash and repetitive overload thresholds in both directions while maintaining strong torsional rigidity. Standard TC units automatically reset every 360° of rotation with multiple reset positions as an option.

- Automatic reset every 360º of rotation
- ±15~30 arcsec rotational reset accuracy
- ISO-7 Cleanroom & corrosion resistant type are available
- Overload detection ring with electric sensor option
- Easily adjustable torque settings, free spinning if tripped
- Quick spring change for new torque range
- Operates in either direction or oscillating rotation
- Horizontal, vertical or inverted mounting
- Simplistic detent ball & pocket design is reliable
- 200~2000 rpm rotational speed
- 0.3~5000 Nm (2.6~44253 lbf·in) torque capacity
- Compact, 64~285mm (2.5~11.2 in) overall diameter
- 8 housing sizes with 4 torque ranges for each size
- Custom bore machining & clamping types are available
- Coupling flanges & special configurations are available
- 1 year warranty

Operation & Mounting

Multiple precision balls are mounted in the lower platen. The upper platen has pockets machines to match the ball diameters. Both platens are connected with a thrust type bearing. The balls are forced into a detent pocket with spring tension. The spring tension is adjustable with a locking spanner nut. When overloaded, the balls roll out of the pocket and the platens or free to rotate independently.

As shown left, the top shaft is connected to the coupling flange with tapered precision fit compression rings. When compressed by the B-type flange and bolt design, the tapered rings shrink on the shaft and expand in the counter bore of the coupling flange. The coupling flange includes a centering pilot with a flange to connect to the TC torque limiter clutch housing. The torque limiter clutch is mounted to an opposing shaft with the end of the shaft tapped for bolt threads. A clamping flange (A-type) and tapered compression rings mount the torque limiting clutch securely. When overloaded, a thin ring (shown as the largest diameter) moves towards the spring. An optional proximity type sensor can detect this motion to signal drive controls.



SANKYO AMERICA, INC.

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TC Series (Shaft to Shaft Type) Torque Limiting Clutch

Options & Specifications

SANKYO Innovation

R Type, Corrosion Resistant

Our R type torque limiting clutch includes corrosion resistant coatings with stainless steel components and FDA compatible lubricants. Ranked 7 in compliance with ISO-14644 specification. Optional custom mounting bores, couplings, flanges and fastening devices are made of corrosion resistant compatible materials with optional IP67 overload detection. Ideal for washdown, medical or packaging applications when environment need to be sanitary.

C Type, Cleanroom Compatible

Sankyo's C type clutches are cleanroom ISO-7 (class-10,000) compatible. Each unit is plated with the black colored Raydent coating to resists chipping and corrosion. The organic base plating is DI water compatible, nonconductive and nonmagnetic without out gassing contaminate potential. Lubrication is silicone free cleanroom compatible. Cleanroom compliant with medical, semi-conductor, electrical or computer assembly environments.

Dowel Hole Option

Sankyo offers dowel pin holes with a rough bore tolerance and finished, reamed to dowel pin tolerance. Dowel hole(s) are available on the torque limiting clutch mounting flange. Typically, the dowel holes are on the same bolt circle as the mounting holes with the same depth. Drawings are supplied with location and diameter tolerance options.

Specification – *Quick Reference*

Description	Unit	4TC	5TC	6TC	7TC	8TC	11TC	14TC	18TC
Torque Range	N·m	0.3~4.5	0.8~18.0	2.0~50.0	20~350	40~450	70~1000	100~2000	700~5000
	lbf·in	2.6~39	7~159	17~442	177~3097	354~3982	619~8850	885~17701	6195~44253
Shaft Rough Bore Dia.	mm	7	9	12.5	16.5	16.5	27	27	50
Max. Shaft Bore Dia.	mm	15	22	30	40	52	68	90	130
Hub Mount Hole Dia.	mm	(4) M4	(4) M4	(8) M6	(8) M8	(8) M8	(8) M10	(8) M12	(8) M16
Hub Female Pilot Dia.	mm	34H7	46H7	50H7	70H7	90H7	110H7	130H7	170H7
Overload Detect Motion	mm	0.7~1.1	0.6~1.2	1.4~2.2	1.6~2.6	1.7~2.7	2.0~3.2	2.1~3.7	3.7~6.2
Overall Height	mm	28	40	52	65	75	90	100	130
Max. Shaft Angular Error	deg	1	1	1.5	1.2	1.2	1	0.7	0.5
Max. Shaft Space Error	mm	±1.0	±1.0	±1.5	±1.8	±2.0	±2.5	±3.5	±3.5
Max. Shaft Parallel Error	mm	0.05	0.05	0.05	0.1	0.1	0.1	0.1	0.1
Max. Rotational Speed	rpm	2000	1600	1000	700	500	400	300	200
Unit Inertia Moment	kg•m²	0.00009	0.0004	0.0017	0.0058	0.014	0.035	0.093	0.4
Unit Weight	kg	0.25	0.68	1.5	3.2	5.3	10.8	20	45
Backlash Accuracy	arcsec.	60~120		30					
Resetting Accuracy	arcsec.	±30		±15					
Trip Torque Accuracy	arcsec	±15%		±10%					
Lubrication Frequency	hours	1000 to 2000							
Lubrication	Lithium type Grease with Molybdenum Disulfide, Density Grade 2 (NLGI) or cleanroom FDA compatible								

Conversions: in = (mm) x 0.039, lb-force = (N) x 0.224, in•lbs = (N•m) x 8.851, lb•in² = (kg•m²) x 3417.168, deg = (arcsec) x 0.00028

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4TC Dimension

Unit : mm

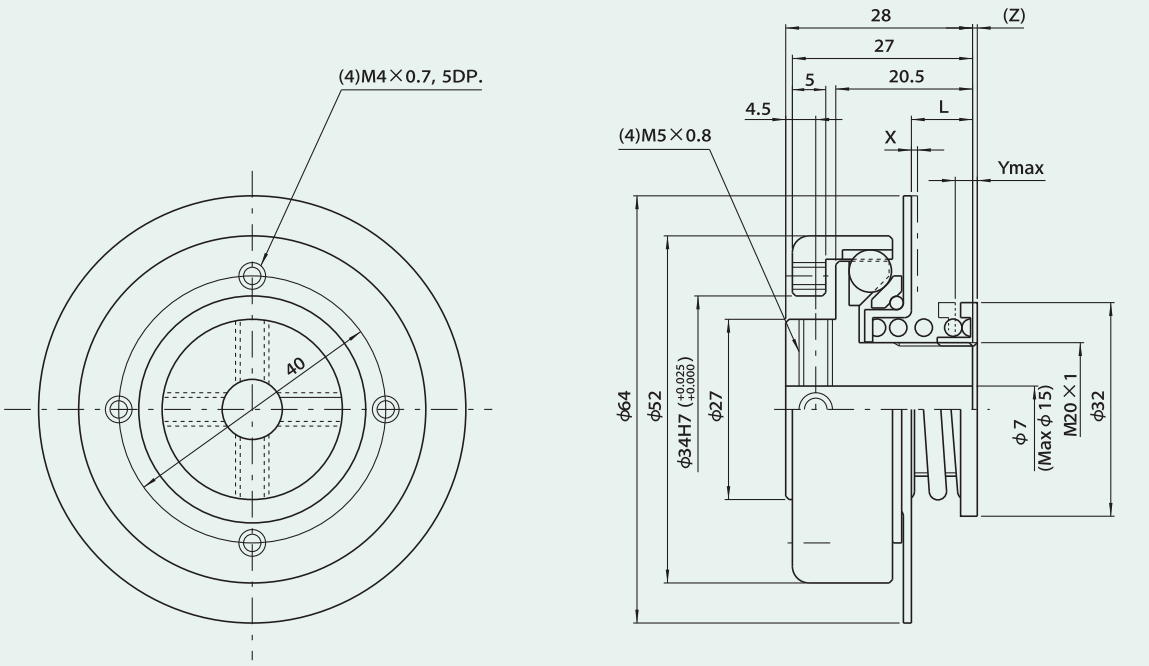
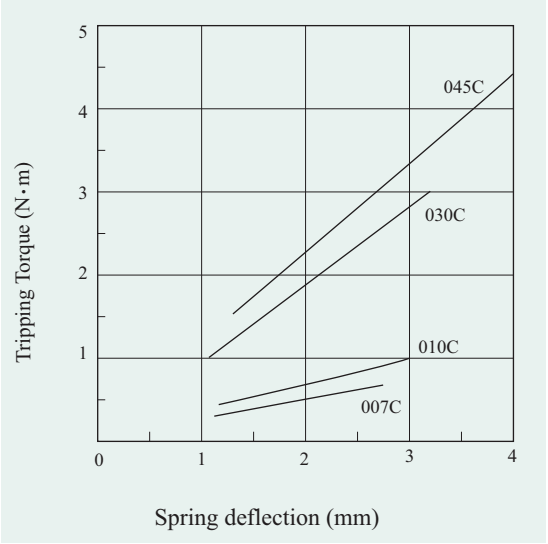


Figure 4TC-1

Torque diagram

Figure 4TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 4TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
4TC-007C	0.3 ~ 0.7	7.6	0.7	2.7	0.6
-010C	0.4 ~ 1.0	8.0	1.1	3.0	0.2
-030C	1.0 ~ 3.0	7.6	0.7	3.3	0.6
-045C	1.5 ~ 4.5	8.0	1.1	4.0	0.2

Specifications

Table 4TC-2

Item	Unit	Value
Pitch of thread	mm	1
Max. allowable angle error	deg	1
Max. allowable space error	mm	± 1.0
Max. allowable parallel offset	mm	0.05
Max. revolution per minute	r.p.m	2000
Moment of inertia	$kg \cdot m^2$	0.9×10^{-4}
Mass	kg	0.25

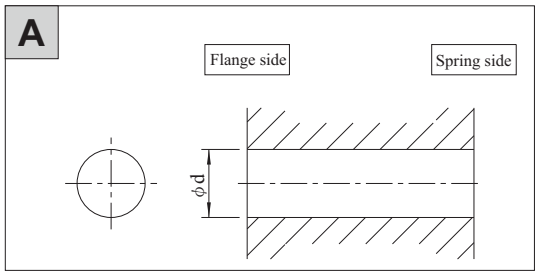
X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

Shaft hole dimensions

Figure 4TC-3



Shaft hole dimension ordering codes

Unit : mm

Table 4TC-3

	No.	ϕ d	Code No.
A	1	10H 7	04TC -10H 7
	2	12H 7	-12H 7
	3	14H 7	-14H 7
	4	15H 7	-15H 7

Option

Shaft mounting flange

Code No.)

