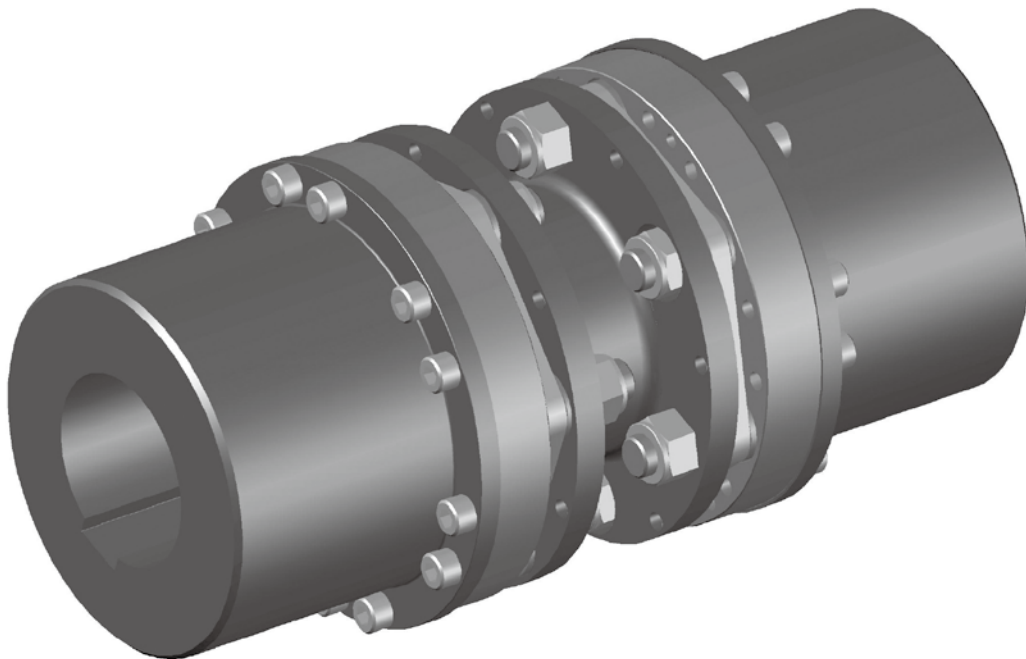


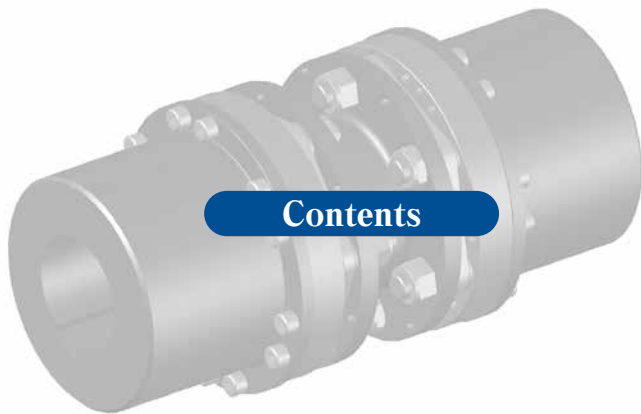
TORSIFLEX® Couplings

For General Purpose & Process Applications

compliant with the requirements of
API 610/ISO 13709 and ISO 14691



Daido Precision Industries Ltd.



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The TORSIFLEX® Coupling is made under License from Ameridrives International LLC.

FEATURES

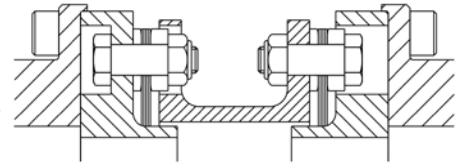
The TORSIFLEX® coupling is compliant with the requirements of API 610/ISO 13709 or ISO 14691. The TORSIFLEX® coupling is of the dry disc type. As same as our FORM-FLEX® couplings, misalignment between the shaft ends is absorbed by deformation of the elements.

CONSTRUCTION

The TORSIFLEX® coupling consists of two hubs and a factory assembled spacer unit. Installation involves fitting the hubs to the machinery shaft ends, placing the spacer unit between them, then securing with the attachment screws. Plug-in design allows installation and removal of spacer unit without disturbing the hubs.

SAFETY

Anti-Flail Feature retains the spacer in position should the disc packs fail. SPARK FREE overload protection is provided as a standard feature on all the TORSIFLEX® couplings, making them suitable for GAS ZONE environments.



HIGHER TORQUE TRANSMISSION

Large bolts for high clamping load, increased frictional torque load, and reduced bolt bending stress.

SURFACE TREATMENT

Zinc phosphate coating applied as standard.

