ABSSAC

PRECISION MOTION SINCE 1982

High performance metal disk coupling

# SERVOFLEX


FLEX series

Servoflex®

# Metal Disc Couplings

# SERVOFLEX

Ultra-high stiffness | Low inertia | High response | No backlash

| | |
|---|---|
| Max. rated torque [N·m] | 8000 |
| Bore ranges [mm] | φ3～115 |
| Operating temperature range[°C] | −30～120(100) |
| Drive | Servomotor/stepper motor |
| Applications | Machine tool / semiconductor manufacturing equipment / printing press / packing machine |

## High-stiffness and Low-inertia Servomotor Couplings

RoHS

Metal disc couplings developed for high-speed and high-precision positioning and ultra-precise control of servomotors, etc. While achieving high stiffness, high torque, low inertia, and high response speed, these couplings are also flexible in the torsional direction, in the uneven directions, and in the shaft direction, and are totally free from backlash. Models with various characteristics are available, and each model has a single element type that emphasizes stiffness and a double element type that emphasizes flexibility.

# Available Models

| Series | Applications | Lineup |
|---|---|---|
| SERVOFLEX | Compact (medium and small capacity) | SFC |
| | Standard | SFS |
| | Feed shaft | SFF |
| | Main shaft | SFM |
| | High torque | SFH |

# Model Selection

| Model type | Rated torque [N・m] | High stiffness | Low inertia | Mountability | Mounting accuracy | High-speed rotation | Material | Operating temperature [°C] |
|---|---|---|---|---|---|---|---|---|
| SFC | 0.25～250 | ◎ | ● | ● | ◎ | ◎ | Aluminum alloy | -30～100 |
| SFS | 20～800 | ◎ | ◎ | △ | ○ | ○ | Steel | -30～120 |
| SFF | 8～1000 | ● | ● | ◎ | ● | ◎ | Steel | -30～120 |
| SFM | 60～1000 | ● | ◎ | ◎ | ● | ● | Steel | -30～120 |
| SFH | 1000～8000 | ● | ◎ | △ | ○ | ○ | Steel | -30～120 |

(Rated torque scale: 0.1, 1, 10, 100, 1000, 10000)

* Symbols in the table indicate four levels of adaptability in order of ●◎○△ with ● showing the highest level of adaptability and △ showing the lowest level. (Adaptability high ←●◎○△→ low)

# Product Lineup

## SFC


RoHS

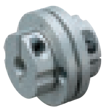
Applications: NC lathe, machining center, chip mounter, actuator, SCARA robot, semiconductor manufacturing equipment

| | | |
|---|---|---|
| Max. rated torque | [N·m] | 250 |
| Bore ranges | [mm] | ϕ 3 ～ 45 |

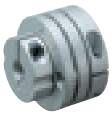
### High Stiffness and Ultra-low Inertia

Small- and medium-capacity model, which is made of a high-strength aluminum alloy and whose outer hub diameter is linked to the shaft diameter to achieve a ultra-low inertia ideal for high-speed rotation. Three different shapes are available depending on the combination of bore diameters you use.

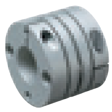
TYPE A



TYPE B



TYPE C



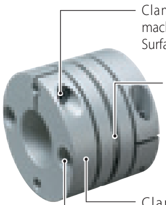
### Simple and Reliable Connection

A single clamping method is used for connection to the shaft. The clamping hub is shock and vibration proof, enabling reliable connection and helping to substantially reduce mounting time. A special jig is used for centering to achieve an extremely high concentricity.

### Wide Variety of Options

A wide variety of options such as a tapered shaft, length-specified special order, and keyway milling application are available. You can combine options to meet your desired specifications.

#### SFC(SA2)



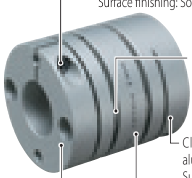
Clamping bolt material: Alloy steel for machine structural use
Surface finishing: Solid lubricant coating*1

Element material: SUS304 metal disc
SUS304 collar*2

Clamping hub material: High-strength aluminum alloy
Surface finishing: Alumite treatment

Bolt material: Alloy steel for machine structural use
Surface finishing: Trivalent chromate treatment*3

#### SFC(DA2)



Clamping bolt material: Alloy steel for machine structural use
Surface finishing: Solid lubricant coating*1

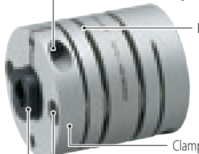
Element material: SUS304 metal disc
SUS304 collar*2

Clamping hub material: High-strength aluminum alloy
Surface finishing: Alumite treatment

Spacer material: High-strength aluminum alloy
Surface finishing: Alumite treatment

Bolt material: Alloy steel for machine structural use
Surface finishing: Trivalent chromate treatment*3

#### SFC(SA2/DA2)BC



Clamping bolt material: Alloy steel for machine structural use
Surface finishing: Solid lubricant coating

Element material: SUS304 metal disc
SUS304 collar

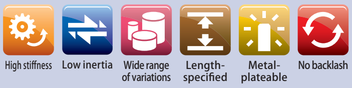
Clamping hub material: High-strength aluminum alloy
Surface finishing: Alumite treatment

Bolt material: Alloy steel for machine structural use
Surface finishing: Trivalent chromate treatment

Taper adapter material: S45C or an equivalent
Surface finishing: Black coating applied

＊1 For surface processing of the clamping bolts , black coating is applied only for #002.
＊2 The collar material in the marked area is S45C in sizes #080 to #100, and the surface finishing is trivalent chrome treatment.
＊3 The bolt surface finishing in the marked area is anti-rust coating in sizes #080 to #100.

## SFS




RoHS

Applications: Machine tool, printing press, packing machine, coater/ coating machine

| | | |
|---|---|---|
| Max. rated torque | [N·m] | 800 |
| Bore ranges | [mm] | ϕ 8 ～ 60 |

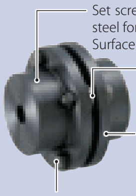
### Wide Variations

SERVOFLEX standard model. 18 types with different numbers of elements, distances between shafts, shaft connection methods, etc. are available. You can select the electroless nickel plating for the pilot bore and key/set screw.

### Parts Delivery

You can order the parts of the coupling to be delivered instead of an assembled coupling, so you can use this coupling in a design in which the assembled coupling could not be mounted. You can also order an assembled coupling to be delivered or combine different types of hubs.

#### SFS(S)



Set screw with hexagonal hole material: Alloy steel for machine structural use
Surface finishing: Black coating applied

Element material: SUS304 metal disc
Collar: S45C or an equivalent

Flange material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

#### SFS(S)□M-□M

Pressure bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

Flange material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

Element material: SUS304 metal disc
Collar: S45C or an equivalent

Collar material: S45C or an equivalent
Surface finishing: Black coating applied

Sleeve material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

#### SFS(S)□M-□C

Pressure bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

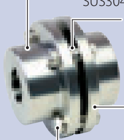
Flange material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

Element material: SUS304 metal disc
Collar: S45C or an equivalent

Collar material: S45C or an equivalent
Surface finishing: Black coating applied

Sleeve material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

#### SFS(S-C)



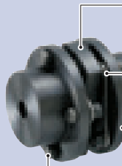
Set screw with hexagonal hole material: SUS304 or an equivalent

Element material: SUS304 metal disc
Collar: S45C or an equivalent
Surface finishing: Electroless nickel plating treatment

Flange material: S45C heat-treated material or an equivalent
Surface finishing: Electroless nickel plating treatment

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Electroless nickel plating treatment

#### SFS(W)



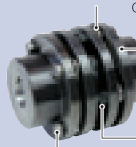
Spacer material: SS400 or an equivalent
Surface finishing: Black coating applied

Element material: SUS304 metal disc
Collar: S45C or an equivalent

Flange material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

#### SFS(G)



Element material: SUS304 metal disc
Collar: S45C or an equivalent

Flange material: S45C heat-treated material or an equivalent
Surface finishing: Black coating applied

Spacer material: Carbon steel
Surface finishing: Black coating or painting

Reamer bolt material: Alloy steel for machine structural use
Surface finishing: Black coating applied

# SFF

RoHS

Ultra-high stiffness | Ultra-low inertia | High torque | Highly accurate mounting | No backlash

Applications: NC lathe, machining center, chip mounter, electrical discharge machine

| Max. rated torque | [N・m] | 1000 |
|---|---|---|
| Bore ranges | [mm] | φ 8 ～ 80 |

## Ultra-high Stiffness and Ultra-low Inertia

Ultrahigh torsional stiffness, achieving 1.5 times the rated torque of the current model and low inertia.

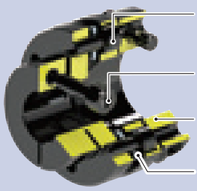
## High-precision Clamping Connection

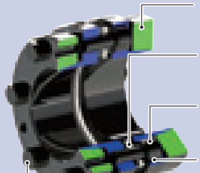
The number of mounting bolts has been reduced substantially. You can remarkably reduce mounting time.

## Frictional Coupling for Large Diameters

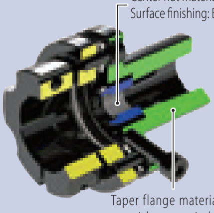
This model supports frictional coupling for larger-diameter shafts than the previous models.

### SFF(SS)

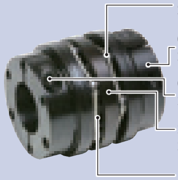


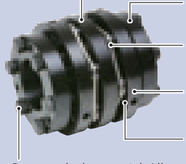




### Tapered shaft




### SFF(DS)




### Flange-mounted

One of the hubs is flange-shaped, allowing mounting on a DD motor, etc.

# SFM

RoHS

Ultra-high stiffness | Ultra-low inertia | High torque | Highly accurate mounting | No backlash | High speed

Application: Machine tool main shaft

| Max. rated torque | [N・m] | 1000 |
|---|---|---|
| Bore ranges | [mm] | φ 12 ～ 80 |

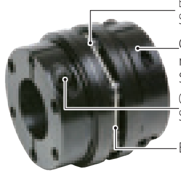
## As Machine Tool Main Shaft

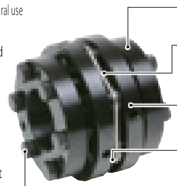
Hi-spec model for meeting the high-torque, low-inertia, and high-revolution demands of machine tool main shafts.

## Max. Rotation Speed 24000 min$^{-1}$

High-speed design, balance corrected.

### SFM(SS)




# SFH

RoHS

High output response | Ultra-high stiffness | Low inertia | Length-specified | No backlash

Applications: Double column machining center, printing press, testing machinery, wind turbine generator

| Max. rated torque | [N・m] | 8000 |
|---|---|---|
| Bore ranges | [mm] | φ 22 ～ 115 |

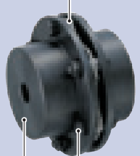
## Max. Rated Torque 8000N·m

This model was developed to transmit a large torque, has an extremely high torsional stiffness, and enables precise shaft rotation and ultra-precise control.

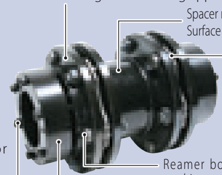
## Total Length Can Be Specified

The total length can be specified for a type that connects the middle of the element using a floating shaft.

### SFH(S)




### SFH(G)□K-□K



## Customization Cases

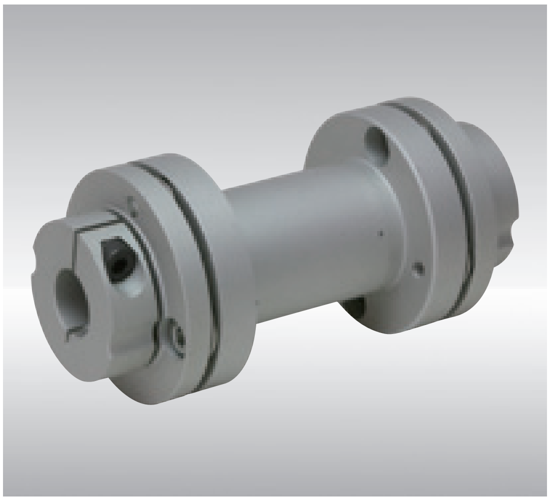
### SFC Model stainless steel

The all-stainless-steel construction provides even better rust-proofing.

### SFC Model with slit plate

A slit plate is mounted between the hubs to allow it to be used with position detection sensors such as an encoder and photo sensor.

### SFC Model with long spacer



This is a specification for when the mounting distance between shafts is long. It can be used in applications such as synchronization of gantry mechanism.

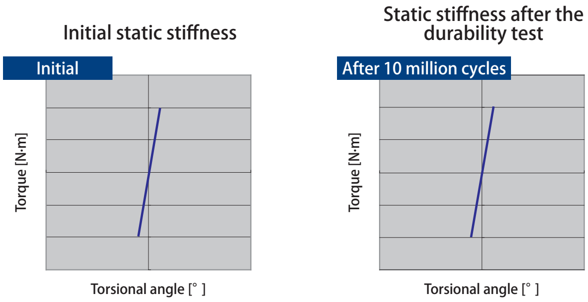
### SFF Model For non-excitation brake assemblies

The device design can be made more compact by forming the spline to the outer diameter of the SFF model and using it as the rotor hub for a Miki Pulley non-excitation brake.

# FAQ

## Q1 What are the durability and aging deterioration of the SERVOFLEX?

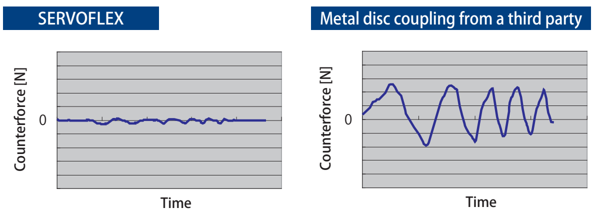
**A** We conduct a torsional durability test by applying a load larger than the rated torque. SERVOFLEX passed the test by withstanding the metal fatigue limit of 10 million cycles of repeated load. SERVOFLEX is all made of metal materials so the deterioration is extremely slow, and it is able to transmit torque with high precision for a long period of time.




Torsional characteristics of the SERVOFLEX before and after the durability test with 10 million cycles of repeated load

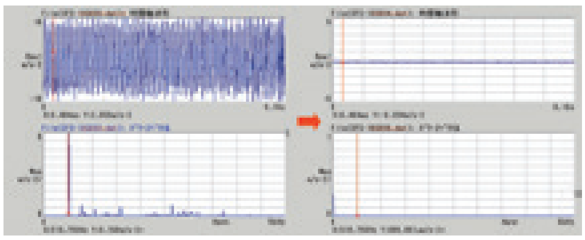
## Q2 When a coupling is mounted, the driven shaft runs out. What is the cause?

**A** The runout of a driven shaft caused by a coupling is mainly attributed to the counterforce of the shaft caused by insufficient centering. All of the SERVOFLEX series are assembled using high-precision special jigs to ensure high concentricity of the bores on the left and right. The counterforce of the shaft is extremely small so the runout of the driven shaft can be minimized.




## Q3 Noise and vibrations occurred during use of a metal disc coupling. Please tell me how to prevent them.

**A** For a servo motor, noise and vibrations can be suppressed by setting the machine resonance suppression filter to its natural frequency in the control system. For a stepper motor, vibrations can be absorbed and suppressed by changing the rotation speed or using a STEPFLEX coupling with high damping ability.

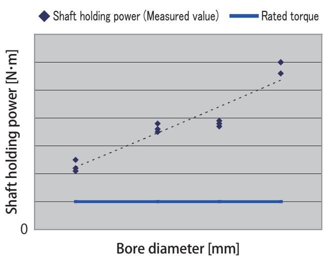


Before adjusting the resonant filter of the servo motor

After adjusting the resonant filter of the servo motor

## Q4 Can enough torque be transmitted using the clamping method for connection to the shaft?

**A** Our torque transmission test uses a sufficient safety factor, so slip of the connection caused by the connection method will not occur when using the rated torque in the catalog. A key-way can be milled into the clamping hub. If you are interested, please refer to P.041 Keyway Milling Option.




Shaft holding power based on SFC-040DA2 bore diameter

# SFC(SA2) Types Single Element Type

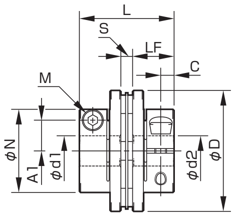
## Specifications

| Model | Type | Rated torque [N·m] | Misalignment | | | Max. rotation speed [$min^{-1}$] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [$kg·m^2$] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFC-002SA2 | C | 0.25 | 0.01 | 0.5 | ±0.04 | 10000 | 190 | 34 | $0.06 \times 10^{-6}$ | 0.003 |
| SFC-005SA2 | C | 0.6 | 0.02 | 0.5 | ±0.05 | 10000 | 500 | 140 | $0.26 \times 10^{-6}$ | 0.007 |
| SFC-010SA2 | C | 1 | 0.02 | 1 | ±0.1 | 10000 | 1400 | 140 | $0.58 \times 10^{-6}$ | 0.011 |
| SFC-020SA2 | C | 2 | 0.02 | 1 | ±0.15 | 10000 | 3700 | 64 | $2.39 \times 10^{-6}$ | 0.025 |
| SFC-025SA2 | C | 4 | 0.02 | 1 | ±0.19 | 10000 | 5600 | 60 | $3.67 \times 10^{-6}$ | 0.029 |
| SFC-030SA2 | A | 5 | 0.02 | 1 | ±0.2 | 10000 | 8000 | 64 | $4.07 \times 10^{-6}$ | 0.034 |
| | B | 5 | 0.02 | 1 | ±0.2 | 10000 | 8000 | 64 | $6.09 \times 10^{-6}$ | 0.041 |
| | C | 5 | 0.02 | 1 | ±0.2 | 10000 | 8000 | 64 | $8.20 \times 10^{-6}$ | 0.049 |
| SFC-035SA2 | C | 10 | 0.02 | 1 | ±0.25 | 10000 | 18000 | 112 | $18.44 \times 10^{-6}$ | 0.082 |
| SFC-040SA2 | A | 12 | 0.02 | 1 | ±0.3 | 10000 | 20000 | 80 | $16.71 \times 10^{-6}$ | 0.077 |
| | B | 12 | 0.02 | 1 | ±0.3 | 10000 | 20000 | 80 | $22.55 \times 10^{-6}$ | 0.085 |
| | C | 12 | 0.02 | 1 | ±0.3 | 10000 | 20000 | 80 | $29.25 \times 10^{-6}$ | 0.100 |
| SFC-050SA2 | A | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $55.71 \times 10^{-6}$ | 0.159 |
| | B | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $76.26 \times 10^{-6}$ | 0.177 |
| | C | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $99.03 \times 10^{-6}$ | 0.206 |
| SFC-055SA2 | C | 40 | 0.02 | 1 | ±0.42 | 10000 | 50000 | 43 | $188.0 \times 10^{-6}$ | 0.314 |
| SFC-060SA2 | A | 60 | 0.02 | 1 | ±0.45 | 10000 | 70000 | 76.4 | $145.9 \times 10^{-6}$ | 0.283 |
| | B | 60 | 0.02 | 1 | ±0.45 | 10000 | 70000 | 76.4 | $205.0 \times 10^{-6}$ | 0.326 |
| | C | 60 | 0.02 | 1 | ±0.45 | 10000 | 70000 | 76.4 | $268.6 \times 10^{-6}$ | 0.385 |
| SFC-080SA2 | C | 100 | 0.02 | 1 | ±0.55 | 10000 | 140000 | 128 | $710.6 \times 10^{-6}$ | 0.708 |
| SFC-090SA2 | C | 180 | 0.02 | 1 | ±0.65 | 10000 | 100000 | 108 | $1236 \times 10^{-6}$ | 0.946 |
| SFC-100SA2 | C | 250 | 0.02 | 1 | ±0.74 | 10000 | 120000 | 111 | $1891 \times 10^{-6}$ | 1.202 |

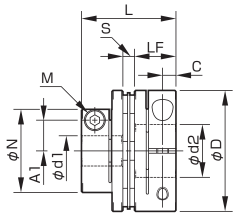
* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* Check the Standard Bore Diameter list as rated torque may be restricted by the holding power of the shaft connection component.
* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

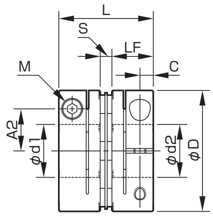
■TYPE A

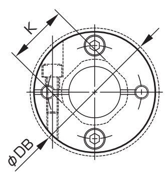



■TYPE B




■TYPE C




| Model | Type | d1 [mm] | | d2 [mm] | | D [mm] | DB [mm] | N [mm] | L [mm] | LF [mm] | S [mm] | A1 [mm] | A2 [mm] | C [mm] | K [mm] | M Qty - Nominal dia. | Tightening torque [N·m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Min. | Max. | | | | | | | | | | | | |
| SFC-002SA2 | C | 3 | 5 | 3 | 5 | 12 | 12.4 | — | 12.35 | 5.9 | 0.55 | — | 3.7 | 1.9 | 5.6 | 1-M1.6 | 0.23 ～ 0.28 |
| SFC-005SA2 | C | 3 | 6 | 3 | 6 | 16 | — | — | 16.7 | 7.85 | 1 | — | 4.8 | 2.5 | 6.5 | 1-M2 | 0.4 ～ 0.5 |
| SFC-010SA2 | C | 3 | 8 | 3 | 8 | 19 | — | — | 19.35 | 9.15 | 1.05 | — | 5.8(6) | 3.15 | 8.5 | 1-M2.5(M2) | 1.0～1.1(0.4～0.5) |
| SFC-020SA2 | C | 4 | 10 | 4 | 11 | 26 | — | — | 23.15 | 10.75 | 1.65 | — | 9.5 | 3.3 | 10.6 | 1-M2.5 | 1.0 ～ 1.1 |
| SFC-025SA2 | C | 5 | 14 | 5 | 14 | 29 | — | — | 23.4 | 10.75 | 1.9 | — | 11 | 3.3 | 14.5 | 1-M2.5 | 1.0 ～ 1.1 |
| SFC-030SA2 | A | 5 | 10 | 5 | 10 | 34 | — | 21.6 | 27.3 | 12.4 | 2.5 | 8 | — | 3.75 | 14.5 | 1-M3 | 1.5 ～ 1.9 |
| | B | 5 | 10 | Over 10 | 16 | 34 | — | 21.6 | 27.3 | 12.4 | 2.5 | 8 | 12.5 | 3.75 | 14.5 | 1-M3 | 1.5 ～ 1.9 |
| | C | Over 10 | 14 | Over 10 | 16 | 34 | — | — | 27.3 | 12.4 | 2.5 | — | 12.5 | 3.75 | 14.5 | 1-M3 | 1.5 ～ 1.9 |
| SFC-035SA2 | C | 6 | 16 | 6 | 19 | 39 | — | — | 34 | 15.5 | 3 | — | 14 | 4.5 | 17 | 1-M4 | 3.4 ～ 4.1 |
| SFC-040SA2 | A | 8 | 15 | 8 | 15 | 44 | — | 29.6 | 34 | 15.5 | 3 | 11 | — | 4.5 | 19.5 | 1-M4 | 3.4 ～ 4.1 |
| | B | 8 | 15 | Over 15 | 24 | 44 | — | 29.6 | 34 | 15.5 | 3 | 11 | 17 | 4.5 | 19.5 | 1-M4 | 3.4 ～ 4.1 |
| | C | Over 15 | 19 | Over 15 | 24 | 44 | — | — | 34 | 15.5 | 3 | — | 17 | 4.5 | 19.5 | 1-M4 | 3.4 ～ 4.1 |
| SFC-050SA2 | A | 8 | 19 | 8 | 19 | 56 | — | 38 | 43.4 | 20.5 | 2.4 | 14.5 | — | 6 | 26 | 1-M5 | 7.0 ～ 8.5 |
| | B | 8 | 19 | Over 19 | 30 | 56 | — | 38 | 43.4 | 20.5 | 2.4 | 14.5 | 22 | 6 | 26 | 1-M5 | 7.0 ～ 8.5 |
| | C | Over 19 | 25 | Over 19 | 30 | 56 | — | — | 43.4 | 20.5 | 2.4 | — | 22 | 6 | 26 | 1-M5 | 7.0 ～ 8.5 |
| SFC-055SA2 | C | 10 | 30 | 10 | 30 | 63 | — | — | 50.6 | 24 | 2.6 | — | 23 | 7.75 | 31 | 1-M6 | 14 ～ 15 |
| SFC-060SA2 | A | 11 | 24 | 11 | 24 | 68 | — | 46 | 53.6 | 25.2 | 3.2 | 17.5 | — | 7.75 | 31 | 1-M6 | 14 ～ 15 |
| | B | 11 | 24 | Over 24 | 35 | 68 | — | 46 | 53.6 | 25.2 | 3.2 | 17.5 | 26.5 | 7.75 | 31 | 1-M6 | 14 ～ 15 |
| | C | Over 24 | 30 | Over 24 | 35 | 68 | — | — | 53.6 | 25.2 | 3.2 | — | 26.5 | 7.75 | 31 | 1-M6 | 14 ～ 15 |
| SFC-080SA2 | C | 18 | 35 | 18 | 40 | 82 | — | — | 68 | 30 | 8 | — | 28 | 9 | 38 | 1-M8 | 27 ～ 30 |
| SFC-090SA2 | C | 25 | 40 | 25 | 45 | 94 | — | — | 68.3 | 30 | 8.3 | — | 34 | 9 | 42 | 1-M8 | 27 ～ 30 |
| SFC-100SA2 | C | 32 | 45 | 32 | 45 | 104 | — | — | 69.8 | 30 | 9.8 | — | 39 | 9 | 48 | 1-M8 | 27 ～ 30 |

* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* The øDB value is measured assuming that the head of the clamping bolt is larger than the external diameter of the hub.
* The K dimension is the inner diameter of the element. For d2 dimension exceeding this value, shaft can be inserted only up to LF dimension to the d2 side hub.
* The nominal diameter for the clamping bolt M is equal to the quantity minus the nominal diameter of the screw threads, where the quantity is for a hub on one side.
* The figures in parentheses ( ) for the SFC-010 are the values when d1 or d2 is ø8 mm.

# SFC(SA2) Types Single Element Type

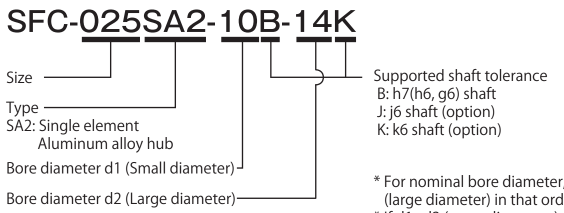
## Standard Bore Diameter

Standard (option) bore diameter, d1/d2 [mm] and restricted rated torque [N·m]

| | Nominal bore diameter | | 3 | 4 | 5 | 6 | 6.35 | 7 | 8 | 9 | 9.525 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shaft tolerance | h7 (h6・g6) | B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Shaft tolerance | j6 (Option) | J | | | | | | | | | | | | | | | | | | | ○ | | ○ | ○ | | ○ | | | | | | | |
| Shaft tolerance | k6 (Option) | K | | | | | | | ○ | ○ | | | | | | ○ | | ○ | | | ○ | | ○ | ○ | | | | ○ | | ○ | | | |
| Supported bore diameter for each model | SFC-002SA2 | d1 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-005SA2 | d1 | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-010SA2 | d1 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-020SA2 | d1 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | SFC-025SA2 | d1 | | | 2.1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | | d2 | | | 2.1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | SFC-030SA2 | d1 | | | 2.8 | 3.4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | | d2 | | | 2.8 | 3.4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | SFC-035SA2 | d1 | | | | 5 | 5 | 6.6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | | d2 | | | | 5 | 5 | 6.6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | SFC-040SA2 | d1 | | | | | | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | | d2 | | | | | | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | SFC-050SA2 | d1 | | | | | | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | | d2 | | | | | | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | SFC-055SA2 | d1 | | | | | | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | | d2 | | | | | | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | SFC-060SA2 | d1 | | | | | | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | | d2 | | | | | | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| | SFC-080SA2 | d1 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| | | d2 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | SFC-090SA2 | d1 | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | | d2 | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | SFC-100SA2 | d1 | | | | | | | | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |
| | | d2 | | | | | | | | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |

* The shaft tolerance for standard bore diameter is h7 (h6 or g6): designation B. However, for a bore diameter of ø35, the shaft tolerance is $^{+0.010}_{-0.025}$.
* Shaft tolerances j6/k6: designations J/K are optional, and are only supported for bore diameters marked with ○.
* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].

## How to Place an Order




* For nominal bore diameter, select d1 (small diameter)-d2 (large diameter) in that order.
* If d1=d2 (same diameters), select B, J, and K in that order.

# SFC(DA2) Types Double Element Type

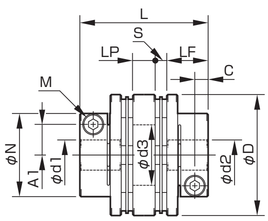
## Specifications

| Model | Type | Rated torque [N·m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min$^{-1}$] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m$^2$] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| SFC-002DA2 | C | 0.25 | 0.03 | 0.5(On one side) | ±0.08 | 10000 | 95 | 17 | $0.07 \times 10^{-6}$ | 0.004 |
| SFC-005DA2 | C | 0.6 | 0.05 | 0.5(On one side) | ±0.1 | 10000 | 250 | 70 | $0.37 \times 10^{-6}$ | 0.010 |
| SFC-010DA2 | C | 1 | 0.11 | 1(On one side) | ±0.2 | 10000 | 700 | 70 | $0.80 \times 10^{-6}$ | 0.015 |
| SFC-020DA2 | C | 2 | 0.15 | 1(On one side) | ±0.33 | 10000 | 1850 | 32 | $3.43 \times 10^{-6}$ | 0.035 |
| SFC-025DA2 | C | 4 | 0.16 | 1(On one side) | ±0.38 | 10000 | 2800 | 30 | $5.26 \times 10^{-6}$ | 0.040 |
| SFC-030DA2 | A | 5 | 0.18 | 1(On one side) | ±0.4 | 10000 | 4000 | 32 | $7.43 \times 10^{-6}$ | 0.054 |
| | B | 5 | 0.18 | 1(On one side) | ±0.4 | 10000 | 4000 | 32 | $9.45 \times 10^{-6}$ | 0.060 |
| | C | 5 | 0.18 | 1(On one side) | ±0.4 | 10000 | 4000 | 32 | $11.56 \times 10^{-6}$ | 0.068 |
| SFC-035DA2 | C | 10 | 0.24 | 1(On one side) | ±0.5 | 10000 | 9000 | 56 | $26.93 \times 10^{-6}$ | 0.121 |
| SFC-040DA2 | A | 12 | 0.24 | 1(On one side) | ±0.6 | 10000 | 10000 | 40 | $29.98 \times 10^{-6}$ | 0.124 |
| | B | 12 | 0.24 | 1(On one side) | ±0.6 | 10000 | 10000 | 40 | $35.82 \times 10^{-6}$ | 0.131 |
| | C | 12 | 0.24 | 1(On one side) | ±0.6 | 10000 | 10000 | 40 | $42.52 \times 10^{-6}$ | 0.146 |
| SFC-050DA2 | A | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $98.34 \times 10^{-6}$ | 0.250 |
| | B | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $118.9 \times 10^{-6}$ | 0.268 |
| | C | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $141.7 \times 10^{-6}$ | 0.298 |
| SFC-055DA2 | C | 40 | 0.31 | 1(On one side) | ±0.84 | 10000 | 25000 | 21.5 | $261.3 \times 10^{-6}$ | 0.459 |
| SFC-060DA2 | A | 60 | 0.34 | 1(On one side) | ±0.9 | 10000 | 35000 | 38.2 | $256.6 \times 10^{-6}$ | 0.447 |
| | B | 60 | 0.34 | 1(On one side) | ±0.9 | 10000 | 35000 | 38.2 | $315.7 \times 10^{-6}$ | 0.489 |
| | C | 60 | 0.34 | 1(On one side) | ±0.9 | 10000 | 35000 | 38.2 | $379.3 \times 10^{-6}$ | 0.549 |
| SFC-080DA2 | C | 100 | 0.52 | 1(On one side) | ±1.10 | 10000 | 70000 | 64 | $1039 \times 10^{-6}$ | 1.037 |
| SFC-090DA2 | C | 180 | 0.52 | 1(On one side) | ±1.30 | 10000 | 50000 | 54 | $1798 \times 10^{-6}$ | 1.369 |
| SFC-100DA2 | C | 250 | 0.55 | 1(On one side) | ±1.48 | 10000 | 60000 | 55.5 | $2754 \times 10^{-6}$ | 1.739 |

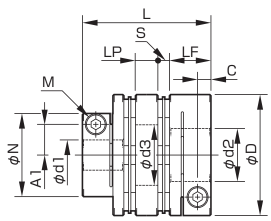
* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* Check the Standard Bore Diameters as rated torque may be restricted by the holding power of the shaft connection component.
* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

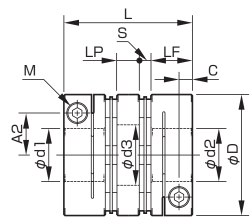
■TYPE A

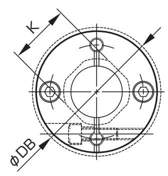



■TYPE B




■TYPE C




| Model | Type | d1 [mm] Min. | d1 [mm] Max. | d2 [mm] Min. | d2 [mm] Max. | D [mm] | DB [mm] | N [mm] | L [mm] | LF [mm] | LP [mm] | S [mm] | A1 [mm] | A2 [mm] | C [mm] | d3 [mm] | K [mm] | M Qty - Nominal dia. | Tightening torque [N·m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFC-002DA2 | C | 3 | 5 | 3 | 5 | 12 | 12.4 | — | 15.7 | 5.9 | 2.8 | 0.55 | — | 3.7 | 1.9 | 5.2 | 5.6 | 1-M1.6 | 0.23 ~ 0.28 |
| SFC-005DA2 | C | 3 | 6 | 3 | 6 | 16 | — | — | 23.2 | 7.85 | 5.5 | 1 | — | 4.8 | 2.5 | 6.5 | 6.5 | 1-M2 | 0.4 ~ 0.5 |
| SFC-010DA2 | C | 3 | 8 | 3 | 8 | 19 | — | — | 25.9 | 9.15 | 5.5 | 1.05 | — | 5.8(6) | 3.15 | 8.5 | 8.5 | 1-M2.5(M2) | 1.0 ~ 1.1(0.4 ~ 0.5) |
| SFC-020DA2 | C | 4 | 10 | 4 | 11 | 26 | — | — | 32.3 | 10.75 | 7.5 | 1.65 | — | 9.5 | 3.3 | 10.6 | 10.6 | 1-M2.5 | 1.0 ~ 1.1 |
| SFC-025DA2 | C | 5 | 14 | 5 | 14 | 29 | — | — | 32.8 | 10.75 | 7.5 | 1.9 | — | 11 | 3.3 | 15 | 14.5 | 1-M2.5 | 1.0 ~ 1.1 |
| SFC-030DA2 | A | 5 | 10 | 5 | 10 | 34 | — | 21.6 | 37.8 | 12.4 | 8 | 2.5 | 8 | — | 3.75 | 15 | 14.5 | 1-M3 | 1.5 ~ 1.9 |
| | B | 5 | 10 | Over 10 | 16 | 34 | — | 21.6 | 37.8 | 12.4 | 8 | 2.5 | 8 | 12.5 | 3.75 | 15 | 14.5 | 1-M3 | 1.5 ~ 1.9 |
| | C | Over 10 | 14 | Over 10 | 16 | 34 | — | — | 37.8 | 12.4 | 8 | 2.5 | — | 12.5 | 3.75 | 15 | 14.5 | 1-M3 | 1.5 ~ 1.9 |
| SFC-035DA2 | C | 6 | 16 | 6 | 19 | 39 | — | — | 48 | 15.5 | 11 | 3 | — | 14 | 4.5 | 17 | 17 | 1-M4 | 3.4 ~ 4.1 |
| SFC-040DA2 | A | 8 | 15 | 8 | 15 | 44 | — | 29.6 | 48 | 15.5 | 11 | 3 | 11 | — | 4.5 | 20 | 19.5 | 1-M4 | 3.4 ~ 4.1 |
| | B | 8 | 15 | Over 15 | 24 | 44 | — | 29.6 | 48 | 15.5 | 11 | 3 | 11 | 17 | 4.5 | 20 | 19.5 | 1-M4 | 3.4 ~ 4.1 |
| | C | Over 15 | 19 | Over 15 | 24 | 44 | — | — | 48 | 15.5 | 11 | 3 | — | 17 | 4.5 | 20 | 19.5 | 1-M4 | 3.4 ~ 4.1 |
| SFC-050DA2 | A | 8 | 19 | 8 | 19 | 56 | — | 38 | 59.8 | 20.5 | 14 | 2.4 | 14.5 | — | 6 | 26 | 26 | 1-M5 | 7.0 ~ 8.5 |
| | B | 8 | 19 | Over 19 | 30 | 56 | — | 38 | 59.8 | 20.5 | 14 | 2.4 | 14.5 | 22 | 6 | 26 | 26 | 1-M5 | 7.0 ~ 8.5 |
| | C | Over 19 | 25 | Over 19 | 30 | 56 | — | — | 59.8 | 20.5 | 14 | 2.4 | — | 22 | 6 | 26 | 26 | 1-M5 | 7.0 ~ 8.5 |
| SFC-055DA2 | C | 10 | 30 | 10 | 30 | 63 | — | — | 68.7 | 24 | 15.5 | 2.6 | — | 23 | 7.75 | 31 | 31 | 1-M6 | 14 ~ 15 |
| SFC-060DA2 | A | 11 | 24 | 11 | 24 | 68 | — | 46 | 73.3 | 25.2 | 16.5 | 3.2 | 17.5 | — | 7.75 | 31 | 31 | 1-M6 | 14 ~ 15 |
| | B | 11 | 24 | Over 24 | 35 | 68 | — | 46 | 73.3 | 25.2 | 16.5 | 3.2 | 17.5 | 26.5 | 7.75 | 31 | 31 | 1-M6 | 14 ~ 15 |
| | C | Over 24 | 30 | Over 24 | 35 | 68 | — | — | 73.3 | 25.2 | 16.5 | 3.2 | — | 26.5 | 7.75 | 31 | 31 | 1-M6 | 14 ~ 15 |
| SFC-080DA2 | C | 18 | 35 | 18 | 40 | 82 | — | — | 98 | 30 | 22 | 8 | — | 28 | 9 | 40 | 38 | 1-M8 | 27 ~ 30 |
| SFC-090DA2 | C | 25 | 40 | 25 | 45 | 94 | — | — | 98.6 | 30 | 22 | 8.3 | — | 34 | 9 | 47 | 42 | 1-M8 | 27 ~ 30 |
| SFC-100DA2 | C | 32 | 45 | 32 | 45 | 104 | — | — | 101.6 | 30 | 22 | 9.8 | — | 39 | 9 | 50 | 48 | 1-M8 | 27 ~ 30 |

* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* The øDB value is measured assuming that the head of the clamping bolt is larger than the external diameter of the hub.
* The K dimension is the inner diameter of the element. For d2 dimension exceeding this value, shaft can be inserted only up to LF dimension to the d2 side hub.
* The nominal diameter for the clamping bolt M is equal to the quantity minus the nominal diameter of the screw threads, where the quantity is for a hub on one side.
* The figures in parentheses ( ) for the SFC-010 are the values when d1 or d2 is ø8 mm.