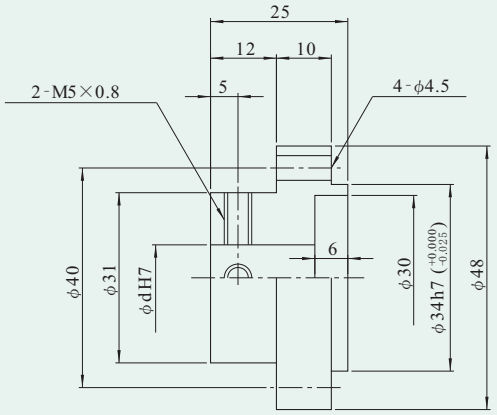
04TC-C□O

Table 4TC-4

ϕd (mm)	※Reference transmitted torque (N·m)
ϕ 12 $^{+0.018}_{+0.0}$	29
ϕ 14 $^{+0.018}_{+0.0}$	36
ϕ 15 $^{+0.018}_{+0.0}$	40
ϕ 16 $^{+0.018}_{+0.0}$	44

※ Torque for fastening set bolt TA=3.6 (N·m)

Figure 4TC-4



5TC Dimensions

Unit : mm

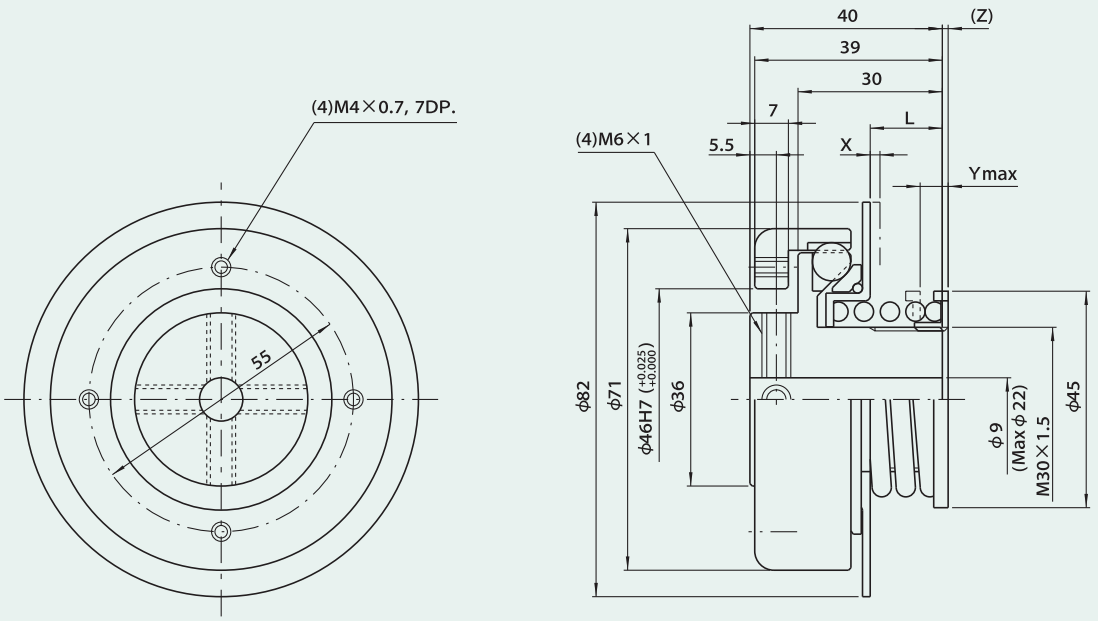
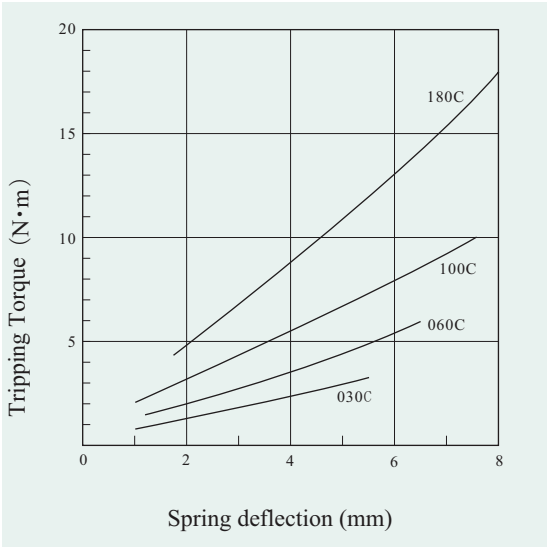


Figure 5TC-1

Torque diagram

Figure 5TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 5TC-1

Model	Range of tripping torque (N•m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
5TC-030C	0.8 ~ 3.0	13.1	0.6	5.4	0.3
-060C	1.5 ~ 6.0	13.7	1.2	6.5	-0.3
-100C	2.0 ~ 10.0	13.1	0.6	7.6	0.3
-180C	4.0 ~ 18.0	13.7	1.2	8.0	-0.3

Specifications

Table 5TC-2

Item	Unit	Value
Pitch of thread	mm	1.5
Max. allowable angle error	deg	1
Max. allowable space error	mm	±1.0
Max. allowable parallel offset	mm	0.05
Max. revolution per minute	r.p.m	1600
Moment of inertia	kg•m²	4.0 X 10^{-4}
Mass	kg	0.68

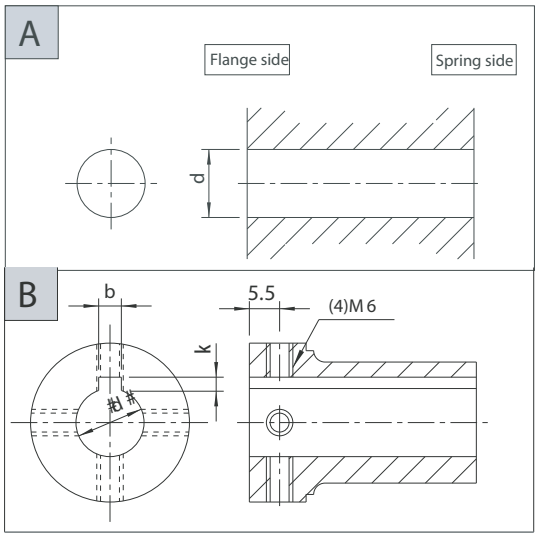
X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

Shaft hole dimensions

Figure 4TC-3



Shaft hole dimension ordering codes

Unit : mm

Table 4TC- 3

	No.	d	Code No.
A	1	12H7	05TC-12H 7
	2	14H 7	-14H 7
	3	15H 7	-15H 7
	4	16H 7	-16H 7
	5	18H 7	-18H 7
	6	20H 7	-20H 7
	7	22H 7	-22H 7

	No.	d	b x h	Code No.
B	1	15H 7	5Js 9 X 23	05TC-15K 5 JM6 4
	2	16H 7	"	-16K 5 JM64
	3	17H 7	"	-17K 5 JM64
	4	18H 7	6Js 9	-18K 6 JM64
	5	20H 7	"	-20K 6 JM64

Option

Shaft mounting flange

Code No)

05TC-C d O

Table 5TC-4

d (mm)	Reference transmitted torque (N·m)
12 +0.018 +0.0	54
14 +0.018 +0.0	66
15 +0.018 +0.0	74
16 +0.018 , 1 /1	80

Torque for fastening set bolt TA=3.6 (N m)

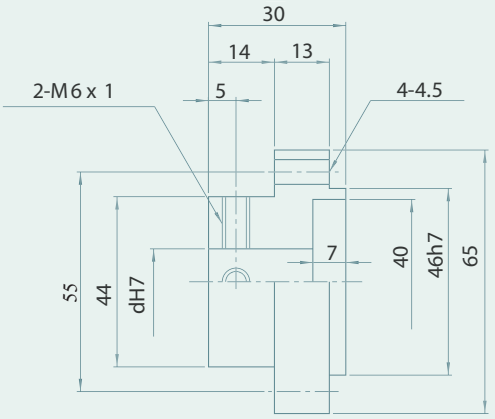


Figure 5TC- 4

6TC Dimension

Unit : mm

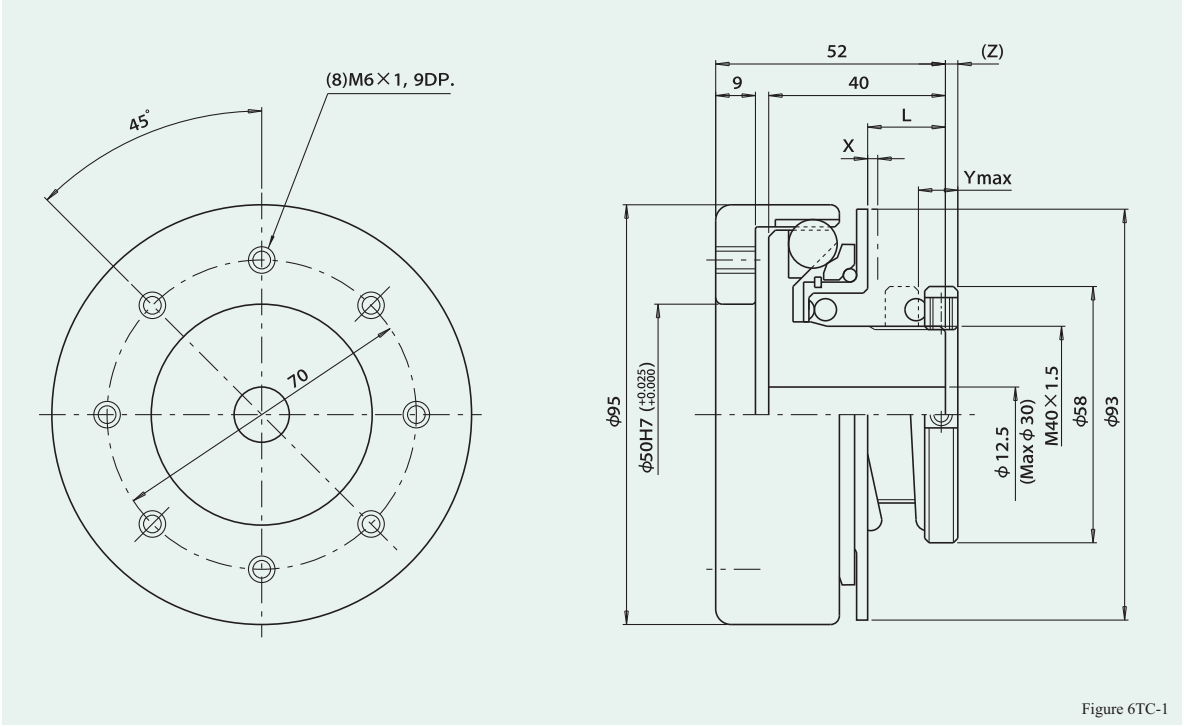
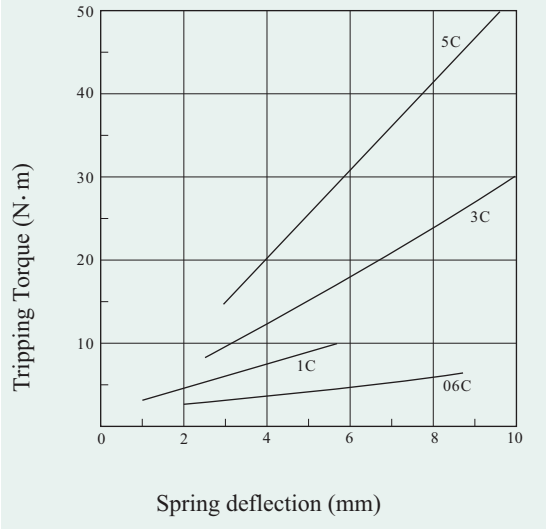


Figure 6TC-1

Torque diagram

Figure 6TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 6TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
6TC-060C	2 ~ 6	18.5	1.4	8.7	3.2
-1C	3 ~ 10	19.0	2.2	5.7	2.8
-3C	8 ~ 30	18.5	1.4	10.0	3.2
-5C	15 ~ 50	19.0	2.2	9.6	2.8

Specifications

Table 6TC-2

Item	Unit	Value
Pitch of thread	mm	1.5
Max. allowable angle error	deg	1.5
Max. allowable space error	mm	±1.5
Max. allowable parallel offset	mm	0.05
Max. revolution per minute	r.p.m	1000
Moment of inertia	$kg \cdot m^2$	1.7×10^{-3}
Mass	kg	1.5

X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

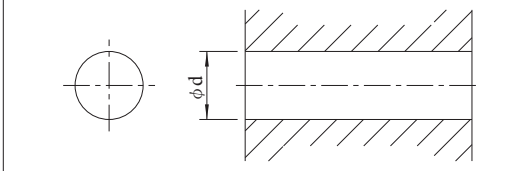
(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

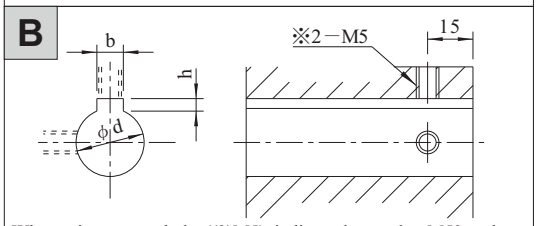
Shaft hole dimensions

Figure 6TC-3

A

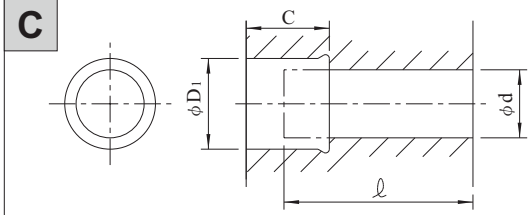


B



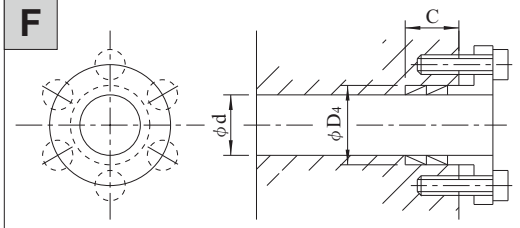
When using two set bolts ((2)M5), indicate the number M52 to the ordering code on the right.