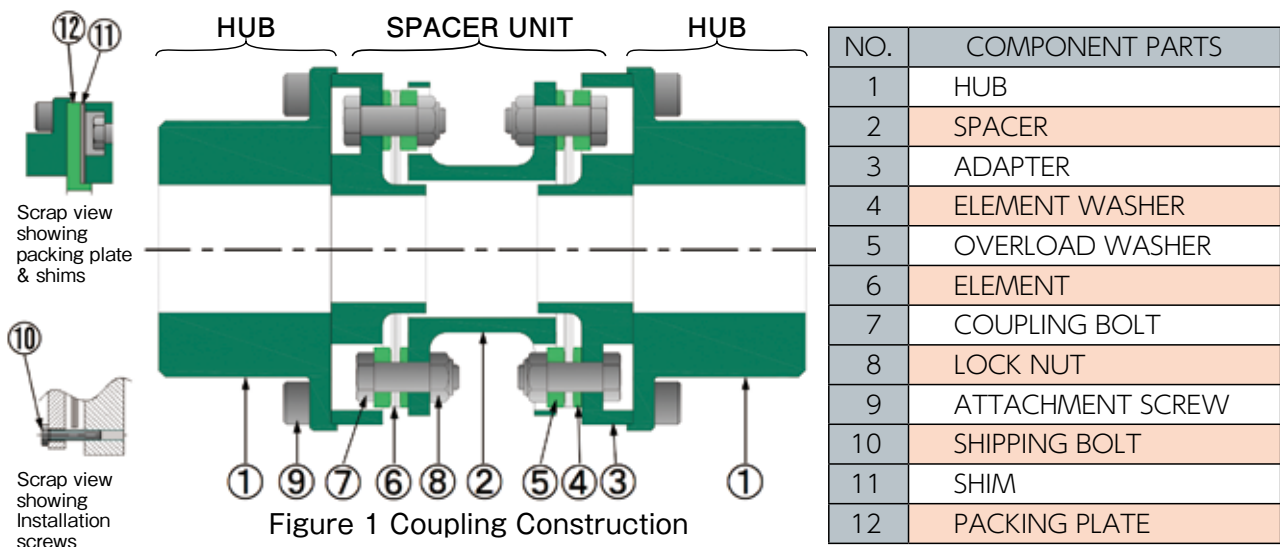
SUPERIOR RESISTANCE TO DIFFICULT CONDITIONS

The temperature range: from -20°C to 149°C.
Consult us if you intend to operate outside of the range.

OPTIONS

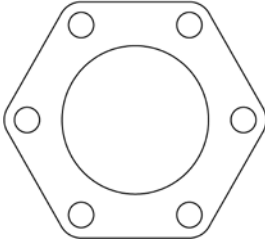
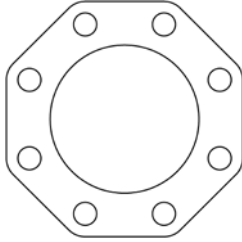
Torque overload protection
LEF (Limited end float)
Electrical Insulation
Low temperature design for down to -50°C

CONSTRUCTION OF THE TORSIFLEX® COUPLING



Mainly, a coupling consists of components shown above. The spacer unit (No. 2 to 8) is factory assembled. If required, the dynamic balance can be carried out. If assembly balance or assembly check balance is carried out, the coupling has match marks. The main coupling bolts (No. 7) and nuts (No. 8) are factory-tightened, and should, under normal circumstances, NOT BE TOUCHED unless specified in the installation instructions (11 and 12 are optional).

TYPES OF ELEMENTS

PERFORMANCE	MAX ANGULAR MISALIGNMENT : 0.5° TORQUE RATING: 270-13100Nm	MAX ANGULAR MISALIGNMENT : 0.33° TORQUE RATING: 19000-120000Nm
SHAPE	SIZE 27-1310 (6-BOLT TYPE) 	SIZE 1900-12000 (8-BOLT TYPE) 

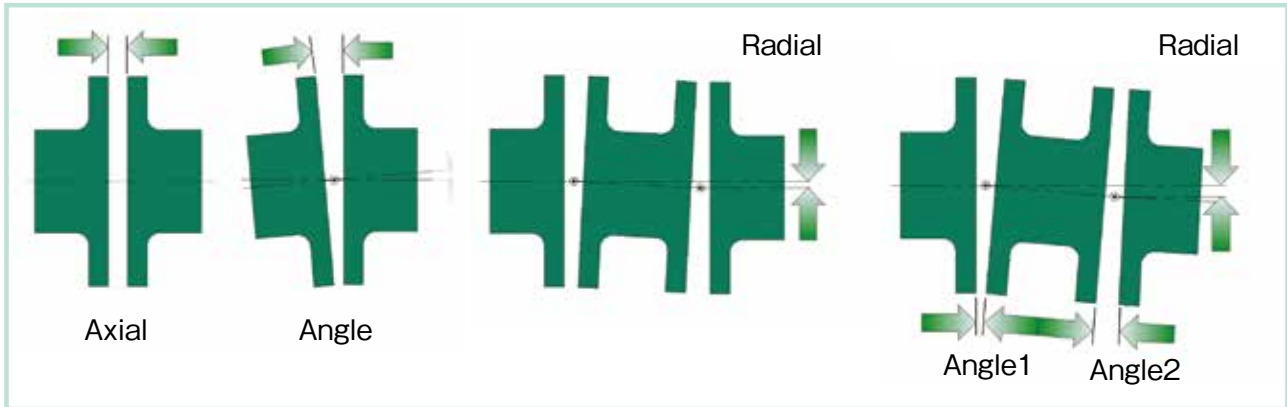
PERFORMANCE

Allowance for axial and parallel misalignment of coupling depends on the number of bolts used in the element and operation speed. Allowance for axial and parallel misalignment is in inverse relationship; in other words, when one increase, the other decreases. Therefore, they should be taken into consideration concurrently. There are many possible causes for misalignment of shaft. Initial alignment may be altered by temperature change, bearing wear, deformation of substructure, etc. In general, however, careful initial alignment of shafts increases coupling life. If it is insufficient, a coupling will have little reserve for absorption of misalignment. This may result in reduced coupling service life.

Parallel misalignment happens when two shafts are parallel and do not intersect. They are offset by some distance. Angular misalignment is caused by either connected shaft. They are not parallel and

intersect at an angle. Axial misalignment is caused by changes in the axial position of the shafts. It can be the situation either smaller or larger distance than one at installation between shafts. In many cases, misalignment is the result of a complex combination of these types.