# SFC(DA2) Types Double Element Type

## Standard Bore Diameter

| | | | 3 | 4 | 5 | 6 | 6.35 | 7 | 8 | 9 | 9.525 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Standard (option) bore diameter, d1/d2 [mm] and restricted rated torque [N·m] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Nominal bore diameter | | | 3 | 4 | 5 | 6 | 6.35 | 7 | 8 | 9 | 9.525 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 |
| Shaft tolerance | h7 (h6 • g6) | B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | j6 (Option) | J | | | | | | | | | | | | | | | | | | | ○ | | ○ | ○ | | ○ | | | | | | | |
| | k6 (Option) | K | | | | | | | ○ | ○ | | | | | | ○ | | ○ | | | ○ | | ○ | ○ | | | | ○ | | ○ | | | |
| Supported bore diameter for each model | SFC-002DA2 | d1 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-005DA2 | d1 | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-010DA2 | d1 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | SFC-020DA2 | d1 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | |
| | | d2 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | | | |
| | SFC-025DA2 | d1 | | | 2.1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | | d2 | | | 2.1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | SFC-030DA2 | d1 | | | 2.8 | 3.4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | | d2 | | | 2.8 | 3.4 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | SFC-035DA2 | d1 | | | | 5 | 5 | 6.6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | | d2 | | | | 5 | 5 | 6.6 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | SFC-040DA2 | d1 | | | | | | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | | d2 | | | | | | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | SFC-050DA2 | d1 | | | | | | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | | d2 | | | | | | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | SFC-055DA2 | d1 | | | | | | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | | d2 | | | | | | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | SFC-060DA2 | d1 | | | | | | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | | d2 | | | | | | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| | SFC-080DA2 | d1 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| | | d2 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | SFC-090DA2 | d1 | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | | d2 | | | | | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | SFC-100DA2 | d1 | | | | | | | | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |
| | | d2 | | | | | | | | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |

* The shaft tolerance for standard bore diameter is h7 (h6 or g6): designation B. However, for a bore diameter of ø35, the shaft tolerance is $^{+0.010}_{-0.025}$.
* Shaft tolerances j6/k6: designations J/K are optional, and are only supported for bore diameters marked with ○.
* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].

## How to Place an Order

**SFC-025DA2-10B-14K**

- Size (025)
- Type (DA2)
  - DA2: Double element, Aluminum alloy hub
- Bore diameter d1 (Small diameter) (10)
- Supported shaft tolerance (B, K)
  - B: h7(h6, g6) shaft
  - J: j6 shaft (option)
  - K: k6 shaft (option)
- Bore diameter d2 (Large diameter) (14)

* For nominal bore diameter, select d1 (small diameter)-d2 (large diameter) in that order.
* If d1=d2 (same diameters), select B, J, and K in that order.

MODELS
SFC
SFS
SFF
SFM
SFH

# SFC(SA2) Types Single Element Type

## Options Tapered shaft supported

Allows coupling via a clamping hub when a taper adapter is mounted on the tapered shaft of a servo motor.

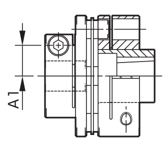
## Specifications

| Model | Type | Rated torque [N·m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| SFC-040SA2-□B-11BC | B | 12 | 0.02 | 1 | ±0.3 | 10000 | 20000 | 80 | $26.58\times10^{-6}$ | 0.131 |
| | C | 12 | 0.02 | 1 | ±0.3 | 10000 | 20000 | 80 | $33.28\times10^{-6}$ | 0.146 |
| SFC-050SA2-□B-11BC | B | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $82.91\times10^{-6}$ | 0.240 |
| | C | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $103.5\times10^{-6}$ | 0.258 |
| SFC-050SA2-□B-14BC | B | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $88.72\times10^{-6}$ | 0.271 |
| | C | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $111.5\times10^{-6}$ | 0.301 |
| SFC-050SA2-□B-16BC | B | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $95.44\times10^{-6}$ | 0.309 |
| | C | 25 | 0.02 | 1 | ±0.4 | 10000 | 32000 | 48 | $118.2\times10^{-6}$ | 0.338 |
| SFC-055SA2-□B-14BC | C | 40 | 0.02 | 1 | ±0.42 | 10000 | 50000 | 43 | $201.1\times10^{-6}$ | 0.409 |
| SFC-055SA2-□B-16BC | C | 40 | 0.02 | 1 | ±0.42 | 10000 | 50000 | 43 | $207.8\times10^{-6}$ | 0.446 |
| SFC-060SA2-□B-16BC | B | 60 | 0.02 | 1 | ±0.45 | 10000 | 70000 | 76.4 | $228.7\times10^{-6}$ | 0.475 |
| | C | 60 | 0.02 | 1 | ±0.45 | 10000 | 70000 | 76.4 | $287.8\times10^{-6}$ | 0.517 |

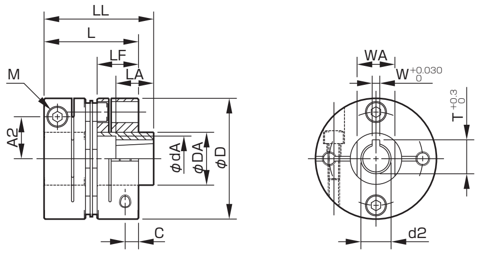
* Types B / C are automatically specified by Miki Pulley according to the bore diameter you select, and cannot be specified by the customer.
* Check the Standard Bore Diameters as rated torque may be restricted by the holding power of the shaft connection component.
* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

■TYPE B




■TYPE C




| Model | d2 [mm] | W [mm] | T [mm] | WA [mm] | LA [mm] | dA [mm] | DA [mm] | LL [mm] | D [mm] | L [mm] | LF [mm] | C [mm] | A1 [mm] | A2 [mm] | M Qty - Nominal dia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFC-040SA2-□B-11BC | 11 | 4 | 12.2 | 18 | 16 | 17 | 22 | 44 | 44 | 34 | 15.5 | 4.5 | 11 | 17 | 1-M4 |
| SFC-050SA2-□B-11BC | 11 | 4 | 12.2 | 18 | 16 | 17 | 22 | 48.4 | 56 | 43.4 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-050SA2-□B-14BC | 14 | 4 | 15.1 | 24 | 19 | 22 | 28 | 53.4 | 56 | 43.4 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-050SA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 63.4 | 56 | 43.4 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-055SA2-□B-14BC | 14 | 4 | 15.1 | 24 | 19 | 22 | 28 | 56.6 | 63 | 50.6 | 24 | 7.75 | — | 23 | 1-M6 |
| SFC-055SA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 66.6 | 63 | 50.6 | 24 | 7.75 | — | 23 | 1-M6 |
| SFC-060SA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 69.6 | 68 | 53.6 | 25.2 | 7.75 | 17.5 | 26.5 | 1-M6 |

* For other dimensions, see dimensions for single element type SFC(SA2).

## Standard Bore Diameter

Standard (option) bore diameter, d1 [mm] and restricted rated torque [N·m]

| | Nominal bore diameter | | 8 | 9 | 9.525 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shaft tolerance | h7 (h6・g6) | B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | j6(Option) | J | | | | | | | | | | | | | ○ | | ○ | ○ | | ○ | |
| | k6(Option) | K | ○ | ○ | | | | | | ○ | | ○ | | | ○ | | ○ | ○ | | | |
| Supported bore diameter | SFC-040SA2 | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | SFC-050SA2 | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| | SFC-055SA2 | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | SFC-060SA2 | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* The shaft tolerance for standard bore diameter is h7 (h6 or g6): designation B.
* Shaft tolerances j6/k6: designations J/K are optional, and are only supported for bore diameters marked with ○.
* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].

## How to Place an Order

SFC-050SA2-12B-14BC

- Size: 050
- Type: SA2: Single element Aluminum alloy hub
- Bore diameter d1: 12
- Supported shaft tolerance: B: h7 (h6, g6), (Option K : k6, J : j6)
- [d2] BC: 14BC — BC: Taper adapter *Select d2 for BC.

# SFC(DA2) Types Double Element Type

## Options Tapered shaft supported

Allows coupling via a clamping hub when a taper adapter is mounted on the tapered shaft of a servo motor.

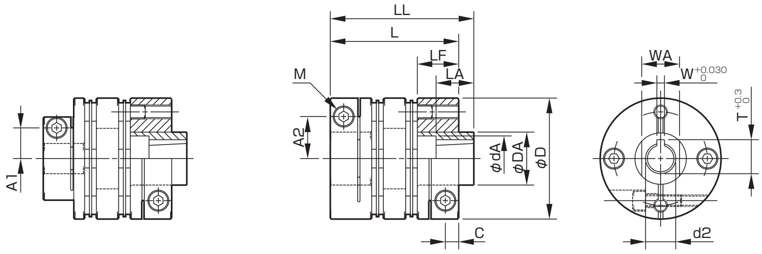
## Specifications

| Model | Type | Rated torque [N•m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min⁻¹] | Torsional stiffness [N•m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg•m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|---|
| SFC-040DA2-□B-11BC | B | 12 | 0.24 | 1(On one side) | ±0.6 | 10000 | 10000 | 40 | $39.42 \times 10^{-6}$ | 0.180 |
| | C | 12 | 0.24 | 1(On one side) | ±0.6 | 10000 | 10000 | 40 | $46.12 \times 10^{-6}$ | 0.195 |
| SFC-050DA2-□B-11BC | B | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $125.5 \times 10^{-6}$ | 0.331 |
| | C | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $146.1 \times 10^{-6}$ | 0.349 |
| SFC-050DA2-□B-14BC | B | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $131.1 \times 10^{-6}$ | 0.362 |
| | C | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $154.1 \times 10^{-6}$ | 0.392 |
| SFC-050DA2-□B-16BC | B | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $138.1 \times 10^{-6}$ | 0.400 |
| | C | 25 | 0.28 | 1(On one side) | ±0.8 | 10000 | 16000 | 24 | $160.8 \times 10^{-6}$ | 0.430 |
| SFC-055DA2-□B-14BC | C | 40 | 0.31 | 1(On one side) | ±0.84 | 10000 | 25000 | 21.5 | $274.0 \times 10^{-6}$ | 0.530 |
| SFC-055DA2-□B-16BC | C | 40 | 0.31 | 1(On one side) | ±0.84 | 10000 | 25000 | 21.5 | $280.5 \times 10^{-6}$ | 0.567 |
| SFC-060DA2-□B-16BC | B | 60 | 0.34 | 1(On one side) | ±0.9 | 10000 | 35000 | 38.2 | $339.4 \times 10^{-6}$ | 0.638 |
| | C | 60 | 0.34 | 1(On one side) | ±0.9 | 10000 | 35000 | 38.2 | $398.5 \times 10^{-6}$ | 0.681 |

* Types B / C are automatically specified by Miki Pulley according to the bore diameter you select, and cannot be specified by the customer.
* Check the Standard Bore Diameters as rated torque may be restricted by the holding power of the shaft connection component.
* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

■TYPE B ■TYPE C




| Model | d2 [mm] | W [mm] | T [mm] | WA [mm] | LA [mm] | dA [mm] | DA [mm] | LL [mm] | D [mm] | L [mm] | LF [mm] | C [mm] | A1 [mm] | A2 [mm] | M Qty - Nominal dia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFC-040DA2-□B-11BC | 11 | 4 | 12.2 | 18 | 16 | 17 | 22 | 58 | 44 | 48 | 15.5 | 4.5 | 11 | 17 | 1-M4 |
| SFC-050DA2-□B-11BC | 11 | 4 | 12.2 | 18 | 16 | 17 | 22 | 64.8 | 56 | 59.8 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-050DA2-□B-14BC | 14 | 4 | 15.1 | 24 | 19 | 22 | 28 | 69.8 | 56 | 59.8 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-050DA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 79.8 | 56 | 59.8 | 20.5 | 6 | 14.5 | 22 | 1-M5 |
| SFC-055DA2-□B-14BC | 14 | 4 | 15.1 | 24 | 19 | 22 | 28 | 74.4 | 63 | 68.7 | 24 | 7.75 | — | 23 | 1-M6 |
| SFC-055DA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 84.7 | 63 | 68.7 | 24 | 7.75 | — | 23 | 1-M6 |
| SFC-060DA2-□B-16BC | 16 | 5 | 17.3 | 24 | 29 | 26 | 30 | 89.3 | 68 | 73.3 | 25.2 | 7.75 | 17.5 | 26.5 | 1-M6 |

* For other dimensions, see dimensions for double element type SFC(DA2).

## Standard Bore Diameter

| | | Standard (option) bore diameter, d1 [mm] and restricted rated torque [N·m] | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal bore diameter | | 8 | 9 | 9.525 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 |
| Shaft tolerance: h7 (h6・g6) | B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Shaft tolerance: j6(Option) | J | | | | | | | | | | | | | ○ | | ○ | ○ | | ○ | |
| Shaft tolerance: k6(Option) | K | ○ | ○ | | | | | | ○ | | ○ | | | ○ | | ○ | ○ | | | |
| Supported bore diameter: SFC-040DA2 | | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| Supported bore diameter: SFC-050DA2 | | 18 | 20 | 22 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| Supported bore diameter: SFC-055DA2 | | | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Supported bore diameter: SFC-060DA2 | | | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* The shaft tolerance for standard bore diameter is h7 (h6 or g6): designation B.
* Shaft tolerances j6/k6: designations J/K are optional, and are only supported for bore diameters marked with ○.
* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].

## How to Place an Order

SFC-050DA2-12B-14BC

- Size: 050
- Type: DA2: Double element Aluminum alloy hub
- Bore diameter d1: 12
- Supported shaft tolerance: B: h7 (h6, g6), (Option K : k6, J : j6)
- [d2] BC: BC: Taper adapter *Select d2 for BC.

# SFC Models

## Options　For length-specified special order parts

SFC(DA2) type spacer length can be changed to attain the necessary distance between shafts. Specify the length in 1 mm units.

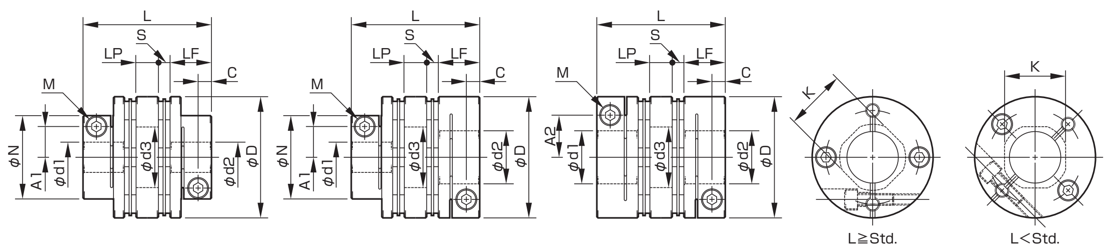
## Specifications

| Model | Type | Rated torque [N•m] | Misalignment | | | | Max. rotation speed [min⁻¹] | Moment of inertia [kg•m²] | | Mass [kg] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Parallel[mm] | | Angular [°] | Axial [mm] | | | | | |
| | | | Min. L | Max. L | | | | Min. L | Max. L | Min. L | Max. L |
| SFC-005DA2 | C | 0.6 | 0.03 | 0.20 | 0.5(On one side) | ±0.1 | 10000 | $0.33 \times 10^{-6}$ | $0.62 \times 10^{-6}$ | 0.009 | 0.017 |
| SFC-010DA2 | C | 1 | 0.08 | 0.44 | 1(On one side) | ±0.2 | 10000 | $0.72 \times 10^{-6}$ | $1.38 \times 10^{-6}$ | 0.014 | 0.026 |
| SFC-020DA2 | C | 2 | 0.10 | 0.46 | 1(On one side) | ±0.33 | 10000 | $3.02 \times 10^{-6}$ | $5.30 \times 10^{-6}$ | 0.031 | 0.054 |
| SFC-025DA2 | C | 4 | 0.09 | 0.46 | 1(On one side) | ±0.38 | 10000 | $4.55 \times 10^{-6}$ | $7.95 \times 10^{-6}$ | 0.036 | 0.061 |
| SFC-030DA2 | A | 5 | 0.11 | 0.48 | 1(On one side) | ±0.4 | 10000 | $6.09 \times 10^{-6}$ | $12.80 \times 10^{-6}$ | 0.046 | 0.085 |
| | B | 5 | 0.11 | 0.48 | 1(On one side) | ±0.4 | 10000 | $8.11 \times 10^{-6}$ | $14.82 \times 10^{-6}$ | 0.053 | 0.091 |
| | C | 5 | 0.11 | 0.48 | 1(On one side) | ±0.4 | 10000 | $10.22 \times 10^{-6}$ | $16.93 \times 10^{-6}$ | 0.061 | 0.099 |
| SFC-035DA2 | C | 10 | 0.15 | 0.54 | 1(On one side) | ±0.5 | 10000 | $23.85 \times 10^{-6}$ | $35.97 \times 10^{-6}$ | 0.108 | 0.161 |
| SFC-040DA2 | A | 12 | 0.15 | 0.54 | 1(On one side) | ±0.6 | 10000 | $25.06 \times 10^{-6}$ | $44.76 \times 10^{-6}$ | 0.107 | 0.174 |
| | B | 12 | 0.15 | 0.54 | 1(On one side) | ±0.6 | 10000 | $30.89 \times 10^{-6}$ | $50.62 \times 10^{-6}$ | 0.116 | 0.182 |
| | C | 12 | 0.15 | 0.54 | 1(On one side) | ±0.6 | 10000 | $37.58 \times 10^{-6}$ | $57.31 \times 10^{-6}$ | 0.130 | 0.197 |
| SFC-050DA2 | A | 25 | 0.16 | 0.63 | 1(On one side) | ±0.8 | 10000 | $77.42 \times 10^{-6}$ | $144.3 \times 10^{-6}$ | 0.205 | 0.347 |
| | B | 25 | 0.16 | 0.63 | 1(On one side) | ±0.8 | 10000 | $97.97 \times 10^{-6}$ | $164.8 \times 10^{-6}$ | 0.225 | 0.365 |
| | C | 25 | 0.16 | 0.63 | 1(On one side) | ±0.8 | 10000 | $120.8 \times 10^{-6}$ | $187.6 \times 10^{-6}$ | 0.252 | 0.394 |
| SFC-055DA2 | C | 40 | 0.16 | 0.60 | 1(On one side) | ±0.84 | 10000 | $226.8 \times 10^{-6}$ | $325.0 \times 10^{-6}$ | 0.378 | 0.538 |
| SFC-060DA2 | A | 60 | 0.19 | 0.63 | 1(On one side) | ±0.9 | 10000 | $210.8 \times 10^{-6}$ | $340.1 \times 10^{-6}$ | 0.382 | 0.567 |
| | B | 60 | 0.19 | 0.63 | 1(On one side) | ±0.9 | 10000 | $269.9 \times 10^{-6}$ | $399.2 \times 10^{-6}$ | 0.424 | 0.609 |
| | C | 60 | 0.19 | 0.63 | 1(On one side) | ±0.9 | 10000 | $333.5 \times 10^{-6}$ | $462.8 \times 10^{-6}$ | 0.484 | 0.669 |

* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* Check the Standard Bore Diameters for SFC(DA2) as there may be limitations on the rated torque caused by the holding power of the coupling shaft section.
* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass are measured for the maximum bore diameter.
* See Specifications for SFC(DA2) for stiffness values.

## Dimensions

■TYPE A　■TYPE B　■TYPE C




| Model | Type | d1 [mm] | | d2 [mm] | | D [mm] | N [mm] | L [mm] | | | LF [mm] | S [mm] | A1 [mm] | A2 [mm] | C [mm] | d3 [mm] | K [mm] | M Qty - Nominal dia. | Tightening torque [N•m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Min. | Max. | Min. | Max. | | | Std. | Min. | Max. | | | | | | | | | |
| SFC-005DA2 | C | 3 | 6 | 3 | 6 | 16 | — | 23.2 | 21 | 40 | 7.85 | 1 | — | 4.8 | 2.5 | 6.5 | 6.5 | 1-M2 | 0.4～0.5 |
| SFC-010DA2 | C | 3 | 8 | 3 | 8 | 19 | — | 25.9 | 24 | 45 | 9.15 | 1.05 | — | 5.8(6) | 3.15 | 8.5 | 8.5 | 1-M2.5(M2) | 1.0～1.1(0.4～0.5) |
| SFC-020DA2 | C | 4 | 10 | 4 | 11 | 26 | — | 32.3 | 29 | 50 | 10.75 | 1.65 | — | 9.5 | 3.3 | 10.6 | 10.6 | 1-M2.5 | 1.0～1.1 |
| SFC-025DA2 | C | 5 | 14 | 5 | 14 | 29 | — | 32.8 | 29 | 50 | 10.75 | 1.9 | — | 11 | 3.3 | 15 | 14.5 | 1-M2.5 | 1.0～1.1 |
| SFC-030DA2 | A | 5 | 10 | 5 | 10 | 34 | 21.6 | 37.8 | 34 | 55 | 12.4 | 2.5 | 8 | — | 3.75 | 15 | 14.5 | 1-M3 | 1.5～1.9 |
| | B | 5 | 10 | Over 10 | 16 | 34 | 21.6 | 37.8 | 34 | 55 | 12.4 | 2.5 | 8 | 12.5 | 3.75 | 15 | 14.5 | 1-M3 | 1.5～1.9 |
| | C | Over 10 | 14 | Over 10 | 16 | 34 | — | 37.8 | 34 | 55 | 12.4 | 2.5 | — | 12.5 | 3.75 | 15 | 14.5 | 1-M3 | 1.5～1.9 |
| SFC-035DA2 | C | 6 | 16 | 6 | 19 | 39 | — | 48 | 43 | 65 | 15.5 | 3 | — | 14 | 4.5 | 17 | 17 | 1-M4 | 3.4～4.1 |
| SFC-040DA2 | A | 8 | 15 | 8 | 15 | 44 | 29.6 | 48 | 43 | 65 | 15.5 | 3 | 11 | — | 4.5 | 20 | 19.5 | 1-M4 | 3.4～4.1 |
| | B | 8 | 15 | Over 15 | 24 | 44 | 29.6 | 48 | 43 | 65 | 15.5 | 3 | 11 | 17 | 4.5 | 20 | 19.5 | 1-M4 | 3.4～4.1 |
| | C | Over 15 | 19 | Over 15 | 24 | 44 | — | 48 | 43 | 65 | 15.5 | 3 | — | 17 | 4.5 | 20 | 19.5 | 1-M4 | 3.4～4.1 |
| SFC-050DA2 | A | 8 | 19 | 8 | 19 | 56 | 38 | 59.8 | 53 | 80 | 20.5 | 2.4 | 14.5 | — | 6 | 26 | 26 | 1-M5 | 7.0～8.5 |
| | B | 8 | 19 | Over 19 | 30 | 56 | 38 | 59.8 | 53 | 80 | 20.5 | 2.4 | 14.5 | 22 | 6 | 26 | 26 | 1-M5 | 7.0～8.5 |
| | C | Over 19 | 25 | Over 19 | 30 | 56 | — | 59.8 | 53 | 80 | 20.5 | 2.4 | — | 22 | 6 | 26 | 26 | 1-M5 | 7.0～8.5 |
| SFC-055DA2 | C | 10 | 30 | 10 | 30 | 63 | — | 68.7 | 60 | 85 | 24 | 2.6 | — | 23 | 7.75 | 31 | 31 | 1-M6 | 14～15 |
| SFC-060DA2 | A | 11 | 24 | 11 | 24 | 68 | 46 | 73.3 | 65 | 90 | 25.2 | 3.2 | 17.5 | — | 7.75 | 31 | 31 | 1-M6 | 14～15 |
| | B | 11 | 24 | Over 24 | 35 | 68 | 46 | 73.3 | 65 | 90 | 25.2 | 3.2 | 17.5 | 26.5 | 7.75 | 31 | 31 | 1-M6 | 14～15 |
| | C | Over 24 | 30 | Over 24 | 35 | 68 | — | 73.3 | 65 | 90 | 25.2 | 3.2 | — | 26.5 | 7.75 | 31 | 31 | 1-M6 | 14～15 |

* Types A / B / C are automatically specified by Miki Pulley according to the combination of bore diameters you select, and cannot be specified by the customer.
* The nominal diameter for the clamping bolt M is equal to the quantity minus the nominal diameter of the screw threads, where the quantity is for a hub on one side.
* The figures in parentheses ( ) for the SFC-010 are the values when d1 or d2 is ø8 mm.
* Compatible lengths L range from the minimum L dimension to the maximum L dimension shown in the above table. Specify in 1 mm units.
* When the L dimension is shorter than the standard, the left/right clamping bolt phases will be off by 45°.
* Check Standard Bore Diameters for SFC(DA2) for the standard bore diameters.

## How to Place an Order

SFC-040DA2-14B-15B-L60

Size
Type
DA2: Double element
Aluminum alloy hub
Bore diameter d1 (Small diameter)
Bore diameter d2 (Large diameter)
Length designation
※ Specify the L dimension in 1 mm increments.
Supported shaft tolerance
B : h7（h6・g6）,（Option　K : k6, J : j6）

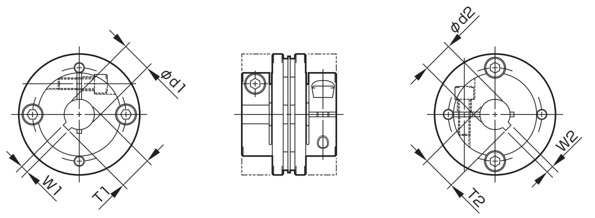
# SFC Models

## Options　For keyway milling applications

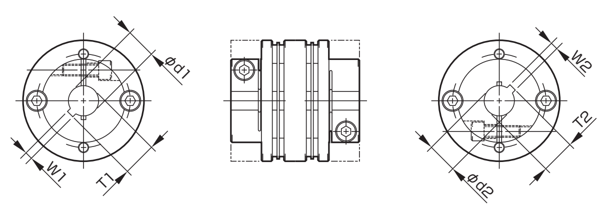
If you are using a keyed shaft, we can mill a keyway in the clamping hub to your specifications.

## Keyway milling standard

■SFC(SA2)




■SFC(DA2)




**H9 keyway width standards**

| Nominal bore dia.: Shaft diameter | h7 | j6 | k6 | Bore dia. d1・d2 [mm] | Keyway width W1・W2 [mm] | Keyway height T1・T2 [mm] | Nominal bore dia.: Shaft diameter | h7 | j6 | k6 | Bore dia. d1・d2 [mm] | Keyway width W1・W2 [mm] | Keyway height T1・T2 [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | BH | — | KH | 8 | 3 $^{+0.025}_{0}$ | 9.4 $^{+0.3}_{0}$ | 20 | BH | — | — | 20 | 6 $^{+0.030}_{0}$ | 22.8 $^{+0.3}_{0}$ |
| 9 | BH | — | KH | 9 | 3 $^{+0.025}_{0}$ | 10.4 $^{+0.3}_{0}$ | 22 | BH | JH | KH | 22 | 6 $^{+0.030}_{0}$ | 24.8 $^{+0.3}_{0}$ |
| 10 | BH | — | — | 10 | 3 $^{+0.025}_{0}$ | 11.4 $^{+0.3}_{0}$ | 24 | BH | JH | KH | 24 | 8 $^{+0.036}_{0}$ | 27.3 $^{+0.3}_{0}$ |
| 11 | BH | — | — | 11 | 4 $^{+0.030}_{0}$ | 12.8 $^{+0.3}_{0}$ | 25 | BH | — | — | 25 | 8 $^{+0.036}_{0}$ | 28.3 $^{+0.3}_{0}$ |
| 12 | BH | — | — | 12 | 4 $^{+0.030}_{0}$ | 13.8 $^{+0.3}_{0}$ | 28 | BH | JH | — | 28 | 8 $^{+0.036}_{0}$ | 31.3 $^{+0.3}_{0}$ |
| 13 | BH | — | — | 13 | 5 $^{+0.030}_{0}$ | 15.3 $^{+0.3}_{0}$ | 30 | BH | — | — | 30 | 8 $^{+0.036}_{0}$ | 33.3 $^{+0.3}_{0}$ |
| 14 | BH | — | KH | 14 | 5 $^{+0.030}_{0}$ | 16.3 $^{+0.3}_{0}$ | 32 | BH | — | KH | 32 | 10 $^{+0.036}_{0}$ | 35.3 $^{+0.3}_{0}$ |
| 15 | BH | — | — | 15 | 5 $^{+0.030}_{0}$ | 17.3 $^{+0.3}_{0}$ | 35 | BH | — | — | 35 | 10 $^{+0.036}_{0}$ | 38.3 $^{+0.3}_{0}$ |
| 16 | BH | — | KH | 16 | 5 $^{+0.030}_{0}$ | 18.3 $^{+0.3}_{0}$ | 38 | BH | — | KH | 38 | 10 $^{+0.036}_{0}$ | 41.3 $^{+0.3}_{0}$ |
| 17 | BH | — | — | 17 | 5 $^{+0.030}_{0}$ | 19.3 $^{+0.3}_{0}$ | 40 | BH | — | — | 40 | 12 $^{+0.043}_{0}$ | 43.3 $^{+0.3}_{0}$ |
| 18 | BH | — | — | 18 | 6 $^{+0.030}_{0}$ | 20.8 $^{+0.3}_{0}$ | 42 | BH | — | — | 42 | 12 $^{+0.043}_{0}$ | 45.3 $^{+0.3}_{0}$ |
| 19 | BH | JH | KH | 19 | 6 $^{+0.030}_{0}$ | 21.8 $^{+0.3}_{0}$ | 45 | BH | — | — | 45 | 14 $^{+0.043}_{0}$ | 48.8 $^{+0.3}_{0}$ |

**JS9 keyway width standards**

| Nominal bore dia.: Shaft diameter | h7 | j6 | k6 | Bore dia. d1・d2 [mm] | Keyway width W1・W2 [mm] | Keyway height T1・T2 [mm] | Nominal bore dia.: Shaft diameter | h7 | j6 | k6 | Bore dia. d1・d2 [mm] | Keyway width W1・W2 [mm] | Keyway height T1・T2 [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 | BJ | — | KJ | 8 | 3 ±0.0125 | 9.4 $^{+0.3}_{0}$ | 20 | BJ | — | — | 20 | 6 ±0.0150 | 22.8 $^{+0.3}_{0}$ |
| 9 | BJ | — | KJ | 9 | 3 ±0.0125 | 10.4 $^{+0.3}_{0}$ | 22 | BJ | JJ | KJ | 22 | 6 ±0.0150 | 24.8 $^{+0.3}_{0}$ |
| 10 | BJ | — | — | 10 | 3 ±0.0125 | 11.4 $^{+0.3}_{0}$ | 24 | BJ | JJ | KJ | 24 | 8 ±0.0180 | 27.3 $^{+0.3}_{0}$ |
| 11 | BJ | — | — | 11 | 4 ±0.0150 | 12.8 $^{+0.3}_{0}$ | 25 | BJ | — | — | 25 | 8 ±0.0180 | 28.3 $^{+0.3}_{0}$ |
| 12 | BJ | — | — | 12 | 4 ±0.0150 | 13.8 $^{+0.3}_{0}$ | 28 | BJ | JJ | — | 28 | 8 ±0.0180 | 31.3 $^{+0.3}_{0}$ |
| 13 | BJ | — | — | 13 | 5 ±0.0150 | 15.3 $^{+0.3}_{0}$ | 30 | BJ | — | — | 30 | 8 ±0.0180 | 33.3 $^{+0.3}_{0}$ |
| 14 | BJ | — | KJ | 14 | 5 ±0.0150 | 16.3 $^{+0.3}_{0}$ | 32 | BJ | — | KJ | 32 | 10 ±0.0180 | 35.3 $^{+0.3}_{0}$ |
| 15 | BJ | — | — | 15 | 5 ±0.0150 | 17.3 $^{+0.3}_{0}$ | 35 | BJ | — | — | 35 | 10 ±0.0180 | 38.3 $^{+0.3}_{0}$ |
| 16 | BJ | — | KJ | 16 | 5 ±0.0150 | 18.3 $^{+0.3}_{0}$ | 38 | BJ | — | KJ | 38 | 10 ±0.0180 | 41.3 $^{+0.3}_{0}$ |
| 17 | BJ | — | — | 17 | 5 ±0.0150 | 19.3 $^{+0.3}_{0}$ | 40 | BJ | — | — | 40 | 12 ±0.0215 | 43.3 $^{+0.3}_{0}$ |
| 18 | BJ | — | — | 18 | 6 ±0.0150 | 20.8 $^{+0.3}_{0}$ | 42 | BJ | — | — | 42 | 12 ±0.0215 | 45.3 $^{+0.3}_{0}$ |
| 19 | BJ | JJ | KJ | 19 | 6 ±0.0150 | 21.8 $^{+0.3}_{0}$ | 45 | BJ | — | — | 45 | 14 ±0.0215 | 48.8 $^{+0.3}_{0}$ |

* We can also handle standards not listed above. Consult Miki Pulley.

## Standard Bore Diameter

**Standard (option) bore diameter, d1/d2 [mm] and restricted rated torque [N·m]**

| Nominal bore diameter | | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Shaft tolerance: h7 (h6・g6) | B | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| Shaft tolerance: j6(Option) | J | | | | | | | | | | | | ○ | | ○ | ○ | | ○ | | | | | | | |
| Shaft tolerance: k6(Option) | K | ○ | ○ | | | | | ○ | | ○ | | | ○ | | ○ | ○ | | | | ○ | | ○ | | | |
| SFC-025 | d1 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| SFC-030 | d1 | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| SFC-035 | d1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| SFC-040 | d1 | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | |
| | d2 | 9 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFC-050 | d1 | 18 | 20 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | d2 | 18 | 20 | 22 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFC-055 | d1 | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | d2 | | | 31 | 34 | 36 | 38 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFC-060 | d1 | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | d2 | | | | 50 | 51 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFC-080 | d1 | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| | d2 | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFC-090 | d1 | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | d2 | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| SFC-100 | d1 | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |
| | d2 | | | | | | | | | | | | | | | | | | | 226 | ● | ● | ● | ● | ● |

(Rows SFC-025 to SFC-100: Supported bore diameter for each model)

* The shaft tolerance for standard bore diameter is h7 (h6 or g6): designation B. However, for a bore diameter of ø35, the shaft tolerance is $^{+0.010}_{-0.025}$.
* Shaft tolerances j6/k6: designations J/K are optional, and are only supported for bore diameters marked with ○.
* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].

## How to Place an Order

SFC-060SA2-12BH-14KJ

- Size: 060
- Type: SA2
  - SA2: Single element
  - DA2: Double element
- Bore diameter d1 (Small diameter): 12
- Affixing method: BH
  - BH: h7 (h6, g6) shaft + H9 keyway
- Bore diameter d2 (Large diameter): 14
- Affixing method: KJ
  - KJ: k6 shaft + JS9 keyway

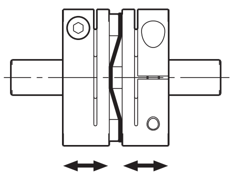
* For nominal bore diameter, select d1 (small diameter) -d2 (large diameter) in that order.
* If d1=d2 (same diameters), select B, J, and K in that order.
B・J・K・BH・BJ・JH・JJ・KH・KJ

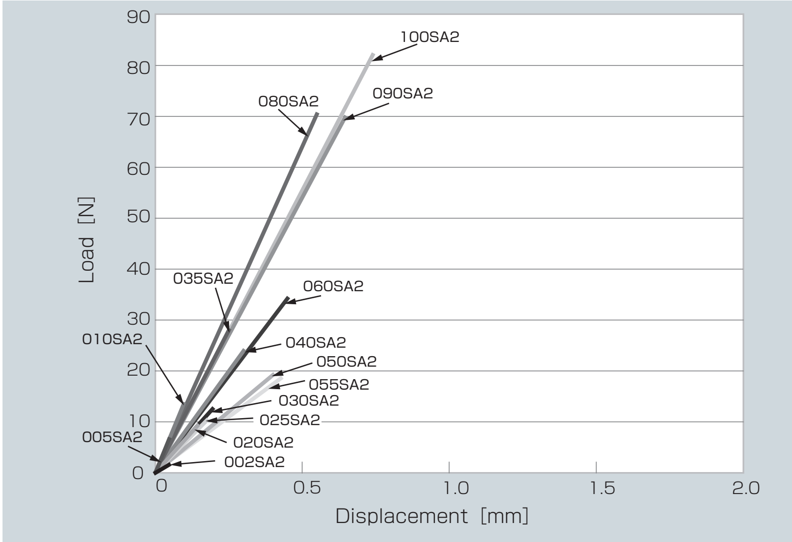
# SFC Models

## Items Checked for Design Purposes

### Spring Characteristics SFC(SA2)

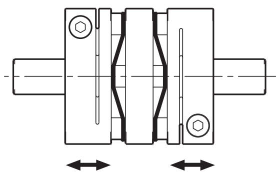
■ Axial load and amount of displacement

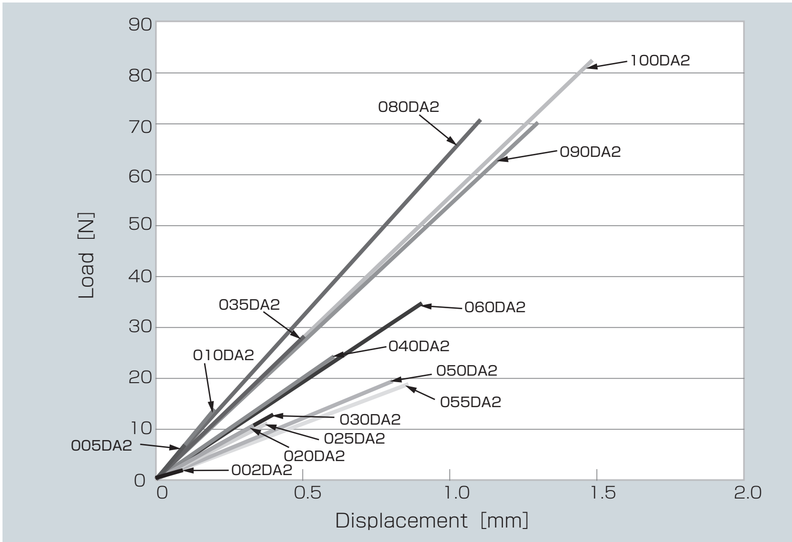




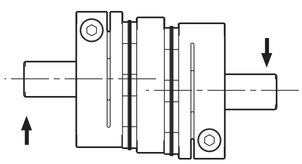

### Spring Characteristics SFC(DA2)

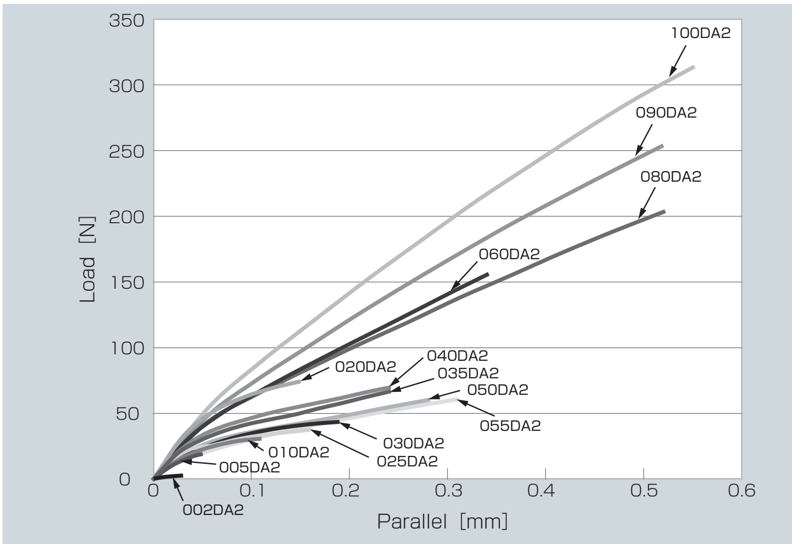
■ Axial load and amount of displacement






■ Parallel misalignment direction load and amount of displacement





# SFC Models

## Special Items to Take Note of

You should note the following to prevent any problems.

(1) Always be careful of parallel, angular, and axial misalignment.

(2) Always tighten bolts with the specified torque.

## Precautions for Handling

Couplings are assembled at high accuracy using a special mounting jig to ensure accurate concentricity of left and right internal diameters. Take extra precautions when handling couplings, should strong shocks be given on couplings, it may affect mounting accuracy and cause the parts to break during use.

(1) Couplings are designed for use within an operating temperature range of -30° C to 100° C. Although the couplings are designed to be waterproof and oilproof, do not subject them to excessive amounts of water and oil as it may cause part deterioration.

(2) Handle the element with care as it is made of a thin stainless steel metal disc, also making sure to be careful so as not to injure yourself.

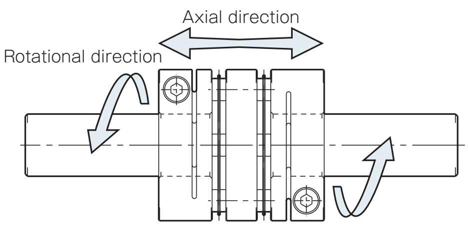
(3) Do not tighten up clamping bolts until after inserting the mounting shaft.