C



When using two sets of fastening elements with a pressure flange, indicate the number A0 to the ordering code on the right.

F



Ships with fastening element and pressure flange.

Shaft hole dimension ordering codes

Unit : mm

Table 6TC-3

	No.	ϕ d	Code No.
A	1	15H 7	06TC -15H 7
	2	16H 7	-16H 7
	3	18H 7	-18H 7
	4	20H 7	-20H 7
	5	22H 7	-22H 7
	6	25H 7	-25H 7
	7	30H 7	-30H 7

	No.	ϕ d	b ×h	Code No.
B	1	15H 7	5Js9×2.3	06TC -15K 5 J
	2	16H 7	〃	-16K 5 J
	3	17H 7	〃	-17K 5 J
	4	18H 7	6Js9×2.8	-18K 6 J
	5	20H 7	〃	-20K 6 J
	6	20H 7	7Js9×3.3	-20K 7 J
	7	22H 7	〃	-22K 7 J
	8	24H 7	〃	-24K 7 J
	9	25H 7	〃	-25K 7 J
	10	25H 7	8 Js9×3.3	-25K 8 J

	No.	ϕ d	ϕ D1	C	ℓ	Code No.
C	1	16H 7	20H 7	23	32	06TC -S 162023
	2	17H 7	21H 7	〃	〃	-S 172123
	3	18H 7	22H 7	〃	〃	-S 182223
	4	20H 7	25H 7	25	30	-S 202525
	5	22H 7	26H 7	〃	〃	-S 222625
	6	24H 7	28H 7	〃	〃	-S 242825
	7	25H 7	30H 7	〃	〃	-S 253025

	No.	ϕ d	ϕ D4	C	Code No.
F	1	16H 7	20H 7	15	06TC -G 162015B 0
	2	17H 7	21H 7	〃	-G 172115B 1
	3	18H 7	22H 7	〃	-G 182215B 1
	4	20H 7	25H 7	〃	-G 202515B 1
	5	22H 7	26H 7	〃	-G 222615B 1

(Note) The codes shown here are for standard hole drilling specifications. The countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Shaft mounting flange

Code No.

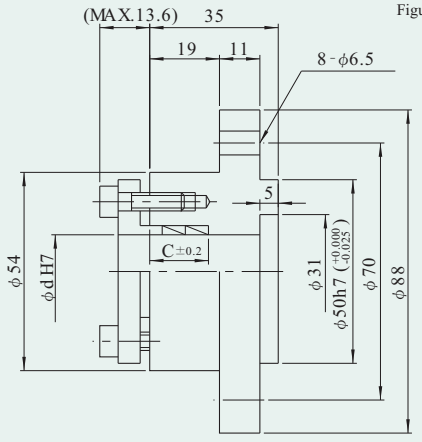
06TC-C d O

Note) pressured flange and 2 sets of fastening elements are attached.

ϕd (mm)	C±0.2 (mm)	Reference transmitted torque (N·m)	※ Reference torque for fastening bolt (N·m)
ϕ 16 $^{+0.018}_{+0.0}$	16	69	8.3
ϕ 20 $^{+0.021}_{+0.0}$	16	141	8.3
ϕ 25 $^{+0.021}_{+0.0}$	17	186	8.3

※Please refer to DIN912-10.9 for torque fastening bolt.

Figure 6TC-4



7TC Dimension

Unit : mm

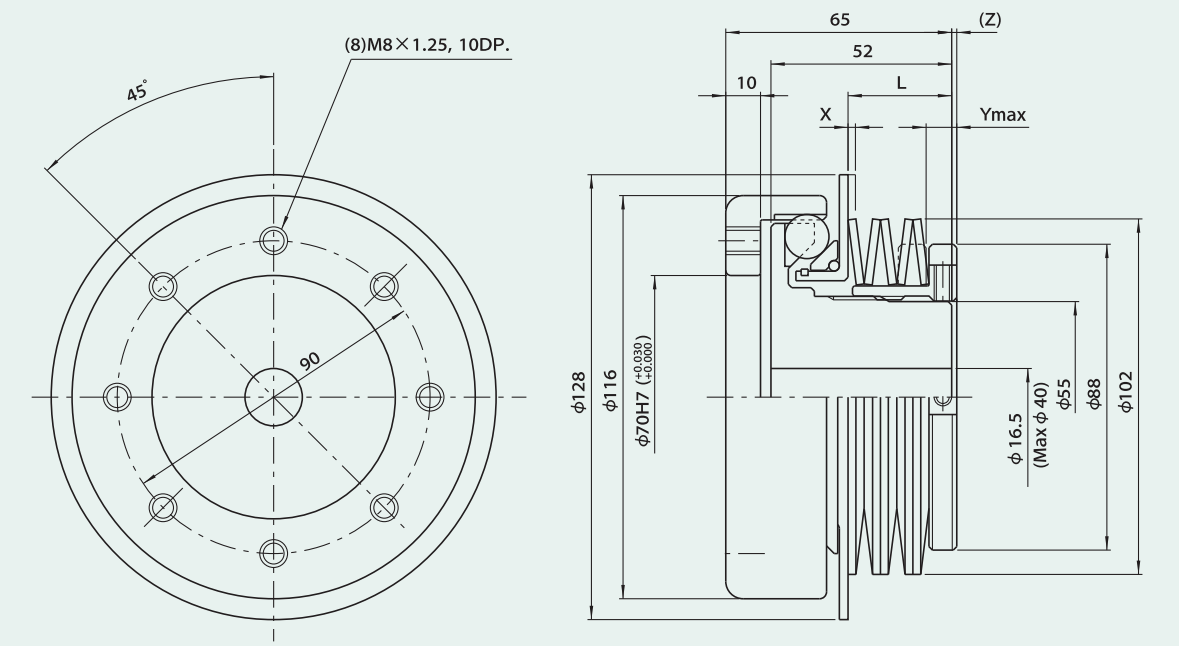
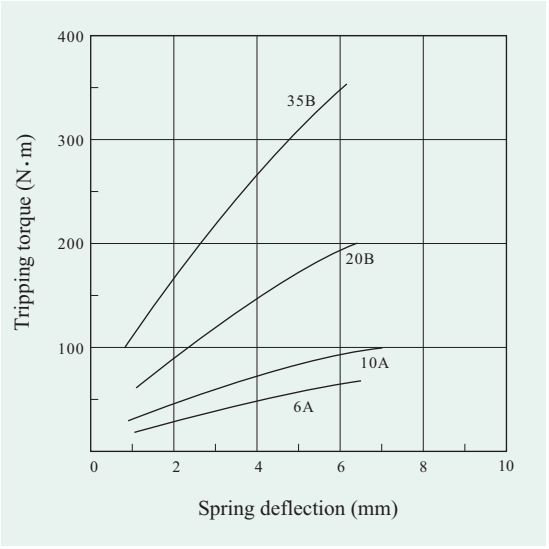


Figure 7TC-1

Torque diagram

Figure 7TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 7TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
7TC -6A	2 0～60	30	1.6	6.4	2.0
-10A	30～100	31	2.6	7.1	0.9
-20B	60～200	30	1.6	6.4	1.7
-35B	100～350	31	2.6	6.2	0.6

Specifications

Table 4TC-2

Item	Unit	Value
Pitch of thread	mm	2
Max. allowable angle error	deg	1.2
Max. allowable space error	mm	±1.8
Max. allowable parallel offset	mm	0.1
Max. revolution per minute	r.p.m	700
Moment of inertia	kg·m^2	5.8 x 10^{-3}
Mass	kg	3.2

X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

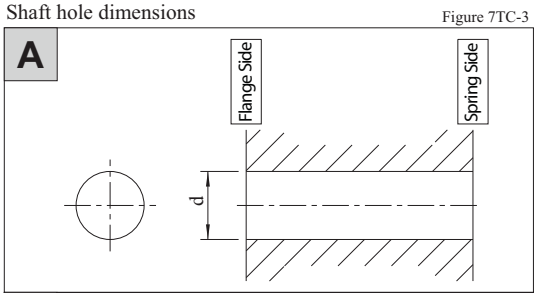
(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

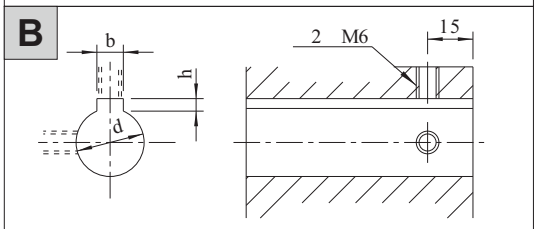
Shaft hole dimensions

Figure 7TC-3

A

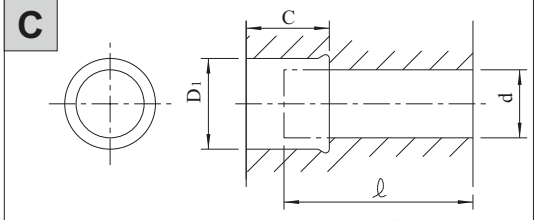


B



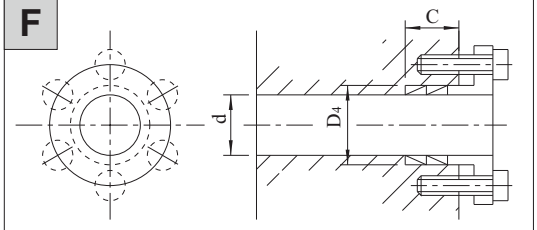
When using two set bolts ((2)M6), indicate the number M62 to the ordering code on the right.

C



When using two sets of fastening elements with a pressure flange, indicate the number A0 to the ordering code on the right.

F



Ships with fastening element and pressure flange.

Shaft hole dimension ordering codes

Unit : mm

Table 7TC-3

	No.	d				Code No.
A	1	20H 7				07TC -20H 7
	2	22H 7				-22H 7
	3	24H 7				-24H 7
	4	25H 7				-25H 7
	5	28H 7				-28H 7
	6	30H 7				-30H 7
	7	32H 7				-32H 7
	8	35H 7				-35H 7
	9	40H 7				-40H 7
B	No.	d	b h			Code No.
	1	20H 7	6Js9 2.8			07TC -20K 6 J
	2		7Js9 3.3			-20K 7 J
	3	22H 7				-22K 7 J
	4	24H 7				-24K 7 J
	5	25H 7				-25K 7 J
	6		8Js9 3.3			-25K 8 J
	7	28H 7				-28K 8 J
	8	30H 7				-30K 8 J
	9		10Js9 3.3			-30K 10J
	10	32H 7				-32K 10J
	11	35H 7				-35K 10J
C	No.	d	D1	C	ℓ	Code No.
	1	20H 7	25H 7	27	40	07TC -S 202527
	2	22H 7	26H 7			-S 222627
	3	24H 7	28H 7			-S 242827
	4	25H 7	30H 7	25	42	-S 253025
	5	28H 7	3 2H 7			-S 283225
	6	30H 7	35H 7	27		-S 303527
	7	32H 7	36H 7			-S 323627
	8	35H 7	40H 8	30	40	-S 354030
F	No.	d	D4	C		Code No.
	1	20H 7	25H 7	16		07TC -G 202516B 0
	2	22H 7	26H 7			-G 222616B 0
	3	24H 7	28H 7			-G 242816B 0
	4	25H 7	30H 7			-G 253016B 0
	5	28H 7	32H 7			-G 283216B 0
	6	30H 7	35H 7			-G 303516B 1
	7	32H 7	36H 7			-G 323616B 1
	8	35H 7	40H 8	19		-G 354019B 1

(Note) The codes shown here are for standard hole drilling specifications. The countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Shaft mounting flange

Code No.