The TORSIFLEX® coupling can satisfy NEMA Standards MG1-2003 and JEM Standards 1146-1959 without the use of any accessories which restrict axial movement. (The TORSIFLEX® coupling does not require any accessories to correct movement in the thrust direction when the motor starts.)

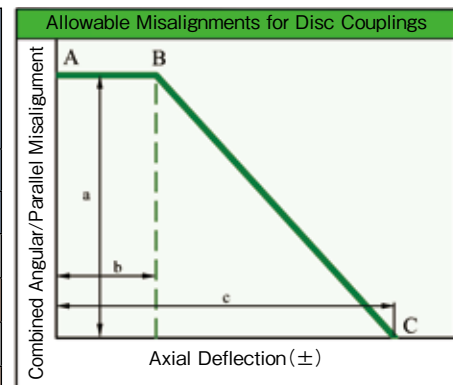


MISALIGNMENT

The TORSIFLEX® coupling should operate within the envelope in “Allowable Misalignment for Disc Couplings” graph below. Note that the values shown in the table below are MAXIMUM. Reduction in these values will reduce bearing loads and increase machinery life.

With regard to the recommended value at alignment of installation, refer to the Table 1 and Table 2 on page 10.

Size	Max. Angular Misalignment (Deg.)	Bending Moment (Nm/deg.)	Max. Axial Deflection (Zero Angular Misalignment) (mm)	Max. Axial Thrust (N)	Max. Axial Deflection at full Angular Misalignment (mm)	Axial Thrust (N)
	Point A 1) 2)	4)	Point C 3)		Point B 4)	
	Per Element		Per Assembly			
TF0027	0.5	31	1.7	560	0.5	65
TF0038	0.5	27	2.2	500	0.5	40
TF0140	0.5	27	2.7	1278	0.5	90
TF0260	0.5	40	3.3	2410	0.6	125
TF0400	0.5	89	4.3	4080	1.4	500
TF0750	0.5	146	5.0	6140	1.8	900
TF1310	0.5	222	6.0	8770	2.2	1300
TF1900	0.33	375	5.0	11000	1.5	1500
TF2500	0.33	500	5.4	12900	1.7	1500
TF3300	0.33	590	6.0	15650	1.8	1800
TF6000	0.33	955	7.5	23000	2.4	2700
TF8500	0.33	1390	8.1	33500	2.8	5000
TF12000	0.33	1710	9.0	38200	3.0	5000



- 1). Combined angular/radial misalignment
- 2). 1° angle is equivalent to 0.017 mm/mm
- 3). At zero speed (Static)
- 4). At max speed & continuous rated torque

NOTE : If limited end float (LEF) feature were incorporated, the amount of axial movement is physically restricted. Therefore, the values shown in the above table do not apply.

SELECTION PROCEDURE

- 1 Select an appropriate service factor "SF"
- 2 Calculate rated torque (Tn) and design torque (Ts)

$$T_n = \frac{9550 \times \text{Power (kW)}}{\text{Speed (min}^{-1})} \quad (\text{Nm}) \quad T_s = T_n \times \text{SF} \quad (\text{Nm})$$

- 3 Select a coupling size equal to or greater than the design torque
- 4 Check that drive and driven shaft diameters are within the MAX. BORE(Emax)
- 5 Check Speed is less than the MAX. SPEED
- 6 Specify required dynamic balance
- 7 Specify the distance between shaft ends (DBSE) and check that is not less than the MINIMUM DBSE

Example:

90kW across the line electric motor driving a centrifugal pump at 3,000 min⁻¹

Driver side shaft diameter ϕ 55mm, Driven side shaft diameter ϕ 50mm, DBSE=140mm

Selected SF=1.5

$$T_n = \frac{9550 \times 90}{3000} = 287 (\text{Nm})$$

$$T_s = 287 \times 1.5 = 430 (\text{Nm})$$

TF0140 is selected.

Emax=73mm > 55 and 50 ✓

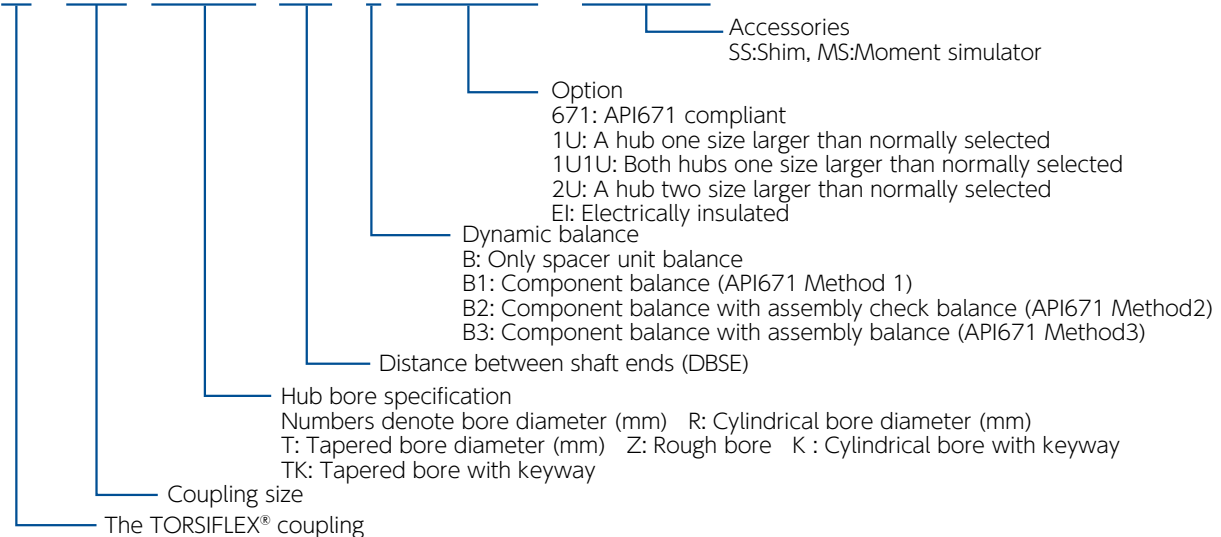
Minimum DBSE=100 < 140 ✓

Service Factor (SF)