## Mounting

(1) Check that coupling clamping bolts have been loosened and remove any rust, dust, oil residue, etc. from inner diameter surfaces of the shaft and couplings. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

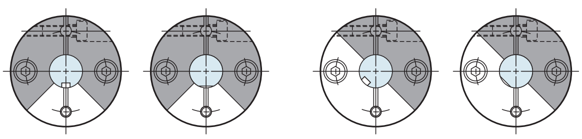
(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element. Be particularly careful not to apply excessive compressing force needlessly when inserting couplings into the paired shaft after attaching the couplings to the motor.

(3) With two of the clamping bolts loosened, make sure that couplings move gently along the axial and rotational directions. Readjust the centering of the two shafts if the couplings fail to move smoothly enough. This method is recommended as a way to easily check the concentricity of the left and right sides. If unable to use the same method, check the mounting accuracy using machine parts quality control procedures or an alternative method.



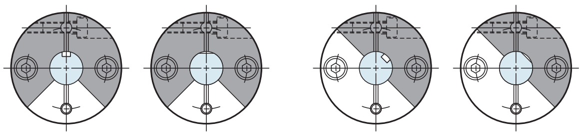

(4) As a general rule, round shafts are to be used for the paired mounting shaft. If needing to use a shaft with a different shape, be careful not to insert it into any of the locations indicated in the diagrams below. (Grayed areas ■ indicate areas wherein clamping hub shifts when clamped. Do not allow keyways, D-shaped cuts, or other insertions in these areas.) Placing the shaft in an undesirable location may cause the couplings to break or lead to a loss in shaft holding power. It is recommended that you use only round shafts to ensure full utilization of the entire range of coupling performance.

### ■ Proper Mounting Examples



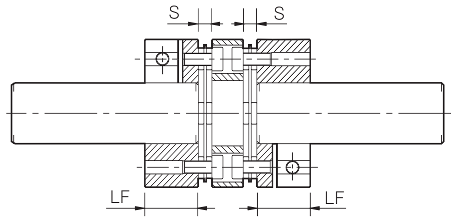
Size 002/005 Size 010 or above

### ■ Poor Mounting Examples



Size 002/005 Size 010 or above

(5) Insert and mount each shaft far enough in that the paired mounting shaft touches the shaft along the entire length of the clamping hub of the coupling (LF dimension), as shown in the diagram below, and does not interfere with the elements, spacers or the other shaft.
In addition, restrict the dimensions between clamping hub faces (S dimensions in the diagram) within the allowable misalignment of the axial direction displacement with respect to a reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.




| Model | LF [mm] | S [mm] |
|---|---|---|
| SFC-002 | 5.9 | 0.55 |
| SFC-005 | 7.85 | 1 |
| SFC-010 | 9.15 | 1.05 |
| SFC-020 | 10.75 | 1.65 |
| SFC-025 | 10.75 | 1.9 |
| SFC-030 | 12.4 | 2.5 |
| SFC-035 | 15.5 | 3 |
| SFC-040 | 15.5 | 3 |
| SFC-050 | 20.5 | 2.4 |
| SFC-055 | 24 | 2.6 |
| SFC-060 | 25.2 | 3.2 |
| SFC-080 | 30 | 8 |
| SFC-090 | 30 | 8.3 |
| SFC-100 | 30 | 9.8 |

(6) Check to make sure that no compression or tensile force is being applied along the axial direction before tightening up the two clamping bolts. Use a calibrated torque wrench to tighten the clamping bolts to within the tightening torque range listed below.

| Model | Clamping bolts | Tightening torque [N·m] |
|---|---|---|
| SFC-002 | M1.6 | 0.23 ～ 0.28 |
| SFC-005 | M2 | 0.4 ～ 0.5 |
| SFC-010 | M2.5 (M2) | 1.0 ～ 1.1 (0.4 ～ 0.5) |
| SFC-020 | M2.5 | 1.0 ～ 1.1 |
| SFC-025 | M2.5 | 1.0 ～ 1.1 |
| SFC-030 | M3 | 1.5 ～ 1.9 |
| SFC-035 | M4 | 3.4 ～ 4.1 |
| SFC-040 | M4 | 3.4 ～ 4.1 |
| SFC-050 | M5 | 7.0 ～ 8.5 |
| SFC-055 | M6 | 14 ～ 15 |
| SFC-060 | M6 | 14 ～ 15 |
| SFC-080 | M8 | 27 ～ 30 |
| SFC-090 | M8 | 27 ～ 30 |
| SFC-100 | M8 | 27 ～ 30 |

* Use M2 bolts on SFC-010 models with holes with a diameter of ø8 mm.
* The start and end numbers for the tightening torque ranges are between the minimum and maximum values. Tighten bolts to a tightening torque within the specified range for the model used.

# SFC Models

## Items Checked for Design Purposes

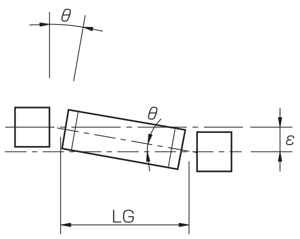
### Suitable Torque Screwdriver/Torque Wrench

| Nominal bolt diameter | Tightening torque [N•m] | Torque screwdriver/ wrench | Hexagon bit/ head | Coupling size |
|---|---|---|---|---|
| M1.6 | 0.23 ～ 0.28 | CN30LTDK | CB 1.5mm | 002 |
| M2 | 0.4 ～ 0.5 | CN60LTDK | SB 1.5mm | 005 • 010 |
| M2.5 | 1.0 ～ 1.1 | CN120LTDK | SB 2mm | 010 • 020 • 025 |
| M3 | 1.5 ～ 1.9 | CN200LTDK | SB 2.5mm | 030 |
| M4 | 3.4 ～ 4.1 | CN500LTDK | SB 3mm | 035 • 040 |
| M5 | 7.0 ～ 8.5 | N10LTDK | SB 4mm | 050 |
| M6 | 14 ～ 15 | N25LCK | 25HCK 5mm | 055 • 060 |
| M8 | 27 ～ 30 | N50LCK | 50HCK 6mm | 080 • 090 • 100 |

* Torque screwdriver (wrench)/bit (head) models are those of Nakamura Mfg. Co., Ltd.

### Length-specified Special Order Parts Option

Specify any length for the length-specified special order option for the SERVOFLEX SFC(DA2). Use the following formula to calculate the amount of allowable parallel misalignment, adjust it to be no greater than that value, and then mount the coupling.




$$\varepsilon = \tan\theta \times LG$$

$\varepsilon$ :Allowable parallel misalignment [mm]
$\theta$ :Allowable angular deflection [° ]

$$LG = LP + S$$

LP : Total length of spacer [mm]
S : Gap size between clamping hub and spacer [mm]

### Options for Keyway Milling

Options for keyway milling are available on request. However, because they are designed such that torque is tranferred to the friction coupling by the clamp mechanism, care should be taken not to exceed the coupling's permitted torque during use. Note also the following issues:

(1) Only ever use keys that are no wider than the keyway. Using keys that are a tight fit could results in damage during mounting or operation.

(2) The positional accuracy of keyway milling is visual. If positional accuracy relative to keyway hubs is required, contact Miki Pulley.

(3) Using JS9 class tolerances provides a tight fit, so couplings may be compressed when mounted on shafts. Take care not to further compress the couplings.

(4) Setting the fit of the key and keyway too loosely may result in play that generates dust. Also take care that the key does not come loose.

(5) Adding a set screw over the keyway is not recommended as it may lower clamp performance, and the set screw may also become loose within the torque range you use or during forward/reverse operation. It may also impair the structural strength of the clamping hub or damage the coupling.

### Clamping Bolts

Use Miki Pulley-specified clamping bolts because they are processed with solid lubrication films (except for SFC-002 M1.6). Applying adhesives to prevent loosening, oil, or the like to a clamping bolt will alter torque coefficients due to those lubricating components, creating excessive axial forces and potentially damaging the clamping bolt or coupling. Consult Miki Pulley before using such products.

### Surface Processing of Coupling Bore Diameter

The bore diameters of SERVOFLEX SFC models may or may not have surface processing in some components due to the circumstances of processing. This does not affect coupling performance. Consult Miki Pulley if your usage conditions require that bore diameters be surface processed or not.

### Selection Order of Nominal Bore Diameters when Ordering

When specifying bore diameters, you should basically specify d1 (small diameter)-d2 (large diameter), and always specify d2 for taper adapters mounted on tapered shafts. However, where d1=d2 (same diameters), note the selection order below for each nominal bore diameter when ordering.

| Nominal bore diameter symbol | Nominal bore diameter symbol description | Type | Selection diameter | Selection order |
|---|---|---|---|---|
| B | Shaft tolerance h7 (h6, g6) | Standard | d1 • d2 | 1 |
| J | Shaft tolerance j6 | Option | d1 • d2 | 2 |
| K | Shaft tolerance k6 | Option | d1 • d2 | 3 |
| BH | Shaft tolerance h7 (h6, g6) + keyway H9 | Option | d1 • d2 | 4 |
| BJ | Shaft tolerance h7 (h6, g6) + keyway JS9 | Option | d1 • d2 | 5 |
| JH | Shaft tolerance j6 + keyway H9 | Option | d1 • d2 | 6 |
| JJ | Shaft tolerance j6 + keyway JS9 | Option | d1 • d2 | 7 |
| KH | Shaft tolerance k6 + keyway H9 | Option | d1 • d2 | 8 |
| KJ | Shaft tolerance k6 + keyway JS9 | Option | d1 • d2 | 9 |
| BC | Taper adapter mounted on tapered shaft | Option | d2 | 10 |

### Points to Consider Regarding the Feed Screw System

#### ■ Servo motor oscillation

Gain adjustment on the servo motor may cause the servo motor to oscillate.

Oscillation in the servo motor during operation can cause problems particularly with the overall natural frequency and electrical control systems of the feed screw system.

In order for these issues to be resolved, the torsional stiffness for the coupling and feed screw section and the moment of inertia and other characteristics for the system overall will need to be adjusted and the torsional natural frequency for the mechanical system raised or the tuning function (filter function) for the electrical control system in the servo motor adjusted during the design stage.

#### ■ Stepper motor resonance

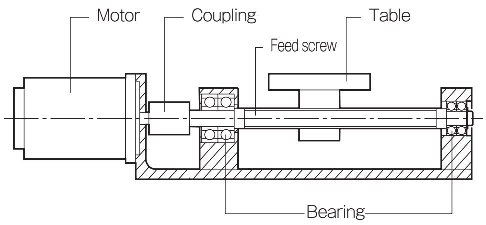
Stepper motors resonate at certain rotation speeds due to the pulsation frequency of the stepper motor and the torsional natural frequency of the system as a whole. To avoid resonance, either the resonant rotation speed must be simply skipped or the torsional natural frequency considered at the design stage.

Please contact Miki Pulley with any questions regarding stepper motor resonance or servo motor oscillation.

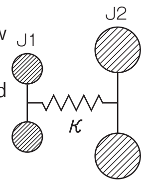
### How to Find the Natural Frequency of a Feed Screw System

(1) Select a coupling based on the nominal and maximum torque of the servo motor or stepper motor.

(2) Find the overall natural frequency, Nf, from the torsional stiffness of the coupling and feed screw, $\kappa$ , the moment of inertia of driving side, J1, and the moment of inertia of driven side, J2, for the feed screw system shown below.




$$Nf = \frac{1}{2\pi}\sqrt{\kappa\left(\frac{1}{J1}+\frac{1}{J2}\right)}$$




Nf: Overall natural frequency of a feed screw system [Hz]
$\kappa$ : Torsional stiffness of the coupling and feed screw [N·m/rad]
J1: Moment of inertia of driving side [kg·m$^2$]
J2: Moment of inertia of driven side [kg·m$^2$]

# SFC Models

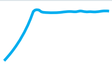
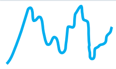
## Selection Procedures

(1) Find the torque, Ta, applied to the coupling using the output capacity, P, of the driver and the usage rotation speed, n.

$$Ta\ [N \cdot m] = 9550 \times \frac{P\ [kW]}{n\ [min^{-1}]}$$

(2) Determine the factor K from the load properties, and find the corrected torque, Td, applied to the coupling.

$$Td\ [N \cdot m] = Ta\ [N \cdot m] \times K \text{(Refer to the table below for values)}$$

| Load properties | Constant | Vibrations: Small | Vibrations: Medium | Vibrations: Large |
|---|---|---|---|---|
| |  |  |  |  |
| K | 1.0 | 1.25 | 1.75 | 2.25 |

For servo motor drive, multiply the maximum torque, Ts, by the usage factor K = 1.2 to 1.5.

$$Td\ [N \cdot m] = Ts\ [N \cdot m] \times (1.2 \sim 1.5)$$

(3) Set the size so that the rated coupling torque, Tn, is higher than the corrected torque, Td.

$$Tn\ [N \cdot m] \geqq Td\ [N \cdot m]$$

(4) The rated torque of the coupling may be limited by the bore diameter of the coupling. See the Specifications and Standard Bore Diameters tables.

(5) Check that the mount shaft is no larger than the maximum bore diameter of the coupling.

*Contact Miki Pulley for assistance with any device experiencing extreme periodic vibrations.

## Easy Selection Chart

Select a coupling size based on the rated output and the rated/maximum torque of the ordinary servo motor. The torque characteristics of servo motors vary between manufacturers, so check the specifications in the manufacturer catalog before finalizing a coupling size selection.

| Servo motor specifications | | | | | Corresponding SERVOFLEX type specifications | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Rated output [W] [kW] | Rated rotation speed [min⁻¹] | Rated torque [N·m] | Max. torque [N·m] | Shaft diameter [mm] | Single element type | Double element type | Rated torque [N·m] | Max. bore diameter [mm] | Outer diameter [mm] |
| 3W | 3000 ~ 6000 | 0.0096 | 0.029 | 4 | SFC-002SA2 | SFC-002DA2 | 0.25 | 5 | 12 |
| 5W | 3000 ~ 6000 | 0.016 | 0.048 | 5 | SFC-002SA2 | SFC-002DA2 | 0.25 | 5 | 12 |
| 10W | 3000 ~ 6000 | 0.032 | 0.096 | 6 | SFC-005SA2 | SFC-005DA2 | 0.6 | 6 | 16 |
| 15W | 3000 ~ 6000 | 0.047 | 0.143 | 4 | SFC-002SA2 | SFC-002DA2 | 0.25 | 5 | 12 |
| 20W | 3000 ~ 6000 | 0.0638 | 0.191 | 6 | SFC-005SA2 | SFC-005DA2 | 0.6 | 6 | 16 |
| 30W | 3000 ~ 6000 | 0.098 | 0.322 | 8 | SFC-010SA2 | SFC-010DA2 | 1 | 8 | 19 |
| 50W | 3000 ~ 6000 | 0.16 | 0.64 | 8 | SFC-010SA2 | SFC-010DA2 | 1 | 8 | 19 |
| 100W | 3000 ~ 6000 | 0.32 | 1.28 | 8 | SFC-020SA2 | SFC-020DA2 | 2 | 11 | 26 |
| 150W | 3000 ~ 6000 | 0.477 | 1.67 | 8 | SFC-025SA2 | SFC-025DA2 | 4 | 14 | 29 |
| 200W | 3000 ~ 6000 | 0.64 | 2.23 | 14 | SFC-025SA2 | SFC-025DA2 | 4 | 14 | 29 |
| 300W | 3000 ~ 6000 | 0.95 | 3.72 | 14 | SFC-030SA2 | SFC-030DA2 | 5 | 16 | 34 |
| 400W | 3000 ~ 6000 | 1.3 | 5 | 14 | SFC-035SA2 | SFC-035DA2 | 10 | 19 | 39 |
| 450W | 1500 | 2.86 | 8.92 | 19 | SFC-040SA2 | SFC-040DA2 | 12 | 24 | 44 |
| 500W | 2000 | 2.4 | 7.2 | 24 | SFC-040SA2 | SFC-040DA2 | 12 | 24 | 44 |
| 600W | 3000 ~ 6000 | 1.91 | 5.73 | 19 | SFC-035SA2 | SFC-035DA2 | 10 | 19 | 39 |
| 750W | 3000 ~ 6000 | 2.387 | 9 | 19 | SFC-040SA2 | SFC-040DA2 | 12 | 24 | 44 |
| 750W | 2000 | 3.6 | 10.7 | 22 | SFC-050SA2 | SFC-050DA2 | 25 | 30 | 56 |
| 850W | 1500 | 5.39 | 13.8 | 19 | SFC-050SA2 | SFC-050DA2 | 25 | 30 | 56 |
| 1kW | 3000 ~ 6000 | 3.18 | 12.5 | 24 | SFC-050SA2 | SFC-050DA2 | 25 | 30 | 56 |
| 1kW | 2000 | 5 | 16.6 | 24 | SFC-050SA2 | SFC-050DA2 | 25 | 30 | 56 |
| 1.5kW | 2000 | 7.5 | 21.6 | 35 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 2kW | 3000 ~ 6000 | 6.8 | 21 | 24 | SFC-055SA2 | SFC-055DA2 | 40 | 30 | 63 |
| 2kW | 2000 | 9.54 | 31 | 35 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 2.2kW | 2000 | 10.5 | 36.7 | 28 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 2.5kW | 3000 ~ 6000 | 12 | 46 | 24 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 3kW | 3000 ~ 6000 | 12 | 35 | 28 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 3kW | 2000 | 14.3 | 42.9 | 35 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 3.5kW | 3000 ~ 6000 | 11.1 | 33.4 | 28 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 3.5kW | 2000 | 17 | 55 | 35 | SFC-080SA2 | SFC-080DA2 | 100 | 40 | 82 |
| 4kW | 3000 ~ 6000 | 22 | 39.2 | 28 | SFC-060SA2 | SFC-060DA2 | 60 | 35 | 68 |
| 4kW | 2000 | 19.1 | 66.9 | 35 | SFC-080SA2 | SFC-080DA2 | 100 | 40 | 82 |
| 4.5kW | 1500 | 28.5 | 105 | 35 | SFC-090SA2 | SFC-090DA2 | 180 | 45 | 94 |
| 5kW | 3000 ~ 6000 | 15.9 | 47.6 | 28 | SFC-080SA2 | SFC-080DA2 | 100 | 40 | 82 |
| 5kW | 2000 | 23.9 | 71.6 | 35 | SFC-080SA2 | SFC-080DA2 | 100 | 40 | 82 |
| 6kW | 2000 | 38 | 130 | 35 | SFC-090SA2 | SFC-090DA2 | 180 | 45 | 94 |
| 7kW | 1500 | 44.6 | 134 | 42 | SFC-090SA2 | SFC-090DA2 | 180 | 45 | 94 |
| 7.5kW | 1500 | 48 | 139 | 42 | SFC-100SA2 | SFC-100DA2 | 250 | 45 | 104 |
| 9kW | 3000 ~ 6000 | 28.6 | 85 | 35 | SFC-090SA2 | SFC-090DA2 | 180 | 45 | 94 |
| 11kW | 2000 | 52.5 | 158 | 42 | SFC-100SA2 | SFC-100DA2 | 250 | 45 | 104 |

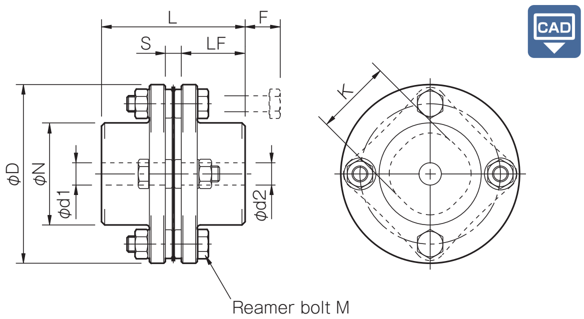
# SFS(S) Types Single Element Type

## Specifications

| Model | Rated torque [N・m] | Misalignment | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|
| | | Angular [°] | Axial [mm] | | | | | |
| SFS-05S | 20 | 1 | ±0.6 | 25000 | 16000 | 43 | $0.11\times10^{-3}$ | 0.30 |
| SFS-06S | 40 | 1 | ±0.8 | 20000 | 29000 | 45 | $0.30\times10^{-3}$ | 0.50 |
| SFS-08S | 80 | 1 | ±1.0 | 17000 | 83000 | 60 | $0.87\times10^{-3}$ | 1.00 |
| SFS-09S | 180 | 1 | ±1.2 | 15000 | 170000 | 122 | $1.60\times10^{-3}$ | 1.40 |
| SFS-10S | 250 | 1 | ±1.4 | 13000 | 250000 | 160 | $2.60\times10^{-3}$ | 2.10 |
| SFS-12S | 450 | 1 | ±1.6 | 11000 | 430000 | 197 | $6.50\times10^{-3}$ | 3.40 |
| SFS-14S | 800 | 1 | ±1.8 | 9500 | 780000 | 313 | $9.90\times10^{-3}$ | 4.90 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




Unit [mm]

| Model | d1・d2 | | | D | N | L | LF | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pilot bore | Min. | Max. | | | | | | | | |
| SFS-05S | 7 | 8 | 20 | 56 | 32 | 45 | 20 | 5 | 11 | 24 | 4-M5×22 |
| SFS-06S | 7 | 8 | 25 | 68 | 40 | 56 | 25 | 6 | 10 | 30 | 4-M6×25 |
| SFS-08S | 10 | 11 | 35 | 82 | 54 | 66 | 30 | 6 | 11 | 38 | 4-M6×29 |
| SFS-09S | 10 | 11 | 38 | 94 | 58 | 68 | 30 | 8 | 21 | 42 | 4-M8×36 |
| SFS-10S | 15 | 16 | 42 | 104 | 68 | 80 | 35 | 10 | 16 | 48 | 4-M8×36 |
| SFS-12S | 18 | 19 | 50 | 126 | 78 | 91 | 40 | 11 | 23 | 54 | 4-M10×45 |
| SFS-14S | 20 | 22 | 60 | 144 | 88 | 102 | 45 | 12 | 31 | 61 | 4-M12×54 |

*Pilot bores are to be drilled into the part.
*The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05S | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06S | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08S | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09S | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10S | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12S | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14S | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

## How to Place an Order

SFS-10S-25H-30H

- Size: 10
- Type: S — Single element
- Bore diameter: d1 (Small diameter) - d2 (Large diameter)
  - Blank: Pilot bore
  - Bore specifications
    - Blank : Compliant with the old JIS standards (class 2) E9
    - H: Compliant with the new JIS standards H9
    - J: Compliant with the new JIS standards JS9
    - P: Compliant with the new JIS standards P9
    - N: Compliant with the new motor standards

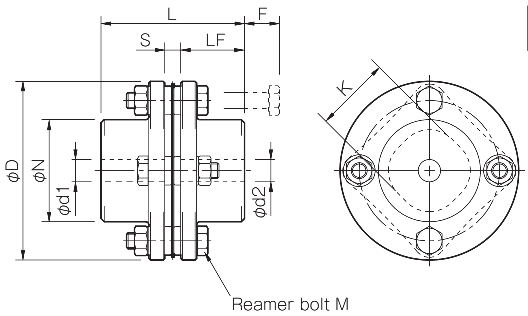
# SFS(S-C) Types Single Element Type/Electroless Nickel Plating Specification

## Specifications

| Model | Rated torque [N・m] | Misalignment |  | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|
| | | Angular [°] | Axial [mm] | | | | | |
| SFS-05S-C | 15 | 1 | ±0.6 | 25000 | 16000 | 43 | $0.11 \times 10^{-3}$ | 0.30 |
| SFS-06S-C | 30 | 1 | ±0.8 | 20000 | 29000 | 45 | $0.30 \times 10^{-3}$ | 0.50 |
| SFS-08S-C | 60 | 1 | ±1.0 | 17000 | 83000 | 60 | $0.87 \times 10^{-3}$ | 1.00 |
| SFS-09S-C | 135 | 1 | ±1.2 | 15000 | 170000 | 122 | $1.60 \times 10^{-3}$ | 1.40 |
| SFS-10S-C | 190 | 1 | ±1.4 | 13000 | 250000 | 160 | $2.60 \times 10^{-3}$ | 2.10 |
| SFS-12S-C | 340 | 1 | ±1.6 | 11000 | 430000 | 197 | $6.50 \times 10^{-3}$ | 3.40 |
| SFS-14S-C | 600 | 1 | ±1.8 | 9500 | 780000 | 313 | $9.90 \times 10^{-3}$ | 4.90 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




CAD

Unit [mm]

| Model | d1・d2 |  | D | N | L | LF | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | | | | | | | | |
| SFS-05S-C | 8 | 20 | 56 | 32 | 45 | 20 | 5 | 11 | 24 | 4-M5×22 |
| SFS-06S-C | 8 | 25 | 68 | 40 | 56 | 25 | 6 | 10 | 30 | 4-M6×25 |
| SFS-08S-C | 11 | 35 | 82 | 54 | 66 | 30 | 6 | 11 | 38 | 4-M6×29 |
| SFS-09S-C | 11 | 38 | 94 | 58 | 68 | 30 | 8 | 21 | 42 | 4-M8×36 |
| SFS-10S-C | 16 | 42 | 104 | 68 | 80 | 35 | 10 | 16 | 48 | 4-M8×36 |
| SFS-12S-C | 19 | 50 | 126 | 78 | 91 | 40 | 11 | 23 | 54 | 4-M10×45 |
| SFS-14S-C | 22 | 60 | 144 | 88 | 102 | 45 | 12 | 31 | 61 | 4-M12×54 |

*The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05S-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06S-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08S-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09S-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10S-C | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12S-C | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14S-C | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

### How to Place an Order

SFS-10S-C-25H-30H

- Size
- Type: S Single element
- Surface finishing -C: Electroless nickel plating
- Bore diameter: d1 (Small diameter) - d2 (Large diameter)
- Bore specifications
  - Blank : Compliant with the old JIS standards (class 2) E9
  - H: Compliant with the new JIS standards H9
  - J: Compliant with the new JIS standards JS9
  - P: Compliant with the new JIS standards P9
  - N: Compliant with the new motor standards

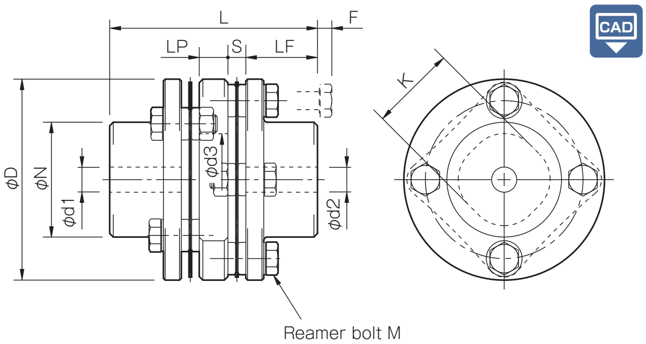
# SFS(W) Types Double Element Type

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-05W | 20 | 0.2 | 1 (On one side) | ±1.2 | 10000 | 8000 | 21 | $0.14 \times 10^{-3}$ | 0.40 |
| SFS-06W | 40 | 0.3 | 1 (On one side) | ±1.6 | 8000 | 14000 | 22 | $0.41 \times 10^{-3}$ | 0.70 |
| SFS-08W | 80 | 0.3 | 1 (On one side) | ±2.0 | 6800 | 41000 | 30 | $1.10 \times 10^{-3}$ | 1.30 |
| SFS-09W | 180 | 0.5 | 1 (On one side) | ±2.4 | 6000 | 85000 | 61 | $2.20 \times 10^{-3}$ | 2.10 |
| SFS-10W | 250 | 0.5 | 1 (On one side) | ±2.8 | 5200 | 125000 | 80 | $3.60 \times 10^{-3}$ | 2.80 |
| SFS-12W | 450 | 0.6 | 1 (On one side) | ±3.2 | 4400 | 215000 | 98 | $9.20 \times 10^{-3}$ | 4.90 |
| SFS-14W | 800 | 0.7 | 1 (On one side) | ±3.6 | 3800 | 390000 | 156 | $15.00 \times 10^{-3}$ | 7.10 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




Unit [mm]

| Model | d1・d2 | | | D | N | L | LF | LP | S | F | d3 | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pilot bore | Min. | Max. | | | | | | | | | | |
| SFS-05W | 7 | 8 | 20 | 56 | 32 | 58 | 20 | 8 | 5 | 4 | 20 | 24 | 8-M5 × 15 |
| SFS-06W | 7 | 8 | 25 | 68 | 40 | 74 | 25 | 12 | 6 | 3 | 24 | 30 | 8-M6 × 18 |
| SFS-08W | 10 | 11 | 35 | 82 | 54 | 84 | 30 | 12 | 6 | 2 | 28 | 38 | 8-M6 × 20 |
| SFS-09W | 10 | 11 | 38 | 94 | 58 | 98 | 30 | 22 | 8 | 12 | 32 | 42 | 8-M8 × 27 |
| SFS-10W | 15 | 16 | 42 | 104 | 68 | 110 | 35 | 20 | 10 | 7 | 34 | 48 | 8-M8 × 27 |
| SFS-12W | 18 | 19 | 50 | 126 | 78 | 127 | 40 | 25 | 11 | 10 | 40 | 54 | 8-M10 × 32 |
| SFS-14W | 20 | 22 | 60 | 144 | 88 | 144 | 45 | 30 | 12 | 15 | 46 | 61 | 8-M12 × 38 |

*Pilot bores are to be drilled into the part.
*The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05W | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06W | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08W | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09W | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10W | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12W | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14W | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

## How to Place an Order

SFS-10W-25H-30H

Size

Type: W
Double element

Bore diameter: d1 (Small diameter) - d2 (Large diameter)
Blank: Pilot bore
Bore specifications
Blank : Compliant with the old JIS standards (class 2) E9
H: Compliant with the new JIS standards H9
J: Compliant with the new JIS standards JS9
P: Compliant with the new JIS standards P9
N: Compliant with the new motor standards

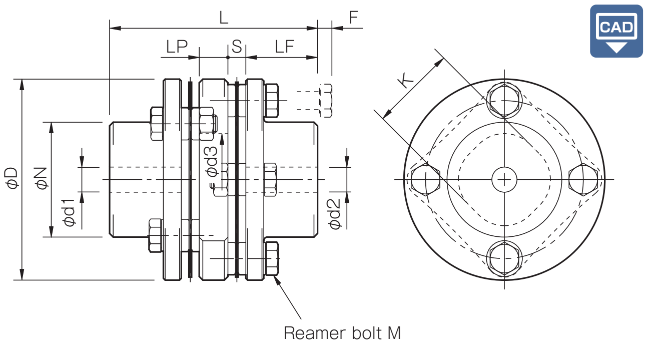
# SFS(W-C) Types Double Element Type/Electroless Nickel Plating Specification

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-05W-C | 15 | 0.2 | 1 (On one side) | ± 1.2 | 10000 | 8000 | 21 | $0.14 \times 10^{-3}$ | 0.40 |
| SFS-06W-C | 30 | 0.3 | 1 (On one side) | ± 1.6 | 8000 | 14000 | 22 | $0.41 \times 10^{-3}$ | 0.70 |
| SFS-08W-C | 60 | 0.3 | 1 (On one side) | ± 2.0 | 6800 | 41000 | 30 | $1.10 \times 10^{-3}$ | 1.30 |
| SFS-09W-C | 135 | 0.5 | 1 (On one side) | ± 2.4 | 6000 | 85000 | 61 | $2.20 \times 10^{-3}$ | 2.10 |
| SFS-10W-C | 190 | 0.5 | 1 (On one side) | ± 2.8 | 5200 | 125000 | 80 | $3.60 \times 10^{-3}$ | 2.80 |
| SFS-12W-C | 340 | 0.6 | 1 (On one side) | ± 3.2 | 4400 | 215000 | 98 | $9.20 \times 10^{-3}$ | 4.90 |
| SFS-14W-C | 600 | 0.7 | 1 (On one side) | ± 3.6 | 3800 | 390000 | 156 | $15.00 \times 10^{-3}$ | 7.10 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




Unit [mm]

| Model | d1・d2 | | D | N | L | LF | LP | S | F | d3 | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | | | | | | | | | | |
| SFS-05W-C | 8 | 20 | 56 | 32 | 58 | 20 | 8 | 5 | 4 | 20 | 24 | 8-M5 × 15 |
| SFS-06W-C | 8 | 25 | 68 | 40 | 74 | 25 | 12 | 6 | 3 | 24 | 30 | 8-M6 × 18 |
| SFS-08W-C | 11 | 35 | 82 | 54 | 84 | 30 | 12 | 6 | 2 | 28 | 38 | 8-M6 × 20 |
| SFS-09W-C | 11 | 38 | 94 | 58 | 98 | 30 | 22 | 8 | 12 | 32 | 42 | 8-M8 × 27 |
| SFS-10W-C | 16 | 42 | 104 | 68 | 110 | 35 | 20 | 10 | 7 | 34 | 48 | 8-M8 × 27 |
| SFS-12W-C | 19 | 50 | 126 | 78 | 127 | 40 | 25 | 11 | 10 | 40 | 54 | 8-M10 × 32 |
| SFS-14W-C | 22 | 60 | 144 | 88 | 144 | 45 | 30 | 12 | 15 | 46 | 61 | 8-M12 × 38 |

*The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05W-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06W-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08W-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09W-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10W-C | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12W-C | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14W-C | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

## How to Place an Order

SFS-10W-C-25H-30H

- Size
- Type: W Double element
- Surface finishing -C: Electroless nickel plating
- Bore diameter: d1 (Small diameter) - d2 (Large diameter)

Bore specifications
Blank : Compliant with the old JIS standards (class 2) E9
H: Compliant with the new JIS standards H9
J: Compliant with the new JIS standards JS9
P: Compliant with the new JIS standards P9
N: Compliant with the new motor standards

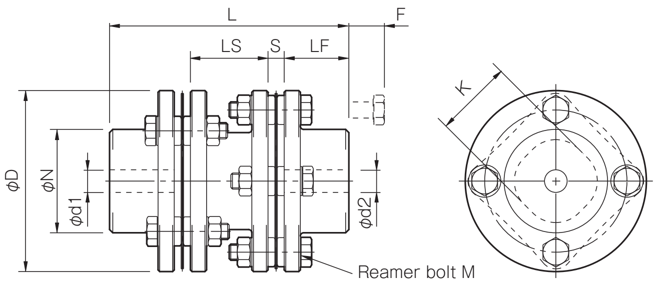
# SFS(G) Types Floating Shaft Type

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-05G | 20 | 0.5 | 1 (On one side) | ±1.2 | 20000 | 8000 | 21 | $0.20 \times 10^{-3}$ | 0.50 |
| SFS-06G | 40 | 0.5 | 1 (On one side) | ±1.6 | 16000 | 14000 | 22 | $0.55 \times 10^{-3}$ | 0.90 |
| SFS-08G | 80 | 0.5 | 1 (On one side) | ±2.0 | 13000 | 41000 | 30 | $1.50 \times 10^{-3}$ | 1.70 |
| SFS-09G | 180 | 0.6 | 1 (On one side) | ±2.4 | 12000 | 85000 | 61 | $2.90 \times 10^{-3}$ | 2.40 |
| SFS-10G | 250 | 0.6 | 1 (On one side) | ±2.8 | 10000 | 125000 | 80 | $4.60 \times 10^{-3}$ | 3.30 |
| SFS-12G | 450 | 0.8 | 1 (On one side) | ±3.2 | 8000 | 215000 | 98 | $11.80 \times 10^{-3}$ | 5.80 |
| SFS-14G | 800 | 0.9 | 1 (On one side) | ±3.6 | 7000 | 390000 | 156 | $21.20 \times 10^{-3}$ | 8.60 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




Unit [mm]

| Model | d1・d2 | | | D | N | L | LF | LS | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pilot bore | Min. | Max. | | | | | | | | | |
| SFS-05G | 7 | 8 | 20 | 56 | 32 | 74 | 20 | 24 | 5 | 11 | 24 | 8-M5 × 22 |
| SFS-06G | 7 | 8 | 25 | 68 | 40 | 86 | 25 | 24 | 6 | 10 | 30 | 8-M6 × 25 |
| SFS-08G | 10 | 11 | 35 | 82 | 54 | 98 | 30 | 26 | 6 | 11 | 38 | 8-M6 × 29 |
| SFS-09G | 10 | 11 | 38 | 94 | 58 | 106 | 30 | 30 | 8 | 21 | 42 | 8-M8 × 36 |
| SFS-10G | 15 | 16 | 42 | 104 | 68 | 120 | 35 | 30 | 10 | 16 | 48 | 8-M8 × 36 |
| SFS-12G | 18 | 19 | 50 | 126 | 78 | 140 | 40 | 38 | 11 | 23 | 54 | 8-M10 × 45 |
| SFS-14G | 20 | 22 | 60 | 144 | 88 | 160 | 45 | 46 | 12 | 31 | 61 | 8-M12 × 54 |

*Pilot bores are to be drilled into the part.
*If you require a product with an LS dimension other than that above, contact Miki Pulley with your required dimension. Please contact Miki Pulley for assistance if LS ≧ 1000.
*The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05G | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06G | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08G | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09G | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10G | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12G | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14G | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

## How to Place an Order

SFS-10G-25H-30H LS=500

- Size: 10
- Type: G — Double element, Floating shaft
- Bore diameter: d1 (Small diameter) - d2 (Large diameter)
  - Blank: Pilot bore
  - Bore specifications
    - Blank : Compliant with the old JIS standards (class 2) E9
    - H: Compliant with the new JIS standards H9
    - J: Compliant with the new JIS standards JS9
    - P: Compliant with the new JIS standards P9
    - N: Compliant with the new motor standards
- Spacer length
  - * Use mm units for LS dimensions.
  - * Leave blank for standard spacers.

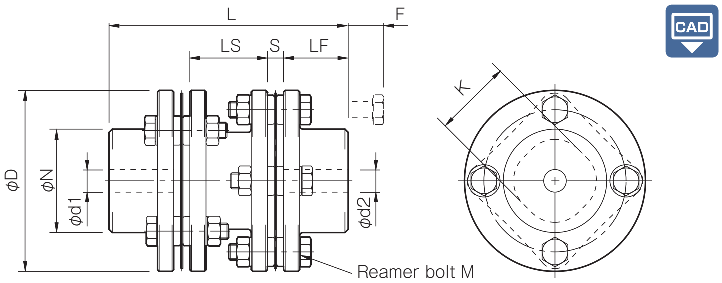
# SFS(G-C) Types Floating Shaft Type/Electroless Nickel Plating Specification

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-05G-C | 15 | 0.5 | 1 (On one side) | ± 1.2 | 20000 | 8000 | 21 | $0.20 \times 10^{-3}$ | 0.50 |
| SFS-06G-C | 30 | 0.5 | 1 (On one side) | ± 1.6 | 16000 | 14000 | 22 | $0.55 \times 10^{-3}$ | 0.90 |
| SFS-08G-C | 60 | 0.5 | 1 (On one side) | ± 2.0 | 13000 | 41000 | 30 | $1.50 \times 10^{-3}$ | 1.70 |
| SFS-09G-C | 135 | 0.6 | 1 (On one side) | ± 2.4 | 12000 | 85000 | 61 | $2.90 \times 10^{-3}$ | 2.40 |
| SFS-10G-C | 190 | 0.6 | 1 (On one side) | ± 2.8 | 10000 | 125000 | 80 | $4.60 \times 10^{-3}$ | 3.30 |
| SFS-12G-C | 340 | 0.8 | 1 (On one side) | ± 3.2 | 8000 | 215000 | 98 | $11.80 \times 10^{-3}$ | 5.80 |
| SFS-14G-C | 600 | 0.9 | 1 (On one side) | ± 3.6 | 7000 | 390000 | 156 | $21.20 \times 10^{-3}$ | 8.60 |

*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




Unit [mm]

| Model | d1・d2 | | D | N | L | LF | LS | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Min. | Max. | | | | | | | | | |
| SFS-05G-C | 8 | 20 | 56 | 32 | 74 | 20 | 24 | 5 | 11 | 24 | 8-M5 × 22 |
| SFS-06G-C | 8 | 25 | 68 | 40 | 86 | 25 | 24 | 6 | 10 | 30 | 8-M6 × 25 |
| SFS-08G-C | 11 | 35 | 82 | 54 | 98 | 30 | 26 | 6 | 11 | 38 | 8-M6 × 29 |
| SFS-09G-C | 11 | 38 | 94 | 58 | 106 | 30 | 30 | 8 | 21 | 42 | 8-M8 × 36 |
| SFS-10G-C | 16 | 42 | 104 | 68 | 120 | 35 | 30 | 10 | 16 | 48 | 8-M8 × 36 |
| SFS-12G-C | 19 | 50 | 126 | 78 | 140 | 40 | 38 | 11 | 23 | 54 | 8-M10 × 45 |
| SFS-14G-C | 22 | 60 | 144 | 88 | 160 | 45 | 46 | 12 | 31 | 61 | 8-M12 × 54 |

* If you require a product with an LS dimension other than that above, contact Miki Pulley with your required dimension. Please contact Miki Pulley for assistance if LS ≧ 1000.
* Please note that when the LS dimension exceeds 100 mm with the electroless nickel plating specification (SFS- □ G-C), the insertion length of the shaft cannot exceed the LS dimension.
* The nominal diameter of the reamer bolt M is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 |
| SFS-05G-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | |
| SFS-06G-C | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFS-08G-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFS-09G-C | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFS-10G-C | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFS-12G-C | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| SFS-14G-C | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* Bore diameters marked with ● are supported as standard bore diameter. See the standard hole-drilling standards for information.