07TC-C d O

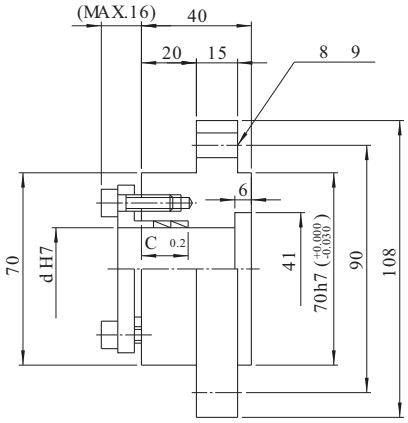
Note) pressured flange and 2 sets of fastening elements are attached.

Table 7TC-4

d (mm)	C 0.2 mm	Reference transmitted torque (N•m)	Reference torque for fastening bolt (N•m)
20 $^{+0.021}_{+0.0}$	16	141	8.3
25 $^{+0.021}_{+0.0}$	17	186	8.3
30 $^{+0.021}_{+0.0}$	17	343	14
35 $^{+0.025}_{+0.0}$	19	382	14
40 $^{+0.025}_{+0.0}$	19	578	14

Please refer to DIN912-10.9 for torque fastening bolt.

Figure 7TC-4



8TC Dimension

Unit : mm

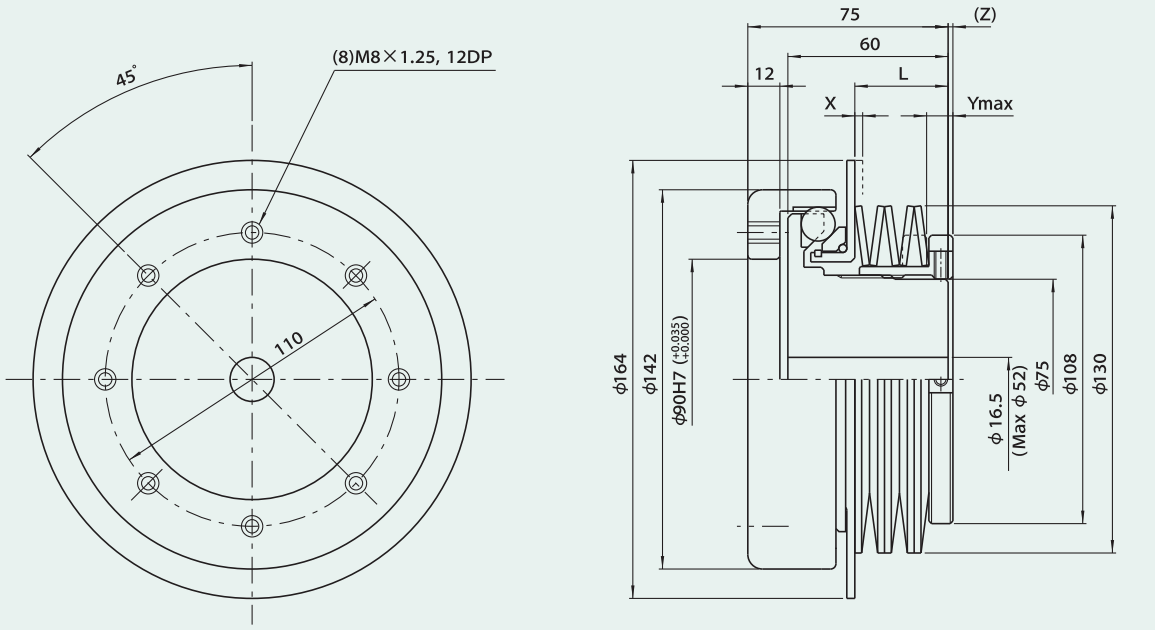
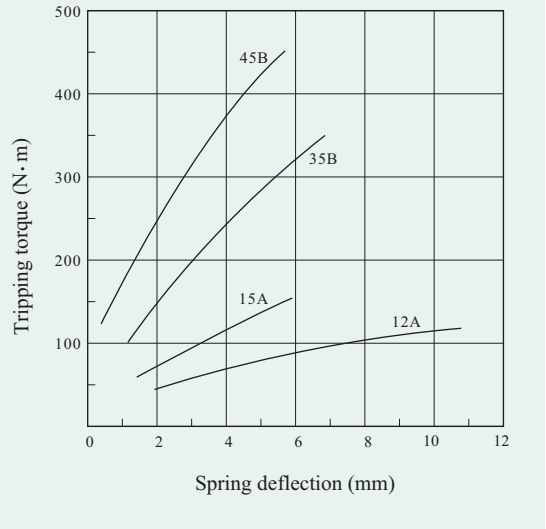


Figure 8TC-1

Torque diagram

Figure 8TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 8TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
8TC-12A	40 ~ 120	35.0	1.7	10.8	2.5
-15A	60 ~ 150	36.0	2.7	5.9	1.6
-35B	100 ~ 350	35.0	1.7	6.9	1.8
-45B	120 ~ 450	36.0	2.7	5.7	0.9

Specifications

Table 8TC-2

Item	Unit	Value
Pitch of thread	mm	2
Max. allowable angle error	deg	1.2
Max. allowable space error	mm	±2
Max. allowable parallel offset	mm	0.1
Max. revolution per minute	r.p.m	500
Moment of inertia	kg·m²	1.4 X 10^{-2}
Mass	kg	5.3

X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

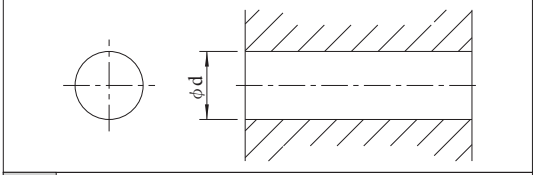
(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

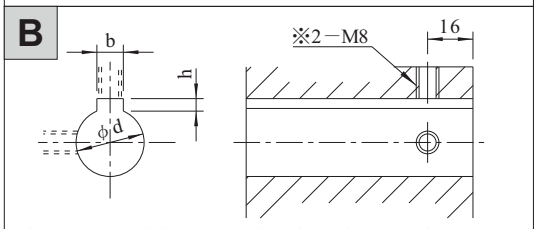
Shaft hole dimensions

Figure 8TC-3

A

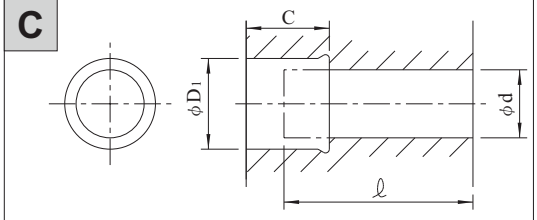


B



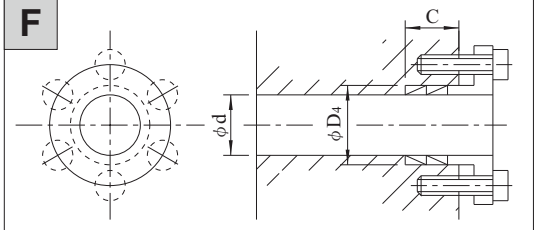
When using two set bolts ((2)M8), indicate the number M82 to the ordering code on the right.

C



When using two sets of fastening elements with a pressure flange, indicate the number of A0 to the ordering code on the right.

F



Ships with fastening element and pressure flange.

Shaft hole dimension ordering codes

Unit : mm

Table 8TC-3

	No.	ϕ d	Code No.
A	1	30H 7	08TC -30H 7
	2	32H 7	-32H 7
	3	35H 7	-35H 7
	4	38H 7	-38H 7
	5	40H 7	-40H 7
	6	45H 7	-45H 7
	7	50H 7	-50H 7

	No.	ϕ d	b ×h	Code No.
B	1	30H 7	8Js9×3.3	08TC -30K 8 J
	2	〃	10Js9×3.3	-30K 10J
	3	32H 7	〃	-32K 10J
	4	35H 7	〃	-35K 10J
	5	38H 7	〃	-38K 10J
	6	40H 7	12Js9×3.3	-40K 12J
	7	45H 7	14Js9×3.8	-45K 14J
	8	50H 7	〃	-50K 14J

	No.	ϕ d	ϕ D1	C	ℓ	Code No.
C	1	30H 7	35H 7	27	49	08TC -S 303527
	2	32H 7	36H 7	〃	〃	-S 323627
	3	35H 7	40H 8	30	〃	-S 354030
	4	38H 7	44H 8	〃	〃	-S 384430
	5	40H 7	45H 8	〃	〃	-S 404530
	6	45H 7	52H 8	38	46	-S 455238

	No.	ϕ d	ϕ D4	C	Code No.
F	1	30H 7	35H 7	17	08TC -G 303517B 0
	2	32H 7	36H 7	〃	-G 323617B 0
	3	35H 7	4 0H 8	19	-G 354019B 0
	4	38H 7	44H 8	〃	-G 384419B 0
	5	40H 7	45H 8	〃	-G 404519B 0
	6	45H 7	52H 8	24	-G 455224B 1

(Note) The codes shown here are for standard hole drilling specifications. The countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Figure 8TC-4

Shaft mounting flange

Code No.

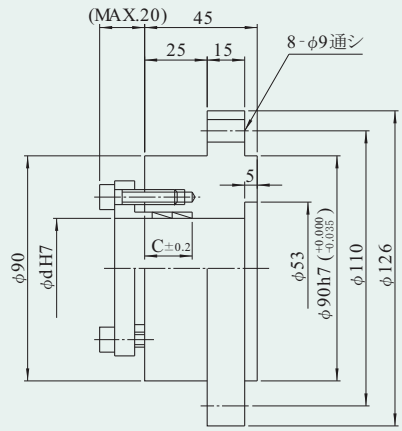
08TC-C d O

Note) pressured flange and 2 sets of fastening elements are attached.

Table 8TC-4

ϕd (mm)	C±0.2 (mm)	Reference transmitted torque (N・m)	※Reference torque for fastening bolt (N・m)
ϕ 30 $^{+0.021}_{+0.0}$	17	343	14
ϕ 35 $^{+0.025}_{+0.0}$	19	382	14
ϕ 40 $^{+0.025}_{+0.0}$	19	578	14
ϕ 45 $^{+0.025}_{+0.0}$	25	833	34

※Please refer to DIN912-10.9 for torque fastening bolt.