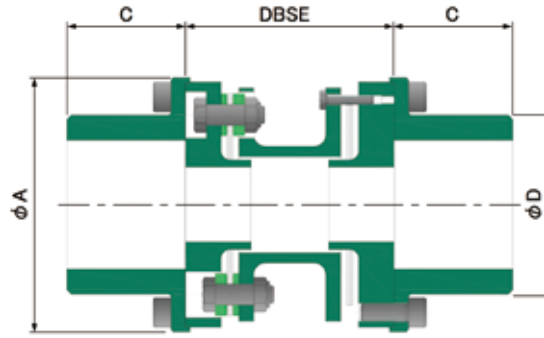
Driver	Driven Equipment	Service Factor (SF)
Turbine, Soft start motor	Steady Torque	1.2
Across the Line Start Motor	Fluctuating Torque Pump, Rotary compressor (frequent starts)	1.5 (2)
	Reciprocating compressor 1-3 cylinders	3
	Reciprocating compressor 4-6 cylinders	2
	Reciprocating compressor over 6 cylinders	1.5
	Centrifugal fan for forced draught	1.5
	Cooling Tower	2

COUPLING NOMENCLATURE

TF 0750-80K/60T-254-B (671, 1U, EI) - W/SS, MS



RATINGS AND DIMENSIONS



SIZE	kW/min ⁻¹	TORQUE RATING Nm	MAX. SPEED min ⁻¹	A mm	C mm	D mm	MINIMUM DBSE mm	TORSIONAL STIFFNESS Nm/rad (*2)	EXTRA PER 100mm Nm/rad (*3)
TF0027	0.028	270	20,000	85	40	60	70	2.9x10 ³	1.0x10 ⁵
TF0038	0.040	380	16,500	107	45	76	70	2.6x10 ³	2.9x10 ⁵
TF0140	0.147	1,400	12,000	127	75	101	100	1.6x10 ³	7.0x10 ⁵
TF0260	0.272	2,600	10,000	154	85	121	120	1.4x10 ³	1.5x10 ⁶
TF0400	0.419	4,000	8,500	176	105	144	140	4.3x10 ⁴	3.0x10 ⁶
TF0750	0.785	7,500	7,500	203	120	166	170	3.8x10 ⁴	6.8x10 ⁶
TF1310	1.37	13,100	6,500	241	145	199	200	4.6x10 ⁵	9.9x10 ⁶
TF1900	1.99	19,000	5,600	279	150	233	200	4.7x10 ⁵	1.7x10 ⁷
TF2500	2.62	25,000	5,200	296	164	240	220	4.3x10 ⁵	2.5x10 ⁷
TF3300	3.46	33,000	4,900	326	182	270	240	4.0x10 ⁵	3.4x10 ⁷
TF6000	6.28	60,000	4,000	395	230	322	260	4.3x10 ⁶	7.4x10 ⁷
TF8500	8.90	85,000	3,600	443	262	365	320	4.0x10 ⁶	1.2x10 ⁸
TF12000	12.6	120,000	3,000	493	292	410	340	3.8x10 ⁶	1.9x10 ⁸

SIZE	HUB				SPACER			
	MAX. BORE Emax (mm)	ROUGH BORE mm	MASS kg (*1)	MOMENT OF INERTIA kgm ² (*1)	MASS kg (*2)	EXTRA PER 100mm kg (*3)	MOMENT OF INERTIA kgm ² (*2)	EXTRA PER 100mm kgm ² (*3)
TF0027	43(26)	10	1.0	5.5x10 ⁻⁴	1.3	0.31	1.1x10 ⁻³	9.7x10 ⁻⁵
TF0038	55(43)	10	1.8	1.6x10 ⁻³	1.9	0.44	2.7x10 ⁻³	2.8x10 ⁻⁴
TF0140	73(67)	10	4.8	6.6x10 ⁻³	4.3	0.69	8.9x10 ⁻³	6.8x10 ⁻⁴
TF0260	88	10	7.9	1.6x10 ⁻²	7.7	1.0	2.3x10 ⁻²	1.5x10 ⁻³
TF0400	105	25	13	3.7x10 ⁻²	12	1.4	5.1x10 ⁻²	2.9x10 ⁻³
TF0750	120	25	20	7.5x10 ⁻²	20	2.3	0.11	6.5x10 ⁻³
TF1310	145	50	34	0.19	35	2.7	0.27	9.6x10 ⁻³
TF1900	170	50	49	0.37	46	3.3	0.48	1.6x10 ⁻²
TF2500	175	50	58	0.46	57	4.0	0.69	2.4x10 ⁻²
TF3300	190	50	81	0.80	78	4.9	1.1	3.3x10 ⁻²
TF6000	230	100	137	2.0	121	7.3	2.5	7.2x10 ⁻²
TF8500	260	100	205	3.8	189	9.6	4.9	0.11
TF12000	290	100	293	6.8	247	12	8.0	0.18

1 MAX SPEEDS shown are for standard materials. Consult us for higher speed.

2 Acceptable peak torque can be calculated by multiplying the TORQUE RATING 1.75 times. Likewise, acceptable momentary torque can be done by multiplying the TORQUE RATING 2.7 times.