## How to Place an Order

SFS-10G-C-25H-30H LS=500

- Size
- Type: G Double element Floating shaft
- Surface finishing -C: Electroless nickel plating
- Bore diameter: d1 (Small diameter) - d2 (Large diameter)
  Bore specifications
  Blank : Compliant with the old JIS standards (class 2) E9
  H: Compliant with the new JIS standards H9
  J: Compliant with the new JIS standards JS9
  P: Compliant with the new JIS standards P9
  N: Compliant with the new motor standards
- Spacer length
  * Use mm units for LS dimensions.
  * Leave blank for standard spacers.

# SFS Models

## Options Frictional coupling hub

The hub contains a frictional coupling element enabling more accurate installation.

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-06S-□M-□M | 40 | – | 1 | ±0.8 | 5000 | 29000 | 45 | $0.30\times10^{-3}$ | 0.70 |
| SFS-08S-□M-□M | 80 | – | 1 | ±1.0 | 5000 | 83000 | 60 | $0.93\times10^{-3}$ | 1.30 |
| SFS-09S-□M-□M | 180 | – | 1 | ±1.2 | 5000 | 170000 | 122 | $1.80\times10^{-3}$ | 1.80 |
| SFS-10S-□M-□M | 250 | – | 1 | ±1.4 | 5000 | 250000 | 160 | $2.70\times10^{-3}$ | 2.30 |
| SFS-12S-□M-□M | 450 | – | 1 | ±1.6 | 5000 | 430000 | 197 | $6.80\times10^{-3}$ | 4.10 |
| SFS-14S-□M-□M | 580 | – | 1 | ±1.8 | 5000 | 780000 | 313 | $14.01\times10^{-3}$ | 6.40 |

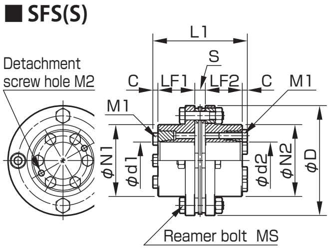
| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-06W-□M-□M | 40 | 0.3 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.41\times10^{-3}$ | 0.90 |
| SFS-08W-□M-□M | 80 | 0.3 | 1 (On one side) | ±2.0 | 5000 | 41000 | 30 | $1.16\times10^{-3}$ | 1.60 |
| SFS-09W-□M-□M | 180 | 0.5 | 1 (On one side) | ±2.4 | 5000 | 85000 | 61 | $2.40\times10^{-3}$ | 2.50 |
| SFS-10W-□M-□M | 250 | 0.5 | 1 (On one side) | ±2.8 | 5000 | 125000 | 80 | $3.70\times10^{-3}$ | 3.00 |
| SFS-12W-□M-□M | 450 | 0.6 | 1 (On one side) | ±3.2 | 4400 | 215000 | 98 | $9.50\times10^{-3}$ | 5.60 |
| SFS-14W-□M-□M | 580 | 0.7 | 1 (On one side) | ±3.6 | 3800 | 390000 | 156 | $19.11\times10^{-3}$ | 8.60 |

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFS-06G-□M-□M | 40 | 0.5 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.55\times10^{-3}$ | 1.10 |
| SFS-08G-□M-□M | 80 | 0.5 | 1 (On one side) | ±2.0 | 5000 | 41000 | 30 | $1.56\times10^{-3}$ | 2.00 |
| SFS-09G-□M-□M | 180 | 0.6 | 1 (On one side) | ±2.4 | 5000 | 85000 | 61 | $3.10\times10^{-3}$ | 2.80 |
| SFS-10G-□M-□M | 250 | 0.6 | 1 (On one side) | ±2.8 | 5000 | 125000 | 80 | $4.70\times10^{-3}$ | 3.50 |
| SFS-12G-□M-□M | 450 | 0.8 | 1 (On one side) | ±3.2 | 5000 | 215000 | 98 | $12.10\times10^{-3}$ | 6.50 |
| SFS-14G-□M-□M | 580 | 0.9 | 1 (On one side) | ±3.6 | 5000 | 390000 | 156 | $25.31\times10^{-3}$ | 10.10 |

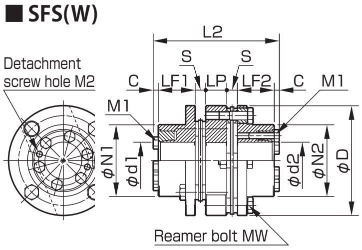
*Check the Standard Bore Diameters as there may be limitations on the rated torque caused by the holding power of the coupling shaft section.
*Max. rotation speed does not take into account dynamic balance.
*The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

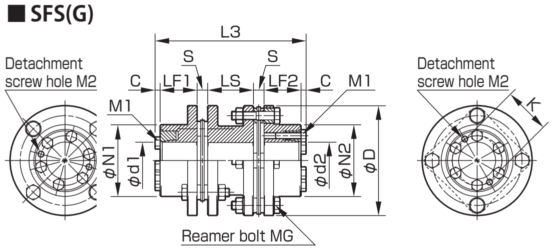
■ SFS(S)




■ SFS(W)




■ SFS(G)




Unit [mm]

| Model | d 1 | d 2 | D | N1 | N2 | L1 | L2 | L3 | LF1 | LF2 | LP | LS | S | C | d3 | K | MS | MW | MG | M1 | M2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFS-06 | 12·14·15 | 12·14·15 | 68 | 40 | 40 | 65.6 | 83.6 | 95.6 | 25 | 25 | 12 | 24 | 6 | 4.8 | 24 | 30 | 4-M6×25 | 8-M6×18 | 8-M6×25 | 4-M5 | 2-M5 |
| SFS-08 | 15·16·20·22 | 15·16·20·22 | 82 | 54 | 54 | 75.6 | 93.6 | 107.6 | 30 | 30 | 12 | 26 | 6 | 4.8 | 28 | 38 | 4-M6×29 | 8-M6×20 | 8-M6×29 | 4-M6 | 2-M6 |
| SFS-09 | 25·28 | 25·28 | 94 | 58 | 58 | 77.6 | 107.6 | 115.6 | 30 | 30 | 22 | 30 | 8 | 4.8 | 32 | 42 | 4-M8×36 | 8-M8×27 | 8-M8×36 | 6-M6 | 2-M6 |
| | 25·28 | 35 | | | 68 | 85.6 | 115.6 | 123.6 | | 38 | | | | | | | | | | | |
| SFS-10 | 25·28·30·35 | 25·28·30·35 | 104 | 68 | 68 | 89.6 | 119.6 | 129.6 | 35 | 35 | 20 | 30 | 10 | 4.8 | 34 | 48 | 4-M8×36 | 8-M8×27 | 8-M8×36 | 6-M6 | 2-M6 |
| SFS-12 | 30·35 | 30·35 | 126 | 78 | 78 | 101.6 | 137.6 | 150.6 | 40 | 40 | 25 | 38 | 11 | 5.3 | 40 | 54 | 4-M10×45 | 8-M10×32 | 8-M10×45 | 4-M8 | 2-M8 |
| SFS-14 | 35 | 35 | 144 | 88 | 88 | 112.6 | 154.6 | 170.6 | 45 | 45 | 30 | 46 | 12 | 5.3 | 46 | 61 | 4-M12×54 | 8-M12×38 | 8-M12×54 | 6-M8 | 2-M8 |

* If you require a product with an LS dimension other than that for SFS(G) type, contact Miki Pulley with your required dimension. Please contact Miki Pulley for assistance if LS ≧ 1000.
* The nominal diameters of each bolt and tap are equal to the quantity minus the nominal diameter of the screw threads times the nominal length. The quantities for the pressure bolt M1 and detachment screw hole M2 are quantities for the hub on one side.

# SFS Models

## Standard Bore Diameter

| SFS-06 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 12M | ● | ● | ● | | | | | | | |
| | 14M | | ● | ● | | | | | | | |
| | 15M | | | ● | | | | | | | |

| SFS-08 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 15M | | | ● | ● | ● | ● | | | | |
| | 16M | | | | ● | ● | ● | | | | |
| | 20M | | | | | ● | ● | | | | |
| | 22M | | | | | | ● | | | | |

| SFS-09 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 25M | | | | | | | ● | ● | | ● |
| | 28M | | | | | | | | ● | | ● |

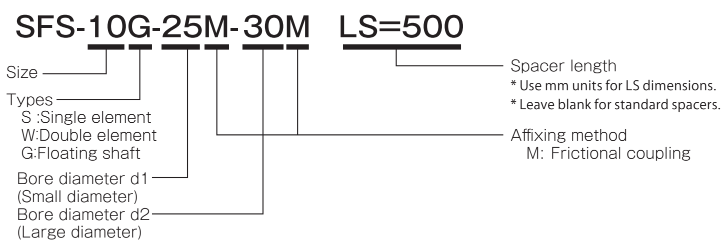
| SFS-10 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 25M | | | | | | | ● | ● | ● | ● |
| | 28M | | | | | | | | ● | ● | ● |
| | 30M | | | | | | | | | ● | ● |
| | 35M | | | | | | | | | | ● |

| SFS-12 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 30M | | | | | | | | | 380 | 380 |
| | 35M | | | | | | | | | | ● |

| SFS-14 | | Standard bore diameter d2 [mm] | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 12M | 14M | 15M | 16M | 20M | 22M | 25M | 28M | 30M | 35M |
| Standard bore diameter d1 [mm] | 35M | | | | | | | | | | ● |

* Bore diameters marked with ● or numbers are supported as the standard bore diameters. Consult Miki Pulley regarding special arrangements which may be possible for other bore diameters.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque [N•m].
* Where a bore diameter is not given above and is small, please check first; model may be restricted in its rated torque.
* The recommended processing tolerance for paired mounting shafts is the h7 (h6 or g6) class. However, for a bore diameter of ø35, the shaft tolerance is $^{+0.010}_{-0.025}$.

## How to Place an Order




MODELS
SFC
SFS
SFF
SFM
SFH

# SFS Models

## Options Tapered Shaft Supported

Supports servo motor tapered shafts.

## Specifications

| Model | Rated torque [N・m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| SFS-06S-□M-11C | 40 | – | 1 | ±0.8 | 5000 | 29000 | 45 | $0.29 \times 10^{-3}$ | 0.60 |
| SFS-06S-□M-16C | 40 | – | 1 | ±0.8 | 5000 | 29000 | 45 | $0.34 \times 10^{-3}$ | 0.70 |
| SFS-08S-□M-16C | 80 | – | 1 | ±1.0 | 5000 | 83000 | 60 | $0.84 \times 10^{-3}$ | 1.20 |
| SFS-09S-□M-16C | 180 | – | 1 | ±1.2 | 5000 | 170000 | 122 | $1.50 \times 10^{-3}$ | 1.60 |

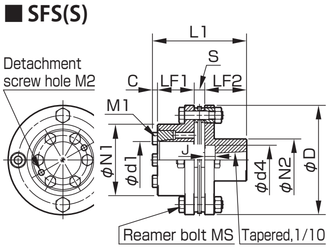
| Model | Rated torque [N・m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| SFS-06W-□M-11C | 40 | 0.3 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.40 \times 10^{-3}$ | 0.80 |
| SFS-06W-□M-16C | 40 | 0.3 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.45 \times 10^{-3}$ | 0.90 |
| SFS-08W-□M-16C | 80 | 0.3 | 1 (On one side) | ±2.0 | 5000 | 41000 | 30 | $1.07 \times 10^{-3}$ | 1.50 |
| SFS-09W-□M-16C | 180 | 0.5 | 1 (On one side) | ±2.4 | 5000 | 85000 | 61 | $2.10 \times 10^{-3}$ | 2.30 |

| Model | Rated torque [N・m] | Misalignment Parallel [mm] | Misalignment Angular [°] | Misalignment Axial [mm] | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| SFS-06G-□M-11C | 40 | 0.5 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.54 \times 10^{-3}$ | 1.00 |
| SFS-06G-□M-16C | 40 | 0.5 | 1 (On one side) | ±1.6 | 5000 | 14000 | 22 | $0.59 \times 10^{-3}$ | 1.10 |
| SFS-08G-□M-16C | 80 | 0.5 | 1 (On one side) | ±2.0 | 5000 | 41000 | 30 | $1.47 \times 10^{-3}$ | 1.90 |
| SFS-09G-□M-16C | 180 | 0.6 | 1 (On one side) | ±2.4 | 5000 | 85000 | 61 | $2.80 \times 10^{-3}$ | 2.60 |

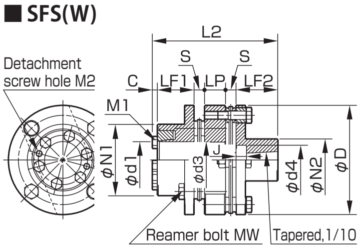
* There may be limitations on the rated torque caused by the holding power of the coupling shaft section. If the bore diameter is not standard and is small, please check first.
* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions

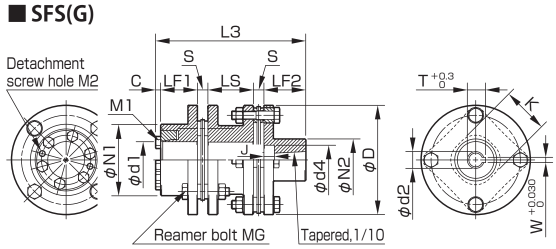
■ SFS(S)




■ SFS(W)




■ SFS(G)




Unit [mm]

| Model | d2 Nominal dia. | d1 | d2 | W $^{+0.030}_{0}$ | T $^{+0.3}_{0}$ | d4 | J | D | N1 | N2 | L1 | L2 | L3 | LF1 | LF2 | LP | LS | S | C | d3 | K | MS | MW | MG | M1 | M2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFS-06 | 11C | 12·14·15 | 11 | 4 | 12.2 | 18 | 9 | 68 | 40 | 30 | 60.8 | 78.8 | 90.8 | 25 | 25 | 12 | 24 | 6 | 4.8 | 24 | 30 | 4-M6×25 | 8-M6×18 | 8-M6×25 | 4-M5 | 2-M5 |
| | 16C | 15 | 16 | 5 | 17.3 | 28 | 10 | | | 40 | 75.8 | 93.8 | 105.8 | | 40 | | | | | | | | | | | |
| SFS-08 | 16C | 15·16·20·22 | 16 | 5 | 17.3 | 28 | 10 | 82 | 54 | 40 | 80.8 | 98.8 | 112.8 | 30 | 40 | 12 | 26 | 6 | 4.8 | 28 | 38 | 4-M6×29 | 8-M6×20 | 8-M6×29 | 4-M6 | 2-M6 |
| SFS-09 | 16C | 25·28 | 16 | 5 | 17.3 | 28 | 10 | 94 | 58 | 40 | 82.8 | 112.8 | 120.8 | 30 | 40 | 22 | 30 | 8 | 4.8 | 32 | 42 | 4-M8×36 | 8-M8×27 | 8-M8×36 | 6-M6 | 2-M6 |

* If you require a product with an LS dimension other than that for SFS(G) type, contact Miki Pulley with your required dimension. Please contact Miki Pulley for assistance if LS ≧ 1000.
* The nominal diameters of each bolt and tap are equal to the quantity minus the nominal diameter of the screw threads times the nominal length.
* The machining tolerance for paired mounting shafts of the hub on the friction-coupled side is h7 (h6 or g6) class.

## How to Place an Order

**SFS-08G-20M-16C LS=500**

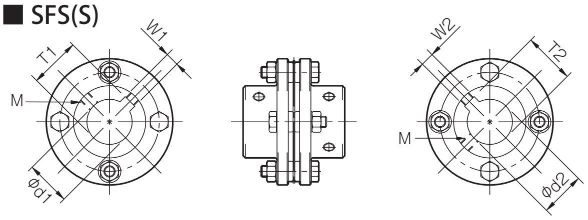
- Size
- Types
  - S :Single element
  - W:Double element
  - G:Floating shaft
- Bore diameter d1
- Affixing method
  - M: Frictional coupling
- [d2] C
  - C: Tapered shaft hub
  - *Select d2 for C.
- Spacer length
  - * Use mm units for LS dimensions.
  - * Leave blank for standard spacers.

# SFS Models

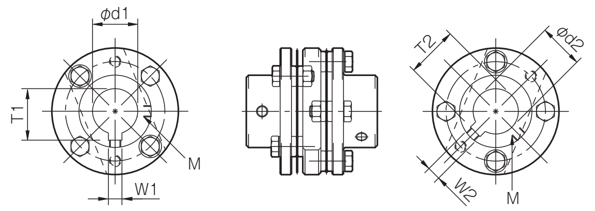
## Standard Hole-Drilling Standards

- Positioning precision for keyway milling is determined by sight, so contact Miki Pulley when the keyway requires a positioning precision for a particular flange hub.
- Set screw positions are not on the same plane.
- The set screws are included with the product.
- Consult the technical documentation at the end of this volume for standard dimensions for bore drilling other than those given here.

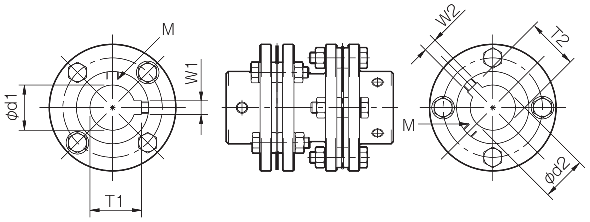
### ■ SFS(S)




### ■ SFS(W)




### ■ SFS(G)




Unit [mm]

**Models compliant with the old JIS standards (class 2)**

| Nominal bore diameter | Bore diameter [d1 • d2] | Keyway width [W1 • W2] | Keyway height [T1 • T2] | Set screw hole [M] |
|---|---|---|---|---|
| Tolerance | H7, H8 | E9 | $^{+0.3}_{0}$ | — |
| 8 | $8^{+0.022}_{0}$ | — | — | 2-M4 |
| 9 | $9^{+0.022}_{0}$ | — | — | 2-M4 |
| 10 | $10^{+0.022}_{0}$ | — | — | 2-M4 |
| 11 | $11^{+0.018}_{0}$ | — | — | 2-M4 |
| 12 | $12^{+0.018}_{0}$ | $4^{+0.050}_{+0.020}$ | 13.5 | 2-M4 |
| 14 | $14^{+0.018}_{0}$ | $5^{+0.050}_{+0.020}$ | 16.0 | 2-M4 |
| 15 | $15^{+0.018}_{0}$ | $5^{+0.050}_{+0.020}$ | 17.0 | 2-M4 |
| 16 | $16^{+0.018}_{0}$ | $5^{+0.050}_{+0.020}$ | 18.0 | 2-M4 |
| 17 | $17^{+0.018}_{0}$ | $5^{+0.050}_{+0.020}$ | 19.0 | 2-M4 |
| 18 | $18^{+0.018}_{0}$ | $5^{+0.050}_{+0.020}$ | 20.0 | 2-M4 |
| 19 | $19^{+0.021}_{0}$ | $5^{+0.050}_{+0.020}$ | 21.0 | 2-M4 |
| 20 | $20^{+0.021}_{0}$ | $5^{+0.050}_{+0.020}$ | 22.0 | 2-M4 |
| 22 | $22^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | 25.0 | 2-M6 |
| 24 | $24^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | 27.0 | 2-M6 |
| 25 | $25^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | 28.0 | 2-M6 |
| 28 | $28^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | 31.0 | 2-M6 |
| 30 | $30^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | 33.0 | 2-M6 |
| 32 | $32^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | 35.5 | 2-M8 |
| 35 | $35^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | 38.5 | 2-M8 |
| 38 | $38^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | 41.5 | 2-M8 |
| 40 | $40^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | 43.5 | 2-M8 |
| 42 | $42^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | 45.5 | 2-M8 |
| 45 | $45^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | 48.5 | 2-M8 |
| 48 | $48^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | 51.5 | 2-M8 |
| 50 | $50^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | 53.5 | 2-M8 |
| 55 | $55^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | 60.0 | 2-M10 |
| 56 | $56^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | 61.0 | 2-M10 |
| 60 | $60^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | 65.0 | 2-M10 |

**Models compliant with the new JIS standards (H9)**

| Nominal bore diameter | Bore diameter [d1 • d2] | Keyway width [W1 • W2] | Keyway height [T1 • T2] | Set screw hole [M] |
|---|---|---|---|---|
| Tolerance | H7, H8 | H9 | $^{+0.3}_{0}$ | — |
| 8H | $8^{+0.022}_{0}$ | $3^{+0.025}_{0}$ | 9.4 | 2-M4 |
| 9H | $9^{+0.022}_{0}$ | $3^{+0.025}_{0}$ | 10.4 | 2-M4 |
| 10H | $10^{+0.022}_{0}$ | $3^{+0.025}_{0}$ | 11.4 | 2-M4 |
| 11H | $11^{+0.018}_{0}$ | $4^{+0.030}_{0}$ | 12.8 | 2-M4 |
| 12H | $12^{+0.018}_{0}$ | $4^{+0.030}_{0}$ | 13.8 | 2-M4 |
| 14H | $14^{+0.018}_{0}$ | $5^{+0.030}_{0}$ | 16.3 | 2-M4 |
| 15H | $15^{+0.018}_{0}$ | $5^{+0.030}_{0}$ | 17.3 | 2-M4 |
| 16H | $16^{+0.018}_{0}$ | $5^{+0.030}_{0}$ | 18.3 | 2-M4 |
| 17H | $17^{+0.018}_{0}$ | $5^{+0.030}_{0}$ | 19.3 | 2-M4 |
| 18H | $18^{+0.018}_{0}$ | $6^{+0.030}_{0}$ | 20.8 | 2-M5 |
| 19H | $19^{+0.021}_{0}$ | $6^{+0.030}_{0}$ | 21.8 | 2-M5 |
| 20H | $20^{+0.021}_{0}$ | $6^{+0.030}_{0}$ | 22.8 | 2-M5 |
| 22H | $22^{+0.021}_{0}$ | $6^{+0.030}_{0}$ | 24.8 | 2-M5 |
| 24H | $24^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | 27.3 | 2-M6 |
| 25H | $25^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | 28.3 | 2-M6 |
| 28H | $28^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | 31.3 | 2-M6 |
| 30H | $30^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | 33.3 | 2-M6 |
| 32H | $32^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | 35.3 | 2-M8 |
| 35H | $35^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | 38.3 | 2-M8 |
| 38H | $38^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | 41.3 | 2-M8 |
| 40H | $40^{+0.025}_{0}$ | $12^{+0.043}_{0}$ | 43.3 | 2-M8 |
| 42H | $42^{+0.025}_{0}$ | $12^{+0.043}_{0}$ | 45.3 | 2-M8 |
| 45H | $45^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | 48.8 | 2-M10 |
| 48H | $48^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | 51.8 | 2-M10 |
| 50H | $50^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | 53.8 | 2-M10 |
| 55H | $55^{+0.030}_{0}$ | $16^{+0.043}_{0}$ | 59.3 | 2-M10 |
| 56H | $56^{+0.030}_{0}$ | $16^{+0.043}_{0}$ | 60.3 | 2-M10 |
| 60H | $60^{+0.030}_{0}$ | $18^{+0.043}_{0}$ | 64.4 | 2-M10 |

**Models compliant with the new JIS standards (JS9)**

| Nominal bore diameter | Bore diameter [d1 • d2] | Keyway width [W1 • W2] | Keyway height [T1 • T2] | Set screw hole [M] |
|---|---|---|---|---|
| Tolerance | H7, H8 | JS9 | $^{+0.3}_{0}$ | — |
| 8J | $8^{+0.022}_{0}$ | $3 \pm 0.0125$ | 9.4 | 2-M4 |
| 9J | $9^{+0.022}_{0}$ | $3 \pm 0.0125$ | 10.4 | 2-M4 |
| 10J | $10^{+0.022}_{0}$ | $3 \pm 0.0125$ | 11.4 | 2-M4 |
| 11J | $11^{+0.018}_{0}$ | $4 \pm 0.0150$ | 12.8 | 2-M4 |
| 12J | $12^{+0.018}_{0}$ | $4 \pm 0.0150$ | 13.8 | 2-M4 |
| 14J | $14^{+0.018}_{0}$ | $5 \pm 0.0150$ | 16.3 | 2-M4 |
| 15J | $15^{+0.018}_{0}$ | $5 \pm 0.0150$ | 17.3 | 2-M4 |
| 16J | $16^{+0.018}_{0}$ | $5 \pm 0.0150$ | 18.3 | 2-M4 |
| 17J | $17^{+0.018}_{0}$ | $5 \pm 0.0150$ | 19.3 | 2-M4 |
| 18J | $18^{+0.018}_{0}$ | $6 \pm 0.0150$ | 20.8 | 2-M5 |
| 19J | $19^{+0.021}_{0}$ | $6 \pm 0.0150$ | 21.8 | 2-M5 |
| 20J | $20^{+0.021}_{0}$ | $6 \pm 0.0150$ | 22.8 | 2-M5 |
| 22J | $22^{+0.021}_{0}$ | $6 \pm 0.0150$ | 24.8 | 2-M5 |
| 24J | $24^{+0.021}_{0}$ | $8 \pm 0.0180$ | 27.3 | 2-M6 |
| 25J | $25^{+0.021}_{0}$ | $8 \pm 0.0180$ | 28.3 | 2-M6 |
| 28J | $28^{+0.021}_{0}$ | $8 \pm 0.0180$ | 31.3 | 2-M6 |
| 30J | $30^{+0.021}_{0}$ | $8 \pm 0.0180$ | 33.3 | 2-M6 |
| 32J | $32^{+0.025}_{0}$ | $10 \pm 0.0180$ | 35.3 | 2-M8 |
| 35J | $35^{+0.025}_{0}$ | $10 \pm 0.0180$ | 38.3 | 2-M8 |
| 38J | $38^{+0.025}_{0}$ | $10 \pm 0.0180$ | 41.3 | 2-M8 |
| 40J | $40^{+0.025}_{0}$ | $12 \pm 0.0215$ | 43.3 | 2-M8 |
| 42J | $42^{+0.025}_{0}$ | $12 \pm 0.0215$ | 45.3 | 2-M8 |
| 45J | $45^{+0.025}_{0}$ | $14 \pm 0.0215$ | 48.8 | 2-M10 |
| 48J | $48^{+0.025}_{0}$ | $14 \pm 0.0215$ | 51.8 | 2-M10 |
| 50J | $50^{+0.025}_{0}$ | $14 \pm 0.0215$ | 53.8 | 2-M10 |
| 55J | $55^{+0.030}_{0}$ | $16 \pm 0.0215$ | 59.3 | 2-M10 |
| 56J | $56^{+0.030}_{0}$ | $16 \pm 0.0215$ | 60.3 | 2-M10 |
| 60J | $60^{+0.030}_{0}$ | $18 \pm 0.0215$ | 64.4 | 2-M10 |

**Models compliant with the new JIS standards (P9)**

| Nominal bore diameter | Bore diameter [d1 • d2] | Keyway width [W1 • W2] | Keyway height [T1 • T2] | Set screw hole [M] |
|---|---|---|---|---|
| Tolerance | H7, H8 | P9 | $^{+0.3}_{0}$ | — |
| 8P | $8^{+0.022}_{0}$ | $3^{-0.006}_{-0.031}$ | 9.4 | 2-M4 |
| 9P | $9^{+0.022}_{0}$ | $3^{-0.006}_{-0.031}$ | 10.4 | 2-M4 |
| 10P | $10^{+0.022}_{0}$ | $3^{-0.006}_{-0.031}$ | 11.4 | 2-M4 |
| 11P | $11^{+0.018}_{0}$ | $4^{-0.012}_{-0.042}$ | 12.8 | 2-M4 |
| 12P | $12^{+0.018}_{0}$ | $4^{-0.012}_{-0.042}$ | 13.8 | 2-M4 |
| 14P | $14^{+0.018}_{0}$ | $5^{-0.012}_{-0.042}$ | 16.3 | 2-M4 |
| 15P | $15^{+0.018}_{0}$ | $5^{-0.012}_{-0.042}$ | 17.3 | 2-M4 |
| 16P | $16^{+0.018}_{0}$ | $5^{-0.012}_{-0.042}$ | 18.3 | 2-M4 |
| 17P | $17^{+0.018}_{0}$ | $5^{-0.012}_{-0.042}$ | 19.3 | 2-M4 |
| 18P | $18^{+0.018}_{0}$ | $6^{-0.012}_{-0.042}$ | 20.8 | 2-M5 |
| 19P | $19^{+0.021}_{0}$ | $6^{-0.012}_{-0.042}$ | 21.8 | 2-M5 |
| 20P | $20^{+0.021}_{0}$ | $6^{-0.012}_{-0.042}$ | 22.8 | 2-M5 |
| 22P | $22^{+0.021}_{0}$ | $6^{-0.012}_{-0.042}$ | 24.8 | 2-M5 |
| 24P | $24^{+0.021}_{0}$ | $8^{-0.015}_{-0.051}$ | 27.3 | 2-M6 |
| 25P | $25^{+0.021}_{0}$ | $8^{-0.015}_{-0.051}$ | 28.3 | 2-M6 |
| 28P | $28^{+0.021}_{0}$ | $8^{-0.015}_{-0.051}$ | 31.3 | 2-M6 |
| 30P | $30^{+0.021}_{0}$ | $8^{-0.015}_{-0.051}$ | 33.3 | 2-M6 |
| 32P | $32^{+0.025}_{0}$ | $10^{-0.015}_{-0.051}$ | 35.3 | 2-M8 |
| 35P | $35^{+0.025}_{0}$ | $10^{-0.015}_{-0.051}$ | 38.3 | 2-M8 |
| 38P | $38^{+0.025}_{0}$ | $10^{-0.015}_{-0.051}$ | 41.3 | 2-M8 |
| 40P | $40^{+0.025}_{0}$ | $12^{-0.018}_{-0.061}$ | 43.3 | 2-M8 |
| 42P | $42^{+0.025}_{0}$ | $12^{-0.018}_{-0.061}$ | 45.3 | 2-M8 |
| 45P | $45^{+0.025}_{0}$ | $14^{-0.018}_{-0.061}$ | 48.8 | 2-M10 |
| 48P | $48^{+0.025}_{0}$ | $14^{-0.018}_{-0.061}$ | 51.8 | 2-M10 |
| 50P | $50^{+0.025}_{0}$ | $14^{-0.018}_{-0.061}$ | 53.8 | 2-M10 |
| 55P | $55^{+0.030}_{0}$ | $16^{-0.018}_{-0.061}$ | 59.3 | 2-M10 |
| 56P | $56^{+0.030}_{0}$ | $16^{-0.018}_{-0.061}$ | 60.3 | 2-M10 |
| 60P | $60^{+0.030}_{0}$ | $18^{-0.018}_{-0.061}$ | 64.4 | 2-M10 |

**Models compliant with the new motor standards**

| Nominal bore diameter | Bore diameter [d1 • d2] | Keyway width [W1 • W2] | Keyway height [T1 • T2] | Set screw hole [M] |
|---|---|---|---|---|
| Tolerance | G7, F7 | H9 | $^{+0.3}_{0}$ | — |
| 14N | $14^{+0.024}_{+0.006}$ | $5^{+0.030}_{0}$ | 16.3 | 2-M4 |
| 19N | $19^{+0.028}_{+0.007}$ | $6^{+0.030}_{0}$ | 21.8 | 2-M5 |
| 24N | $24^{+0.028}_{+0.007}$ | $8^{+0.036}_{0}$ | 27.3 | 2-M6 |
| 28N | $28^{+0.028}_{+0.007}$ | $8^{+0.036}_{0}$ | 31.3 | 2-M6 |
| 38N | $38^{+0.050}_{+0.025}$ | $10^{+0.036}_{0}$ | 41.3 | 2-M8 |
| 42N | $42^{+0.050}_{+0.025}$ | $12^{+0.043}_{0}$ | 45.3 | 2-M8 |
| 48N | $48^{+0.050}_{+0.025}$ | $14^{+0.043}_{0}$ | 51.8 | 2-M10 |
| 55N | $55^{+0.060}_{+0.030}$ | $16^{+0.043}_{0}$ | 59.3 | 2-M10 |
| 60N | $60^{+0.060}_{+0.030}$ | $18^{+0.043}_{0}$ | 64.4 | 2-M10 |

## Distance from Set Screw Edge

| Model | Distance from set screw edge [mm] |
|---|---|
| SFS-05 | 7 |
| SFS-06 | 9 |
| SFS-08 | 10 |
| SFS-09 | 10 |
| SFS-10 | 12 |
| SFS-12 | 12 |
| SFS-14 | 15 |


MODELS
SFC
SFS
SFF
SFM
SFH

# SFS Models

## Items Checked for Design Purposes

### Special Items to Take Note of

You should note the following to prevent any problems.

(1) Always be careful of parallel, angular, and axial misalignment.

(2) Always tighten bolts with the specified torque.

### Precautions for Handling

SFS models are delivered as components. Select whether to assemble by mounting flange hubs on each shaft and coupling shafts in both directions by mounting the element last, while centering, or to assemble by completing couplings first and then inserting them onto the shafts.
When using the assembly method that completes couplings first, take extra precautions when handling couplings. Subjecting assembled couplings to strong shocks may affect mounting accuracy and cause the parts to break during use.

(1) Couplings are designed for use within an operating temperature range of -30° C to 120℃ . Although the couplings are designed to be waterproof and oilproof, do not subject them to excessive amounts of water and oil as it may cause part deterioration.

(2) Handle the element with care as it is made of a thin stainless steel metal disc, also making sure to be careful so as not to injure yourself.

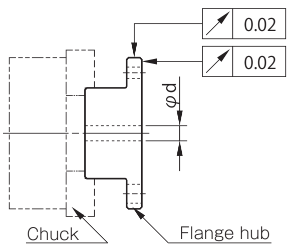
(3) For frictional coupling types, do not tighten up pressure bolts until after inserting the mounting shaft.

### Centering and Finishing When Drilling Bores in Flange Hubs

Keep the following in mind when processing bore diameters in pilot-bore products.

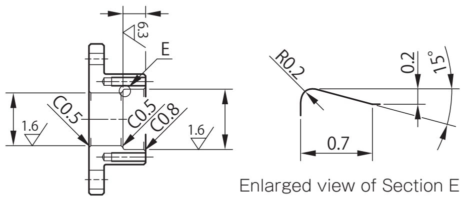
#### ■ Centering

After adjusting the chuck so that runout of each flange hub is no more than the precision of the figure below, finish the inner diameter, guided by the figure below.




#### ■ Locking collar specifications

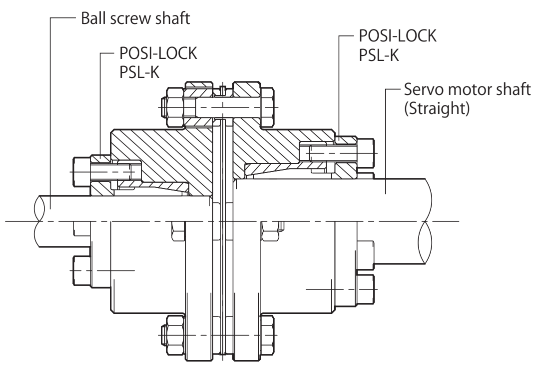
Finish as shown in the figure below if you are processing for a connection by means of locking collar.




Enlarged view of Section E

#### ■ Finishing/mounting example

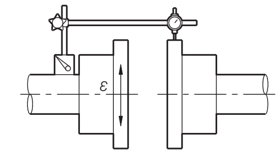
The example shows a pilot-bore type of flange hub processed for a POSI-LOCK PSL-K, a shaft lock made by Miki Pulley, and connected to a straight shaft.




### Centering

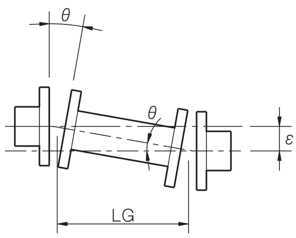
#### ■ Parallel misalignment ( ε )

Lock the dial gauge in place on one shaft and then measure the runout of the paired flange hub's outer periphery while rotating that shaft.
Since couplings on which the elements (discs) are a set SFS(S) types do not allow parallel misalignment, get as close to zero as possible. For couplings that allow the entire length to be freely set SFS(G) types, use the following formula to calculate allowable parallel misalignment.




$$\varepsilon = \tan\theta \times LG$$

ε : Allowable parallel misalignment
θ : 1°

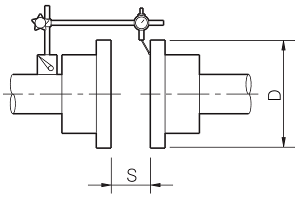



$$LG = LS + S$$

LS: Total length of spacer
S: Dimension of gap between flange hub and spacer

#### ■ Angular deflection( θ )

Lock the dial gauge in place on one shaft and then measure the runout of the end surface near the paired flange hub's outer periphery while rotating that shaft.
Adjust runout B so that θ ≦ 1° in the following formula.




$$B = D \times \tan\theta$$

B: Runout
D: Flange hub outer diameter
θ : 1°

#### ■ Axial displacement (S)

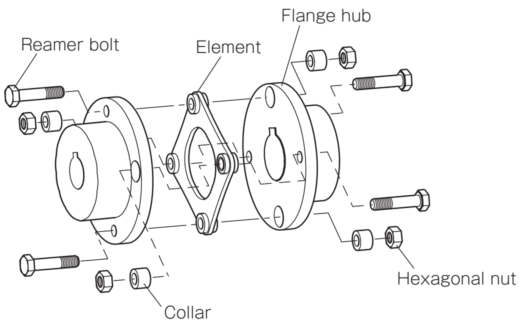
In addition, restrict the dimension between flange hub faces (S in the diagram) within the allowable error range for axial displacement with respect to a reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

*On the SFS(S), this is the dimension of the gap between two flange hubs. On the SFS(W/G), dimension S is the gap between the flange hub and the spacer.

# SFS Models

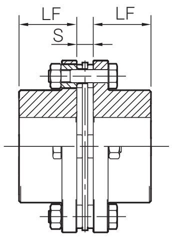
## Mounting

This assembly method mounts a flange hub on each shaft of the SFS models and couples shafts in both directions by mounting the element last, while centering.




(1) Remove any rust, dust, oil residue, etc. from inner diameter surfaces of the shaft and flange hubs. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

(2) Insert each shaft far enough into the flange hub that the paired mounting shaft touches the shaft along the entire length of the flange hub (LF dimension), as shown in the diagram below, and does not interfere with the elements, spacers or the other shaft.




(3) Mount the other flange hub on the paired mounting shaft as described in steps (1) and (2).