11TC Dimension

Unit : mm

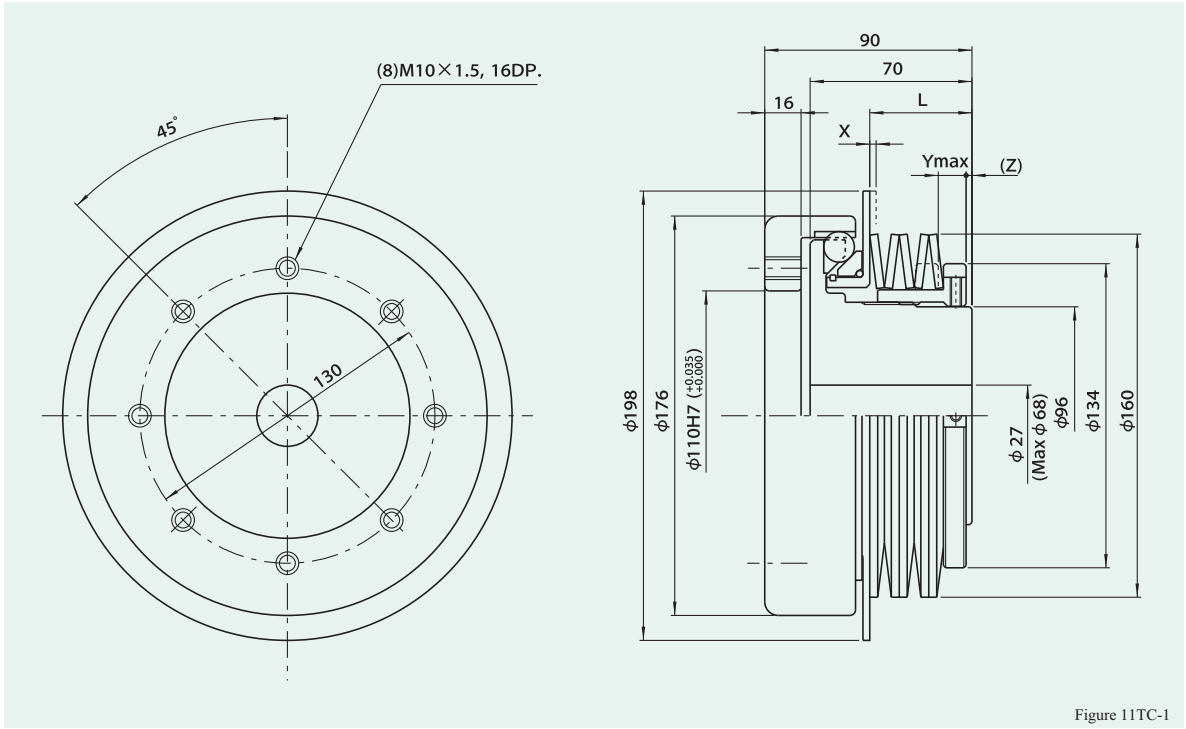
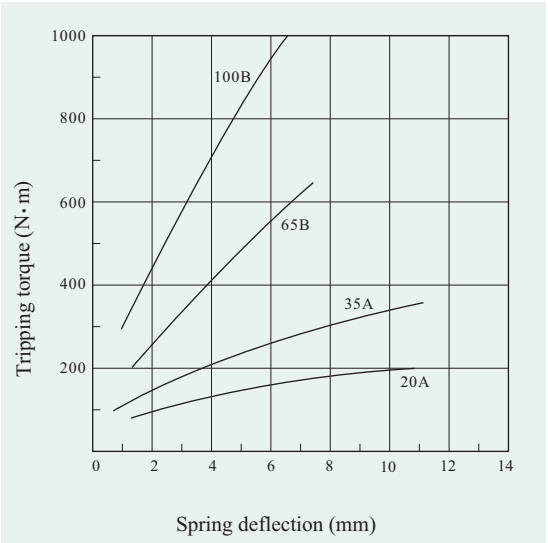


Figure 11TC-1

Torque diagram

Figure 11TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 11TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
11TC-20A	70 ~ 200	41.5	2.0	10.8	2.4
-35A	100 ~ 350	43.0	3.2	11.2	1.0
-65B	200 ~ 650	41.5	2.0	7.4	-0.1
-100B	300 ~ 1000	43.0	3.2	6.7	-1.5

Specifications

Table 11TC-2

Item	Unit	Value
Pitch of thread	mm	2
Max. allowable angle error	deg	1
Max. allowable space error	mm	±2.5
Max. allowable parallel offset	mm	0.1
Max. revolution per minute	r.p.m	400
Moment of inertia	kg·m²	3.5 X 10^{-2}
Mass	kg	10.8

X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

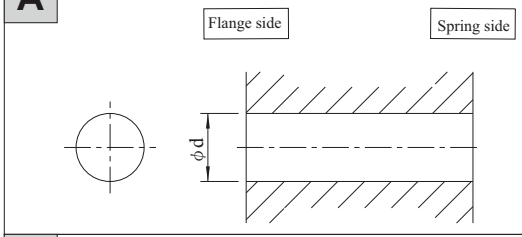
(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

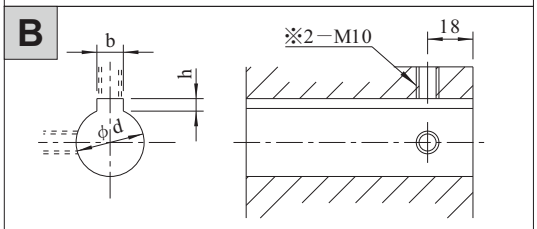
Shaft hole dimensions

Figure 11TC-3

A

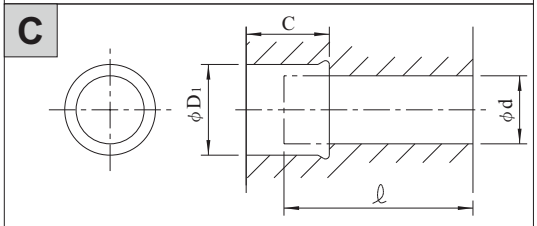


B



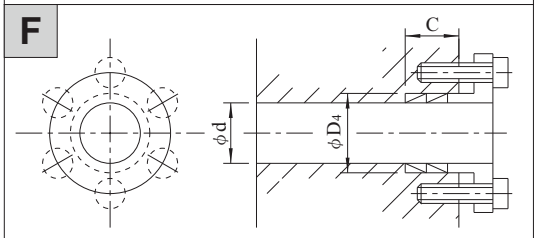
When using two set bolts ((2)M10), indicated the number M102 to the ordering code on the right.

C



When using two sets of fastening elements with a pressure flange, indicate the number A0 to the ordering code on the right.

F



Ships with fastening element and pressure flange.

Shaft hole dimension ordering codes

Unit : mm Table 11TC-3

	No.	ϕ d				Code No.
A	1	40H 7				11TC -40H 7
	2	45H 7				-45H 7
	3	50H 7				-50H 7
	4	55H 7				-55H 7
	5	60H 7				-60H 7
	No.	ϕ d	b×h			Code No.
B	1	40H 7	12Js9×3.3			11TC -40K 12J
	2	45H 7	14Js9×3.8			-45K 14J
	3	50H 7	〃			-50K 14J
	4	55H 7	15Js9×5.0			-55K 15J
	5	60H 7	〃			-60K 15J
	No.	ϕ d	ϕ D1	C	ℓ	Code No.
C	1	35H 7	40H 8	31	56	11TC -S 354031
	2	40H 7	45H 8	34	〃	-S 404534
	3	45H 7	52H 8	38	〃	-S 455238
	4	50H 7	57H 8	〃	〃	-S 505738
	5	55H 7	62H 8	40	〃	-S 556240
	6	60H 7	68H 8	46	54	-S 606846
	No.	ϕ d	ϕ D4	C		Code No.
F	1	35H 7	40H 8	19		11TC -G 354019B 0
	2	40H 7	45H 8	〃		-G 404519B 0
	3	45H 7	52H 8	24		-G 455224B 0
	4	50H 7	57H 8	〃		-G 505724B 0
	5	55H 7	62H 8	〃		-G 556224B 0
	6	60H 7	68H 8	29		-G 606829B 1

(Note) The codes shown here are for standard hole drilling specifications. The countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Figure 11TC-4

Shaft mounting flange

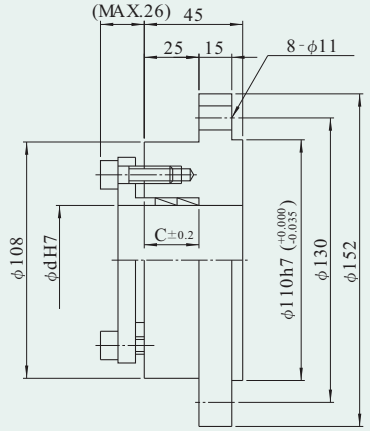
Code No.)

11TC-C□O

Note) pressured flange and 2 sets of fastening elements are attached.

ϕd (N・m)	C±0.2 (mm)	Reference transmitted torque (N・m)	※Reference torque for fastening bolt (N・m)
ϕ 40 $^{+0.025}_{+0.0}$	19	578	14
ϕ 45 $^{+0.025}_{+0.0}$	25	833	34
ϕ 50 $^{+0.025}_{+0.0}$	25	1372	34
ϕ 55 $^{+0.030}_{+0.0}$	25	1519	34
ϕ 60 $^{+0.030}_{+0.0}$	29	1960	68

※ Please refer to DIN912-10.9 for torque fastening bolt.



14TC Dimensions

Unit : mm

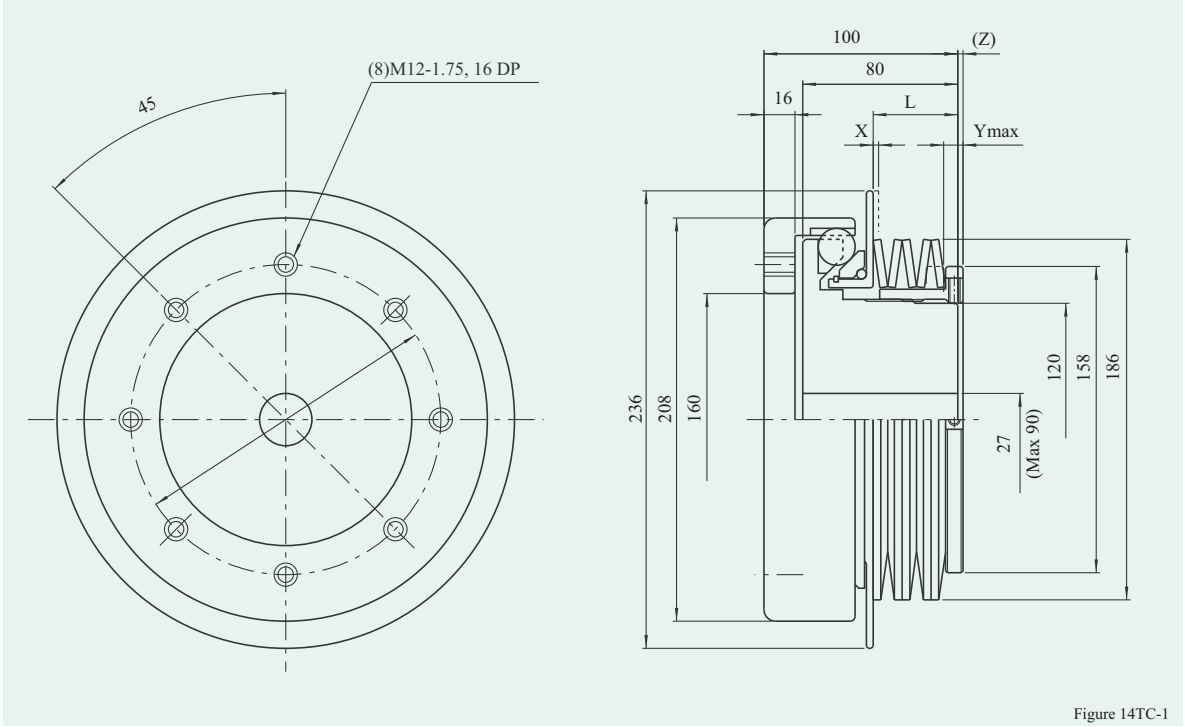
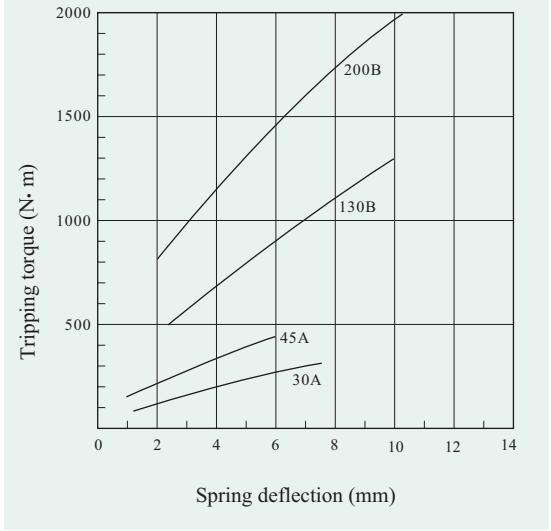


Figure 14TC-1

Torque diagram

Figure 14TC-2



NOTE
1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 14TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
14TC-30A	100 ~ 300	44.0	2.1	7.5	4.5
-45A	150 ~ 450	44.0	3.7	6.0	4.5
-130B	500 ~ 1300	44.0	2.1	10.0	3.5
-200B	800 ~ 2000	44.0	3.7	10.2	3.5