(*1) MASS and MOMENT OF INERTIA of rough bore

(*2) MASS, MOMENT OF INERTIA of spacer unit and TORSIONAL STIFFNESS of a coupling set at minimum DBSE

(*3) Additional MASS, MOMENT OF INERTIA and TORSIONAL STIFFNESS for every extra 100 mm of DBSE

Example: Size TF0140 with min. DBSE + 50 mm extra

$$\text{MASS} = 4.8 \times 2 + 4.3 + 0.69 \times 50/100 = 14.2 \text{ (kg)}$$

$$\text{MOMENT OF INERTIA} = 6.6 \times 10^{-3} \times 2 + 8.9 \times 10^{-3} + 6.8 \times 10^{-4} \times 50/100 = 0.0224 \text{ (kgm}^2\text{)}$$

$$\text{TORSIONAL STIFFNESS} = \frac{1}{\frac{1}{1.6 \times 10^3} + \frac{1}{7.0 \times 10^5 \times \frac{100}{50}}} = 1.6 \times 10^3 \text{ (Nm/rad)}$$

NOTE: Dimensions of MAX. BORE of API610 compliant TF0027, TF0038 AND TF0140 are shown in brackets '()' . Coupling hubs designed for interference fit to the shaft shall be furnished with tapped puller holes at least 10 mm (0.38 in) in diameter to aid removal.

BORE AND KEYWAY

DIMENSIONS OF BORE, KEY AND KEYWAY

Keys and their corresponding keyways are compliant with JIS B 1301-1996

Nominal bore diameters, d. (mm)	Nominal size of key, b×h (mm)	Dimensions of keyway		Keyway fillet radius, r ₂ (mm)	Keyway Depth (t ₂) (mm)	Keyway Depth Tolerance, t ₂ (mm)
		Keyway Width, b ₂ (mm)	Width tolerance (mm)			
			Commercial class Tolerance, b ₂ (Js9)			
10~12	4×4	4	±0.0150	0.08~0.16	1.8	+0.1 0
12~17	5×5	5		0.16~0.25	2.3	
17~22	6×6	6			2.8	
22~30	8×7	8	±0.0180	0.25~0.40	3.3	+0.2 0
30~38	10×8	10			3.3	
38~44	12×8	12	±0.0215	0.40~0.60	3.3	
44~50	14×9	14			3.8	
50~58	16×10	16			4.3	
58~65	18×11	18			4.4	
65~75	20×12	20	±0.0260	0.70~0.10	4.9	
75~85	22×14	22			5.4	
85~95	25×14	25			5.4	
95~110	28×16	28			6.4	
110~130	32×18	32	±0.0310	1.20~1.60	7.4	+0.3 0
130~150	36×20	36			8.4	
150~170	40×22	40			9.4	
170~200	45×25	45			10.4	
200~230	50×28	50	±0.0370	2.00~2.50	11.4	
230~260	56×32	56			12.4	
260~290	63×32	63			12.4	
290~330	70×36	70			14.4	
330~380	80×40	80	±0.0435		15.4	
380~440	90×45	90			17.4	
440~500	100×50	100			19.5	

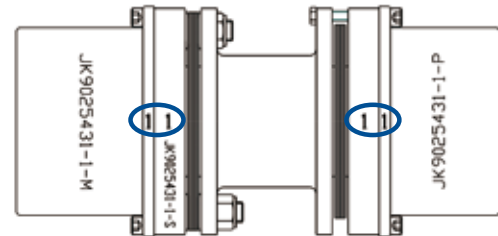
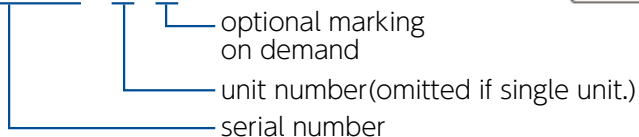
SAFETY PRECAUTIONS

- 1). Please be sure to read and fully understand the instruction manual before use.
- 2). If the danger is predicted due to the operation of coupling, take prevention measures to avoid the risk beforehand.

PRODUCT IDENTIFICATION / MARKING

- Each coupling is marked with the unique serial number.
(For products in accordance with API671 or on demand)

Example: JK90254311 - 1 - M



Correctly aligned match markings shown

- Couplings with assembly balance or assembly check balance have match marking.

LIMITATIONS OF PRODUCT USE

Each coupling must be selected in accordance with the recommended selection procedure and must only be used within the performance criteria below.

- The rated torque capacities: refer to this brochure and/or product arrangement drawing.
- Allowable misalignments: refer to this brochure and/or product arrangement drawing.
- The temperature range: -20°C to 149°C

MAINTENANCE INSTRUCTIONS

Check the following items for general maintenance during routine machinery maintenance.

- Axial, angular and parallel misalignments remain within the acceptable limits and shall not change noticeably.
- All fasteners are securely tightened.
- Inspect the flexible elements visually for signs of fatigue cracking local to the washer anchoring points or fretting corrosion.
- Note that any crackings will begin at the outermost edge of the top or bottom of laminated blades. The element packs should be replaced at the earliest opportunity should cracking / damage be detected.
- Slight bowing or S-shape like distortion is not detrimental to the operation of the unit.

Note: Any requirements for spare parts should be made quoting the original purchasers order number and the coupling serial number.

They will be etched on the major coupling flanges and be shown on all documentation (for API671 compliant couplings or on demand).

Correct, careful assembly and alignment at the initial stage enable couplings to provide maximum performance of rotation transfer, long life and trouble-free operation.