(4) Keep the width of the dimension between flange hub faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

| Coupling size | 05 | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|---|
| S [mm] | 5 | 6 | 6 | 8 | 10 | 11 | 12 |

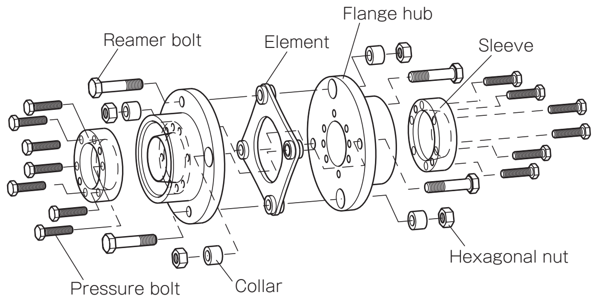
(5) Insert the element into the gap between the two flange hubs, and then mount it with the reamer bolt for locking the element in place. Check that the element is not deformed. If it is, it may be under an axial force or there may be insufficient lubrication between the collar, bolt, and disc, so adjust to bring it to normal. The situation may be improved by applying a small amount of machine oil to the bearing surface of the reamer bolt. However, never use any oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based) which would dramatically affect the friction coefficient.

(6) Use a calibrated torque wrench to tighten all the reamer bolts to the tightening torques of the table below.

| Coupling size | 05 | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|---|
| Reamer bolt size | M5 | M6 | M6 | M8 | M8 | M10 | M12 |
| Tightening torque [N•m] Black oxide finish (standard) specification | 8 | 14 | 14 | 34 | 34 | 68 | 118 |
| Tightening torque [N•m] Electroless nickel plating [° C] specification | 6 | 11 | 11 | 26 | 26 | 51 | 90 |

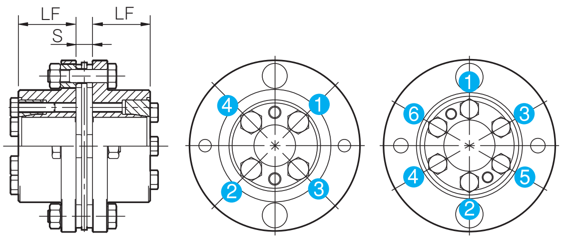
## Mounting (Frictional Coupling Hub Types)

This assembly method mounts a flange hub on each shaft of the SFS (frictional coupling hub) type and couples both shafts by mounting the element last while centering.




(1) Loosen the pressure bolts of the flange hubs, check that the sleeve can move freely, and then remove any rust, dust, oil residue, etc. from the inner diameter surfaces of the shaft and flange hubs. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

(2) Insert each shaft far enough into the flange hub that the paired mounting shaft touches the shaft along the entire length of the flange hub (LF dimension), as shown in the diagram below, and does not interfere with the elements, spacers or the other shaft. Then, holding them in place, tighten the pressure bolts evenly, a little at a time on the diagonal, following the tightening sequence shown in the figure below.




(3) Mount the other flange hub on the paired mounting shaft as described in steps (1) and (2).

(4) Keep the width of the dimension between flange hub faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

| Coupling size | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|
| S [mm] | 6 | 6 | 8 | 10 | 11 | 12 |

(5) Insert the element into the gap between the two flange hubs, and then mount it with the reamer bolt for locking the element in place. Check that the element is not deformed. If it is, it may be under an axial force or there may be insufficient lubrication between the collar, bolt, and disc, so adjust to bring it to normal. The situation may be improved by applying a small amount of machine oil to the bearing surface of the reamer bolt. However, never use any oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based) which would dramatically affect the friction coefficient.

(6) Use a calibrated torque wrench to tighten all the reamer and pressure bolts to the tightening torques of the table below.

| Coupling size | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|
| Reamer bolt size | M6 | M6 | M8 | M8 | M10 | M12 |
| Tightening torque [N·m] | 14 | 14 | 34 | 34 | 68 | 118 |
| Pressure bolt size | M5 | M6 | M6 | M6 | M8 | M8 |
| Tightening torque [N·m] | 8 | 14 | 14 | 14 | 34 | 34 |

(7) To protect against initial loosening of the pressure bolts, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

# SFS Models

## Items Checked for Design Purposes

### Mounting (When Mounted After Coupling Is Completed)

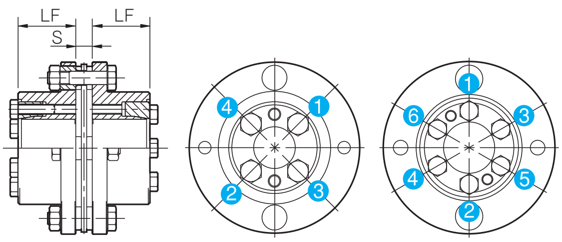
This assembly method first completes the coupling and then inserts it onto the shaft.

(1) Remove any rust, dust, oil or the like from the inner diameter surfaces of the shaft and flange hubs. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.
For types that use frictional coupling, loosen the flange hub's pressure bolt and check that the sleeve can move freely.

(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element.
Be particularly careful not to mistakenly apply excessive compression force when inserting couplings into the paired shaft after mounting on one shaft.

(3) For frictional coupling types, with the pressure bolts loosened, make sure that couplings move gently in the axial and rotational directions.
Readjust the centering of the two shafts if the couplings fail to move smoothly enough.

(4) Insert each shaft far enough into the flange hub that the paired mounting shaft touches the shaft along the entire length of the flange hub (LF dimension), as shown in the diagram below. Then position it so that it does not interfere with the elements, spacers or the other shaft and lock it in place. For frictional coupling types, tighten the pressure bolts evenly, a little at a time on the diagonal, following the tightening sequence shown in the figure below.




(5) Keep the width of the dimension between flange hub faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

| Coupling size | 05 | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|---|
| S [mm] | 5 | 6 | 6 | 8 | 10 | 11 | 12 |

(6) Use a calibrated torque wrench to tighten all the pressure bolts to the appropriate tightening torques of the table below.

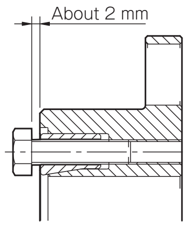
| Coupling size | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|
| Pressure bolt size | M5 | M6 | M6 | M6 | M8 | M8 |
| Tightening torque [N·m] | 8 | 14 | 14 | 14 | 34 | 34 |

(7) To protect against initial loosening of the pressure bolts, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

### Removal

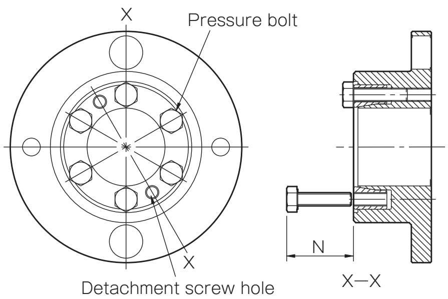
(1) Check to confirm that there is no torque or axial direction load being applied to the coupling. There may be cases where a torque is applied to the coupling, particularly when the safety brake is being used. Make sure to verify that this is not occurring before removing parts.

(2) Loosen all the pressure bolts placing pressure on the sleeve until the gap between bearing seat and sleeve is about 2 mm.




In the case of a tapered coupling system that tightens a pressure bolt from the axial direction, the sleeve will be self-locking, so the coupling between flange hub and shaft cannot be released simply by loosening the pressure bolt. (Note that in some cases, a coupling can be released by loosening a pressure bolt.)
For that reason, when designing couplings, a space must be installed for inserting a detachment screw.
If there is no space in the axial direction, consult Miki Pulley.

(3) Pull out two of the pressure bolts loosened in step (2), insert them into detachment screw holes at two locations on the sleeve, and tighten them alternately, a little at a time. The coupling between the flange hub and shaft will be released.

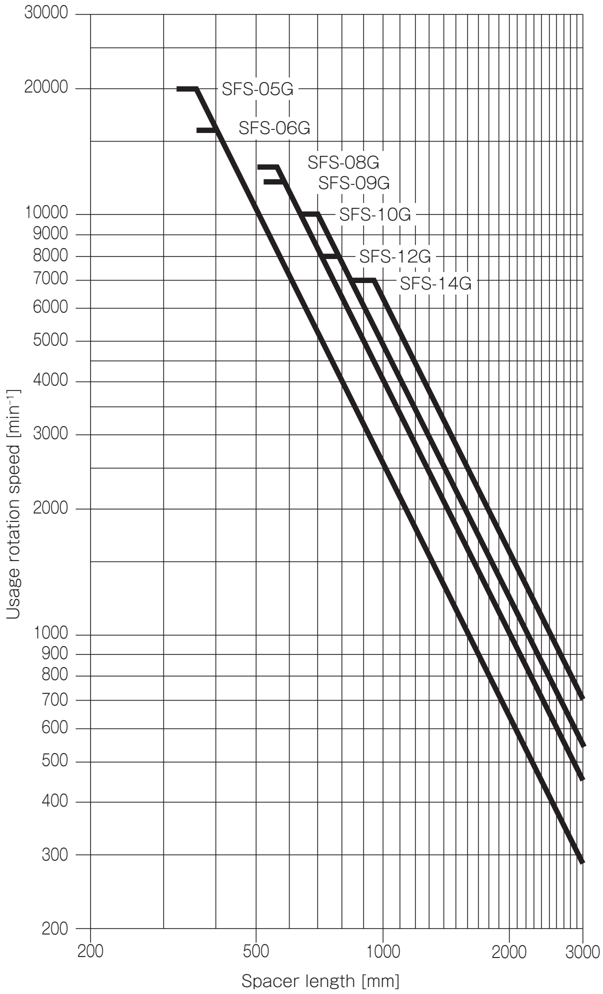



| Coupling size | 06 | 08 | 09 | 10 | 12 | 14 |
|---|---|---|---|---|---|---|
| Nominal diameter of pressure bolt × Length | M5 × 20 | M6 × 24 | M6 × 24 | M6 × 24 | M8 × 25 | M8 × 25 |
| Recommended N dimension [mm] | 26 | 30 | 30 | 30 | 31.5 | 31.5 |

# SFS Models

## Limit Rotation Speed

For SFS(G) long spacer types, the speed at which the coupling can be used will vary with the length of spacer selected. Use the following table to confirm that the speed you will use is at or below the limit rotation speed. When a max. rotation speed is set for a specific type, that speed is the upper limit.




## Points to Consider Regarding the Feed Screw System

### ■ Servo motor oscillation

Gain adjustment on the servo motor may cause the servo motor to oscillate.
Oscillation in the servo motor during operation can cause problems particularly with the overall natural frequency and electrical control systems of the feed screw system.
In order for these issues to be resolved, the torsional stiffness for the coupling and feed screw section and the moment of inertia and other characteristics for the system overall will need to be adjusted and the torsional natural frequency for the mechanical system raised or the tuning function (filter function) for the electrical control system in the servo motor adjusted during the design stage.

### ■ Stepper motor resonance

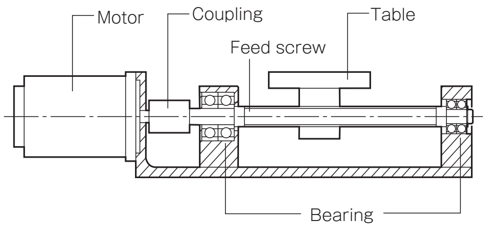
Stepper motors resonate at certain rotation speeds due to the pulsation frequency of the stepper motor and the torsional natural frequency of the system as a whole. To avoid resonance, either the resonant rotation speed must be simply skipped or the torsional natural frequency considered at the design stage.

Please contact Miki Pulley with any questions regarding servo motor oscillation or stepper motor resonance.

## How to Find the Natural Frequency of a Feed Screw System

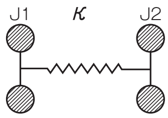
(1) Select a coupling based on the nominal and maximum torque of the servo motor or stepper motor.

(2) Find the overall natural frequency, Nf, from the torsional stiffness of the coupling and feed screw, $\kappa$, the moment of inertia of driving side, J1, and the moment of inertia of driven side, J2, for the feed screw system shown below.




$$Nf=\frac{1}{2\pi}\sqrt{\kappa\left(\frac{1}{J1}+\frac{1}{J2}\right)}$$

Nf: Overall natural frequency of a feed screw system [Hz]
$\kappa$ : Torsional stiffness of the coupling and feed screw [N·m/rad]
J1: Moment of inertia of driving side [kg·m$^2$]
J2: Moment of inertia of driven side [kg·m$^2$]




## Selection Procedures

(1) Find the torque, Ta, applied to the coupling using the output capacity, P, of the driver and the usage rotation speed, n.

$$Ta\,[N\cdot m]=9550\times\frac{P\,[kW]}{n[min^{-1}]}$$

(2) Determine the factor $\kappa$ from the load properties, and find the corrected torque, Td, applied to the coupling.

**Td = Ta × K (Refer to the table below for values)**

| Load properties | Constant | Vibrations: Small | Vibrations: Medium | Vibrations: Large |
|---|---|---|---|---|
| K | 1.0 | 1.25 | 1.75 | 2.25 |

For servo motor drive, multiply the maximum torque, Ts, by the usage factor K = 1.2 to 1.5.

**Td = Ts × (1.2 to 1.5)**

(3) Set the size so that the rated coupling torque, Tn, is higher than the corrected torque, Td.

**Tn ≧ Td**

(4) The rated torque of the coupling may be limited by the bore diameter of the coupling. See the table showing the bore diameters that limit rated torque.

(5) Check that the mount shaft is no larger than the maximum bore diameter of the coupling.

Contact Miki Pulley for assistance with any device experiencing extreme periodic vibrations.

MODELS
SFC
SFS
SFF
SFM
SFH

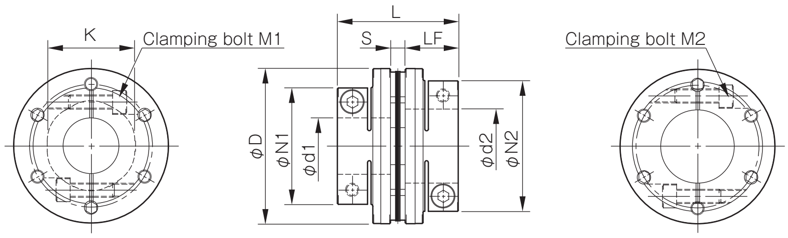
# SFF(SS) Types Single Element/Clamping

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFF-040SS-□B-□B-8N | 8 | 0.02 | 1 | ±0.2 | 18000 | 15000 | 174 | $0.03 \times 10^{-3}$ | 0.17 |
| SFF-040SS-□B-□B-12N | 12 | 0.02 | 1 | ±0.2 | 18000 | 15000 | 174 | $0.03 \times 10^{-3}$ | 0.17 |
| SFF-050SS-□B-□B-25N | 25 | 0.02 | 1 | ±0.3 | 18000 | 32000 | 145 | $0.10 \times 10^{-3}$ | 0.36 |
| SFF-060SS-□B-□B-60N | 60 | 0.02 | 1 | ±0.3 | 18000 | 104000 | 399 | $0.22 \times 10^{-3}$ | 0.52 |
| SFF-060SS-□B-□B-80N | 80 | 0.02 | 1 | ±0.3 | 18000 | 104000 | 399 | $0.23 \times 10^{-3}$ | 0.49 |
| SFF-070SS-□B-□B-90N | 90 | 0.02 | 1 | ±0.5 | 18000 | 240000 | 484 | $0.40 \times 10^{-3}$ | 0.72 |
| SFF-070SS-□B-□B-100N | 100 | 0.02 | 1 | ±0.5 | 18000 | 240000 | 484 | $0.42 \times 10^{-3}$ | 0.67 |
| SFF-080SS-□B-□B-150N | 150 | 0.02 | 1 | ±0.5 | 17000 | 120000 | 96 | $0.79 \times 10^{-3}$ | 1.04 |
| SFF-080SS-□B-□B-200N | 200 | 0.02 | 1 | ±0.5 | 17000 | 310000 | 546 | $1.25 \times 10^{-3}$ | 1.40 |
| SFF-090SS-□B-□B-250N | 250 | 0.02 | 1 | ±0.6 | 15000 | 520000 | 321 | $1.54 \times 10^{-3}$ | 1.62 |
| SFF-090SS-□B-□B-300N | 300 | 0.02 | 1 | ±0.6 | 15000 | 520000 | 321 | $1.58 \times 10^{-3}$ | 1.53 |
| SFF-100SS-□B-□B-450N | 450 | 0.02 | 1 | ±0.65 | 13000 | 740000 | 540 | $3.27 \times 10^{-3}$ | 2.53 |
| SFF-120SS-□B-□B-600N | 600 | 0.02 | 1 | ±0.8 | 11000 | 970000 | 360 | $6.90 \times 10^{-3}$ | 3.78 |

* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | S [mm] | K [mm] | M1・M2 Qty - Nominal dia. | M1・M2 Tightening torque [N・m] |
|---|---|---|---|---|---|---|---|---|---|---|
| SFF-040SS-□B-□B-8N | 8・9・9.525 | 8・9・9.525・10・11・12・14・15・16 | 38 | 38.9 | 33 | 17.5 | 3.9 | 17 | 2-M4 | 3.4 |
| SFF-040SS-□B-□B-12N | 10・11・12・14・15・16 | 10・11・12・14・15・16 | 38 | 38.9 | 33 | 17.5 | 3.9 | 17 | 2-M4 | 3.4 |
| SFF-050SS-□B-□B-25N | 10・11・12・14・15・16・17・18・19 | 10・11・12・14・15・16・17・18・19 | 48 | 48.4 | 42 | 21.5 | 5.4 | 20 | 2-M5 | 7 |
| SFF-060SS-□B-□B-60N | 12・14・15・16・17・18・19 | 12・14・15・16・17・18・19・20・22 | 58 | 53.4 | 44 | 24 | 5.4 | 32 | 2-M6 | 14 |
| | – | 24・25・28 | | | 48 | | | | 2-M5 | 7 |
| | – | 30 | | | 52 | | | | | |
| SFF-060SS-□B-□B-80N | 20・22 | 20・22 | 58 | 53.4 | 44 | 24 | 5.4 | 32 | 2-M6 | 14 |
| | 24・25・28 | 24・25・28 | | | 48 | | | | 2-M5 | 7 |
| | 30 | 30 | | | 52 | | | | | |
| SFF-070SS-□B-□B-90N | 18・19 | 18・19・20・22・24・25 | 68 | 55.9 | 47 | 25 | 5.9 | 38 | 2-M6 | 14 |
| | – | 28・30・32・35 | | | 56 | | | | | |
| SFF-070SS-□B-□B-100N | 20・22・24・25 | 20・22・24・25 | 68 | 55.9 | 47 | 25 | 5.9 | 38 | 2-M6 | 14 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | | |
| SFF-080SS-□B-□B-150N | 22・24・25 | 22・24・25 | 78 | 68.3 | 53 | 30 | 8.3 | 37 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | 2-M6 | 14 |
| SFF-080SS-□B-□B-200N | 22・24・25 | 22・24・25 | 78 | 67.7 | 53 | 30 | 7.7 | 42 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 70 | | | | | |
| | 38 | 38 | | | 74 | | | | | |
| SFF-090SS-□B-□B-250N | 25・28 | 25・28・30・32 | 88 | 68.3 | 66 | 30 | 8.3 | 50 | 2-M8 | 34 |
| | – | 35・38・40・42 | | | 74 | | | | | |
| SFF-090SS-□B-□B-300N | 30・32 | 30・32 | 88 | 68.3 | 66 | 30 | 8.3 | 50 | 2-M8 | 34 |
| | 35・38・40・42 | 35・38・40・42 | | | 74 | | | | | |
| SFF-100SS-□B-□B-450N | 32・35・38・40・42・45・48 | 32・35・38・40・42・45・48 | 98 | 90.2 | 84 | 40 | 10.2 | 56 | 2-M10 | 68 |
| SFF-120SS-□B-□B-600N | 32・35・38・40・42・45 | 32・35・38・40・42・45 | 118 | 90.2 | 84 | 40 | 10.2 | 68 | 2-M10 | 68 |
| | 48・50・55 | 48・50・55 | | | 100 | | | | | |

* Nominal diameter of clamping bolt M1/M2 is given as number of bolts - nominal diameter, and the number is the number for one hub.

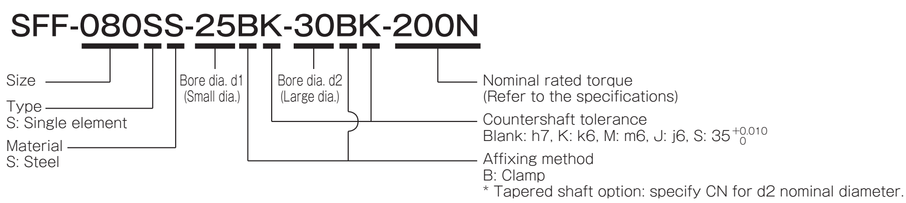
# SFF(SS) Types Single Element/Clamping

## Standard Bore Diameter

| Model | | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal diameter | 8 | 9 | 9.525 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 |
| SFF-040SS-□B-□B-8N | d1 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| SFF-040SS-□B-□B-12N | d1 | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| SFF-050SS-□B-□B-25N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| SFF-060SS-□B-□B-60N | d1 | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-060SS-□B-□B-80N | d1 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-070SS-□B-□B-90N | d1 | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-070SS-□B-□B-100N | d1 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-080SS-□B-□B-150N | d1 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-080SS-□B-□B-200N | d1 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | d2 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFF-090SS-□B-□B-250N | d1 | | | | | | | | | | | | | | | | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFF-090SS-□B-□B-300N | d1 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| | d2 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| SFF-100SS-□B-□B-450N | d1 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | d2 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| SFF-120SS-□B-□B-600N | d1 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | d2 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* The bore diameters marked with ● are supported as standard bore diameter.

## How to Place an Order



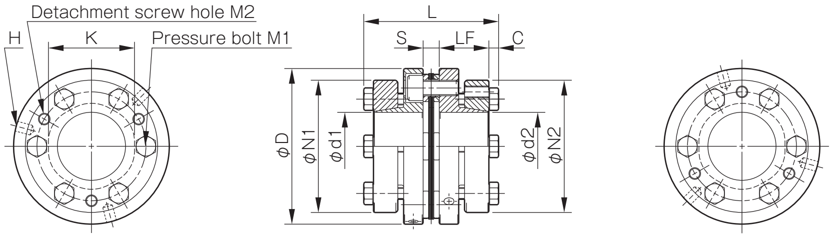
# SFF(SS) Types Single Element/Wedge Coupling

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFF-070SS-□K-□K-100N | 100 | 0.02 | 1 | ±0.5 | 18000 | 240000 | 484 | $0.66 \times 10^{-3}$ | 0.92 |
| SFF-080SS-□K-□K-150N | 150 | 0.02 | 1 | ±0.5 | 17000 | 120000 | 96 | $1.21 \times 10^{-3}$ | 1.03 |
| SFF-080SS-□K-□K-200N | 200 | 0.02 | 1 | ±0.5 | 17000 | 310000 | 546 | $1.11 \times 10^{-3}$ | 1.26 |
| SFF-090SS-□K-□K-300N | 300 | 0.02 | 1 | ±0.6 | 15000 | 520000 | 321 | $1.75 \times 10^{-3}$ | 1.48 |
| SFF-100SS-□K-□K-450N | 450 | 0.02 | 1 | ±0.65 | 13000 | 740000 | 540 | $2.56 \times 10^{-3}$ | 1.87 |
| SFF-120SS-□K-□K-600N | 600 | 0.02 | 1 | ±0.8 | 11000 | 970000 | 360 | $5.33 \times 10^{-3}$ | 2.50 |
| SFF-140SS-□K-□K-800N | 800 | 0.02 | 1 | ±1.0 | 10000 | 1400000 | 360 | $10.28 \times 10^{-3}$ | 4.66 |
| SFF-140SS-□K-□K-1000N | 1000 | 0.02 | 1 | ±1.0 | 10000 | 1400000 | 360 | $14.70 \times 10^{-3}$ | 5.01 |

* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | S [mm] | C [mm] | K [mm] | H [mm] | M1 Qty - Nominal dia. | M1 Tightening torque [N・m] | M2 Qty - Nominal dia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-070SS-□K-□K-100N | 18・19 | 18・19 | 68 | 62.9 | 53 | 23.5 | 5.9 | 5 | 38 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 20・22・24・25 | 20・22・24・25 | | | 58 | | | | | | | | |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| SFF-080SS-□K-□K-150N | 22・24・25 | 22・24・25 | 78 | 69.3 | 58 | 25.5 | 8.3 | 5 | 37 | 4-5.1 | 4-M6 | 10 | 2-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | – | 38 | | | 73 | | | | | | | | |
| SFF-080SS-□K-□K-200N | 22・24・25 | 22・24・25 | 78 | 68.7 | 58 | 25.5 | 7.7 | 5 | 42 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | 38 | 38 | | | 73 | | | | | | | | |
| SFF-090SS-□K-□K-300N | 28・30 | 28・30 | 88 | 69.3 | 63 | 25.5 | 8.3 | 5 | 50 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48 | 48 | | | 83 | | | | | | | | |
| SFF-100SS-□K-□K-450N | 32・35 | 32・35 | 98 | 75.2 | 68 | 27.5 | 10.2 | 5 | 56 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48・50 | 48・50 | | | 83 | | | | | | | | |
| SFF-120SS-□K-□K-600N | 35 | 35 | 118 | 75.2 | 68 | 27.5 | 10.2 | 5 | 68 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48・50・52 | 48・50・52 | | | 83 | | | | | | | | |
| | 55 | 55 | | | 88 | | | | | | | | |
| | 60・62・65 | 60・62・65 | | | 98 | | | | | | | | |
| | – | 70 | | | 108 | | | | | | | | |
| SFF-140SS-□K-□K-800N | 35・38 | 35・38 | 138 | 94.6 | 83 | 36.5 | 10.6 | 5.5 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 40・42・45 | 40・42・45 | | | 88 | | | | | | | | |
| | – | 48・50・52 | | | 98 | | | | | | | | |
| | – | 55・60 | | | 108 | | | | | | | | |
| | – | 62・65・70 | | | 118 | | | | | | | | |
| | – | 75・80 | | | 128 | | | | | | | | |
| SFF-140SS-□K-□K-1000N | 48・50・52 | 48・50・52 | 138 | 94.6 | 98 | 36.5 | 10.6 | 5.5 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 55・60 | 55・60 | | | 108 | | | | | | | | |
| | 62・65・70 | 62・65・70 | | | 118 | | | | | | | | |
| | 75 | 75・80 | | | 128 | | | | | | | | |

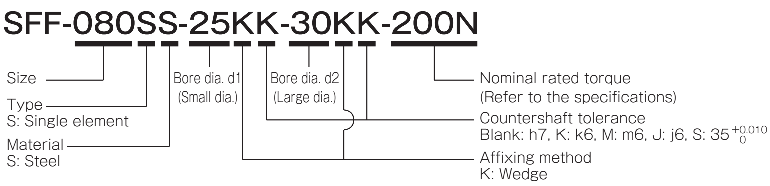
* The nominal diameters of the pressure bolt M1 and detachment screw hole M2 are equal to the quantity minus the nominal diameter of the screw threads. The quantities of H, M1 and M2 are the same as the quantity for a hub on one side.

# SFF(SS) Types Single Element/Wedge Coupling

## Standard Bore Diameter

| Model | | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal diameter | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 52 | 55 | 60 | 62 | 65 | 70 | 75 | 80 |
| SFF-070SS-□K-□K-100N | d1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| SFF-080SS-□K-□K-150N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFF-080SS-□K-□K-200N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFF-090SS-□K-□K-300N | d1 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-100SS-□K-□K-450N | d1 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | d2 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFF-120SS-□K-□K-600N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFF-140SS-□K-□K-800N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| SFF-140SS-□K-□K-1000N | d1 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | d2 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

## How to Place an Order




MODELS
SFC
SFS
SFF
SFM
SFH

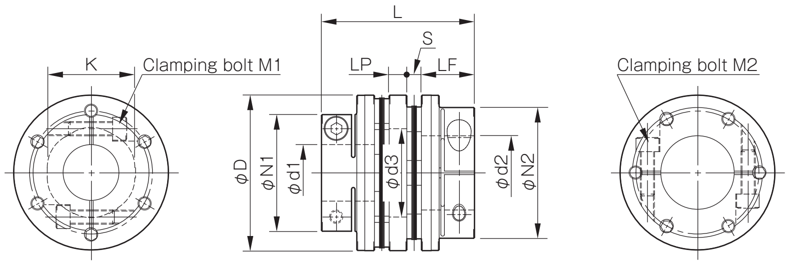
# SFF(DS) Types Double Element/Clamping

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFF-040DS-□B-□B-8N | 8 | 0.10 | 1(On one side) | ±0.4 | 14000 | 7500 | 87 | $0.04 \times 10^{-3}$ | 0.22 |
| SFF-040DS-□B-□B-12N | 12 | 0.10 | 1(On one side) | ±0.4 | 14000 | 7500 | 87 | $0.04 \times 10^{-3}$ | 0.22 |
| SFF-050DS-□B-□B-25N | 25 | 0.20 | 1(On one side) | ±0.6 | 14000 | 16000 | 72.5 | $0.13 \times 10^{-3}$ | 0.46 |
| SFF-060DS-□B-□B-60N | 60 | 0.20 | 1(On one side) | ±0.6 | 14000 | 52000 | 199.5 | $0.28 \times 10^{-3}$ | 0.64 |
| SFF-060DS-□B-□B-80N | 80 | 0.20 | 1(On one side) | ±0.6 | 14000 | 52000 | 199.5 | $0.29 \times 10^{-3}$ | 0.61 |
| SFF-070DS-□B-□B-90N | 90 | 0.25 | 1(On one side) | ±1.0 | 14000 | 120000 | 242 | $0.53 \times 10^{-3}$ | 0.90 |
| SFF-070DS-□B-□B-100N | 100 | 0.25 | 1(On one side) | ±1.0 | 14000 | 120000 | 242 | $0.55 \times 10^{-3}$ | 0.85 |
| SFF-080DS-□B-□B-150N | 150 | 0.32 | 1(On one side) | ±1.0 | 13000 | 60000 | 48 | $1.10 \times 10^{-3}$ | 1.37 |
| SFF-080DS-□B-□B-200N | 200 | 0.31 | 1(On one side) | ±1.0 | 13000 | 155000 | 273 | $1.50 \times 10^{-3}$ | 1.72 |
| SFF-090DS-□B-□B-250N | 250 | 0.32 | 1(On one side) | ±1.2 | 12000 | 260000 | 160.5 | $2.03 \times 10^{-3}$ | 2.02 |
| SFF-090DS-□B-□B-300N | 300 | 0.32 | 1(On one side) | ±1.2 | 12000 | 260000 | 160.5 | $2.10 \times 10^{-3}$ | 1.92 |
| SFF-100DS-□B-□B-450N | 450 | 0.38 | 1(On one side) | ±1.3 | 10000 | 370000 | 270 | $4.18 \times 10^{-3}$ | 3.12 |
| SFF-120DS-□B-□B-600N | 600 | 0.38 | 1(On one side) | ±1.6 | 9000 | 485000 | 180 | $8.87 \times 10^{-3}$ | 4.60 |

* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | LP [mm] | S [mm] | d3 [mm] | K [mm] | M1・M2 Qty - Nominal dia. | M1・M2 Tightening torque [N・m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-040DS-□B-□B-8N | 8・9・9.525 | 8・9・9.525・10・11・12・14・15・16 | 38 | 48.8 | 33 | 17.5 | 6 | 3.9 | 17 | 17 | 2-M4 | 3.4 |
| SFF-040DS-□B-□B-12N | 10・11・12・14・15・16 | 10・11・12・14・15・16 | 38 | 48.8 | 33 | 17.5 | 6 | 3.9 | 17 | 17 | 2-M4 | 3.4 |
| SFF-050DS-□B-□B-25N | 10・11・12・14・15・16・17・18・19 | 10・11・12・14・15・16・17・18・19 | 48 | 60.8 | 42 | 21.5 | 7 | 5.4 | 20 | 20 | 2-M5 | 7 |
| SFF-060DS-□B-□B-60N | 12・14・15・16・17・18・19 | 12・14・15・16・17・18・19・20・22 | 58 | 65.8 | 44 | 24 | 7 | 5.4 | 31 | 32 | 2-M6 | 14 |
| | – | 24・25・28 | | | 48 | | | | | | 2-M5 | 7 |
| | – | 30 | | | 52 | | | | | | | |
| SFF-060DS-□B-□B-80N | 20・22 | 20・22 | 58 | 65.8 | 44 | 24 | 7 | 5.4 | 31 | 32 | 2-M6 | 14 |
| | 24・25・28 | 24・25・28 | | | 48 | | | | | | 2-M5 | 7 |
| | 30 | 30 | | | 52 | | | | | | | |
| SFF-070DS-□B-□B-90N | 18・19 | 18・19・20・22・24・25 | 68 | 69.8 | 47 | 25 | 8 | 5.9 | 37 | 38 | 2-M6 | 14 |
| | – | 28・30・32・35 | | | 56 | | | | | | | |
| SFF-070DS-□B-□B-100N | 20・22・24・25 | 20・22・24・25 | 68 | 69.8 | 47 | 25 | 8 | 5.9 | 37 | 38 | 2-M6 | 14 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | | | | |
| SFF-080DS-□B-□B-150N | 22・24・25 | 22・24・25 | 78 | 86.6 | 53 | 30 | 10 | 8.3 | 40 | 37 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | | | 2-M6 | 14 |
| SFF-080DS-□B-□B-200N | 22・24・25 | 22・24・25 | 78 | 85.4 | 53 | 30 | 10 | 7.7 | 40 | 42 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 70 | | | | | | | |
| | 38 | 38 | | | 74 | | | | | | | |
| SFF-090DS-□B-□B-250N | 25・28 | 25・28・30・32 | 88 | 86.6 | 66 | 30 | 10 | 8.3 | 50 | 50 | 2-M8 | 34 |
| | – | 35・38・40・42 | | | 74 | | | | | | | |
| SFF-090DS-□B-□B-300N | 30・32 | 30・32 | 88 | 86.6 | 66 | 30 | 10 | 8.3 | 50 | 50 | 2-M8 | 34 |
| | 35・38・40・42 | 35・38・40・42 | | | 74 | | | | | | | |
| SFF-100DS-□B-□B-450N | 32・35・38・40・42・45・48 | 32・35・38・40・42・45・48 | 98 | 112.4 | 84 | 40 | 12 | 10.2 | 52 | 56 | 2-M10 | 68 |
| SFF-120DS-□B-□B-600N | 32・35・38・40・42・45 | 32・35・38・40・42・45 | 118 | 112.4 | 84 | 40 | 12 | 10.2 | 72 | 68 | 2-M10 | 68 |
| | 48・50・55 | 48・50・55 | | | 100 | | | | | | | |

* Nominal diameter of clamping bolt M1/M2 is given as number of bolts - nominal diameter, and the number is the number for one hub.

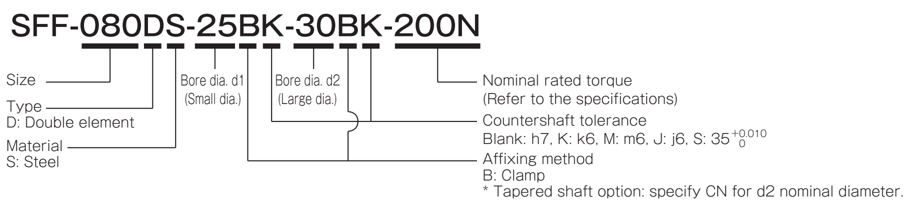
# SFF(DS) Types Double Element/Clamping

## Standard Bore Diameter

| Model | Standard bore diameter d1・d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal diameter | 8 | 9 | 9.525 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 |
| SFF-040DS-□B-□B-8N | d1 | ● | ● | ● | | | | | | | | | | | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| SFF-040DS-□B-□B-12N | d1 | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | | | | |
| SFF-050DS-□B-□B-25N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| SFF-060DS-□B-□B-60N | d1 | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-060DS-□B-□B-80N | d1 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-070DS-□B-□B-90N | d1 | | | | | | | | | | | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-070DS-□B-□B-100N | d1 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-080DS-□B-□B-150N | d1 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFF-080DS-□B-□B-200N | d1 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | d2 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFF-090DS-□B-□B-250N | d1 | | | | | | | | | | | | | | | | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFF-090DS-□B-□B-300N | d1 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| | d2 | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| SFF-100DS-□B-□B-450N | d1 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | d2 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| SFF-120DS-□B-□B-600N | d1 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | d2 | | | | | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |

* The bore diameters marked with ● are supported as standard bore diameter.

## How to Place an Order




MODELS
SFC
SFS
SFF
SFM
SFH

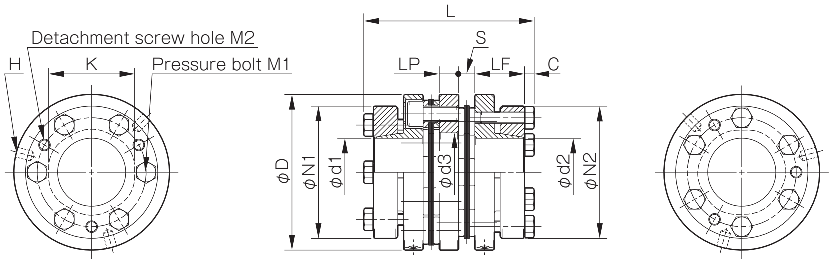
# SFF(DS) Types Double Element/Wedge Coupling

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed $[min^{-1}]$ | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia $[kg\cdot m^2]$ | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFF-070DS-□K-□K-100N | 100 | 0.25 | 1(On one side) | ±1.0 | 14000 | 120000 | 242 | $0.80\times10^{-3}$ | 1.10 |
| SFF-080DS-□K-□K-150N | 150 | 0.32 | 1(On one side) | ±1.0 | 13000 | 60000 | 48 | $1.36\times10^{-3}$ | 1.56 |
| SFF-080DS-□K-□K-200N | 200 | 0.31 | 1(On one side) | ±1.0 | 13000 | 155000 | 273 | $1.42\times10^{-3}$ | 1.60 |
| SFF-090DS-□K-□K-300N | 300 | 0.32 | 1(On one side) | ±1.2 | 12000 | 260000 | 160.5 | $2.24\times10^{-3}$ | 1.87 |
| SFF-100DS-□K-□K-450N | 450 | 0.38 | 1(On one side) | ±1.3 | 10000 | 370000 | 270 | $3.51\times10^{-3}$ | 2.49 |
| SFF-120DS-□K-□K-600N | 600 | 0.38 | 1(On one side) | ±1.6 | 9000 | 485000 | 180 | $7.17\times10^{-3}$ | 3.29 |
| SFF-140DS-□K-□K-800N | 800 | 0.44 | 1(On one side) | ±2.0 | 8000 | 700000 | 180 | $14.68\times10^{-3}$ | 6.05 |
| SFF-140DS-□K-□K-1000N | 1000 | 0.44 | 1(On one side) | ±2.0 | 8000 | 700000 | 180 | $19.11\times10^{-3}$ | 6.39 |

* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | LP [mm] | S [mm] | C [mm] | d3 [mm] | K [mm] | H [mm] | M1 Qty-Nominal dia. | M1 Tightening torque [N・m] | M2 Qty-Nominal dia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-070DS-□K-□K-100N | 18・19 | 18・19 | 68 | 76.8 | 53 | 23.5 | 8 | 5.9 | 5 | 37 | 38 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 20・22・24・25 | 20・22・24・25 | | | 58 | | | | | | | | | | |
| | 28・30 | 28・30 | | | 63 | | | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | | | |
| SFF-080DS-□K-□K-150N | 22・24・25 | 22・24・25 | 78 | 87.6 | 58 | 25.5 | 10 | 8.3 | 5 | 40 | 37 | 4-5.1 | 4-M6 | 10 | 2-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | | | |
| | – | 38 | | | 73 | | | | | | | | | | |
| SFF-080DS-□K-□K-200N | 22・24・25 | 22・24・25 | 78 | 86.4 | 58 | 25.5 | 10 | 7.7 | 5 | 40 | 42 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | | | |
| | 38 | 38 | | | 73 | | | | | | | | | | |
| SFF-090DS-□K-□K-300N | 28・30 | 28・30 | 88 | 87.6 | 63 | 25.5 | 10 | 8.3 | 5 | 50 | 50 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 32・35 | 32・35 | | | 68 | | | | | | | | | | |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | | | |
| | 48 | 48 | | | 83 | | | | | | | | | | |
| SFF-100DS-□K-□K-450N | 32・35 | 32・35 | 98 | 97.4 | 68 | 27.5 | 12 | 10.2 | 5 | 52 | 56 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | | | |
| | 48・50 | 48・50 | | | 83 | | | | | | | | | | |
| SFF-120DS-□K-□K-600N | 35 | 35 | 118 | 97.4 | 68 | 27.5 | 12 | 10.2 | 5 | 72 | 68 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | | | |
| | 48・50・52 | 48・50・52 | | | 83 | | | | | | | | | | |
| | 55 | 55 | | | 88 | | | | | | | | | | |
| | 60・62・65 | 60・62・65 | | | 98 | | | | | | | | | | |
| | – | 70 | | | 108 | | | | | | | | | | |
| SFF-140DS-□K-□K-800N | 35・38 | 35・38 | 138 | 120.2 | 83 | 36.5 | 15 | 10.6 | 5.5 | 80 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 40・42・45 | 40・42・45 | | | 88 | | | | | | | | | | |
| | – | 48・50・52 | | | 98 | | | | | | | | | | |
| | – | 55・60 | | | 108 | | | | | | | | | | |
| | – | 62・65・70 | | | 118 | | | | | | | | | | |
| | – | 75・80 | | | 128 | | | | | | | | | | |
| SFF-140DS-□K-□K-1000N | 48・50・52 | 48・50・52 | 138 | 120.2 | 98 | 36.5 | 15 | 10.6 | 5.5 | 80 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 55・60 | 55・60 | | | 108 | | | | | | | | | | |
| | 62・65・70 | 62・65・70 | | | 118 | | | | | | | | | | |
| | 75 | 75・80 | | | 128 | | | | | | | | | | |

* The nominal diameters of the pressure bolt M1 and detachment screw hole M2 are equal to the quantity minus the nominal diameter of the screw threads. The quantities of H, M1 and M2 are the same as the quantity for a hub on one side.