Specifications

Table 14TC-2

Item	Unit	Value
Pitch of thread	mm	2
Max. allowable angle error	deg	0.7
Max. allowable space error	mm	±3.5
Max. allowable parallel offset	mm	0.1
Max. revolution per minute	r.p.m	300
Moment of inertia	$kg \cdot m^2$	9.3×10^{-2}
Mass	kg	20

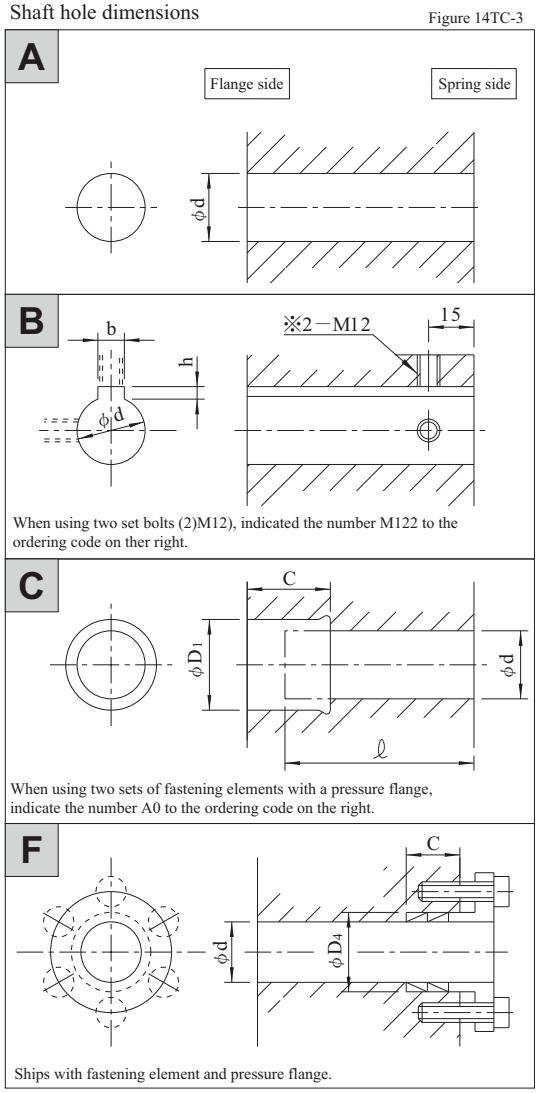
X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

Shaft hole dimensions

Figure 14TC-3



Shaft hole dimension ordering codes

Unit : mm

Table 14TC-3

	No.	ϕ d				Code No.
A	1	50H 7				14TC -50H 7
	2	55H 7				-55H 7
	3	60H 7				-60H 7
B	No.	ϕ d	b×h			Code No.
	1	50H 7	14Js9×3.8			14TC -50K 14J
	2	55H 7	15Js9×5.0			-55K 15J
	3	60H 7	〃			-60K 15J
C	No.	ϕ d	ϕ D1	C	ℓ	Code No.
	1	50H 7	57H 8	48	56	14TC -S 505748
	2	〃	80H 8	35	80	-S 508035
	3	55H 7	62H 8	50	56	-S 556250
	4	〃	85H 8	35	80	-S 558535
	5	60H 7	68H 8	54	56	-S 606854
	6	〃	90H 8	35	80	-S 609035
F	No.	ϕ d	ϕ D4	C		Code No.
	1	50H 7	57H 8	24		14TC -G 505724B 0
	2	55H 7	62H 8	24		-G 556224B 0
	3	60H 7	68H 8	30		-G 606830B 0

(Note) The codes shown here are for standard hole drilling specifications. The countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Shaft mounting flange

Code No.)

14TC-C d O

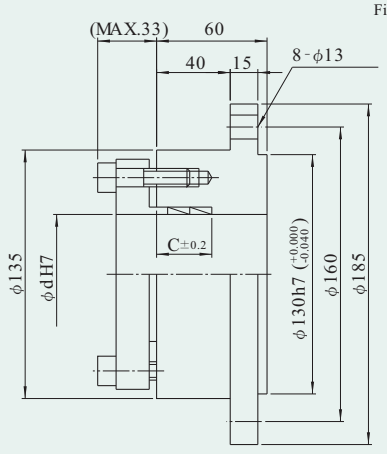
Note) pressured flange and 2 sets of fastening elements are attached.

Table 14TC-4

ϕd (mm)	C±0.2 (mm)	Reference transmitted torque (N•m)	※Reference torque for fastening bolt (N•m)
ϕ 50 $^{+0.025}_{+0.0}$	25	1372	34
ϕ 55 $^{+0.030}_{+0.0}$	25	1519	34
ϕ 60 $^{+0.030}_{+0.0}$	29	1960	68
ϕ 65 $^{+0.030}_{+0.0}$	30	2940	68

※Please refer to DIN912-10.9 for torque fastening bolt.

Figure 14TC-4



18TC

SANDEX

18TC Dimension

Unit : mm

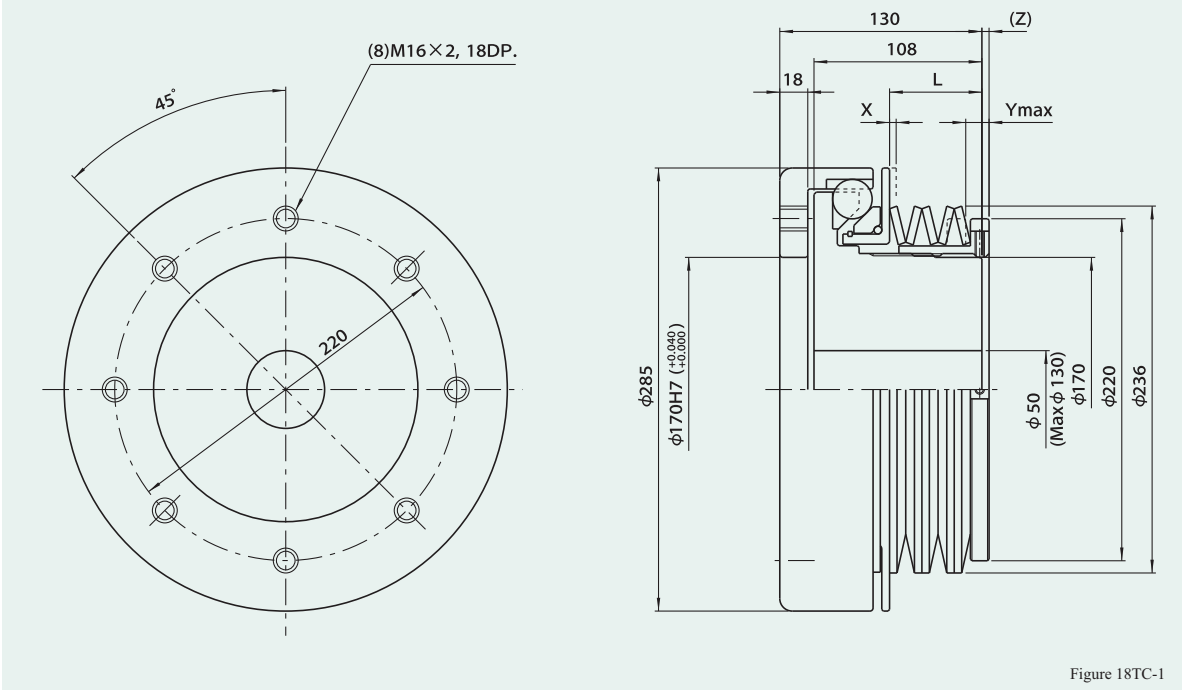
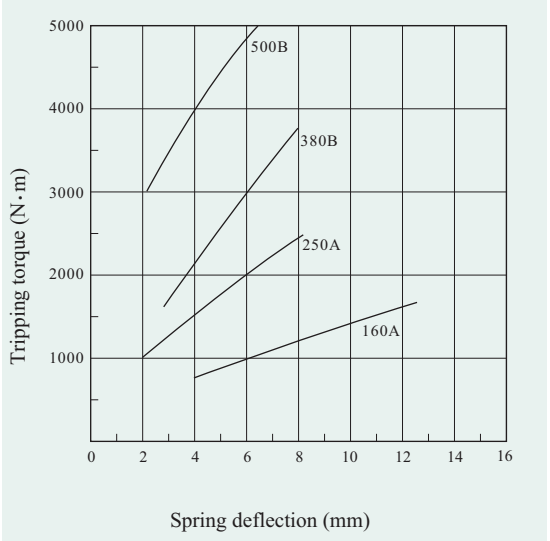


Figure 18TC-1

Torque diagram

Figure 18TC-2



NOTE

1. Use only recommended shaft fastening devices to match the torque requirement, compression ring type fasteners are a good alternative to keyways types.
2. Measure hole depth before selecting the bolt length.
3. Lock the adjusting nut after setting the torque.
4. Torque is set to minimum unless preset is specified.

Dimensions

Table 18TC-1

Model	Range of tripping torque (N·m)	L (mm)	X (mm)	Ymax (mm)	(Z) (mm)
18TC-160A	700 ~ 1600	59.0	3.7	12.5	4.8
-250A	1000 ~ 2500	59.0	6.2	8.3	5.0
-380B	1600 ~ 3800	59.0	3.7	8.0	5.0
-500B	3000 ~ 5000	59.0	6.2	6.5	5.2

Specifications

Table 18TC-2

Item	Unit	Value
Pitch of thread	mm	3
Max. allowable angle error	deg	0.5
Max. allowable space error	mm	+3.5
Max. allowable parallel offset	mm	0.1
Max. revolution per minute	r.p.m	200
Moment of inertia	kg·m^2	0.4
Mass	kg	45

X : Denotes amount of movement when an overload occurs. Optional monitoring sensors can input to the controller to stop the machine.

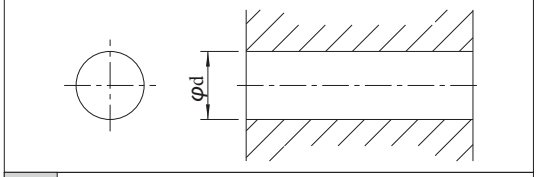
(Z) : Denotes when the spring height is torque free and should be a reference when calculating tripping torques.

Ymax : Denotes the amount of turns the torque adjustment nut must be turned to obtain maximum tripping torque. Tightening beyond this amount can prevent the torque limiter from tripping.

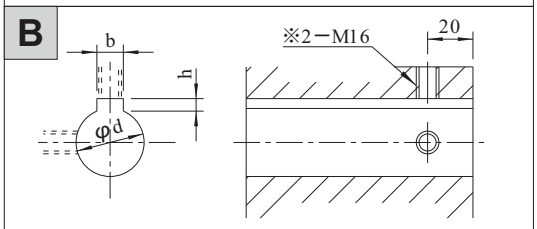
Shaft hole dimensions

Figure 18TC-3

A

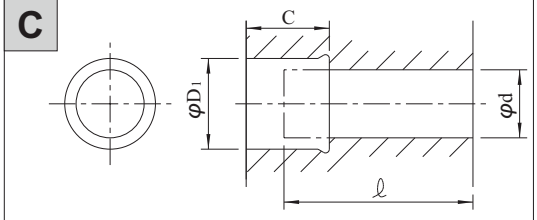


B



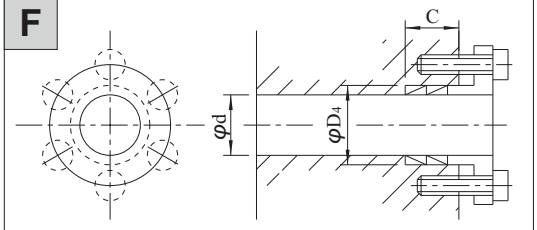
When using two set bolts ((2)M16), indicate the number M162 to the ordering code on the right.