The TORSIFLEX® coupling is designed to transmit the torque in friction between the driving and driven bolts and the flexible elements. Therefore it is essential that, should the need arise, these bolts should be securely tightened with torque indicated on the assembly drawing or in the "Installation and Maintenance Instructions" in this catalogue.

Torque and speed should remain within the originally specified conditions.

ALIGNMENT INSTRUCTIONS

Although the TORSIFLEX® coupling can accept substantial amounts of misalignment, the actual acceptable level depends on how each coupling is mounted/aligned.

The amount of allowable misalignment is shown in the diagram on page 5.

The curve shows the maximum allowable level of misalignment for operation and is NOT intended to define set up value.

AXIAL ALIGNMENT

Distance between the machinery shaft ends(DBSE) tolerance values at setting up are as shown in Table 1.

Table 1

SIZE	No. of bolts	Tolerance on DBSE
TF0027 ~ TF1310	6	±0.30 mm
TF1900 ~ TF12000	8	±0.25 mm

PARALLEL / RADIAL / ANGULAR ALIGNMENT

Having basically aligned the machinery shafts, the coupling may be installed as instructed. It is then worth performing a check the overall alignment. This may be simply performed by one of the following methods:

Method 1.

Attach a dial indicator securely to one of the hubs with the needle in contact with the surface of spacer flange. The needle shall be positioned as close as the edge. Rotate the shaft of machinery with the coupling more than one roll and find the smallest reading position. At this position, set the dial reading to zero. Rotate the shaft more than one roll again and find the largest reading position. Divide this largest value by the coupling flange diameter to gain a value in mm/mm, which should be no greater than that shown in the Table 2. This should be carried out to the other end as well.

Method 2.

An alternative method is to accurately measure the gap between the flanges where the flexible element is sandwiched(element gap G1, G2) to obtain the largest and the smallest value. The gap between these two values should be divided by the flange outside diameter to obtain a value in mm/mm, which should be no greater than that shown in the Table 2. This should be carried out to the other flexible element as well.

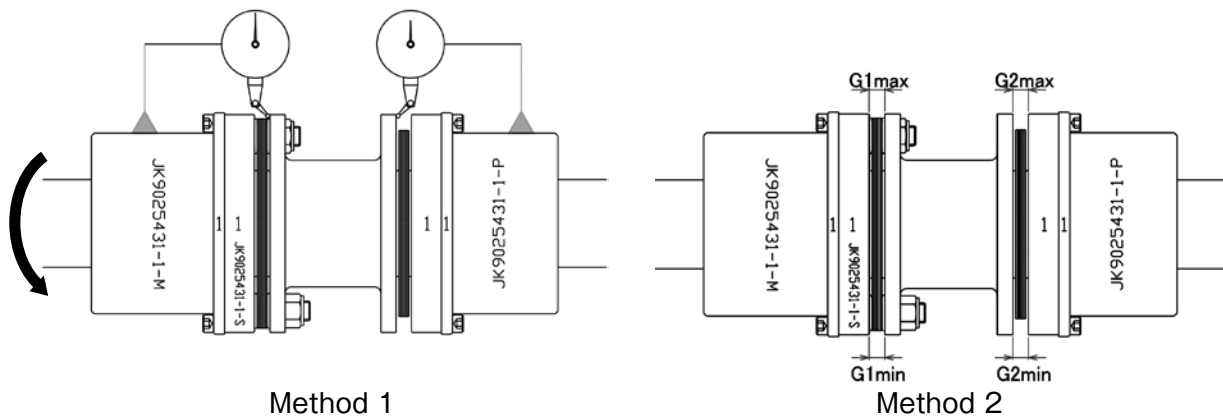


Table 2

SIZE	No. of bolts	Tolerance Element Gap
TF0027~TF1310	6	±0.003 mm/mm
TF1900~TF12000	8	±0.002 mm/mm

INSTALLATION AND OPERATING MISALIGNMENT LIMITS

Check that the parallel and axial misalignments of the shafts are within the limits defined in the alignment curves on page 5 (Allowable Misalignments for Disc Couplings).

For assembly balanced and assembly check balanced couplings, two match markings must be aligned when the coupling is installed.

IMPORTANT: The main coupling bolts/nuts at both ends are factory-tightened, and should, under normal circumstances, NOT BE TOUCHED unless specified in the installation instructions.

When tightening any other bolts or screws, this should be done evenly, i.e. cylinder head fashion, to 50% torque then to 100% torque in the same sequence. Threads should be lubricated with molybdenum disulphide grease or equivalent. See Table 4 on page 13 for tightening torques.

The hubs must be removed from the spacer unit when installing. See Figure 1. Remove the attachment