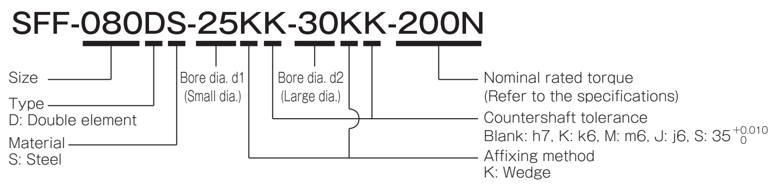
# SFF(DS) Types Double Element/Wedge Coupling

## Standard Bore Diameter

| Model | Nominal diameter | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 52 | 55 | 60 | 62 | 65 | 70 | 75 | 80 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-070DS-□K-□K-100N | d1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| SFF-080DS-□K-□K-150N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFF-080DS-□K-□K-200N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFF-090DS-□K-□K-300N | d1 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-100DS-□K-□K-450N | d1 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | d2 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFF-120DS-□K-□K-600N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFF-140DS-□K-□K-800N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| SFF-140DS-□K-□K-1000N | d1 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | d2 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

Standard bore diameter d1·d2 [mm]

## How to Place an Order




MODELS
SFC
SFS
SFF
SFM
SFH

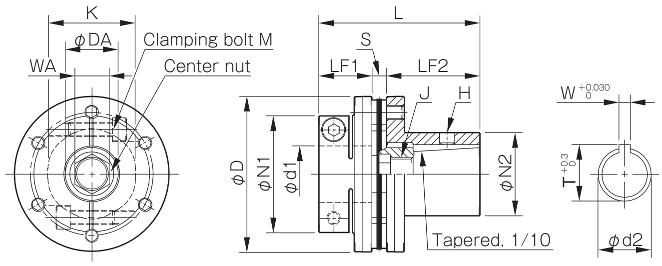
# SFF Models

## Options Tapered shaft supported

One of the hubs is a taper flange, supporting servo motor tapered shafts.

## Specifications/Dimensions Single Element/Clamping

| Model | Rated torque [N・m] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|
| SFF-040SS-□B-11CN-8N | 8 | $0.03 \times 10^{-3}$ | 0.20 |
| SFF-040SS-□B-11CN-12N | 12 | $0.03 \times 10^{-3}$ | 0.18 |
| SFF-050SS-□B-14CN-25N | 25 | $0.09 \times 10^{-3}$ | 0.36 |
| SFF-050SS-□B-16CN-25N | 25 | $0.10 \times 10^{-3}$ | 0.41 |
| SFF-060SS-□B-16CN-60N | 60 | $0.18 \times 10^{-3}$ | 0.54 |
| SFF-060SS-□B-16CN-80N | 80 | $0.19 \times 10^{-3}$ | 0.52 |

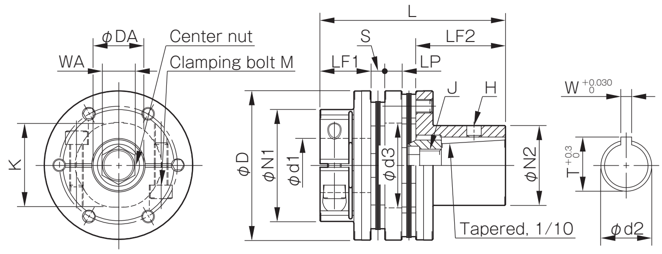



* The moment of inertia and mass are measured for the maximum bore diameter.
* For other Specifications, see Specifications for Single Element Clamping.

| Model | d1 [mm] | d2 [mm] | W [mm] | T [mm] | D [mm] | L [mm] | N1 [mm] | N 2 [mm] | LF1 [mm] | LF2 [mm] | S [mm] | K [mm] | H [mm] | M Qty - Nominal dia. | MTightening torque [N・m] | DA [mm] | W A [mm] | J Nominal × pitch | J Tightening torque [N・m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-040SS-□B-11CN-8N | 8～9.525 | 11 | 4 | 12.2 | 38 | 46.4 | 33 | 22 | 17.5 | 25 | 3.9 | 17 | 5.1 | 2-M4 | 3.4 | 12 | 6 | M6×1.0 | 10 |
| SFF-040SS-□B-11CN-12N | 10～16 | 11 | 4 | 12.2 | 38 | 46.4 | 33 | 22 | 17.5 | 25 | 3.9 | 17 | 5.1 | 2-M4 | 3.4 | 12 | 6 | M6×1.0 | 10 |
| SFF-050SS-□B-14CN-25N | 10～19 | 14 | 4 | 15.1 | 48 | 56.9 | 42 | 27.5 | 21.5 | 30 | 5.4 | 20 | 5.1 | 2-M5 | 7 | 15 | 8 | M8×1.0 | 20 |
| SFF-050SS-□B-16CN-25N | 10～19 | 16 | 5 | 17.3 | 48 | 67.9 | 42 | 29.5 | 21.5 | 41 | 5.4 | 20 | 6.8 | 2-M5 | 7 | 16 | 10 | M10×1.25 | 30 |
| SFF-060SS-□B-16CN-60N | 12～19 | 16 | 5 | 17.3 | 58 | 70.4 | 44 | 29.5 | 24 | 41 | 5.4 | 32 | 6.8 | 2-M6 | 14 | 16 | 10 | M10×1.25 | 30 |
| SFF-060SS-□B-16CN-80N | 20～22 | 16 | 5 | 17.3 | 58 | 70.4 | 44 | 29.5 | 24 | 41 | 5.4 | 32 | 6.8 | 2-M6 | 14 | 16 | 10 | M10×1.25 | 30 |
| | 24～28 | | | | | | 48 | | | | | | | 2-M5 | 7 | | | | |
| | 30 | | | | | | 52 | | | | | | | | | | | | |

## Specifications/Dimensions Double Element/Clamping

| Model | Rated torque [N・m] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|
| SFF-040DS-□B-11CN-8N | 8 | $0.04 \times 10^{-3}$ | 0.25 |
| SFF-040DS-□B-11CN-12N | 12 | $0.04 \times 10^{-3}$ | 0.23 |
| SFF-050DS-□B-14CN-25N | 25 | $0.12 \times 10^{-3}$ | 0.45 |
| SFF-050DS-□B-16CN-25N | 25 | $0.13 \times 10^{-3}$ | 0.49 |
| SFF-060DS-□B-16CN-60N | 60 | $0.24 \times 10^{-3}$ | 0.67 |
| SFF-060DS-□B-16CN-80N | 80 | $0.26 \times 10^{-3}$ | 0.64 |




* The moment of inertia and mass are measured for the maximum bore diameter.
* For other Specifications, see Specifications for Double Element/Clamping.

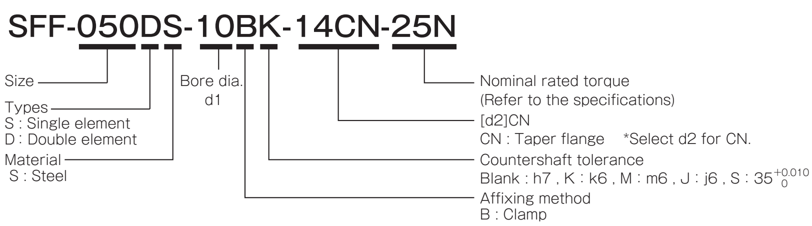
| Model | d1 [mm] | d2 [mm] | W [mm] | T [mm] | D [mm] | L [mm] | N1 [mm] | N 2 [mm] | LF1 [mm] | LF2 [mm] | LP [mm] | S [mm] | d3 [mm] | K [mm] | H [mm] | M Qty- Nominal dia. | M Tightening torque [N・m] | DA [mm] | W A [mm] | J Nominal × pitch | J Tightening torque [N・m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-040DS-□B-11CN-8N | 8～9.525 | 11 | 4 | 12.2 | 38 | 56.3 | 33 | 22 | 17.5 | 25 | 6 | 3.9 | 17 | 17 | 5.1 | 2-M4 | 3.4 | 12 | 6 | M6×1.0 | 10 |
| SFF-040DS-□B-11CN-12N | 10～16 | 11 | 4 | 12.2 | 38 | 56.3 | 33 | 22 | 17.5 | 25 | 6 | 3.9 | 17 | 17 | 5.1 | 2-M4 | 3.4 | 12 | 6 | M6×1.0 | 10 |
| SFF-050DS-□B-14CN-25N | 10～19 | 14 | 4 | 15.1 | 48 | 69.3 | 42 | 27.5 | 21.5 | 30 | 7 | 5.4 | 20 | 20 | 5.1 | 2-M5 | 7 | 15 | 8 | M8×1.0 | 20 |
| SFF-050DS-□B-16CN-25N | 10～19 | 16 | 5 | 17.3 | 48 | 80.3 | 42 | 29.5 | 21.5 | 41 | 7 | 5.4 | 20 | 20 | 6.8 | 2-M5 | 7 | 16 | 10 | M10×1.25 | 30 |
| SFF-060DS-□B-16CN-60N | 12～19 | 16 | 5 | 17.3 | 58 | 82.8 | 44 | 29.5 | 24 | 41 | 7 | 5.4 | 31 | 32 | 6.8 | 2-M6 | 14 | 16 | 10 | M10×1.25 | 30 |
| SFF-060DS-□B-16CN-80N | 20～22 | 16 | 5 | 17.3 | 58 | 82.8 | 44 | 29.5 | 24 | 41 | 7 | 5.4 | 31 | 32 | 6.8 | 2-M6 | 14 | 16 | 10 | M10×1.25 | 30 |
| | 24～28 | | | | | | 48 | | | | | | | | | 2-M5 | 7 | | | | |
| | 30 | | | | | | 52 | | | | | | | | | | | | | | |

## Standard Bore Diameter

| Model | Standard Bore Diameter d1 [mm] | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 8 | 9 | 9.525 | 10 | 11 | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 |
| SFF-040□-□B-11CN-8N | ● | ● | ● | | | | | | | | | | | | | | | |
| SFF-040□-□B-11CN-12N | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFF-050□-□B-14CN-25N | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFF-050□-□B-16CN-25N | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFF-060□-□B-16CN-60N | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFF-060□-□B-16CN-80N | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● |

* The bore diameters marked with ● are supported as standard bore diameter.

## How to Place an Order



# SFF Models

## Options Flange-Mounted

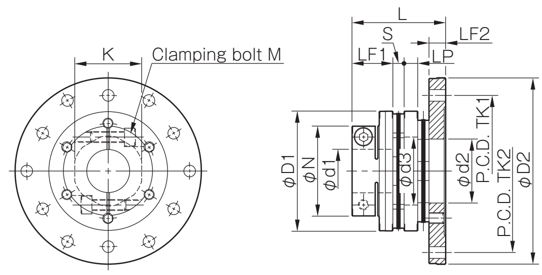
One of the hubs is flange-shaped, allowing mounting on a DD motor, speed reducer, etc.

## Specifications

| Model | Rated torque [N・m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N・m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg・m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFF-070DS-□B-105D-100N | 100 | 0.25 | 1 (On one side) | ±1.0 | 1000 | 120000 | 242 | $1.20\times10^{-3}$ | 1.08 |
| SFF-080DS-□B-166D-200N | 200 | 0.31 | 1 (On one side) | ±1.0 | 1000 | 155000 | 273 | $8.35\times10^{-3}$ | 3.11 |
| SFF-090DS-□B-166D-300N | 300 | 0.32 | 1 (On one side) | ±1.2 | 1000 | 260000 | 160.5 | $8.68\times10^{-3}$ | 3.18 |
| SFF-100DS-□B-166D-450N | 450 | 0.38 | 1 (On one side) | ±1.3 | 1000 | 370000 | 270 | $10.01\times10^{-3}$ | 3.91 |
| SFF-120DS-□B-166D-600N | 600 | 0.38 | 1 (On one side) | ±1.6 | 1000 | 485000 | 180 | $12.65\times10^{-3}$ | 4.57 |

* Max. rotation speed does not take into account dynamic balance.
* Torsional stiffness values given are measured values for the element alone.
* The moment of inertia and mass are measured for when d1 is the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D1 [mm] | D2 [mm] | L [mm] | N [mm] | LF1 [mm] | LF2 [mm] | LP [mm] | S [mm] | d3 [mm] | K [mm] | M 1 [mm] | TK1 [mm] | M 2 [mm] | TK2 [mm] | M Qty - Nominal dia. | M Tightening torque [N·m] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFF-070DS-□B-105D-100N | 28～35 | 36 | 68 | 105 | 54.8 | 56 | 25 | 10 | 8 | 5.9 | 37 | 38 | 6.4 | 86 | 6.4 | 92 | 2-M6 | 14 |
| SFF-080DS-□B-166D-200N | 28～38 | 39 | 78 | 166 | 68.9 | 70(74) | 30 | 13.5 | 10 | 7.7 | 40 | 42 | 6.4 | 150 | 8.6 | 150 | 2-M8 | 34 |
| SFF-090DS-□B-166D-300N | 35～42 | 49 | 88 | 166 | 70.1 | 74 | 30 | 13.5 | 10 | 8.3 | 50 | 50 | 6.4 | 150 | 8.6 | 150 | 2-M8 | 34 |
| SFF-100DS-□B-166D-450N | 32～48 | 51 | 98 | 166 | 85.9 | 84 | 40 | 13.5 | 12 | 10.2 | 52 | 56 | 6.4 | 150 | 8.6 | 150 | 2-M10 | 68 |
| SFF-120DS-□B-166D-600N | 48～55 | 67 | 118 | 166 | 85.9 | 100 | 40 | 13.5 | 12 | 10.2 | 72 | 68 | 6.4 | 150 | 8.6 | 150 | 2-M10 | 68 |

* The figure in parentheses ( ) for the SFF-080DS is the value when d1 is ø38 mm.
* Special arrangements may be possible for mounting holes at the flange end regarding bore diameter, number, and pitch. Check if arrangements are possible.

## Standard Bore Diameter

| Model | Standard Bore Diameter d1 [mm] | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 |
| SFF-070DS-□B-105D-100N | ● | ● | ● | ● | | | | | | | |
| SFF-080DS-□B-166D-200N | ● | ● | ● | ● | ● | | | | | | |
| SFF-090DS-□B-166D-300N | | | | ● | ● | ● | ● | | | | |
| SFF-100DS-□B-166D-450N | | | ● | ● | ● | ● | ● | ● | ● | | |
| SFF-120DS-□B-166D-600N | | | | | | | | | ● | ● | ● |

* The bore diameters marked with ● are supported as standard bore diameter.

## How to Place an Order

SFF-080DS-38BK-166D-200N

Size

Types
D : Double element

Material
S : Steel

Bore dia. d1

Nominal rated torque
(Refer to the specifications)

[D2] D
D: Flange-mounted
* Select [D2] D after d1.

Countershaft tolerance
Blank : h7 , K : k6 , M : m6 , J : j6 , S : 35$^{+0.010}_{0}$

Affixing method
B : Clamp

# SFF Models

## Items Checked for Design Purposes

### Special Items to Take Note of

You should note the following to prevent any problems.

(1) Always be careful of parallel, angular, and axial misalignment.

(2) Always tighten bolts with the specified torque.

### Precautions for Handling

Couplings are assembled at high accuracy using a special mounting jig to ensure accurate concentricity of left and right internal diameters. Take extra precautions when handling couplings, should strong shocks be given on couplings, it may affect mounting accuracy and cause the parts to break during use.

(1) Couplings are designed for use within an operating temperature range of -30° C to 120℃ . Although the couplings are designed to be waterproof and oilproof, do not subject them to excessive amounts of water and oil as it may cause part deterioration.

(2) Handle the element with care as it is made of a thin stainless steel metal disc, also making sure to be careful so as not to injure yourself.

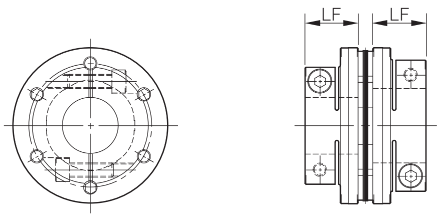
(3) Do not tighten up clamping bolts or pressure bolts until after inserting the mounting shaft.

### Mounting (Clamping)

(1) Check that coupling clamping bolts have been loosened and remove any rust, dust, oil residue, etc. from the inner diameter surfaces of the shaft and couplings. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

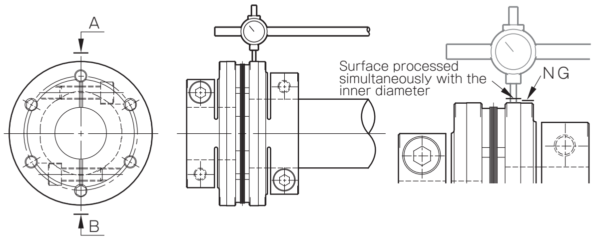
(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element.

(3) Ensure that the length of the coupling inserted onto the motor shaft touches the shaft for the entire length of the clamping hub of the coupling (LF dimension), as shown in the diagram below, and position it so that it does not interfere with the elements, spacers or the other shaft. Then temporarily tighten the two clamping bolts, tightening them alternately until the coupling cannot be manually rotated.




| Model (Clamping) | LF dimension [mm] |
|---|---|
| SFF-040 | 17.5 |
| SFF-050 | 21.5 |
| SFF-060 | 24 |
| SFF-070 | 25 |
| SFF-080 | 30 |
| SFF-090 | 30 |
| SFF-100 | 40 |
| SFF-120 | 40 |

(4) Hold a dial gauge against the outer diameter of the clamping hub on the motor shaft side (the surface processed simultaneously with the inner diameter), and then tighten the two clamping bolts while turning the motor shaft by hand and adjusting the difference in the runout values at A and B in the figure below is 0.02 mm or less (and as close to 0 as possible).



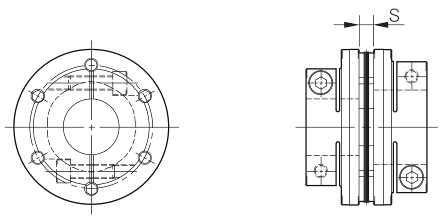

(5) Alternately fasten the two clamping bolts as you adjust them, and finish by tightening both bolts to the appropriate tightening torque of the following table, using a calibrated torque wrench.
Since it is fastened by two clamping bolts, tightening one bolt before the other will place more than the prescribed axial force on the bolt tightened first when the other bolt is tightened. Be sure to tighten them alternately, a little at a time.

| Clamping bolt nominal diameter | Tightening torque [N·m] |
|---|---|
| M4 | 3.4 |
| M5 | 7 |
| M6 | 14 |
| M8 | 34 |
| M10 | 68 |

(6) Mount the motor, to which the coupling has already been mounted, on the body of the machinery. At that time, adjust the motor mounting position (centering location) while inserting the coupling onto the driven shaft (a feed screw or the like), being alert to undue forces on the element such as compression or pulling.

(7) Make the length of the driven shaft (feed screw or the like) inserted into the coupling connect to the shaft for the length of the LF dimension (described above), alternately tighten the two clamping bolts, and provisionally tighten enough that the coupling cannot be manually rotated.

(8) In addition, keep the dimension between clamping hub faces (the S dimension in the diagram) to within the allowable misalignment of the axial displacement with respect to a reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.




| Model (Clamping) | S dimension [mm] |
|---|---|
| SFF-040 | 3.9 |
| SFF-050 | 5.4 |
| SFF-060 | 5.4 |
| SFF-070 | 5.9 |
| SFF-080 (-150N) | 8.3 |
| SFF-080 (-200N) | 7.7 |
| SFF-090 | 8.3 |
| SFF-100 | 10.2 |
| SFF-120 | 10.2 |

(9) Adjust runout using the same procedure as for the motor shaft side, and then finish by tightening the clamping bolts to the appropriate tightening torque.

(10) To protect against initial loosening of the clamping bolt, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

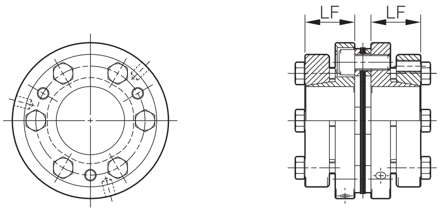
# SFF Models

## Mounting (Wedge Coupling)

(1) Check that coupling pressure bolts have been loosened and remove any rust, dust, oil residue, etc. from the inner diameter surfaces of the shaft and couplings. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element.

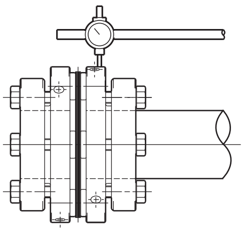
(3) Insert each coupling far enough onto the motor shaft that it touches the shaft along the entire length of the coupling flange (LF dimension), as shown in the diagram below. Position it so that it does not interfere with the elements, spacers or the other shaft and then hold it in place.



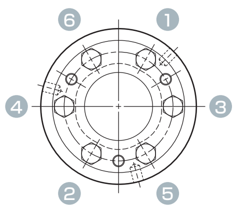

| Model (Wedge coupling) | LF dimension [mm] |
|---|---|
| SFF-070 | 23.5 |
| SFF-080 | 25.5 |
| SFF-090 | 25.5 |
| SFF-100 | 27.5 |
| SFF-120 | 27.5 |
| SFF-140 | 36.5 |

(4) Using the drive pin hole, lightly tighten the pressure bolt on the diagonal.

(5) Touch the dial gauge to the flange end face or outer diameter on the motor shaft side. Then, while gently rotating the motor shaft manually, adjust the flange periphery and end face by hammering until the runout is as close to zero as possible.



(6) Sequentially fasten the pressure bolts while doing hammering adjustments, and then use a calibrated torque wrench to tighten all the pressure bolts to the appropriate tightening torques below. See the following figure for the tightening procedure for the pressure bolts. Try to tighten them evenly.

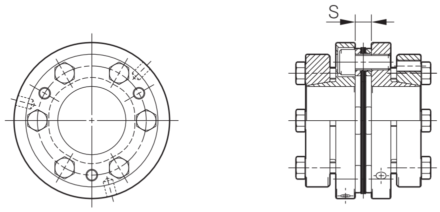



| Pressure bolt nominal diameter | Tightening torque [N·m] |
|---|---|
| M6 | 10 |
| M8 | 24 |

(7) Tighten the motor shaft's pressure bolts at the nominal torque and check that the runout value is low.

(8) Mount the motor, to which the coupling has already been mounted, on the body of the machinery. At that time, adjust the motor mounting position (centering location) while inserting the coupling onto the driven shaft (a feed screw or the like), taking care to not deform the disc. Also insert each coupling far enough onto the paired shaft that it touches the shaft along the entire length of the coupling flange (LF dimension) and then hold it in that position.

(9) Keep the width of the dimension between flange faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.




| Model | S dimension [mm] |
|---|---|
| SFF-070 | 5.9 |
| SFF-080 (-150N) | 8.3 |
| SFF-080 (-200N) | 7.7 |
| SFF-090 | 8.3 |
| SFF-100 | 10.2 |
| SFF-120 | 10.2 |
| SFF-140 | 10.6 |

(10) Sequentially tighten the pressure bolts on the driven shaft (a feed screw or the like) side using the same procedure as for the motor shaft side pressure bolts, and then tighten to the appropriate tightening torque.

(11) To protect against initial loosening of the pressure bolt, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

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# SFF Models

## Items Checked for Design Purposes

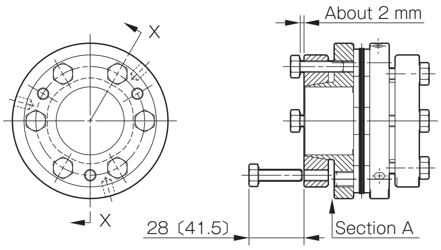
### Removal

(1) Check to confirm that there is no torque or axial load being applied to the coupling. There may be cases where a torque is applied to the coupling, particularly when the safety brake is being used. Make sure to verify that this is not occurring before removing parts.

(2) Loosen all the clamping bolts or pressure bolts (loosen pressure bolts until the gap between bearing seat and sleeve is about 2mm).

(3) For clamping type, release the fastening to the shaft by sufficiently loosening all clamping bolts. Note that grease has been applied to the clamping bolts, so do not remove them all the way.

(4) In the case of a wedge coupling system that tightens a pressure bolt from the axial direction, the sleeve will be self-locking, so the coupling between flange and shaft cannot be released simply by loosening the pressure bolt. (Note that in some cases, a coupling can be released by loosening a pressure bolt.) For that reason, when designing devices, a space must be installed for inserting a detachment screw.




* Dimensions in ( ) : SFF-140

X-X

(5) Pull out three of the pressure bolts (two 080, 150 N) loosened in step (2), insert them into the detachment screw holes on the sleeve, and tighten them in order, a little at a time. The coupling will be released.

(6) If there is no space in the axial direction, insert the tip of a flathead screwdriver or the like into part A and lightly tap perpendicular to the shaft or use it as a lever to pry off the coupling. Use appropriate caution to not damage the coupling body or the pressure bolts.

### Suitable Torque Screwdriver/Torque Wrench

#### ■ Clamping bolt

| Nominal bolt diameter | Tightening torque [N・m] | Torque screwdriver/ wrench | Hexagon bit/ head | Coupling size |
|---|---|---|---|---|
| M4 | 3.4 | CN500LTDK | SB 3mm | 040 |
| M5 | 7 | N10LTDK | SB 4mm | 050・060 |
| M6 | 14 | N25LCK | 25HCK 5mm | 060・070・080 |
| M8 | 34 | N50LCK | 50HCK 6mm | 080・090 |
| M10 | 68 | N100SPCK × 68N・m | 100HCK 8mm | 100・120 |

* Torque screwdriver (wrench)/bit (head) models are those of Nakamura Mfg. Co., Ltd.

#### ■ Pressure bolt

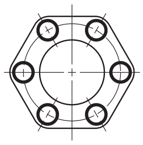
| Nominal bolt diameter | Tightening torque [N・m] | Torque wrench | Spanner head | Coupling size |
|---|---|---|---|---|
| M6 | 10 | N12SPCK × 10N・m | 25SCK 10mm | 070 ～ 120 |
| M8 | 24 | N50SPCK × 24N・m | 50SCK 13mm | 140 |

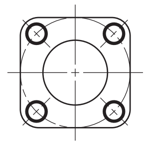
* Torque wrench/spanner head models are those of Nakamura Mfg. Co., Ltd.

### Differences in Torsional Stiffness due to Element Shape

Elements used by SFF models may be either square or hexagonal. Since torque is transmitted by coupling the hubs to each other via the element, torsional stiffness is higher in couplings that use hexagonal elements transmitting torque with six bolts, at the expense of some flexibility. Choose your element shape accordingly.

| Model (nominal rated torque) | Element shape |
|---|---|
| SFF-040 | Square |
| SFF-050 | Square |
| SFF-060 | Hexagonal |
| SFF-070 | Hexagonal |
| SFF-080 (-150N) | Square |
| SFF-080 (-200N) | Hexagonal |
| SFF-090 | Hexagonal |
| SFF-100 | Hexagonal |
| SFF-120 | Hexagonal |
| SFF-140 | Hexagonal |





### Center Nut for Tapered Shafts

The center nut designated for clamping-type sizes 040/050/060 is shipped pre-installed depending on the opposite coupling-end bore diameter. Check the table below.

| Clamping hub type model | Center nut installation |
|---|---|
| SFF-040□-□B-11CN-8N | All pre-installed |
| SFF-040□-□B-11CN-12N | Installed where d1<d12 |
| SFF-050□-□B-14CN-25N | Installed where d1<d15 |
| SFF-050□-□B-16CN-25N | Installed where d1<d16 |
| SFF-060□-□B-16CN-60N | Installed where d1<d16 |
| SFF-060□-□B-16CN-80N | All bundled |

### Flange Mounted

You must prepare bolts separately for mounting of flange-mounted models of clamping-type sizes 070 to 120.
Before mounting at the flange end, check the device and material being mounted to, strength classification of bolts, etc. for appropriate mounting.

### Clamping and Wedge Coupling in Combination

For the range of common sizes between clamping and wedge coupling (070 - 120), a common element is used per each size allowing you to use them in combination.
When specifying bore diameters in this instance, specify d1: clamping, d2: wedge coupling in that order, regardless of larger and smaller bore diameters.


Rated torques after combination are given for the clamping side. See the table below.

| d1 clamping (designation B) | | d2 wedge coupling (designation K) | | Rated torque after combination [N·m] |
|---|---|---|---|---|
| Model | Bore diameter range [mm] | Model | Bore diameter range [mm] | |
| SFF-070 (-90N) | 18・19 | SFF-070 (-100N) | 18 ～ 35 | 90 |
| SFF-070 (-100N) | 20 ～ 35 | SFF-070 (-100N) | 18 ～ 35 | 100 |
| SFF-080 (-150N) | 22 ～ 35 | SFF-080 (-150N) | 22 ～ 38 | 150 |
| SFF-080 (-200N) | 22 ～ 38 | SFF-080 (-200N) | 22 ～ 38 | 200 |
| SFF-090 (-250N) | 25・28 | SFF-090 (-300N) | 28 ～ 48 | 250 |
| SFF-090 (-300N) | 30 ～ 42 | SFF-090 (-300N) | 28 ～ 48 | 300 |
| SFF-100 (-450N) | 32 ～ 48 | SFF-100 (-450N) | 32 ～ 50 | 450 |
| SFF-120 (-600N) | 32 ～ 55 | SFF-120 (-600N) | 35 ～ 70 | 600 |

# SFF Models

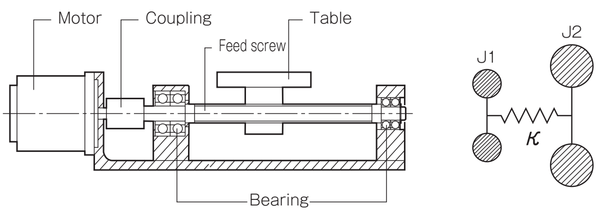
## Points to Consider Regarding the Feed Screw System

Gain adjustment on the servo motor may cause the servo motor to oscillate. Oscillation in the servo motor during operation can cause problems particularly with the overall natural frequency and electrical control systems of the feed screw system.

In order for these issues to be resolved, the torsional stiffness for the coupling and feed screw section and the moment of inertia and other characteristics for the system overall will need to be adjusted and the torsional natural frequency for the mechanical system raised or the tuning function (filter function) for the electrical control system in the servo motor adjusted during the design stage.

## How to Find the Natural Frequency of a Feed Screw System

Select a coupling based on the maximum torque of the servo motor. Next, find the overall natural frequency, Nf, from the torsional stiffness of the coupling and feed screw, $\kappa$, the moment of inertia of driving side, J1, and the moment of inertia of driven side, J2, for the feed screw system shown below.




Natural frequency of overall feed screw system Nf

$$Nf=\frac{1}{2\pi}\sqrt{\kappa\left(\frac{1}{J1}+\frac{1}{J2}\right)}$$

Nf: Overall natural frequency of a feed screw system [Hz]
$\kappa$ : Torsional stiffness of the coupling and feed screw [N·m/rad]
J1: Moment of inertia of driving side [kg·m²]
J2: Moment of inertia of driven side [kg·m²]

Torsional spring constant of coupling and feed screw $\kappa$

$$\frac{1}{\kappa}=\frac{1}{\kappa c}+\frac{1}{\kappa b}$$

$\kappa$ c: Torsional spring constant of coupling [kg·m²]
$\kappa$ b: Torsional spring constant of feed screw [kg·m²]

Driving moment of inertia J1

$$J1=Jm+\frac{Jc}{2}$$

Jm: Moment of inertia of servomotor [kg·m²]
Jc: Moment of inertia of coupling [kg·m²]

Driven moment of inertia J2

$$J2=Jb+Jt+\frac{Jc}{2}$$

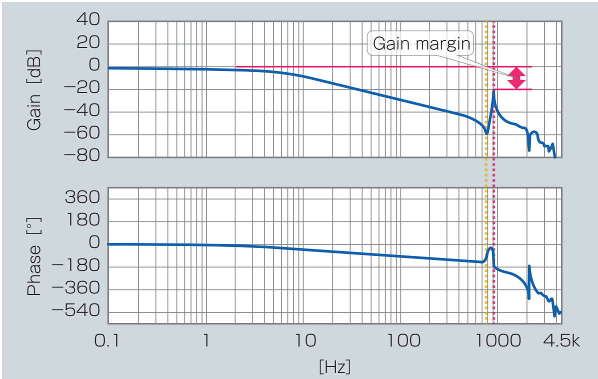
Jb: Moment of inertia of feedscrew [kg·m²]
Jt: Moment of inertia of table [kg·m²]
Jc: Moment of inertia of coupling [kg·m²]

Moment of inertia of table Jt

$$Jt=\frac{M\times P^2}{4\pi^2}$$

M: Mass of table [kg]
P: Lead of feed screw [m]

Since it is easier for oscillation to occur when the gain margin with natural frequency is 10 dB or lower, it is necessary for the natural frequency to be set high with a therefore higher gain margin at the design stage, or to adjust the natural frequency using the servomotor's electric tuning function (filter function) so as to avoid oscillation.




## Selection Procedures

(1) Find the torque, Ta, applied to the coupling using the output capacity, P, of the driver and the usage rotation speed, n.

$$Ta\ [N\cdot m]=9550\times\frac{P\ [kW]}{n\ [min^{-1}]}$$

(2) Determine the factor K from the load properties, and find the corrected torque, Td, applied to the coupling.

**Td [N·m] = Ta [N·m] × K(Refer to the table below for values)**

| Load properties | Constant | Vibrations: Small | Vibrations: Medium | Vibrations: Large |
|---|---|---|---|---|
| K | 1.0 | 1.25 | 1.75 | 2.25 |

For servo motor drive, multiply the maximum torque, Ts, by the usage factor K = 1.2 to 1.5.

$$Td\ [N\cdot m]=Ts\ [N\cdot m]\times(1.2\sim1.5)$$

(3) Set the size so that the rated coupling torque, Tn, is higher than the corrected torque, Td.

$$Tn\ [N\cdot m]\geqq Td\ [N\cdot m]$$

(4) Check that the mount shaft is no larger than the maximum bore diameter of the coupling.

* Contact Miki Pulley for assistance with any device experiencing extreme periodic vibrations.

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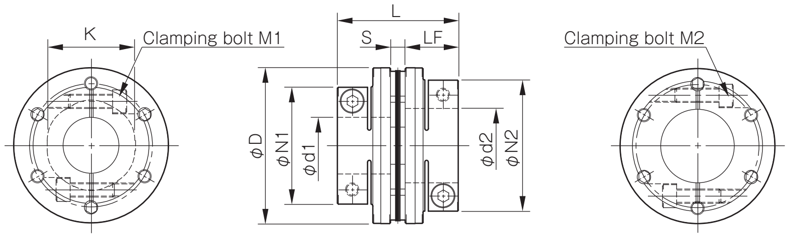
# SFM Models Clamping

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [° ] | Axial [mm] | | | | | |
| SFM-060SS-□B-□B-60N | 60 | 0.02 | 1 | ±0.3 | 24000 | 104000 | 399 | $0.22 \times 10^{-3}$ | 0.52 |
| SFM-060SS-□B-□B-80N | 80 | 0.02 | 1 | ±0.3 | 24000 | 104000 | 399 | $0.23 \times 10^{-3}$ | 0.49 |
| SFM-070SS-□B-□B-90N | 90 | 0.02 | 1 | ±0.5 | 24000 | 240000 | 484 | $0.40 \times 10^{-3}$ | 0.72 |
| SFM-070SS-□B-□B-100N | 100 | 0.02 | 1 | ±0.5 | 24000 | 240000 | 484 | $0.42 \times 10^{-3}$ | 0.67 |
| SFM-080SS-□B-□B-150N | 150 | 0.02 | 1 | ±0.5 | 24000 | 120000 | 96 | $0.79 \times 10^{-3}$ | 1.04 |
| SFM-080SS-□B-□B-200N | 200 | 0.02 | 1 | ±0.5 | 24000 | 310000 | 546 | $1.25 \times 10^{-3}$ | 1.40 |
| SFM-090SS-□B-□B-250N | 250 | 0.02 | 1 | ±0.6 | 24000 | 520000 | 321 | $1.54 \times 10^{-3}$ | 1.62 |
| SFM-090SS-□B-□B-300N | 300 | 0.02 | 1 | ±0.6 | 24000 | 520000 | 321 | $1.58 \times 10^{-3}$ | 1.53 |
| SFM-100SS-□B-□B-450N | 450 | 0.02 | 1 | ±0.65 | 20000 | 740000 | 540 | $3.27 \times 10^{-3}$ | 2.53 |
| SFM-120SS-□B-□B-600N | 600 | 0.02 | 1 | ±0.8 | 20000 | 970000 | 360 | $6.90 \times 10^{-3}$ | 3.78 |

* Torsional stiffness values given are calculated for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | S [mm] | K [mm] | M1・M2 Qty - Nominal dia. | M1・M2 Tightening torque [N・m] |
|---|---|---|---|---|---|---|---|---|---|---|
| SFM-060SS-□B-□B-60N | 12・14・15・16・17・18・19 | 12・14・15・16・17・18・19・20・22 | 58 | 53.4 | 44 | 24 | 5.4 | 32 | 2-M6 | 14 |
| | – | 24・25・28 | | | 48 | | | | 2-M5 | 7 |
| | – | 30 | | | 52 | | | | | |
| SFM-060SS-□B-□B-80N | 20・22 | 20・22 | 58 | 53.4 | 44 | 24 | 5.4 | 32 | 2-M6 | 14 |
| | 24・25・28 | 24・25・28 | | | 48 | | | | 2-M5 | 7 |
| | 30 | 30 | | | 52 | | | | | |
| SFM-070SS-□B-□B-90N | 18・19 | 18・19・20・22・24・25 | 68 | 55.9 | 47 | 25 | 5.9 | 38 | 2-M6 | 14 |
| | – | 28・30・32・35 | | | 56 | | | | | |
| SFM-070SS-□B-□B-100N | 20・22・24・25 | 20・22・24・25 | 68 | 55.9 | 47 | 25 | 5.9 | 38 | 2-M6 | 14 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | | |
| SFM-080SS-□B-□B-150N | 22・24・25 | 22・24・25 | 78 | 68.3 | 53 | 30 | 8.3 | 37 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 56 | | | | 2-M6 | 14 |
| SFM-080SS-□B-□B-200N | 22・24・25 | 22・24・25 | 78 | 67.7 | 53 | 30 | 7.7 | 42 | 2-M8 | 34 |
| | 28・30・32・35 | 28・30・32・35 | | | 70 | | | | | |
| | 38 | 38 | | | 74 | | | | | |
| SFM-090SS-□B-□B-250N | 25・28 | 25・28・30・32 | 88 | 68.3 | 66 | 30 | 8.3 | 50 | 2-M8 | 34 |
| | – | 35・38・40・42 | | | 74 | | | | | |
| SFM-090SS-□B-□B-300N | 30・32 | 30・32 | 88 | 68.3 | 66 | 30 | 8.3 | 50 | 2-M8 | 34 |
| | 35・38・40・42 | 35・38・40・42 | | | 74 | | | | | |
| SFM-100SS-□B-□B-450N | 32・35・38・40・42・45・48 | 32・35・38・40・42・45・48 | 98 | 90.2 | 84 | 40 | 10.2 | 56 | 2-M10 | 68 |
| SFM-120SS-□B-□B-600N | 32・35・38・40・42・45 | 32・35・38・40・42・45 | 118 | 90.2 | 84 | 40 | 10.2 | 68 | 2-M10 | 68 |
| | 48・50・55 | 48・50・55 | | | 100 | | | | | |

* Nominal diameter of clamping bolt M1/M2 is given as number of bolts - nominal diameter, and the number is the number for one hub.