C



When using two sets of fastening elements with a pressure flange, indicate the number A0 to the ordering code on the right.

F



Ships with fastening element and pressure flange.

Shaft hole dimension ordering codes

Unit : mm

Table 18TC-3

	No.	φ d				Code No.
A	1	60H 7				18TC -60H 7
	2	65H 7				-65H 7
	3	70H 7				-70H 7
	4	75H 7				-75H 7
	5	80H 7				-80H 7
	No.	φ d	b × h			Code No.
B	1	60H 7	1 8Js9 × 4.4			18TC -60K 18J
	2	65H 7	〃			-65K 18J
	3	70H 7	20Js9 × 4.9			-70K 20J
	4	75H 7	〃			-75K 20J
	5	80H 7	22Js9 × 5.4			-80K 22J
	6	85H 7	〃			-85K 22J
	7	90H 7	2 5Js9 × 5.4			-90K 25J
	No.	φ d	φ D1	C	ℓ	Code No.
C	1	60H 7	68H 8	58	80	18TC -S 606858
	2	60H 7	90H 8	35	100	-S 609035
	3	70H 7	79H 8	61	80	-S 707961
	4	70H 7	110H 8	40	1 00	-S 7011040
	5	80H 7	9 1H 8	6 9	8 0	-S 809169
	6	85H 7	120H 8	40	100	-S 8012040
	7	90H 7	101H 8	79	7 0	-S 9010179
	8	90H 7	130H 8	40	1 00	-S 9013040
	No.	φ d	φ D4	C		Code No.
F	1	60H 7	6 8H 8	29		18TC -G 606829B 0
	2	70H 7	79H 8	33		-G 707933B 0
	3	80H 7	9 1H 8	39		-G 809139B 0
	4	90H 7	1 01H 8	〃		-G 9010139B 0

(Note) The codes shown here are for standard hold drilling specifications. Thc countersink depth depends on the length of the shaft ℓ and the depth of the Ringfeder.

Option

Figure 18TC-4

Shaft mounting flange

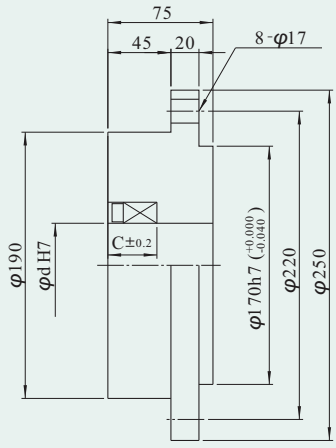
Code No.)

18TC-C d O

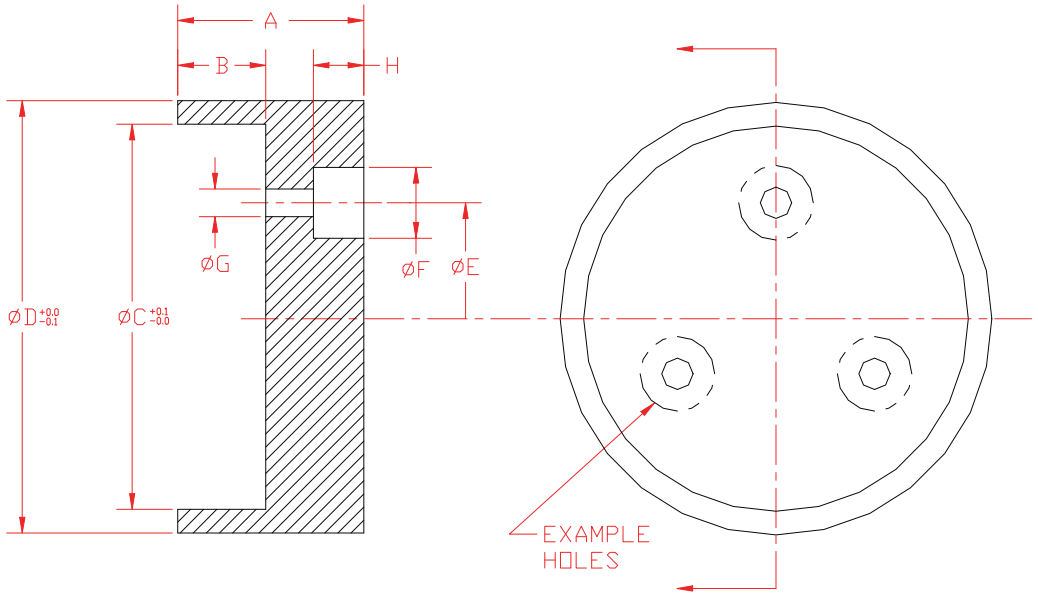
Note) 1 set of fastening elements are attached.

φd (mm)	C ± 0.2 (mm)	Reference transmitted torque (N・m)	※Reference torque for fastening bolt (N・m)
φ 60 $^{+0.030}_{+0.0}$	35	2421	34
φ 70 $^{+0.030}_{+0.0}$	40	4508	69
φ 80 $^{+0.030}_{+0.0}$	40	5096	69
φ 90 $^{+0.035}_{+0.0}$	40	6468	69

※ Please refer to DIN912-10.9 for torque for fastening bolt.



A-CLAMP FLANGE SANKYO



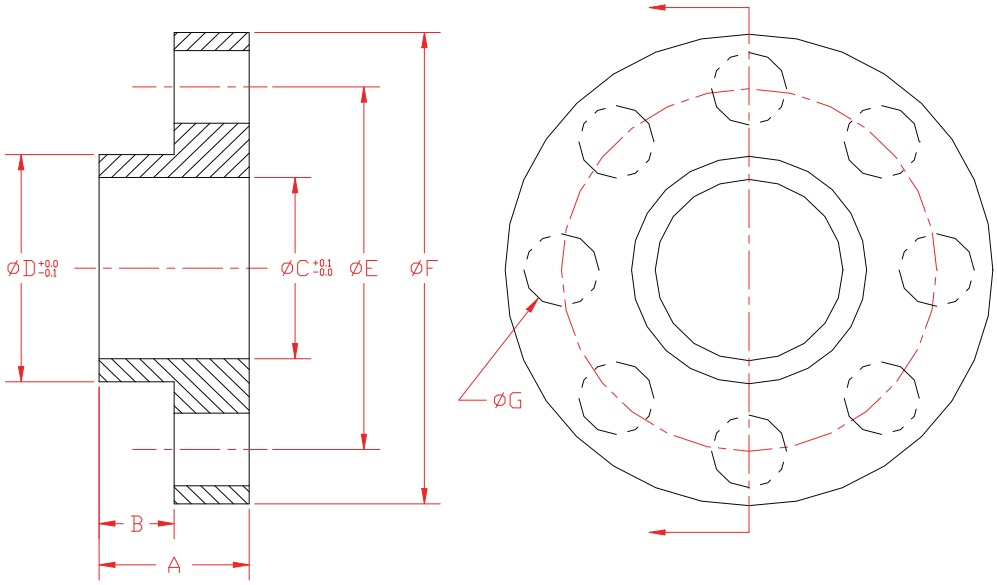
A-Style Clamping Flange Dimensions

SHAFT Ø (mm)	A (mm)	B (mm)	ØC (mm)	ØD (mm)	ØE (mm)	ØF (mm)	ØG (mm)	ØH (mm)	BOLT SIZE (mm)	TAPER RING SIZE (mm)	MAX. TORQUE PER TAPER RING SET (N•m)
10	16	5	10.2	12.8	0	11.0	1-Ø6.6	6	1-M6 x 15	10 x 13 x 4.5	9
12			12.2	14.8						12 x 15 x 4.5	11
13	18		13.2	15.8		14.0	1-Ø9	8	1-M8 x 20	13 x 16 x 4.5	36
14			14.2	17.8						14 x 18 x 6.3	27
15			15.2	18.8						15 x 19 x 6.3	31
16			16.2	19.8						16 x 20 x 6.3	35
17	20		17.2	20.8		17.5	1-Ø11	10	1-M10 x 25	17 x 21 x 6.3	78
18			18.2	21.8						18 x 22 x 6.3	83
19			19.2	23.8						19 x 24 x 6.3	78
20	15		20.2	24.8	12	9.5	3-Ø5.5	5	3-M5 x 18	20 x 25 x 6.3	49
22			22.2	25.8	14					22 x 26 x 6.3	64
24			24.2	27.8						24 x 28 x 6.3	74
25	18	7	25.2	29.8	15	11.0	3-Ø6.6	6	3-M6 x 20	25 x 30 x 6.3	118
28			28.2	31.8	18	11.0	4-Ø6.6	6	4-M6 x 20	28 x 32 x 6.3	201
30			30.2	34.8	20					30 x 35 x 6.3	211
32			32.2	35.8						32 x 36 x 6.3	230
35	23	8	35.2	39.8	23	14.0	4-Ø9	8	4-M8 x 25	35 x 40 x 7	480
36			36.2	41.8						36 x 42 x 7	490
38			38.2	43.8	25					38 x 44 x 7	519
40			40.2	44.8						40 x 45 x 8	529
42			42.2	47.8						42 x 48 x 8	549
45	26		45.2	51.8	28	17.5	4-Ø11	10	4-M10 x 30	45 x 52 x 10	892
48			48.2	54.8	32					48 x 55 x 10	1000
50	28		50.2	56.8	35					50 x 57 x 10	1029
55	30	10	55.2	61.8	40	17.5	6-Ø11	10	6-M10 x 30	55 x 62 x 10	1862
60			60.2	67.8						60 x 68 x 12	1960
65			65.2	72.8	45					65 x 73 x 12	2156
70	35		70.2	78.8	50				6-M10 x 40	70 x 79 x 14	2254
75			75.2	83.8	55	17.5	8-Ø11	10	8-M10 x 40	75 x 84 x 14	3234
80	40	12	80.2	90.8	60					80 x 91 x 17	3332
85	50		85.2	95.8	65	20.0	8-Ø14	12	8-M12 x 50	85 x 96 x 17	5586
90			90.2	100.8						90 x 101 x 17	5880

Bolt Tightening Torque

M4 Bolt	4 Nm (35 lb-in)	M8 Bolt	34 Nm (300 lb-in)
M5 Bolt	8.3 Nm (73 lb-in)	M10 Bolt	68 Nm (602 lb-in)
M6 Bolt	14 Nm (124 lb-in)	M12 Bolt	118 Nm (1044 lb-in)