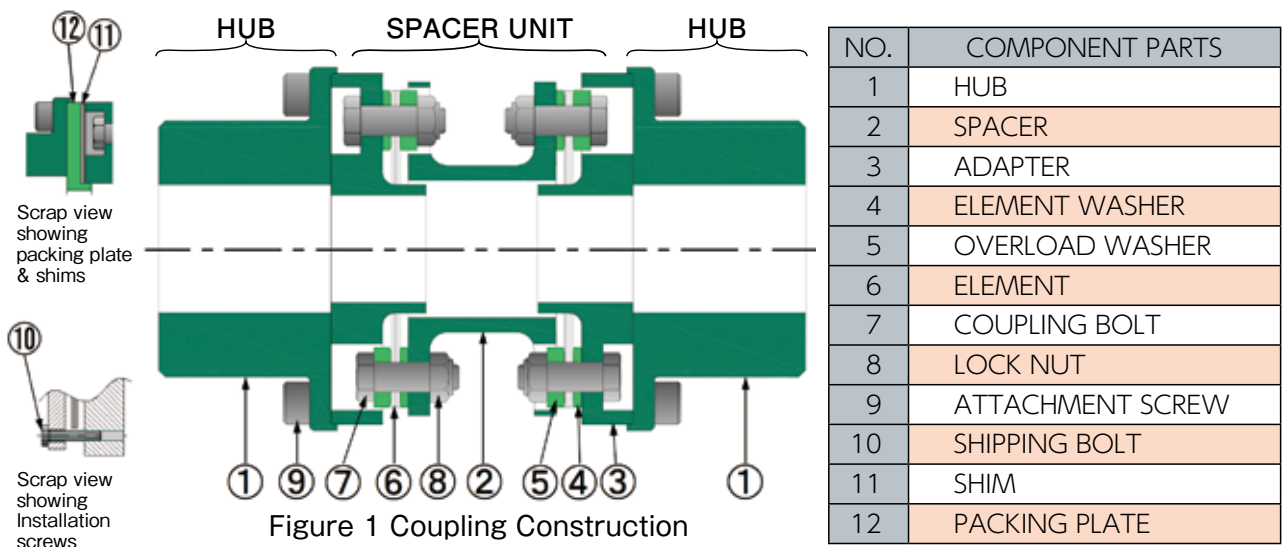
screws from the hub/adaptor and force the flanges apart by using jacking screws. Alternatively, you may knock the edge of hub to slide out from the spacer unit.

Store the bolts and nuts along with the packing plate and shims (option) for later stages of installation.

The hubs can now be fitted to the driver and driven shafts. The method of fitting depends on the type of fit specified in the each product drawing. In any cases, follow the instructions in the product drawing. Where hub/shaft connections require a standard interference fit, the hubs may be heated in an oil bath or oven at 90-120 ° C. It is essential that the whole hub is heated up uniformly.

Couplings with assembly balanced or assembly check balanced have match marks. Ensure that they are aligned before the spacer unit is installed.

Check shaft misalignments and distance between shaft ends (DBSE) are within allowable limits.



Coupling bolts in the spacer unit are factory-assembled and must not be disturbed. Shipping bolts are used for the protection of element during transportation and for installation or removal.

[If no packing plate or shims are supplied, skip to (*) below.]

Measure the free length of the spacer unit. Add this to the thickness of the packing plate. Record this value as X.

Now measure the distance between the shaft ends (DBSE) of the machinery. Adjust this length by either subtracting pre-stretch or adding pre-compression. Record this value as Y.

Calculate the required number of shims from the following equation:

$$\text{Number of shims} = (Y - X) \div \text{shim thickness}$$

Round this value to get the number of shims required. The thickness of a shim is 0.4mm.

Fit shims between packing plate and spacer unit.

Ensure match marks are aligned.

(*)

Insert the shipping bolts (No. 10) and tighten them in cylinder head fashion, maintaining parallelism between the flange faces of adaptor and spacer until both elements packs are compressed to minimum required amount to allow the spacer unit to be put into position.

Do not compress the elements beyond the value stated in "Maximum Compression" as shown in Table 3. It is recommended to use the minimum amount of compression when installing couplings.

The flange of spacer has the drilled holes (Fig. A) to install the shipping bolts and the tapped holes (Fig. B) for production.

Insert the shipping bolts to the holes shown in Fig. A. When element is compressed by shipping bolts,

it may be deformed slightly. However, that should be no problem as long as the amount of compression is within the acceptable range.

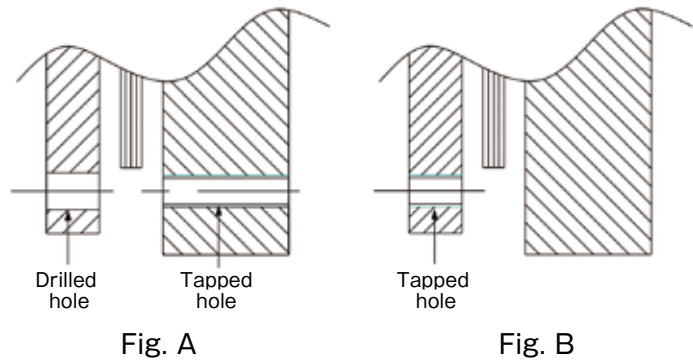


Table 3

Coupling size	Maximum Compression(mm) per element pack
27	1.5
38	1.75
140	2.0
260	2.3
400	2.3
750	2.5
1310	3.0
1900	3.0
2500	3.0
3300	3.0
6000	3.5
8500	3.5
12000	4.0

Insert the spacer unit between the shaft ends (hub faces), ensuring match marks are aligned. Align the hubs' bolt holes to meet spacer unit's tapped holes. Then loosen shipping bolts while checking the spacer unit is fitted the hubs correctly. Insert and loosely tighten all attachment screws. Then release and remove the shipping bolts. Tighten the attachment screws in cylinder head fashion. See Table 4 for tightening torques. If a pre-stretch is present, pull the adapter together using the attachment screws.

Ensure all match marks have been aligned and all tools have been removed. Inspect the coupling before operation. Operating with shipping bolts may damage the coupling.

REMOVAL INSTRUCTIONS

Do a reverse of the above installation process. Upon reinstallation, the installation process shall be repeated.

Table 4 : When tightening bolts or screws, this should be done evenly, i.e. cylinder head fashion, to 50% torque then to 100% torque in the same sequence. Threads should be lubricated with molybdenum disulphide grease or equivalent.