# SFM Models Clamping

## Standard Bore Diameter

| Model | | Standard bore diameter d1·d2 [mm] | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal diameter | | 12 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 55 |
| SFM-060SS-□B-□B-60N | d1 | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFM-060SS-□B-□B-80N | d1 | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFM-070SS-□B-□B-90N | d1 | | | | | | | ● | ● | | | | | | | | | | | | | | | |
| | d2 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFM-070SS-□B-□B-100N | d1 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFM-080SS-□B-□B-150N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | |
| SFM-080SS-□B-□B-200N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | |
| SFM-090SS-□B-□B-250N | d1 | | | | | | | | | | | | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFM-090SS-□B-□B-300N | d1 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| | d2 | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | | | | |
| SFM-100SS-□B-□B-450N | d1 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| | d2 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | | |
| SFM-120SS-□B-□B-600N | d1 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| | d2 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● |

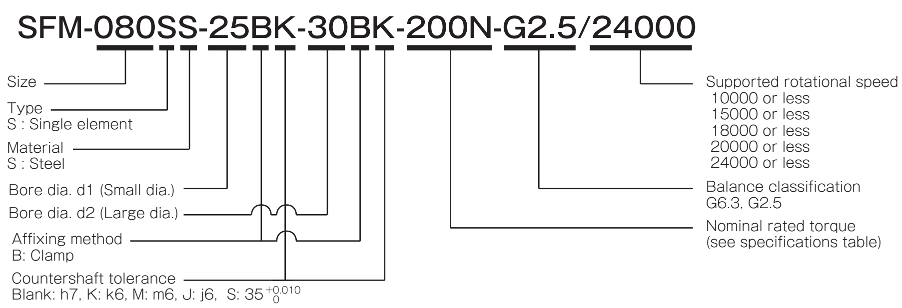
* The bore diameters marked with ● are supported as standard bore diameter.

## Balance correction

| Model (size) | Balance classification | Supported rotational speed [min⁻¹] | | | | |
|---|---|---|---|---|---|---|
| | | 10000 or less | 15000 or less | 18000 or less | 20000 or less | 24000 or less |
| SFM-060SS | G6.3 • G2.5 | ● | ● | ● | ● | ● |
| SFM-070SS | G6.3 • G2.5 | ● | ● | ● | ● | ● |
| SFM-080SS | G6.3 • G2.5 | ● | ● | ● | ● | ● |
| SFM-090SS | G6.3 • G2.5 | ● | ● | ● | ● | ● |
| SFM-100SS | G6.3 • G2.5 | ● | ● | ● | ● | |
| SFM-120SS | G6.3 • G2.5 | ● | ● | ● | ● | |

* We will perform balance correction for supported rotational speeds marked with ●.

## How to Place an Order

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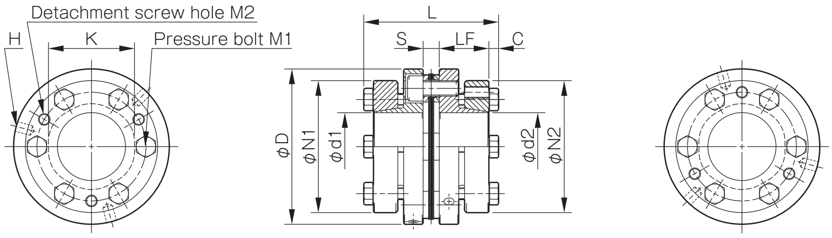
# SFM Models Wedge Coupling

## Specifications

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFM-070SS-□K-□K-100N | 100 | 0.02 | 1 | ±0.5 | 24000 | 240000 | 484 | $0.66 \times 10^{-3}$ | 0.92 |
| SFM-080SS-□K-□K-150N | 150 | 0.02 | 1 | ±0.5 | 24000 | 120000 | 96 | $1.21 \times 10^{-3}$ | 1.03 |
| SFM-080SS-□K-□K-200N | 200 | 0.02 | 1 | ±0.5 | 24000 | 310000 | 546 | $1.11 \times 10^{-3}$ | 1.26 |
| SFM-090SS-□K-□K-300N | 300 | 0.02 | 1 | ±0.6 | 24000 | 520000 | 321 | $1.75 \times 10^{-3}$ | 1.48 |
| SFM-100SS-□K-□K-450N | 450 | 0.02 | 1 | ±0.65 | 20000 | 740000 | 540 | $2.56 \times 10^{-3}$ | 1.87 |
| SFM-120SS-□K-□K-600N | 600 | 0.02 | 1 | ±0.8 | 20000 | 970000 | 360 | $5.33 \times 10^{-3}$ | 2.50 |
| SFM-140SS-□K-□K-800N | 800 | 0.02 | 1 | ±1.0 | 20000 | 1400000 | 360 | $10.28 \times 10^{-3}$ | 4.66 |
| SFM-140SS-□K-□K-1000N | 1000 | 0.02 | 1 | ±1.0 | 20000 | 1400000 | 360 | $14.70 \times 10^{-3}$ | 5.01 |

* Torsional stiffness values given are calculated for the element alone.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions




| Model | d1 [mm] | d2 [mm] | D [mm] | L [mm] | N1・N2 [mm] | LF [mm] | S [mm] | C [mm] | K [mm] | H [mm] | M1 Qty - Nominal dia. | M1 Tightening torque [N・m] | M2 Qty - Nominal dia. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFM-070SS-□K-□K-100N | 18・19 | 18・19 | 68 | 62.9 | 53 | 23.5 | 5.9 | 5 | 38 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 20・22・24・25 | 20・22・24・25 | | | 58 | | | | | | | | |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| SFM-080SS-□K-□K-150N | 22・24・25 | 22・24・25 | 78 | 69.3 | 58 | 25.5 | 8.3 | 5 | 37 | 4-5.1 | 4-M6 | 10 | 2-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | – | 38 | | | 73 | | | | | | | | |
| SFM-080SS-□K-□K-200N | 22・24・25 | 22・24・25 | 78 | 68.7 | 58 | 25.5 | 7.7 | 5 | 42 | 3-5.1 | 6-M6 | 10 | 3-M6 |
| | 28・30 | 28・30 | | | 63 | | | | | | | | |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | 38 | 38 | | | 73 | | | | | | | | |
| SFM-090SS-□K-□K-300N | 28・30 | 28・30 | 88 | 69.3 | 63 | 25.5 | 8.3 | 5 | 50 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 32・35 | 32・35 | | | 68 | | | | | | | | |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48 | 48 | | | 83 | | | | | | | | |
| SFM-100SS-□K-□K-450N | 32・35 | 32・35 | 98 | 75.2 | 68 | 27.5 | 10.2 | 5 | 56 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48・50 | 48・50 | | | 83 | | | | | | | | |
| SFM-120SS-□K-□K-600N | 35 | 35 | 118 | 75.2 | 68 | 27.5 | 10.2 | 5 | 68 | 3-6.8 | 6-M6 | 10 | 3-M6 |
| | 38・40・42 | 38・40・42 | | | 73 | | | | | | | | |
| | 45 | 45 | | | 78 | | | | | | | | |
| | 48・50・52 | 48・50・52 | | | 83 | | | | | | | | |
| | 55 | 55 | | | 88 | | | | | | | | |
| | 60・62・65 | 60・62・65 | | | 98 | | | | | | | | |
| | – | 70 | | | 108 | | | | | | | | |
| SFM-140SS-□K-□K-800N | 35・38 | 35・38 | 138 | 94.6 | 83 | 36.5 | 10.6 | 5.5 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 40・42・45 | 40・42・45 | | | 88 | | | | | | | | |
| | – | 48・50・52 | | | 98 | | | | | | | | |
| | – | 55・60 | | | 108 | | | | | | | | |
| | – | 62・65・70 | | | 118 | | | | | | | | |
| | – | 75・80 | | | 128 | | | | | | | | |
| SFM-140SS-□K-□K-1000N | 48・50・52 | 48・50・52 | 138 | 94.6 | 98 | 36.5 | 10.6 | 5.5 | 78 | 3-8.6 | 6-M8 | 24 | 3-M8 |
| | 55・60 | 55・60 | | | 108 | | | | | | | | |
| | 62・65・70 | 62・65・70 | | | 118 | | | | | | | | |
| | 75 | 75・80 | | | 128 | | | | | | | | |

* The nominal diameters of the pressure bolt M1 and detachment screw hole M2 are equal to the quantity minus the nominal diameter of the screw threads. The quantities of H, M1 and M2 are the same as the quantity for a hub on one side.

# SFM Models Wedge Coupling

## Standard Bore Diameter

| Model | Standard bore diameter d1·d2 [mm] | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal diameter | 18 | 19 | 20 | 22 | 24 | 25 | 28 | 30 | 32 | 35 | 38 | 40 | 42 | 45 | 48 | 50 | 52 | 55 | 60 | 62 | 65 | 70 | 75 | 80 |
| SFM-070SS-□K-□K-100N | d1 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| SFM-080SS-□K-□K-150N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFM-080SS-□K-□K-200N | d1 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| | d2 | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | | | | | |
| SFM-090SS-□K-□K-300N | d1 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| | d2 | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | | |
| SFM-100SS-□K-□K-450N | d1 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| | d2 | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | | | | | | | | |
| SFM-120SS-□K-□K-600N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFM-140SS-□K-□K-800N | d1 | | | | | | | | | | ● | ● | ● | ● | ● | | | | | | | | | | |
| | d2 | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| SFM-140SS-□K-□K-1000N | d1 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| | d2 | | | | | | | | | | | | | | | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |

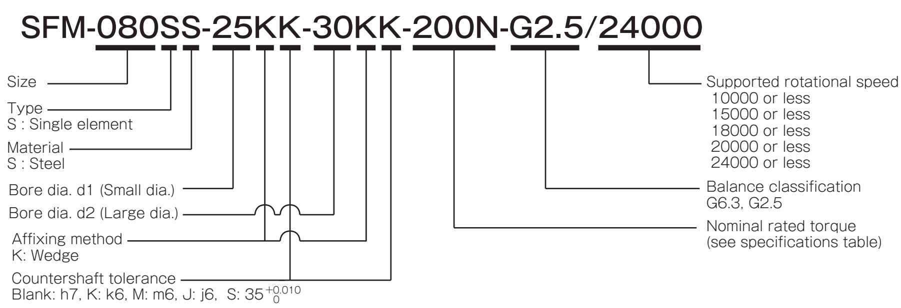
* The bore diameters marked with ● are supported as standard bore diameter.

## Balance correction

| Model (size) | Balance classification | Supported rotational speed [min⁻¹] | | | | |
|---|---|---|---|---|---|---|
| | | 10000 or less | 15000 or less | 18000 or less | 20000 or less | 24000 or less |
| SFM-070SS | G6.3・G2.5 | ● | ● | ● | ● | ● |
| SFM-080SS | G6.3・G2.5 | ● | ● | ● | ● | ● |
| SFM-090SS | G6.3・G2.5 | ● | ● | ● | ● | ● |
| SFM-100SS | G6.3・G2.5 | ● | ● | ● | ● | |
| SFM-120SS | G6.3・G2.5 | ● | ● | ● | ● | |
| SFM-140SS | G6.3・G2.5 | ● | ● | ● | ● | |

* We will perform balance correction for supported rotational speeds marked with ●.

## How to Place an Order



# SFM Models

## Items Checked for Design Purposes

### Special Items to Take Note of

You should note the following to prevent any problems.

(1) Always be careful of parallel, angular, and axial misalignment.

(2) Always tighten bolts with the specified torque.

### Precautions for Handling

Couplings are assembled at high accuracy using a special mounting jig to ensure accurate concentricity of left and right internal diameters. Take extra precautions when handling couplings, should strong shocks be given on couplings, it may affect mounting accuracy and cause the parts to break during use.

(1) Couplings are designed for use within an operating temperature range of -30° C to 120℃ . Although the couplings are designed to be waterproof and oilproof, do not subject them to excessive amounts of water and oil as it may cause part deterioration.

(2) Handle the element with care as it is made of a thin stainless steel metal disc, also making sure to be careful so as not to injure yourself.

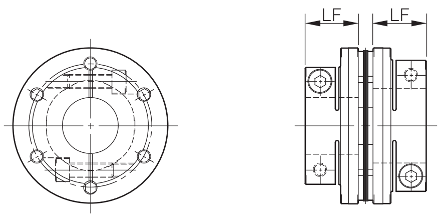
(3) Do not tighten up clamping bolts or pressure bolts until after inserting the mounting shaft.

### Mounting (Clamping)

(1) Check that coupling clamping bolts have been loosened and remove any rust, dust, oil residue, etc. from the inner diameter surfaces of the shaft and couplings. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

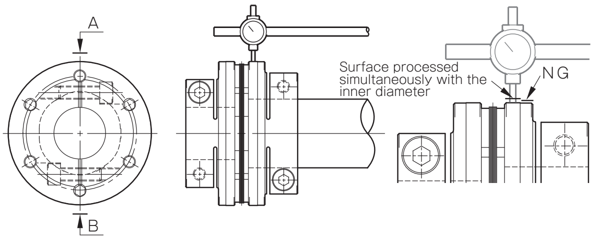
(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element.

(3) Ensure that the length of the coupling inserted onto the motor shaft touches the shaft for the entire length of the clamping hub of the coupling (LF dimension), as shown in the diagram below, and position it so that it does not interfere with the elements, spacers or the other shaft. Then temporarily tighten the two clamping bolts, tightening them alternately until the coupling cannot be manually rotated.




| Model (Clamping) | LF dimension [mm] |
|---|---|
| SFM-060 | 24 |
| SFM-070 | 25 |
| SFM-080 | 30 |
| SFM-090 | 30 |
| SFM-100 | 40 |
| SFM-120 | 40 |

(4) Hold a dial gauge against the outer diameter of the clamping hub on the motor shaft side (the surface processed simultaneously with the inner diameter), and then tighten the two clamping bolts while turning the motor shaft by hand and adjusting the difference in the runout values at A and B in the figure below is 0.02 mm or less (and as close to 0 as possible).



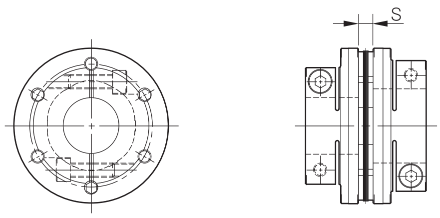

(5) Alternately fasten the two clamping bolts as you adjust them, and finish by tightening both bolts to the appropriate tightening torque of the following table, using a calibrated torque wrench.
Since it is fastened by two clamping bolts, tightening one bolt before the other will place more than the prescribed axial force on the bolt tightened first when the other bolt is tightened. Be sure to tighten them alternately, a little at a time.

| Clamping bolt nominal diameter | Tightening torque [N·m] |
|---|---|
| M5 | 7 |
| M6 | 14 |
| M8 | 34 |
| M10 | 68 |

(6) Mount the motor, to which the coupling has already been mounted, on the body of the machinery. At that time, adjust the motor mounting position (centering location) while inserting the coupling onto the driven shaft, being alert to undue forces on the element such as compression or pulling.

(7) Make the length of the driven shaft inserted into the coupling connect to the shaft for the length of the LF dimension (described above), alternately tighten the two clamping bolts, and provisionally tighten enough that the coupling cannot be manually rotated.

(8) In addition, keep the dimension between clamping hub faces (the S dimension in the diagram) to within the allowable misalignment of the axial displacement with respect to a reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.




| Model (Clamping) | S dimension [mm] |
|---|---|
| SFM-060 | 5.4 |
| SFM-070 | 5.9 |
| SFM-080 (-150N) | 8.3 |
| SFM-080 (-200N) | 7.7 |
| SFM-090 | 8.3 |
| SFM-100 | 10.2 |
| SFM-120 | 10.2 |

(9) Adjust runout using the same procedure as for the motor shaft side, and then finish by tightening the clamping bolts to the appropriate tightening torque.

(10) To protect against initial loosening of the clamping bolt, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

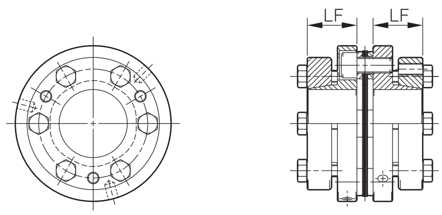
# SFM Models

## Mounting (Wedge Coupling)

(1) Check that coupling pressure bolts have been loosened and remove any rust, dust, oil residue, etc. from the inner diameter surfaces of the shaft and couplings. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

(2) Be careful when inserting the couplings into the shaft so as not to apply excessive force of compression or tensile force to the element.

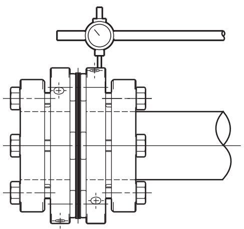
(3) Insert each coupling far enough onto the motor shaft that it touches the shaft along the entire length of the coupling flange (LF dimension), as shown in the diagram below. Position it so that it does not interfere with the elements, spacers or the other shaft and then hold it in place.



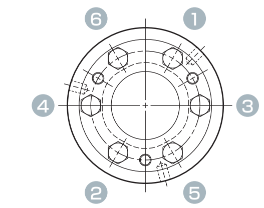

| Model (Wedge coupling) | LF dimension [mm] |
|---|---|
| SFM-070 | 23.5 |
| SFM-080 | 25.5 |
| SFM-090 | 25.5 |
| SFM-100 | 27.5 |
| SFM-120 | 27.5 |
| SFM-140 | 36.5 |

(4) Using the drive pin hole, lightly tighten the pressure bolt on the diagonal.

(5) Touch the dial gauge to the flange end face or outer diameter on the motor shaft side. Then, while gently rotating the motor shaft manually, adjust the flange periphery and end face by hammering until the runout is as close to zero as possible.



(6) Sequentially fasten the pressure bolts while doing hammering adjustments, and then use a calibrated torque wrench to tighten all the pressure bolts to the appropriate tightening torques below. See the following figure for the tightening procedure for the pressure bolts. Try to tighten them evenly.

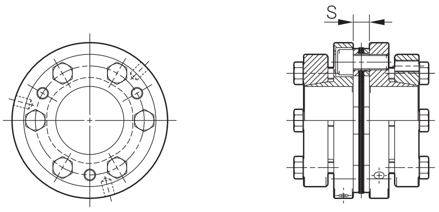



| Pressure bolt nominal diameter | Tightening torque [N·m] |
|---|---|
| M6 | 10 |
| M8 | 24 |

(7) Tighten the motor shaft's pressure bolts at the nominal torque and check that the runout value is low.

(8) Mount the motor, to which the coupling has already been mounted, on the body of the machinery. At that time, adjust the motor mounting position (centering location) while inserting the coupling onto the driven shaft, being alert to any deformation of the disc, etc. Make the length of the driven shaft inserted into the coupling be in contact with the entire length of the coupling flange (LF dimension), and maintain it at that position.

(9) Keep the width of the dimension between flange faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.



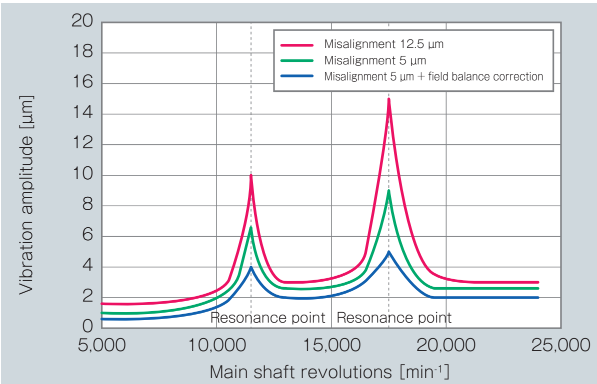

| Model | S dimension [mm] |
|---|---|
| SFM-070 | 5.9 |
| SFM-080 (-150N) | 8.3 |
| SFM-080 (-200N) | 7.7 |
| SFM-090 | 8.3 |
| SFM-100 | 10.2 |
| SFM-120 | 10.2 |
| SFM-140 | 10.6 |

(10) Tighten the pressure bolts on the driven shaft in order using the same procedure as for the pressure bolts on the motor shaft side, and then finish by tightening to the appropriate tightening torque.

(11) To protect against initial loosening of the pressure bolt, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

## Important when Combining for High-Revolution (Main Shaft) Applications

For high-revolution applications such as a machining center main shaft, vibration can become an issue.
One cause of vibration at high revolutions is misalignment of shaft axes when combining the spindle motor and the main shaft, with vibration still occurring even with balance correction of the coupling itself.
While it is possible to allow for some misalignment occurring as parallel, angular, or axial displacement, it is particularly important to take care with misalignment with high-revolution applications. Be sure to perform axial adjustment during assembly and field balance correction after assembly.




*Couplings used in the above measurements had undergone balance correction on an individual basis.

# SFM Models

## Items Checked for Design Purposes

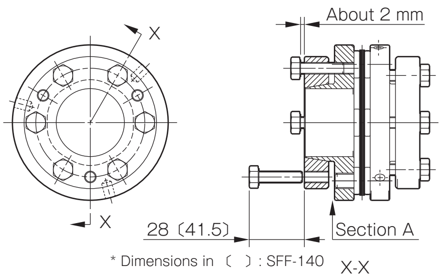
### Removal

(1) Check to confirm that there is no torque or axial load being applied to the coupling. There may be cases where a torque is applied to the coupling, particularly when the safety brake is being used. Make sure to verify that this is not occurring before removing parts.

(2) Loosen all the clamping bolts or pressure bolts (loosen pressure bolts until the gap between bearing seat and sleeve is about 2mm).

(3) For clamping type, release the fastening to the shaft by sufficiently loosening all clamping bolts. Note that grease has been applied to the clamping bolts, so do not remove them all the way.

(4) In the case of a wedge coupling system that tightens a pressure bolt from the axial direction, the sleeve will be self-locking, so the coupling between flange and shaft cannot be released simply by loosening the pressure bolt. (Note that in some cases, a coupling can be released by loosening a pressure bolt.) For that reason, when designing devices, a space must be installed for inserting a detachment screw.




(5) Pull out three of the pressure bolts (two 080, 150 N) loosened in step (2), insert them into the detachment screw holes on the sleeve, and tighten them in order, a little at a time. The coupling will be released.

(6) If there is no space in the axial direction, insert the tip of a flathead screwdriver or the like into part A and lightly tap perpendicular to the shaft or use it as a lever to pry off the coupling. Use appropriate caution to not damage the coupling body or the pressure bolts.

### Suitable Torque Screwdriver/Torque Wrench

#### Clamping bolt

| Nominal bolt diameter | Tightening torque [N・m] | Torque screwdriver/ wrench | Hexagon bit/ head | Coupling size |
|---|---|---|---|---|
| M5 | 7 | N10LTDK | SB 4mm | 060 |
| M6 | 14 | N25LCK | 25HCK 5mm | 060・070・080 |
| M8 | 34 | N50LCK | 50HCK 6mm | 080・090 |
| M10 | 68 | N100SPCK × 68N・m | 100HCK 8mm | 100・120 |

* Torque screwdriver (wrench)/bit (head) models are those of Nakamura Mfg. Co., Ltd.

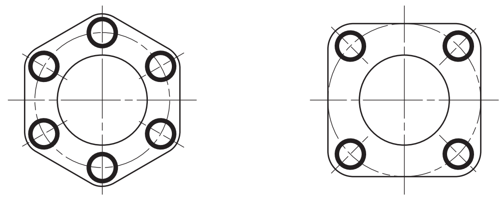
#### Pressure bolt

| Nominal bolt diameter | Tightening torque [N・m] | Torque wrench | Spanner head | Coupling size |
|---|---|---|---|---|
| M6 | 10 | N12SPCK × 10N・m | 25SCK 10mm | 070 ～ 120 |
| M8 | 24 | N50SPCK × 24N・m | 50SCK 13mm | 140 |

* Torque wrench/spanner head models are those of Nakamura Mfg. Co., Ltd.

### Differences in Torsional Stiffness due to Element Shape

Elements used by SFM models may be either square or hexagonal. Since torque is transmitted by coupling the hubs to each other via the element, torsional stiffness is higher in couplings that use hexagonal elements transmitting torque with six bolts, at the expense of some flexibility. Choose your element shape accordingly.



| Model (nominal rated torque) | Element shape |
|---|---|
| SFM-060 | Hexagonal |
| SFM-070 | Hexagonal |
| SFM-080 (-150N) | Square |
| SFM-080 (-200N) | Hexagonal |
| SFM-090 | Hexagonal |
| SFM-100 | Hexagonal |
| SFM-120 | Hexagonal |
| SFM-140 | Hexagonal |

### Clamping and Wedge Coupling in Combination

For the range of common sizes between clamping and wedge coupling (070 - 120), a common element is used per each size allowing you to use them in combination.
When specifying bore diameters in this instance, specify d1: clamping, d2: wedge coupling in that order, regardless of larger and smaller bore diameters.

Example) SFM-080SS-30B-25K-200N-G2.5/24000

- 30: Bore dia. d1
- B: Affixing method, B : Clamp
- 25: Bore dia. d2
- K: Affixing method, K: Wedge

Rated torques after combination are given for the clamping side. See the table below.

| d1 clamping (designation B) | | d2 wedge coupling (designation K) | | Rated torque after combination [N·m] |
|---|---|---|---|---|
| Model | Bore diameter range [mm] | Model | Bore diameter range [mm] | |
| SFM-070 (-90N) | 18・19 | SFM-070 (-100N) | 18 ～ 35 | 90 |
| SFM-070 (-100N) | 20 ～ 35 | SFM-070 (-100N) | 18 ～ 35 | 100 |
| SFM-080 (-150N) | 22 ～ 35 | SFM-080 (-150N) | 22 ～ 38 | 150 |
| SFM-080 (-200N) | 22 ～ 38 | SFM-080 (-200N) | 22 ～ 38 | 200 |
| SFM-090 (-250N) | 25・28 | SFM-090 (-300N) | 28 ～ 48 | 250 |
| SFM-090 (-300N) | 30 ～ 42 | SFM-090 (-300N) | 28 ～ 48 | 300 |
| SFM-100 (-450N) | 32 ～ 48 | SFM-100 (-450N) | 32 ～ 50 | 450 |
| SFM-120 (-600N) | 32 ～ 55 | SFM-120 (-600N) | 35 ～ 70 | 600 |

# SFM Models

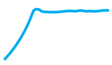
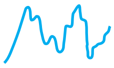
## Selection Procedures

(1) Find the torque, Ta, applied to the coupling using the output capacity, P, of the driver and the usage rotation speed, n.

$$Ta\ [N\cdot m] = 9550 \times \frac{P\ [kW]}{n\ [min^{-1}]}$$

(2) Determine the factor K from the load properties, and find the corrected torque, Td, applied to the coupling.

$$Td\ [N\cdot m] = Ta\ [N\cdot m] \times K \text{(Refer to the table below for values)}$$

| Load properties | Constant | Vibrations: Small | Vibrations: Medium | Vibrations: Large |
|---|---|---|---|---|
| |  |  |  |  |
| K | 1.0 | 1.25 | 1.75 | 2.25 |

For servo motor drive, multiply the maximum torque, Ts, by the usage factor K = 1.2 to 1.5.

$$Td\ [N\cdot m] = Ts\ [N\cdot m] \times (1.2 \sim 1.5)$$

For high-revolution applications such as a machining center main shaft, it is necessary to set a high safety factor unlike common feed screw systems.
Multiply the maximum torque of spindle motor: Ts by the service factor: K=3 to 3.6.

$$Td\ [N\cdot m] = Ts\ [N\cdot m] \times (3 \sim 3.6)$$

(3) Set the size so that the rated coupling torque, Tn, is higher than the corrected torque, Td.

$$Tn\ [N\cdot m] \geqq Td\ [N\cdot m]$$

(4) Check that the mount shaft is no larger than the maximum bore diameter of the coupling.

* Contact Miki Pulley for assistance with any device experiencing extreme periodic vibrations.

MODELS
SFC
SFS
SFF
SFM
SFH

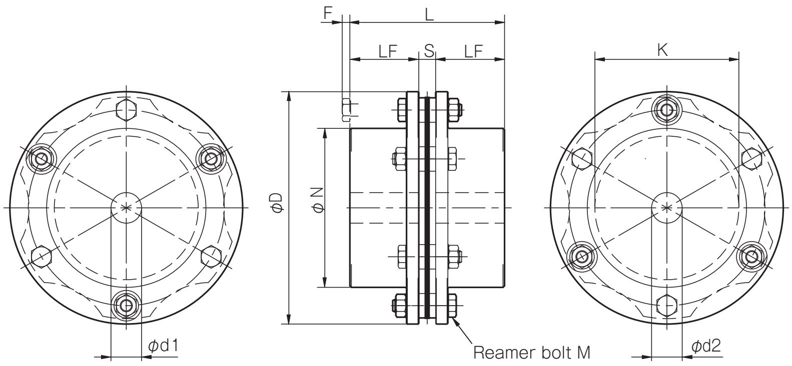
# SFH(S) Types Single Element Type

## Specification (SFH-□S) Pilot Bore/Key or Set Screw

| Model | Rated torque [N·m] | Misalignment | | Max. rotation speed [min$^{-1}$] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m$^2$] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|
| | | Angular [°] | Axial [mm] | | | | | |
| SFH-150S | 1000 | 1 | ±0.4 | 5900 | 1500000 | 244 | $12.60 \times 10^{-3}$ | 4.71 |
| SFH-170S | 1300 | 1 | ±0.5 | 5100 | 2840000 | 224 | $26.88 \times 10^{-3}$ | 7.52 |
| SFH-190S | 2000 | 1 | ±0.5 | 4700 | 3400000 | 244 | $43.82 \times 10^{-3}$ | 10.57 |
| SFH-210S | 4000 | 1 | ±0.55 | 4300 | 4680000 | 508 | $68.48 \times 10^{-3}$ | 13.78 |
| SFH-220S | 5000 | 1 | ±0.6 | 4000 | 5940000 | 448 | $102.53 \times 10^{-3}$ | 18.25 |
| SFH-260S | 8000 | 1 | ±0.7 | 3400 | 10780000 | 612 | $233.86 \times 10^{-3}$ | 29.66 |

* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions (SFH-□S) Pilot Bore/Key or Set Screw




Unit [mm]

| Model | d1·d2 | | | D | N | L | LF | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pilot bore | Min. | Max. | | | | | | | | |
| SFH-150S | 20 | 22 | 70 | 152 | 104 | 101 | 45 | 11 | 5 | 94 | 6-M8×36 |
| SFH-170S | 25 | 28 | 80 | 178 | 118 | 124 | 55 | 14 | 6 | 108 | 6-M10×45 |
| SFH-190S | 30 | 32 | 85 | 190 | 126 | 145 | 65 | 15 | 10 | 116 | 6-M12×54 |
| SFH-210S | 35 | 38 | 90 | 210 | 130 | 165 | 75 | 15 | 8 | 124 | 6-M16×60 |
| SFH-220S | 45 | 48 | 100 | 225 | 144 | 200 | 90 | 20 | −2 | 132 | 6-M16×60 |
| SFH-260S | 50 | 55 | 115 | 262 | 166 | 223 | 100 | 23 | 11 | 150 | 6-M20×80 |

* Pilot bores are to be drilled into the part. See the standard hole-drilling standards of P.86 for information on bore drilling.
* The nominal diameter of the reamer bolt is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## How to Place an Order

SFH-150S-38H-38H

Size
Type: S
Single element
Bore diameter: d1 (Small diameter) - d2 (Large diameter)
Blank: Pilot bore
Bore specifications
Blank: Compliant with the old JIS standards (class 2)
H: Compliant with the new JIS standards
N: Compliant with the new motor standards

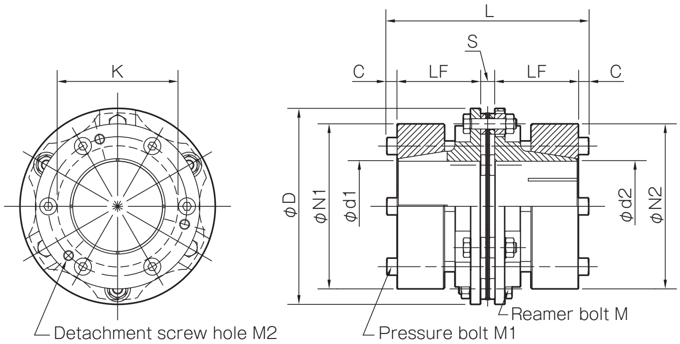
# SFH(S) Types Single Element Type

## Specification (SFH-□S-□K-□K) Frictional Coupling

| Model | Rated torque [N·m] | Misalignment | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|
| | | Angular [°] | Axial [mm] | | | | | |
| SFH-150S | 1000 | 1 | ±0.4 | 5900 | 1500000 | 244 | $25.14 \times 10^{-3}$ | 8.95 |
| SFH-170S | 1300 | 1 | ±0.5 | 5100 | 2840000 | 224 | $47.90 \times 10^{-3}$ | 12.53 |
| SFH-190S | 2000 | 1 | ±0.5 | 4700 | 3400000 | 244 | $60.40 \times 10^{-3}$ | 14.21 |
| SFH-210S | 4000 | 1 | ±0.55 | 4300 | 4680000 | 508 | $80.50 \times 10^{-3}$ | 16.12 |

* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass in the table are measured for the maximum bore diameter.

## Dimensions (SFH-□S-□K-□K) Frictional Coupling




Unit [mm]

| Model | D | L | d1・d2 | N1・N2 | LF | S | C | K | M | M1 | M2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SFH-150S | 152 | 157 | 38・40・42・45・48・50 | 108 | 65 | 11 | 8 | 94 | 6-M8×36 | 6-M8×60 | 3-M8 |
| | | | 55・56・60・65・70 | 128 | | | | | | | |
| SFH-170S | 178 | 160 | 38・40・42・45・48・50 | 108 | 65 | 14 | 8 | 108 | 6-M10×45 | 6-M8×60 | 3-M8 |
| | | | 55・56・60・65・70 | 128 | | | | | | | |
| | | | 75・80 | 148 | | | | | | | |
| SFH-190S | 190 | 175 | 38・40・42・45・48・50 | 108 | 70 | 15 | 10 | 116 | 6-M12×54 | 6-M10×65 | 3-M10 |
| | | | 55・56・60・65・70 | 128 | | | | | | | |
| | | | 75・80・85 | 148 | | | | | | | |
| SFH-210S | 210 | 181 | 38・40・42・45・48・50 | 108 | 73 | 15 | 10 | 124 | 6-M16×60 | 6-M10×65 | 3-M10 |
| | | | 55・56・60・65・70 | 128 | | | | | | | |
| | | | 75・80・85・90 | 148 | | | | | | | |

* The nominal diameters of each bolt and tap are equal to the quantity minus the nominal diameter of the screw threads times the nominal length. The quantities for the pressure bolt M1 and detachment screw hole M2 are quantities for the hub on one side.

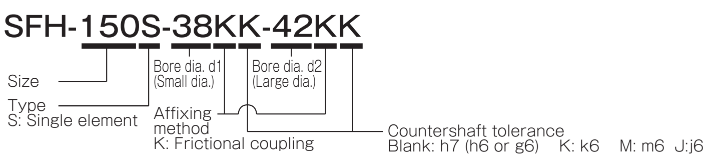
## Standard Bore Diameter

| Model | Standard bore diameter d1, d2 [mm] | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 | 65 | 70 | 75 | 80 | 85 | 90 |
| SFH-150S | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFH-170S | 1100 | 1200 | 1250 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFH-190S | 1800 | 1900 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| SFH-210S | 1800 | 1900 | 2000 | 2150 | 2300 | 2400 | 2600 | 2650 | 2850 | 3100 | 3350 | 3600 | 3800 | ● | ● |

* The bore diameters marked with ● or numbers are supported as standard bore diameter.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque value [N·m].



## How to Place an Order



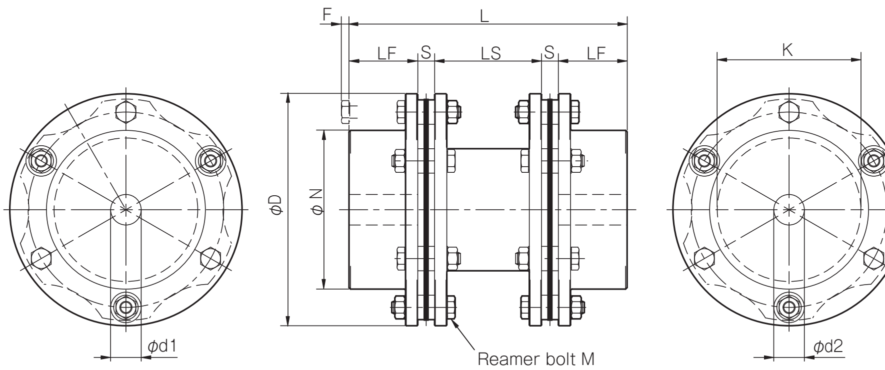
# SFH(G) Types Double Element/Floating Shaft Type

## Specification (SFH-□G) Pilot Bore/Key or Set Screw

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFH-150G | 1000 | 1.4 | 1 (On one side) | ±0.8 | 5900 | 750000 | 122 | $21.87 \times 10^{-3}$ | 8.72 |
| SFH-170G | 1300 | 1.6 | 1 (On one side) | ±1.0 | 5100 | 1420000 | 112 | $51.07 \times 10^{-3}$ | 13.94 |
| SFH-190G | 2000 | 2.0 | 1 (On one side) | ±1.0 | 4700 | 1700000 | 122 | $81.58 \times 10^{-3}$ | 19.51 |
| SFH-210G | 4000 | 2.1 | 1 (On one side) | ±1.1 | 4300 | 2340000 | 254 | $125.50 \times 10^{-3}$ | 24.26 |
| SFH-220G | 5000 | 2.3 | 1 (On one side) | ±1.2 | 4000 | 2970000 | 224 | $176.91 \times 10^{-3}$ | 30.27 |
| SFH-260G | 8000 | 2.9 | 1 (On one side) | ±1.4 | 3400 | 5390000 | 306 | $433.47 \times 10^{-3}$ | 53.11 |

* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass are measured for the maximum bore diameter.

## Dimensions (SFH-□G) Pilot Bore/Key or Set Screw




Unit [mm]

| Model | d1·d2 | | | D | N | L | LF | LS | S | F | K | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Pilot bore | Min. | Max. | | | | | | | | | |
| SFH-150G | 20 | 22 | 70 | 152 | 104 | 182 | 45 | 70 | 11 | 5 | 94 | 12-M8×36 |
| SFH-170G | 25 | 28 | 80 | 178 | 118 | 218 | 55 | 80 | 14 | 6 | 108 | 12-M10×45 |
| SFH-190G | 30 | 32 | 85 | 190 | 126 | 260 | 65 | 100 | 15 | 10 | 116 | 12-M12×54 |
| SFH-210G | 35 | 38 | 90 | 210 | 130 | 290 | 75 | 110 | 15 | 8 | 124 | 12-M16×60 |
| SFH-220G | 45 | 48 | 100 | 225 | 144 | 335 | 90 | 115 | 20 | −2 | 132 | 12-M16×60 |
| SFH-260G | 50 | 55 | 115 | 262 | 166 | 391 | 100 | 145 | 23 | 11 | 150 | 12-M20×80 |

* Pilot bores are to be drilled into the part. See the standard hole-drilling standards of P.86 for information on bore drilling.
* If you require a product with an LS dimension other than that above, contact Miki Pulley with your required dimension [mm]. Please contact Miki Pulley for assistance if LS ≧ 1000.
* The nominal diameter of the reamer bolt is equal to the quantity minus the nominal diameter of the screw threads times the nominal length.