B-CLAMP FLANGE SANKYO



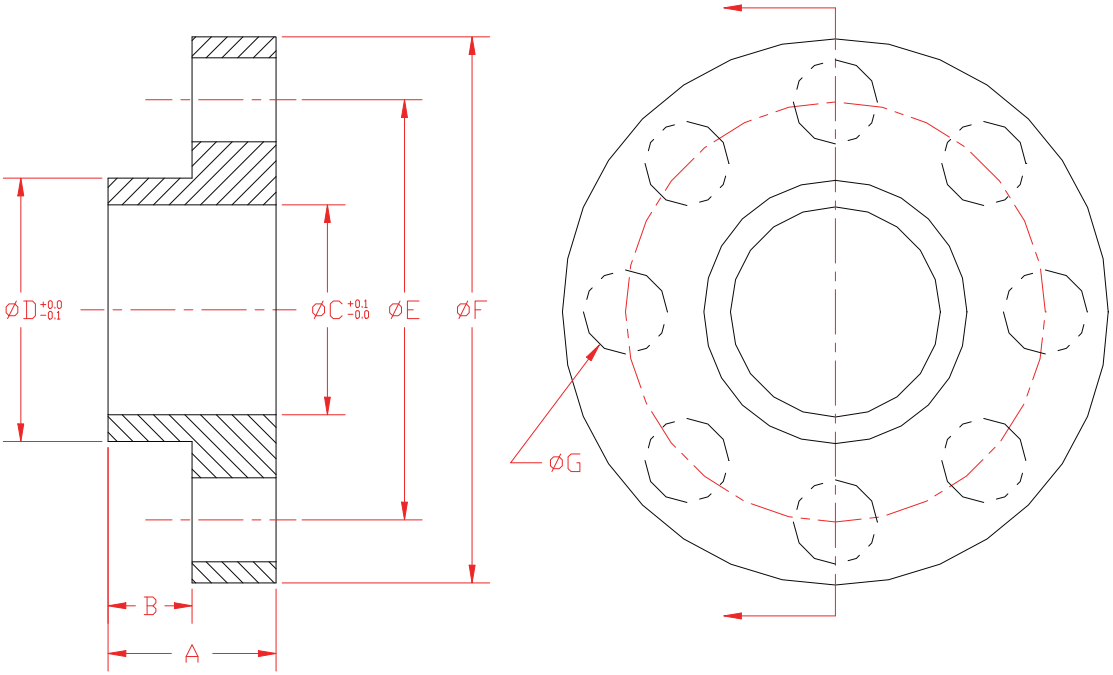
B-Style Clamping Flange Dimensions

SHAFT Ø (mm)	A (mm)	B (mm)	ØC (mm)	ØD (mm)	ØE (mm)	ØF (mm)	ØG (mm)	BOLT SIZE (mm)	TAPER RING SIZE (mm)	MAX. TORQUE PER TAPER RING SET (N•m)
10	12	6	10.2	12.8	22	30	4-Ø5	4-M4 x 15	10 x 13 x 4.5	25
12			12.2	14.8	26	38			12 x 15 x 4.5	29
13			13.2	15.8					13 x 16 x 4.5	33
14			14.2	17.8	30	42	4-Ø6	4-M5 x 18	14 x 18 x 6.3	58
15			15.2	18.8					15 x 19 x 6.3	64
16			16.2	19.8					16 x 20 x 6.3	69
17			17.2	20.8	32	44			17 x 21 x 6.3	74
18			18.2	21.8					18 x 22 x 6.3	80
19			19.2	23.8	38	50	6-Ø6	6-M5 x 18	19 x 24 x 6.3	130
20			20.2	24.8					20 x 25 x 6.3	141
22			22.2	25.8					22 x 26 x 6.3	167
24			24.2	27.8					24 x 28 x 6.3	186
25	13	7	25.2	29.8	40	52			25 x 30 x 6.3	186
28			28.2	31.8	42	54			28 x 32 x 6.3	221
30			30.2	34.8	48	61	6-Ø7	6-M6 x 20	30 x 35 x 6.3	343
32			32.2	35.8					32 x 36 x 6.3	363
35	14	8	35.2	39.8	56	69			35 x 40 x 7	382
36			36.2	41.8					36 x 42 x 7	392
38			38.2	43.8					38 x 44 x 7	412
40	15	7	40.2	44.8	57	70	8-Ø7	8-M6 x 25	40 x 45 x 8	578
42	15	9	42.2	47.8	60	73			42 x 48 x 8	598
45	17	9	45.2	51.8	68	84	6-Ø9	6-M8 x 25	45 x 52 x 10	833
48			48.2	54.8	71	87			48 x 55 x 10	931
50			50.2	56.8	78	94	8-Ø9	8-M8 x 25	50 x 57 x 10	1372
55			55.2	61.8					55 x 62 x 10	1519
60	21	9	60.2	67.8	88	107	6-Ø11	6-M10 x 30	60 x 68 x 12	1960
65	28	10	65.2	72.8	105	125	8-Ø11	8-M10 x 40	65 x 73 x 12	2940
70			70.2	78.8					70 x 79 x 14	3136
75			75.2	83.8					75 x 84 x 14	3234
80			80.2	90.8	118	135			80 x 91 x 17	3332
85			85.2	95.8					85 x 96 x 17	3528
90			90.2	100.8					90 x 101 x 17	3822

Bolt Tightening Torque

M4 Bolt	4 Nm (35 lb-in)	M8 Bolt	34 Nm (300 lb-in)
M5 Bolt	8.3 Nm (73 lb-in)	M10 Bolt	68 Nm (602 lb-in)
M6 Bolt	14 Nm (124 lb-in)	M12 Bolt	118 Nm (1044 lb-in)

B1-CLAMP FLANGE SANKYO



Compact B1-Style Clamping Flange Dimensions

SHAFT Ø (mm)	A (mm)	B (mm)	ØC (mm)	ØD (mm)	ØE (mm)	ØF (mm)	ØG (mm)	BOLT SIZE (mm)	TAPER RING SIZE (mm)	MAX. TORQUE PER TAPER RING SET (N•m)
15	12	6	15.2	18.8	30	39	4-Ø6	4-M5x18	15 x 19 x 6.3	64
16			16.2	19.8	27	34	4-Ø4.5	4-M4x18	16 x 20 x 6.3	31
17			17.2	20.8	30	39	4-Ø5.5	4-M5x18	17 x 21 x 6.3	74
18			18.2	21.8	30	40			18 x 22 x 6.3	80
20			20.2	24.8	32		6-Ø4.5	6-M4x18	20 x 25 x 6.3	69
22			22.2	25.8	32				22 x 26 x 6.3	87
25	13	7	25.2	29.8	40	49	6-Ø5.5	6-M5x18	25 x 30 x 6.3	186
28			28.2	31.8	42	50			28 x 32 x 6.3	219
30			30.2	34.8	43	54	8-Ø6	8-M5x18	30 x 35 x 6.3	314
32			32.2	35.8	45		6-Ø5.5	6-M5x18	32 x 36 x 6.3	248
35	14	8	35.2	39.8	48	58	8-Ø5.5	8-M5x18	35 x 40 x 7	358
45	17	9	45.2	51.8	64	75	8-Ø7	8-M6x25	45 x 52 x 10	547
50			50.2	56.8	72	88	8-Ø9	8-M8x25	50 x 57 x 10	1392
55			55.2	61.8	75				55 x 62 x 10	1519
60	21		60.2	67.8	82	100		8-M8x30	60 x 68 x 12	1617

Bolt Tightening Torque

M4 Bolt	4 Nm (35 lb-in)	M8 Bolt	34 Nm (300 lb-in)
M5 Bolt	8.3 Nm (73 lb-in)	M10 Bolt	68 Nm (602 lb-in)
M6 Bolt	14 Nm (124 lb-in)	M12 Bolt	118 Nm (1044 lb-in)

TC Series (Shaft to Shaft Type) Torque Limiting Clutch

SANKYO Innovation

Torque Limiter Overview

Shaft/Flange Torque Limiter Overview

Picture	Model	Type	Torque N·m	Shaft Dia. mm	Auto Reset	Torque Adjust	Max. RPM	Rotational Backlash	Reset Accuracy	Trip Torque Accuracy
	**Mini TF**	Shaft to Flange	0.3~18	7~20	Yes	Coil Spring	1600~2000	1~2 Arcmin.	±30 Arcsec.	±15%
	**TF**	Shaft to Flange	2~5000	12.5~110	Yes	Belleville Washer	180~800	30 Arcsec.	±15 Arcsec.	±10%
	**TNF**	Shaft to Flange	2~600	12.5~52	Yes	Belleville Washer	400~800	30 Arcsec.	±15 Arcsec.	±10%
	**TAF**	Shaft to Flange	50~650	16.5~68	No	Air Adjust	300~600	30 Arcsec.	±15 Arcsec.	±10%
	**TRF**	Shaft to Flange	10~110	12.5~36	Yes	Belleville Washer	2000	1~2 Arcmin.	±60 Arcsec.	±15%

Flange/Flange Torque Limiter Overview

Picture	Model	Type	Torque N·m	Shaft Dia. mm	Auto Reset	Torque Adjust	Max. RPM	Rotational Backlash	Reset Accuracy	Trip Torque Accuracy
	**To**	Flange to Flange	80~1000	90~220	Yes	Multiple Coil Springs	120~200	30 Arcsec.	±15 Arcsec.	±10%
	**TAD**	Shaft to Flange	40~5500	70~275	Yes	Multiple Coil Springs	180~800	30 Arcsec.	±15 Arcsec.	±10%

Shaft/Shaft Torque Limiter Overview

Picture	Model	Type	Torque N·m	Shaft Dia. mm	Auto Reset	Torque Adjust	Max. RPM	Rotational Backlash	Reset Accuracy	Trip Torque Accuracy
	**Mini TC**	Shaft to Shaft	0.3~18	7~22	Yes	Coil Spring	1600~2000	1~2 Arcmin.	±30 Arcsec.	±15%
	**TC**	Shaft to Shaft	2~5000	12.5~130	Yes	Belleville Washer	200~1000	30 Arcsec.	±15 Arcsec.	±10%
	**TR**	Shaft to Shaft	3~600	11~62	No, Manual Reset	Belleville Washer	800~2000	60 Arcsec.	±30 Arcsec.	±10%

Linear Torque Limiter Overview

Picture	Model	Type	Torque N·m	Mounting mm	Auto Reset	Torque Adjust	Max. RPM	Linear Backlash	Reset Accuracy	Trip Torque Accuracy
	**LM**	Linear	5~120	18~42 Wide	Yes	Coil Spring	N/A	0 mm	±0.03 mm	±10%

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TC Series (Shaft to Shaft Type) Torque Limiting Clutch

Related Products

SANKYO Innovation

Fixed Stop Rotary Indexers

Sankyo's AD/DTR low profile dial indexers feature hollow bore centers for routing supply lines with a stationary flange for mounting a second dial above the indexing dial. Our ED series offers nickel plated steel billet housings with cleanroom compatible models available. A great choice for packaging machine, our DU series is designed with short index periods for continuous duty cycles. Parallel shaft indexers are designed for inline indexing in confined spaces. Most series perform index or oscillate motion with ±30 arcsec accuracy. Special configurations are available to meet your needs.

				
AD – Dial Index (High Torque Capacity)	***DTR – Large Dial (Integrated Reducer)***	***ED – Right Angle Index (Cleanroom Compatible)***	***DU – Universal Index (Short Index Period)***	***P – Parallel Index (Parallel Shafts)***

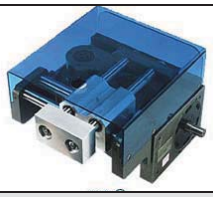
Programmable Rotary Indexers

Each series below features programmable stops or non-patterned motions driven with servo motor drives. Constant lead cams include internal cam ratios which can be driven with or without optional reducers for combined ratios up to 1600:1. Multiple housing sizes are available in each series with stationary or rotating hollow outputs, for cycle rates up to 1500+ cycles/minute.

				
AR – Dial Index (High Torque)	***RE – Dial Index (Mid Torque/speed)***	***RTR – Dial Index (Extreme Torque)***	***RA – Rotating Bore Index (High Speed)***	***Ro – Ring Index (Large Bore)***

Linear & Rotary Handlers

Sankyo's handlers feature rotary & linear motions combined with lift motions. All internal cam motions include gripper dwell times and easy synchronization (1 input shaft revolution for one full cycle). Multiple sizes for each series are available.

				
FN – Rotary Handler (Lift, Index, Oscillate)	***FH – Rotary Handler (600 cpm Handler)***	***GY – Linear Handler (Pick & Place)***	***GV – Linear Handler (Walking Beam)***	***G – Linear Handler (Large Capacity W.B.)***

Rotary & Linear Assembly

Our rotary and linear assembly machine can incorporate synchronizes or asynchronous handlers. Our BH series can mount 0~12 synchronized handlers above a 6~36 station indexing dial plate. The IC80 series precision chain conveyor can use our GY series handler with 12~256 stations. Our MPC series can change feed pitch by station. Each pallet is driven with a cam to control the pallet motion by station. Perfect for accumulation or long inspection times.

	***BH Series*** *(rotary assembly)* • *90 cycles/min* • *6~36 stations* • *0~12 handlers* • *3 frame sizes* • *1 motor drives index & handler* • *clutch protected*		***IC80 Series*** *(linear assembly)* • *120 cycles/min* • *80~160mm link* • *1~4 link pitch* • *960~9600 long* • *line shaft drive for handlers* • *clutch protected*		***MPC Series*** *(linear assembly)* • *60 cycles/min* • *0~375mm pitch* • *30~100 pallets* • *pallets can accumulate or feed multiples* • *clutch protected*

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