IMPORTANT: The main coupling bolts/nuts at both ends are factory-tightened, and should, under normal circumstances, NOT BE TOUCHED unless specified in the installation instructions.

Table 4

Coupling size TF	Coupling Bolt (Nm)	Attachment Screw (Nm)
27	9	10
38	9	24
140	45	10
260	75	24
400	113	24
750	225	44
1310	370	72
1900	370	72
2500	480	180
3300	750	180
6000	1100	350
8500	1900	475
12000	2500	633

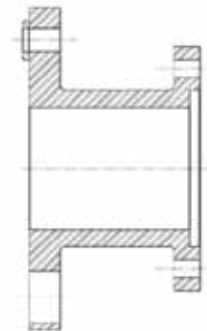
(Note) For 1U (one size larger than usual) and 2U (two size larger than usual) hubs, the attachment screws shall be one or two size larger respectively.

HUB OPTIONS

TAPERED BORE FOR HYDRAULIC REMOVAL
USED WITH KEYLESS TAPERED SHAFT



SPECIAL FLANGE ADAPTER
DESIGNED TO MATE WITH CUSTOM FLANGE



DESIGN OPTIONS

BETWEEN FLANGE TO FLANGE MOUNTING
CAN BE DESIGNED TO FIT CUSTOMER'S SPECIFIC PILOT AND BOLTING POSITIONS SUCH
AS TEST STANDS.



APPLICATION DATA SHEET

Project Ref : _____

Company : _____ Date : _____

Contact : _____

Phone # : _____ Email : _____

SECTION I - DRIVER Electric Motor ; Engine - # of Cylinders _____ ; Turbine ;
 Other _____
 Ps : _____ kW : _____ Normal Torque: _____ N·m
 Rated Speed: _____ Max Torque: _____ N·m
 Operating Speed : _____ Breakdown Torque: _____ N·m

SECTION II - DRIVEN Description : _____

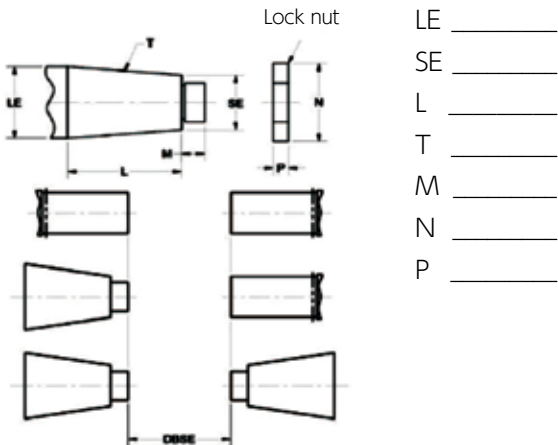
 Load Application: Non-Pulsating Medium Pulsating Heavy Pulsating Smooth
 Light Shock Heavy Shock

SECTION III - COUPLING APPLICATION Min Service Factor : _____
 Temperature Range: _____ to _____ °C Hydraulic Removal: Yes No
 Specification: API671 Edition _____ ; API610 Edition _____ ; Other _____
 Balance: Coupling Hubs Spacer Balance Specification _____

SECTION IV - DIMENSIONAL DATA Distance Between Shaft Ends (DBSE): _____ mm
 Taper Shaft & Keyway Data

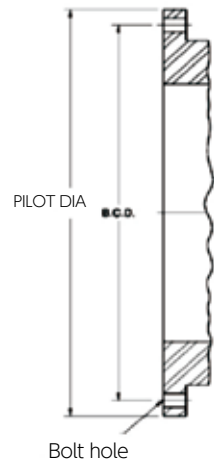
	Driver	Driven
Shaft Dia (Straight):	_____	_____
Shaft Dia L.E. (Taper):	_____	_____
Taper Ratio:	_____	_____
Keyway Size:	Width _____ Depth _____	Width _____ Depth _____
KW Depth Across Bore:	_____	_____

TAPER SHAFT DATA



FLYWHEEL/FLANGE CONNECTION

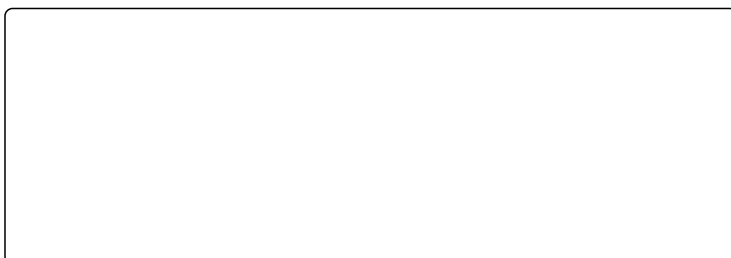
Pilot dia. _____
 B.C.D. _____
 Hole dia. _____
 No. of holes _____



GUARANTEE

This brochure was prepared for the purpose of providing you with performance and size data for the TORSIFLEX® coupling in order to select the most appropriate type. We accept requests for consultation regarding application of selected types shown in this brochure, as well as special designs and uses. But it is impossible for us to test our couplings with each piece of equipment under actual operating conditions.

Therefore, we are unable to guarantee the performance of our couplings in practical operation. We do, however, guarantee that our products have been manufactured and shipped under proper quality control. We guarantee our products against defects in craftsmanship and materials for one year after shipping. If such defect should appear, please return the whole or part of product for inspection to determine whether the guarantee is applicable. If we find that the part is defective, our responsibility will be limited to repairing or replacing the part in question. Defects arising from modification without our prior consent, usage of item not supplied by us, repair by other than us, improper handling, or accidents are excluded from this guarantee. Production of items shown in this brochure may be discontinued. The contents of this brochure may be changed without notice.



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