## How to Place an Order

SFH-150G-38H-38H LS=500

Size

Type: G
Double element
Floating shaft

Bore diameter: d1 (Small diameter) - d2 (Large diameter)
Blank: Pilot bore

Bore specifications
Blank: Compliant with the old JIS standards (class 2)
H: Compliant with the new JIS standards
N: Compliant with the new motor standards

Spacer length
*Use mm units for LS dimensions.
*Leave blank for standard spacers.

## Maximum LS Dimension When Used Vertically

| Model | LS [mm] |
|---|---|
| SFH-150G | 1100 |
| SFH-170G | 800 |
| SFH-190G | 900 |
| SFH-210G | 2000 |
| SFH-220G | 1900 |
| SFH-260G | 2500 |

* When considering vertical use and the LS dimension is greater than that in the above table, consult Miki Pulley.

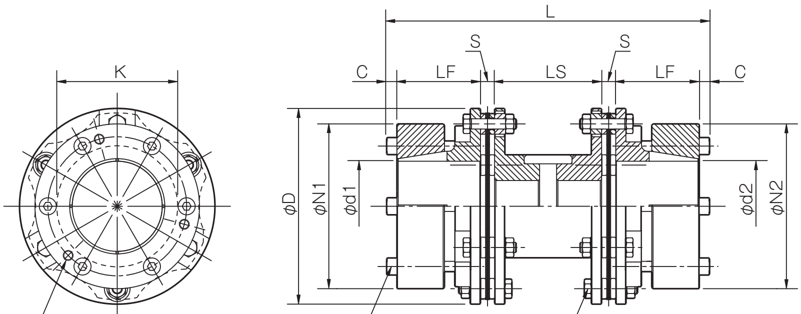
# SFH(G) Types Double Element/Floating Shaft Type

## Specification (SFH-□G-□K-□K) Frictional Coupling

| Model | Rated torque [N·m] | Misalignment | | | Max. rotation speed [min⁻¹] | Torsional stiffness [N·m/rad] | Axial stiffness [N/mm] | Moment of inertia [kg·m²] | Mass [kg] |
|---|---|---|---|---|---|---|---|---|---|
| | | Parallel [mm] | Angular [°] | Axial [mm] | | | | | |
| SFH-150G | 1000 | 1.4 | 1 (On one side) | ± 0.8 | 5900 | 750000 | 122 | $34.41 \times 10^{-3}$ | 12.96 |
| SFH-170G | 1300 | 1.6 | 1 (On one side) | ± 1.0 | 5100 | 1420000 | 112 | $72.09 \times 10^{-3}$ | 18.95 |
| SFH-190G | 2000 | 2.0 | 1 (On one side) | ± 1.0 | 4700 | 1700000 | 122 | $98.15 \times 10^{-3}$ | 23.14 |
| SFH-210G | 4000 | 2.1 | 1 (On one side) | ± 1.1 | 4300 | 2340000 | 254 | $137.53 \times 10^{-3}$ | 26.61 |

* Max. rotation speed does not take into account dynamic balance.
* The moment of inertia and mass in the table are measured for the maximum bore diameter.

## Dimensions (SFH-□G-□K-□K) Frictional Coupling




Unit [mm]

| Model | D | L | d1・d2 | N1・N2 | LF | LS | S | C | K | M | M1 | M2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SFH-150G | 152 | 238 | 38・40・42・45・48・50 | 108 | 65 | 70 | 11 | 8 | 94 | 12-M8 × 36 | 6-M8 × 60 | 3-M8 |
| | | | 55・56・60・65・70 | 128 | | | | | | | | |
| SFH-170G | 178 | 254 | 38・40・42・45・48・50 | 108 | 65 | 80 | 14 | 8 | 108 | 12-M10 × 45 | 6-M8 × 60 | 3-M8 |
| | | | 55・56・60・65・70 | 128 | | | | | | | | |
| | | | 75・80 | 148 | | | | | | | | |
| SFH-190G | 190 | 290 | 38・40・42・45・48・50 | 108 | 70 | 100 | 15 | 10 | 116 | 12-M12 × 54 | 6-M10 × 65 | 3-M10 |
| | | | 55・56・60・65・70 | 128 | | | | | | | | |
| | | | 75・80・85 | 148 | | | | | | | | |
| SFH-210G | 210 | 306 | 38・40・42・45・48・50 | 108 | 73 | 110 | 15 | 10 | 124 | 12-M16 × 60 | 6-M10 × 65 | 3-M10 |
| | | | 55・56・60・65・70 | 128 | | | | | | | | |
| | | | 75・80・85・90 | 148 | | | | | | | | |

* If you require a product with an LS dimension other than that above, contact Miki Pulley with your required dimension [mm]. Please contact Miki Pulley for assistance if LS ≧ 1000.
* The nominal diameters of each bolt and tap are equal to the quantity minus the nominal diameter of the screw threads times the nominal length. The quantities for the pressure bolt M1 and detachment screw hole M2 are quantities for the hub on one side.

## Standard Bore Diameter

| Model | Standard bore diameter d1, d2 [mm] | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 38 | 40 | 42 | 45 | 48 | 50 | 55 | 56 | 60 | 65 | 70 | 75 | 80 | 85 | 90 |
| SFH-150G | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | | | |
| SFH-170G | 1100 | 1200 | 1250 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | | |
| SFH-190G | 1800 | 1900 | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| SFH-210G | 1800 | 1900 | 2000 | 2150 | 2300 | 2400 | 2600 | 2650 | 2850 | 3100 | 3350 | 3600 | 3800 | ● | ● |

* The bore diameters marked with ● or numbers are supported as standard bore diameter.
* Bore diameters whose fields contain numbers are restricted in their rated torque by the holding power of the shaft connection component because the bore diameter is small. The numbers indicate the rated torque value [N·m].

## How to Place an Order

SFH-150G-38KK-42KK LS=500

- Size: 150
- Type: G — Double element Floating shaft
- Bore dia. d1 (Small dia.)
- Bore dia. d2 (Large dia.)
- Affixing method — K: Frictional coupling
- Countershaft tolerance — Blank: h7 (h6 or g6) K: k6 M: m6 J:j6
- Spacer length — *Use mm units for LS dimensions. *Leave blank for standard spacers.

## Maximum LS Dimension When Used Vertically

| Model | LS [mm] |
|---|---|
| SFH-150G | 1100 |
| SFH-170G | 800 |
| SFH-190G | 900 |
| SFH-210G | 2000 |

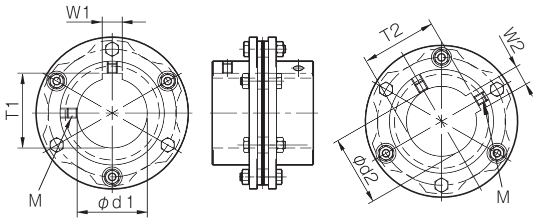
* When considering vertical use and the LS dimension is greater than that in the above table, consult Miki Pulley.

# SFH Models

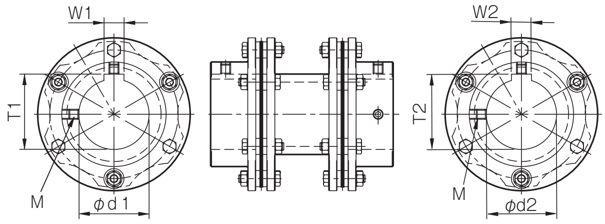
## Standard Hole-Drilling Standards

- Positioning precision for keyway milling is determined by sight, so contact Miki Pulley when the keyway requires a positioning precision for a particular flange hub.
- Set screw positions are not on the same plane.
- The set screws are included with the product.
- Consult the technical documentation at the end of this volume for standard dimensions for bore processing other than those given here.

### ■ SFH(S)




### ■ SFH(G)




Unit [mm]

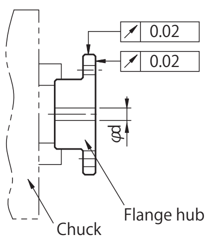
| Models compliant with the old JIS standards (class 2) | | | | | Models compliant with the new JIS standards | | | | | Models compliant with the new motor standards | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Nominal bore diameter | Bore diameter [d1・d2] | Keyway width [W1・W2] | Keyway height [T1・T2] | Set screw hole [M] | Nominal bore diameter | Bore diameter [d1・d2] | Keyway width [W1・W2] | Keyway height [T1・T2] | Set screw hole [M] | Nominal bore diameter | Bore diameter [d1・d2] | Keyway width [W1・W2] | Keyway height [T1・T2] | Set screw hole [M] |
| Tolerance | H7 | E9 | – | – | Tolerance | H7 | H9 | – | – | Tolerance | G7, F7 | H9 | – | – |
| 22 | $22^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | $25.0^{+0.3}_{0}$ | 2-M6 | 22H | $22^{+0.021}_{0}$ | $6^{+0.030}_{0}$ | $24.8^{+0.3}_{0}$ | 2-M5 | – | – | – | – | – |
| 24 | $24^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | $27.0^{+0.3}_{0}$ | 2-M6 | 24H | $24^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | $27.3^{+0.3}_{0}$ | 2-M6 | 24N | $24^{+0.028}_{+0.007}$ | $8^{+0.036}_{0}$ | $27.3^{+0.3}_{0}$ | 2-M6 |
| 25 | $25^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | $28.0^{+0.3}_{0}$ | 2-M6 | 25H | $25^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | $28.3^{+0.3}_{0}$ | 2-M6 | – | – | – | – | – |
| 28 | $28^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | $31.0^{+0.3}_{0}$ | 2-M6 | 28H | $28^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | $31.3^{+0.3}_{0}$ | 2-M6 | 28N | $28^{+0.028}_{+0.007}$ | $8^{+0.036}_{0}$ | $31.3^{+0.3}_{0}$ | 2-M6 |
| 30 | $30^{+0.021}_{0}$ | $7^{+0.061}_{+0.025}$ | $33.0^{+0.3}_{0}$ | 2-M6 | 30H | $30^{+0.021}_{0}$ | $8^{+0.036}_{0}$ | $33.3^{+0.3}_{0}$ | 2-M6 | – | – | – | – | – |
| 32 | $32^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | $35.5^{+0.3}_{0}$ | 2-M8 | 32H | $32^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | $35.3^{+0.3}_{0}$ | 2-M8 | – | – | – | – | – |
| 35 | $35^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | $38.5^{+0.3}_{0}$ | 2-M8 | 35H | $35^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | $38.3^{+0.3}_{0}$ | 2-M8 | – | – | – | – | – |
| 38 | $38^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | $41.5^{+0.3}_{0}$ | 2-M8 | 38H | $38^{+0.025}_{0}$ | $10^{+0.036}_{0}$ | $41.3^{+0.3}_{0}$ | 2-M8 | 38N | $38^{+0.050}_{+0.025}$ | $10^{+0.036}_{0}$ | $41.3^{+0.3}_{0}$ | 2-M8 |
| 40 | $40^{+0.025}_{0}$ | $10^{+0.061}_{+0.025}$ | $43.5^{+0.3}_{0}$ | 2-M8 | 40H | $40^{+0.025}_{0}$ | $12^{+0.043}_{0}$ | $43.3^{+0.3}_{0}$ | 2-M8 | – | – | – | – | – |
| 42 | $42^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | $45.5^{+0.3}_{0}$ | 2-M8 | 42H | $42^{+0.025}_{0}$ | $12^{+0.043}_{0}$ | $45.3^{+0.3}_{0}$ | 2-M8 | 42N | $42^{+0.050}_{+0.025}$ | $12^{+0.043}_{0}$ | $45.3^{+0.3}_{0}$ | 2-M8 |
| 45 | $45^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | $48.5^{+0.3}_{0}$ | 2-M8 | 45H | $45^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | $48.8^{+0.3}_{0}$ | 2-M10 | – | – | – | – | – |
| 48 | $48^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | $51.5^{+0.3}_{0}$ | 2-M8 | 48H | $48^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | $51.8^{+0.3}_{0}$ | 2-M10 | 48N | $48^{+0.050}_{+0.025}$ | $14^{+0.043}_{0}$ | $51.8^{+0.3}_{0}$ | 2-M10 |
| 50 | $50^{+0.025}_{0}$ | $12^{+0.075}_{+0.032}$ | $53.5^{+0.3}_{0}$ | 2-M8 | 50H | $50^{+0.025}_{0}$ | $14^{+0.043}_{0}$ | $53.8^{+0.3}_{0}$ | 2-M10 | – | – | – | – | – |
| 55 | $55^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | $60.0^{+0.3}_{0}$ | 2-M10 | 55H | $55^{+0.030}_{0}$ | $16^{+0.043}_{0}$ | $59.3^{+0.3}_{0}$ | 2-M10 | 55N | $55^{+0.060}_{+0.030}$ | $16^{+0.043}_{0}$ | $59.3^{+0.3}_{0}$ | 2-M10 |
| 56 | $56^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | $61.0^{+0.3}_{0}$ | 2-M10 | 56H | $56^{+0.030}_{0}$ | $16^{+0.043}_{0}$ | $60.3^{+0.3}_{0}$ | 2-M10 | – | – | – | – | – |
| 60 | $60^{+0.030}_{0}$ | $15^{+0.075}_{+0.032}$ | $65.0^{+0.3}_{0}$ | 2-M10 | 60H | $60^{+0.030}_{0}$ | $18^{+0.043}_{0}$ | $64.4^{+0.3}_{0}$ | 2-M10 | 60N | $60^{+0.060}_{+0.030}$ | $18^{+0.043}_{0}$ | $64.4^{+0.3}_{0}$ | 2-M10 |
| 65 | $65^{+0.030}_{0}$ | $18^{+0.075}_{+0.032}$ | $71.0^{+0.3}_{0}$ | 2-M10 | 65H | $65^{+0.030}_{0}$ | $18^{+0.043}_{0}$ | $69.4^{+0.3}_{0}$ | 2-M10 | 65N | $65^{+0.060}_{+0.030}$ | $18^{+0.043}_{0}$ | $69.4^{+0.3}_{0}$ | 2-M10 |
| 70 | $70^{+0.030}_{0}$ | $18^{+0.075}_{+0.032}$ | $76.0^{+0.3}_{0}$ | 2-M10 | 70H | $70^{+0.030}_{0}$ | $20^{+0.052}_{0}$ | $74.9^{+0.5}_{0}$ | 2-M10 | – | – | – | – | – |
| 75 | $75^{+0.030}_{0}$ | $20^{+0.092}_{+0.040}$ | $81.0^{+0.5}_{0}$ | 2-M10 | 75H | $75^{+0.030}_{0}$ | $20^{+0.052}_{0}$ | $79.9^{+0.5}_{0}$ | 2-M10 | 75N | $75^{+0.060}_{+0.030}$ | $20^{+0.052}_{0}$ | $79.9^{+0.5}_{0}$ | 2-M10 |
| 80 | $80^{+0.030}_{0}$ | $20^{+0.092}_{+0.040}$ | $86.0^{+0.5}_{0}$ | 2-M10 | 80H | $80^{+0.030}_{0}$ | $22^{+0.052}_{0}$ | $85.4^{+0.5}_{0}$ | 2-M12 | – | – | – | – | – |
| 85 | $85^{+0.035}_{0}$ | $24^{+0.092}_{+0.040}$ | $93.0^{+0.5}_{0}$ | 2-M12 | 85H | $85^{+0.035}_{0}$ | $22^{+0.052}_{0}$ | $90.4^{+0.5}_{0}$ | 2-M12 | 85N | $85^{+0.071}_{+0.036}$ | $22^{+0.052}_{0}$ | $90.4^{+0.5}_{0}$ | 2-M12 |
| 90 | $90^{+0.035}_{0}$ | $24^{+0.092}_{+0.040}$ | $98.0^{+0.5}_{0}$ | 2-M12 | 90H | $90^{+0.035}_{0}$ | $25^{+0.052}_{0}$ | $95.4^{+0.5}_{0}$ | 2-M12 | – | – | – | – | – |
| 95 | $95^{+0.035}_{0}$ | $24^{+0.092}_{+0.040}$ | $103.0^{+0.5}_{0}$ | 2-M12 | 95H | $95^{+0.035}_{0}$ | $25^{+0.052}_{0}$ | $100.4^{+0.5}_{0}$ | 2-M12 | 95N | $95^{+0.071}_{+0.036}$ | $25^{+0.052}_{0}$ | $100.4^{+0.5}_{0}$ | 2-M12 |
| 100 | $100^{+0.035}_{0}$ | $28^{+0.092}_{+0.040}$ | $109.0^{+0.5}_{0}$ | 2-M12 | 100H | $100^{+0.035}_{0}$ | $28^{+0.052}_{0}$ | $106.4^{+0.5}_{0}$ | 2-M12 | – | – | – | – | – |
| 115 | $115^{+0.035}_{0}$ | $32^{+0.112}_{+0.050}$ | $125.0^{+0.5}_{0}$ | 2-M12 | 115H | $115^{+0.035}_{0}$ | $32^{+0.062}_{0}$ | $122.4^{+0.5}_{0}$ | 2-M12 | – | – | – | – | – |

## Distance from Set Screw Edge

| Model | SFH-150 | SFH-170 | SFH-190 | SFH-210 | SFH-220 | SFH-260 |
|---|---|---|---|---|---|---|
| Distance from set screw edge [mm] | 15 | 20 | 25 | 30 | 35 | 40 |

## Centering and Finishing when Drilling Bores in Flange Hubs

SFH models are delivered in component form. When processing bore diameters in pilot-bore products in particular, adjust the chuck so that runout of each flange hub is no more than the precision of the figure at right, and then finish the inner diameter.



# SFH Models

## Items Checked for Design Purposes

### Special Items to Take Note of

You should note the following to prevent any problems.

(1) Always be careful of parallel, angular, and axial misalignment.

(2) Always tighten bolts with the specified torque.

### Precautions for Handling

SFH models are delivered in component form. This mounts a flange hub on each shaft and couples both shafts by mounting the element (spacer) last, while centering. Also, the SFH(S) types can first mount an element on the flange hub, then center, and then complete the coupling before inserting it onto the shaft.
When using the assembly method that completes coupling first, take extra precautions when handling couplings. Subjecting assembled couplings to strong shocks may affect mounting accuracy and cause the parts to break during use.

(1) Couplings are designed for use within an operating temperature range of -30° C to 120℃ . Although the couplings are designed to be waterproof and oilproof, do not subject them to excessive amounts of water and oil as it may cause part deterioration.

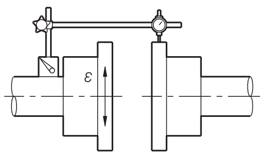
(2) Handle the element with care as it is made of a thin stainless steel metal disc, also making sure to be careful so as not to injure yourself.

(3) For frictional coupling types, do not tighten up pressure bolts until after inserting the mounting shaft.

### Centering

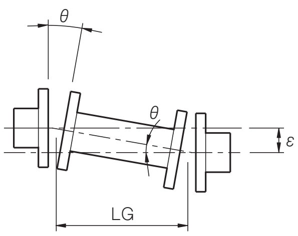
#### ■ Parallel misalignment ( $\varepsilon$ )

Lock the dial gauge in place on one shaft and then measure the runout of the paired flange hub's outer periphery while rotating that shaft. Since couplings on which the elements (discs) are a set SFH(S) types do not allow parallel misalignment, get as close to zero as possible. For couplings that allow the entire length to be freely set SFH(G) types, use the following formula to calculate allowable parallel misalignment.




$$\varepsilon = \tan\theta \times LG$$

$\varepsilon$ : Allowable parallel misalignment
$\theta$ : 1°

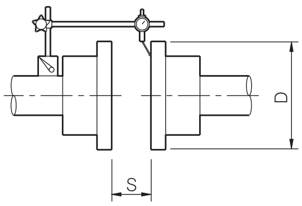



$$LG = LS + S$$

LS: Total length of spacer
S: Dimension of gap between flange hub and spacer

#### ■ Angular deflection( $\theta$ )

Lock the dial gauge in place on one shaft and then measure the runout of the end surface near the paired flange hub's outer periphery while rotating that shaft.
Adjust runout B so that $\theta \leqq 1°$ in the following formula.




$$B = D \times \tan\theta$$

B: Runout
D: Flange hub outer diameter
$\theta$ : 1°

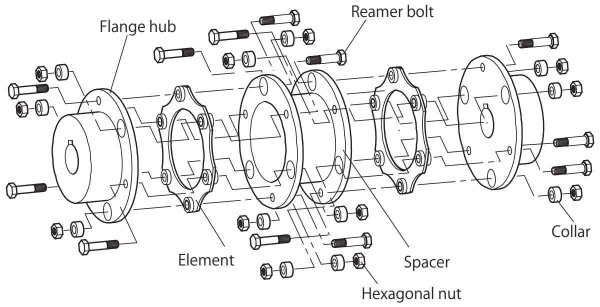
#### ■ Axial displacement (S)

In addition, restrict the dimension between flange hub faces (S in the diagram) within the allowable error range for axial displacement with respect to a reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

* On the SFH(S), this is the dimension of the gap between two flange hubs. On the SFH (G), dimension S is the gap between the flange hub and the spacer.

### Mounting

This assembly method mounts a flange hub on each shaft of the SFH models and couples both shafts by mounting the element (spacer) last, while centering.

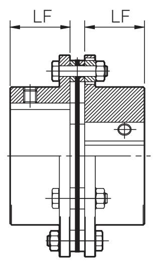



(1) Remove any rust, dust, oil or the like from the inner diameter surfaces of the shaft and flange hubs. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

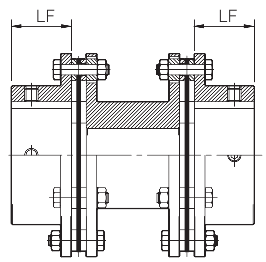
For types that use frictional coupling, loosen the flange hub's pressure bolt and check that the sleeve can move freely.

(2) Insert the flange hub onto the paired mounting shaft. Insert each shaft far enough into the coupling so that the paired mounting shaft touches the shaft along the entire length of the flange hub (LF dimension) as shown in the diagram below, and does not interfere with the elements, spacers or the other shaft.

#### ■ SFH(S) types




#### ■ SFH(G) types




| Coupling size | 150 | 170 | 190 | 210 | 220 | 260 |
|---|---|---|---|---|---|---|
| LF (key or set screw) [mm] | 45 | 55 | 65 | 75 | 90 | 100 |
| LF (frictional coupling) [mm] | 65 | 65 | 70 | 73 | – | – |

(3) Mount the other flange hub on the paired mounting shaft as described in steps (1) and (2).

(4) With the flange hub inserted, center (parallel misalignment and angular deflection), and the adjust the distance between shafts.

(5) For SFH(S) types, translate the flange hubs on the shaft, insert the element between the two flange hubs, and provisionally assemble with the reamer bolt, collar, and hexagonal nut. For SFH(G) types, insert reamer bolts from the flange side for both flanges, provisionally fasten the element and collar with a hexagonal nut, and then translate the flange hubs on the shaft, insert the spacer between the flange hubs, and provisionally assemble with the reamer bolt, collar and hexagonal nut.

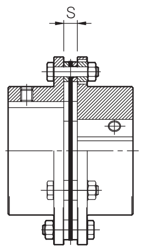
# SFH Models

## Items Checked for Design Purposes

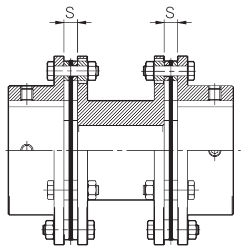
### Mounting

(6) Keep the width of the dimension between flange faces (S dimension in the diagram) within the allowable error range for axial misalignment with respect to the reference value. Note that the tolerance values were calculated based on the assumption that both the level of parallel misalignment and angular deflection are zero. Adjust to keep this value as low as possible.

#### ■ SFH(S) types




#### ■ SFH(G) types




| Coupling size | 150 | 170 | 190 | 210 | 220 | 260 |
|---|---|---|---|---|---|---|
| S [mm] | 11 | 14 | 15 | 15 | 20 | 23 |

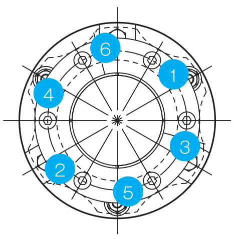
(7) Check that the element is not deformed. If it is, it may be under an axial force or there may be insufficient lubrication between the collar, bolt, and disc, so adjust to bring it to normal. The situation may be improved by applying a small amount of machine oil to the bearing surface of the reamer bolt. However, never use any oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based) which would dramatically affect the friction coefficient.

(8) Use a calibrated torque wrench to tighten all the reamer bolts to the appropriate tightening torques.

| Coupling size | 150 | 170 | 190 | 210 | 220 | 260 |
|---|---|---|---|---|---|---|
| Reamer bolt size | M8 | M10 | M12 | M16 | M16 | M20 |
| Tightening torque [N·m] | 34 | 68 | 118 | 300 | 300 | 570 |

(9) When selecting a key system for the mounting on the shaft, lock the flange hub to the shaft with a set screw.

For frictional coupling types, tighten the pressure bolts evenly, a little at a time, on the diagonal, guided by the tightening procedure of the figure below.



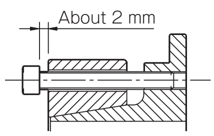

| Type | Pressure bolt size | Tightening torque [N·m] |
|---|---|---|
| SFH-150 | M8 | 34 |
| SFH-170 | M8 | 34 |
| SFH-190 | M10 | 68 |
| SFH-210 | M10 | 68 |

(10) To protect against initial loosening of the pressure bolts, we recommend operating for a set period of time and then retightening to the appropriate tightening torque.

### Removal

(1) Check to confirm that there is no torque or axial load being applied to the coupling. There may be cases where a torque is applied to the coupling, particularly when the safety brake is being used. Make sure to verify that this is not occurring before removing parts.

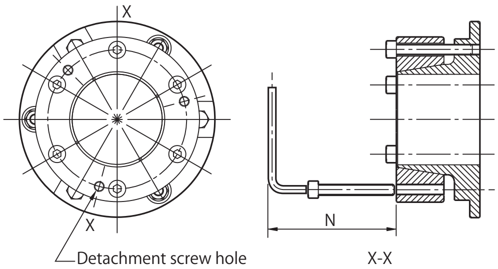
(2) Loosen all the pressure bolts placing pressure on the sleeve until the gap between bearing seat and sleeve is about 2 mm.




For a tapered coupling system that tightens pressure bolts from the axial direction, the sleeve will be self-locking, so the coupling between flange hub and shaft cannot be released simply by loosening the pressure bolt. (Note that in some cases, a coupling can be released by loosening a pressure bolt.) For that reason, when designing devices, a space must be installed for inserting a detachment screw.

If there is no space in the axial direction, consult Miki Pulley.

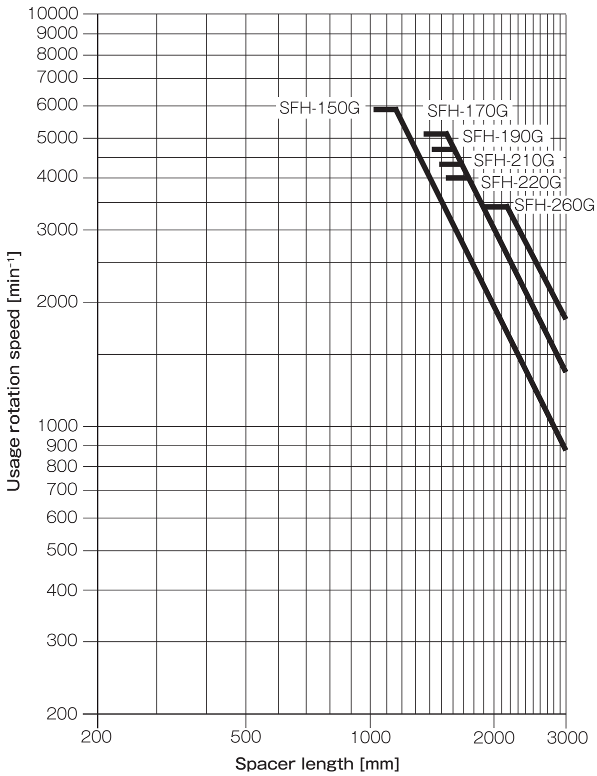
(3) Pull out three of the pressure bolts loosened in step (2), insert them into detachment screw holes at three locations on the sleeve, and tighten them alternately, a little at a time. The link between the flange hub and shaft will be released.




| Coupling size | 150 | 170 | 190 | 210 |
|---|---|---|---|---|
| Nominal diameter of pressure bolt × Length | M8 × 60 | M8 × 60 | M10 × 65 | M10 × 65 |
| Recommended N dimension [mm] | 108 | 108 | 121 | 121 |

### Limit Rotation Speed

For SFH(G) long spacer types, the speeds at which the coupling can be used will vary with the length of spacer selected. Use the following table to confirm that the speed you will use is at or below the limit rotation speed.




### Points to Consider Regarding the Feed Screw System

#### ■ Servo motor oscillation

Gain adjustment on the servo motor may cause the servo motor to oscillate.
Oscillation in the servo motor during operation can cause problems particularly with the overall natural frequency and electrical control systems of the feed screw system.
In order for these issues to be resolved, the torsional stiffness for the coupling and feed screw section and the moment of inertia and other characteristics for the system overall will need to be adjusted and the torsional natural frequency for the mechanical system raised or the tuning function (filter function) for the electrical control system in the servo motor adjusted during the design stage.

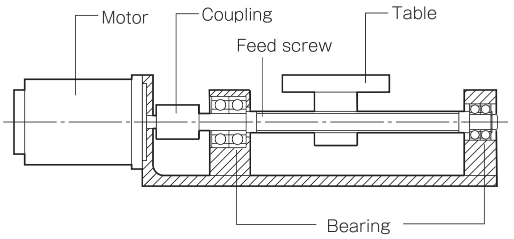
Please contact Miki Pulley with any questions regarding servo motor oscillation.

# SFH Models

## How to Find the Natural Frequency of a Feed Screw System

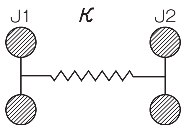
(1) Select a coupling based on the nominal and maximum torque of the servo motor.

(2) Find the overall natural frequency, Nf, from the torsional stiffness of the coupling and feed screw, $\kappa$, the moment of inertia of driving side, J1, and the moment of inertia of driven side, J2, for the feed screw system shown below.




$$Nf=\frac{1}{2\pi}\sqrt{\kappa\left(\frac{1}{J1}+\frac{1}{J2}\right)}$$

Nf: Overall natural frequency of a feed screw system [Hz]
$\kappa$ : Torsional stiffness of the coupling and feed screw [N·m/rad]
J1: Moment of inertia of driving side [kg·m²]
J2: Moment of inertia of driven side [kg·m²]




## Selection Procedures

(1) Find the torque, Ta, applied to the coupling using the output capacity, P, of the driver and the usage rotation speed, n.

$$Ta\ [N{\cdot}m] = 9550 \times \frac{P\ [kW]}{n[min^{-1}]}$$

(2) Determine the factor $\kappa$ from the load properties, and find the corrected torque, Td, applied to the coupling.

**Td = Ta × K (Refer to the table below for values)**

| Load properties | Constant | Vibrations: Small | Vibrations: Medium | Vibrations: Large |
|---|---|---|---|---|
| K | 1.0 | 1.25 | 1.75 | 2.25 |

For servo motor drive, multiply the maximum torque, Ts, by the usage factor K = 1.2 to 1.5.

**Td = Ts × (1.2 to 1.5)**

(3) Set the size so that the rated coupling torque, Tn, is higher than the corrected torque, Td.

**Tn ≧ Td**

(4) The rated torque of the coupling may be limited by the bore diameter of the coupling. See the table showing the bore diameters that limit rated torque.

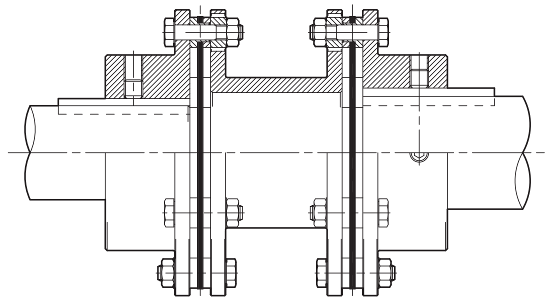
(5) Check that the mount shaft is no larger than the maximum bore diameter of the coupling.

Contact Miki Pulley for assistance with any device experiencing extreme periodic vibrations.

## Mounting Example

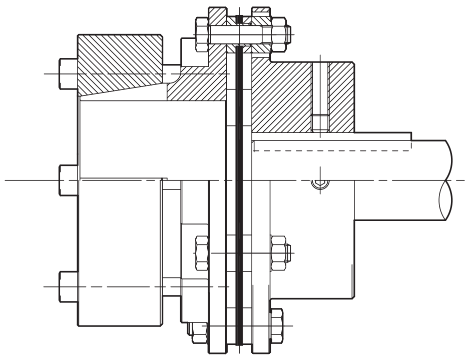
### ■ SFH(G)

This is a combination of multiple standard bore-drilled couplings. Either Miki Pulley can do the processing, or you can drill pilot bores however you like.



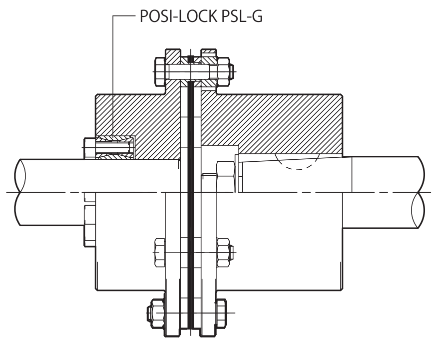
### ■ SFH(S)

This example combines a frictional-coupling type flange and a standard bore-drilled flange hub.



### ■ SFH(S) special

This combines a flange hub processed for the tapered shaft of a servo motor with a flange hub processed for a Miki Pulley shaft lock PSL-G.



# Torque Wrenches

## SFC-□ SA2/DA2 (Clamping Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque screwdriver (Preset) | Hexagon bit | Coupling size |
|---|---|---|---|---|
| M1.6 | 0.23～0.28 | CN30LTDK | CB 1.5mm | 002 |
| M2 | 0.4～0.5 | CN60LTDK | SB 1.5mm | 005,010 |
| M2.5 | 1.0～1.1 | CN120LTDK | SB 2mm | 010,020,025 |
| M3 | 1.5～1.9 | CN200LTDK | SB 2.5mm | 030 |
| M4 | 3.4～4.1 | CN500LTDK | SB 3mm | 035,040 |
| M5 | 7.0～8.5 | N10LTDK | SB 4mm | 050 |
| Nominal bolt diameter | Tightening torque [N·m] | Torque wrenches (Preset) | Hexagonal head | Coupling size |
| M6 | 14～15 | N25LCK | 25HCK 5mm | 055,060 |
| M8 | 27～30 | N50LCK | 50HCK 6mm | 080,090,100 |

## SFS-□ S/W/G (Pressure Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M5 | 8 | N12SPCK × 8N・m | 230SCK 8mm | 05 |
| M6 | 14 | N25SPCK × 14N・m | 230SCK 10mm | 06,08,09,10 |
| M8 | 34 | N50SPCK × 34N・m | 450SCK 13mm | 12,14 |

## SFS-□ S/W/G (Reamer Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M5 | 8 | N12SPCK × 8N・m | 25SCK 8mm | 05 |
| M6 | 14 | N25SPCK × 14N・m | 25SCK 10mm | 06,08 |
| M8 | 34 | N50SPCK × 34N・m | 50SCK 13mm | 09,10 |
| M10 | 68 | N100SPCK × 68N・m | 100SCK 17mm | 12 |
| M12 | 118 | N200SPCK × 118N・m | 200SCK 19mm | 14 |

## SFS-□ S/W/G-C (Reamer Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M5 | 6 | N6SPCK × 6N・m | 25SCK 8mm | 05 |
| M6 | 11 | N12SPCK × 11N・m | 25SCK 10mm | 06,08 |
| M8 | 26 | N50SPCK × 26N・m | 50SCK 13mm | 09,10 |
| M10 | 51 | N100SPCK × 51N・m | 100SCK 17mm | 12 |
| M12 | 90 | N100SPCK × 90N・m | 100SCK 19mm | 14 |

## SFF-□ SS/DS (Clamping Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque screwdriver (Preset) | Hexagon bit | Coupling size |
|---|---|---|---|---|
| M4 | 3.4 | CN500LTDK | SB 3mm | 040 |
| M5 | 7 | N10LTDK | SB 4mm | 050,060 |
| Nominal bolt diameter | Tightening torque [N·m] | Torque wrenches (Preset) | Hexagonal head | Coupling size |
| M6 | 14 | N25LCK | 25HCK 5mm | 060,070,080 |
| M8 | 34 | N50LCK | 50HCK 6mm | 080,090 |
| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Hexagonal head | Coupling size |
| M10 | 68 | N100SPCK × 68N・m | 100HCK 8mm | 100,120 |

## SFF-□ SS/DS (Pressure Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M6 | 10 | N12SPCK × 10N・m | 25SCK 10mm | 070,080,090,100,120 |
| M8 | 24 | N50SPCK × 24N・m | 50SCK 13mm | 140 |

# Torque Wrenches

## SFM-□ SS (Clamping Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque screwdriver (Preset) | Hexagon bit | Coupling size |
|---|---|---|---|---|
| M5 | 7 | N10LTDK | SB 4mm | 060 |
| **Nominal bolt diameter** | **Tightening torque [N·m]** | **Torque wrench (Preset)** | **Hexagonal head** | **Coupling size** |
| M6 | 14 | N25LCK | 25HCK 5mm | 060,070,080 |
| M8 | 34 | N50LCK | 50HCK 6mm | 080,090 |
| **Nominal bolt diameter** | **Tightening torque [N·m]** | **Torque wrench (Single-function)** | **Hexagonal head** | **Coupling size** |
| M10 | 68 | N100SPCK × 68N・m | 100HCK 8mm | 100,120 |

## SFM-□ SS (Pressure Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M6 | 10 | N12SPCK × 10N・m | 25SCK 10mm | 070,080,090,100,120 |
| M8 | 24 | N50SPCK × 24N・m | 50SCK 13mm | 140 |

## SFH-□ S/G (Pressure Bolt)

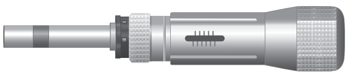
| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Hexagonal head | Coupling size |
|---|---|---|---|---|
| M8 | 34 | N50SPCK × 34N・m | 50HCK 6mm | 150,170 |
| M10 | 68 | N100SPCK × 68N・m | 100HCK 8mm | 190,210 |

## SFH-□ S/G (Reamer Bolt)

| Nominal bolt diameter | Tightening torque [N·m] | Torque wrench (Single-function) | Wrench attachment | Coupling size |
|---|---|---|---|---|
| M8 | 34 | N50SPCK × 34N・m | 50SCK 13mm | 150 |
| M10 | 68 | N100SPCK × 68N・m | 100SCK 17mm | 170 |
| M12 | 118 | N200SPCK × 118N・m | 200SCK 19mm | 190 |
| M16 | 300 | N4400SPCK × 300N・m | 440SCK 24mm | 210,220 |
| **Nominal bolt diameter** | **Tightening torque [N·m]** | **Torque wrenches (Preset)** | **Wrench attachment** | **Coupling size** |
| M20 | 570 | N700LCK | 700SCK 30mm | 260 |

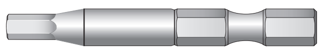
## Torque Screwdriver (Preset)

■ N-LTDK



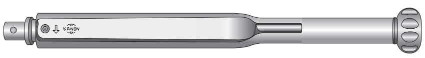
## Bit

■ SB



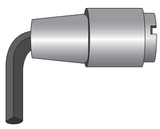
## Torque Wrenches (Preset)

■ N-LCK



## Hexagonal Head

■ HCK

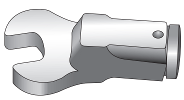


## Torque Wrench (Single-function)

■ N-SPCK

## Wrench Attachment

■ SCK



* Torque screwdriver (wrench)/bit (head) models are those of Nakamura Mfg. Co., Ltd.

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