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'25.04-**-MP-SFU(en)-001A

MIKI PULLEY

NEW

High performance metal disk coupling for semi-assembled

SERVOFLEX SFU

MIKI PULLEY

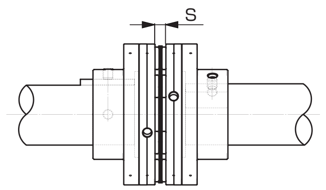
FLEX series

Servoflex®

SERVOFLEX SFU

Check points for design

(5) Overall length of flange inner bore should contact with shaft. Adjust the coupling overall length center position with center of both shafts distance. Then tighten set screws to fix flanges on both shafts. After coupling fixed onto shafts, check the dimension (S) at several points of unit inner end face. If there are some difference at several points, there would be possibility of parallel & angular misalignment. It would be strongly recommended to adjust alignment of 2 shafts again.



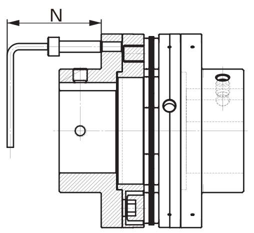
Size	Dimensions S [mm]
SFU-070	5.9
SFU-080	7.7
SFU-090	8.3
SFU-100	10.2
SFU-120	10.2
SFU-140	10.6

How to remove coupling

(1) Confirm if torque or axial force is free. In case of failsafe brake device is working, there would be possibi lity. of torque applying on coupling. Be sure to confirm before remove coupling.

(2) Loosen set screws first, then loosen assembling bolts.

(3) If you can not disassemble flanges & unit, insert same size with assembling bolts into taps and tighten little by little to separate flanges & unit. Necessary space for disassemble bolts depends on the coupling size as shown in below drawing. ※Assembling bolts could be use for disassemble, but do not use those again for assemble if tip of the bolts are deformed.



Size	Recommended dimension N [mm]
SFU-070	41
SFU-080	57
SFU-090	57
SFU-100	64
SFU-120	66
SFU-140	76

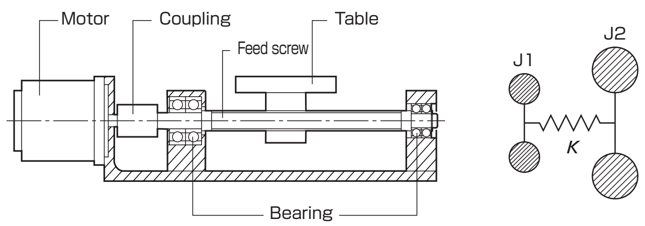
Important points to note for ball screw feeding system

In servo motor driven ball screw feeding system,there might be possibility of vibration due to gain adjustment.In such case, to skip vibration point(Hz) by electrical filter function adjustment is recommended.If you face vibration problem, it is necessary to re consider whole system natural frequency such as tortional stifness of the coupling & ball screw as well as moment of inertia.Please feel free to contact us from inqiry page in website to clalify the uncertain matters.

How to figure out natural frequency of the feeding system

Select coupling based on servo mortor maximum torque.Then figure out natural frequency (Nf) of the whole system by conditions as described in below illustration.

K : 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]



Natural frequency of overall feed screw system Nf [Hz]

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

Torsional spring constant of coupling and feed screw κ [N·m/rad]

$$\frac{1}{K} = \frac{1}{Kc} + \frac{1}{Kb}$$

Kc : Torsional spring constant of coupling [N·m/rad]
Kb : Torsional spring constant of feed screw [N·m/rad]

Driving moment of inertia J1 [kg·m2]

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

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

Driven moment of inertia J2 [kg·m2]

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

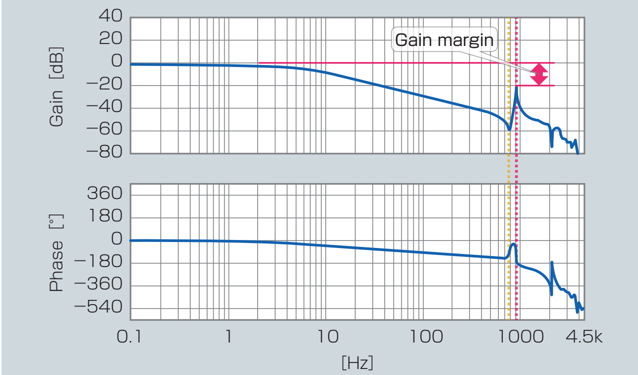
Jb : Moment of inertia of feedscrew [kg·m2]
Jt : Moment of inertia of table [kg·m2]
Jc : Moment of inertia of coupling [kg·m2]

Moment of inertia of table Jt [kg·m2]

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

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

If the gain margin of natural frequency is below 10db, there is a high possibility of vibration. It is recommended to set natural frequency higher at the early design stage or use servo filter function(electrical tuning function) to skip the vibration natural frequency point.



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.

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

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

$$Td\,[N\cdot m] = Ta\,[N\cdot m] \times K$$ (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 drive, multiply, maximum torque Ts, by safty 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) 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.

SERVOFLEX SFU(DS)

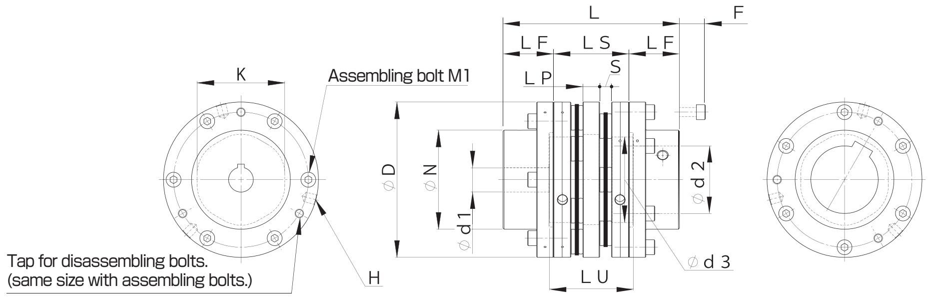
Double elements type

Specification

Model	Permissible torqu [N·m]	permissible misalignment			Max.rotation speed [min⁻¹]	Tortional stiffness [N·m/rad]	Axial stiffness [N/mm]	Moment of inertia [kg·m²]	Mass [kg]
		Parallel [mm]	Angular [°]	Axial [mm]					
SFU-070DS-100N	100	0.25	1(On one side)	±1.0	14000	120000	242	0.66×10^{-3}	1.04
SFU-080DS-200N	200	0.31	1(On one side)	±1.0	13000	155000	273	1.58×10^{-3}	1.86
SFU-090DS-300N	300	0.32	1(On one side)	±1.2	12000	260000	160.5	2.50×10^{-3}	2.29
SFU-100DS-450N	450	0.38	1(On one side)	±1.3	10000	370000	270	4.83×10^{-3}	3.63
SFU-120DS-600N	600	0.38	1(On one side)	±1.6	8000	485000	180	10.02×10^{-3}	5.09
SFU-140DS-1000N	1000	0.44	1(On one side)	±2.0	7000	700000	180	22.57×10^{-3}	8.27

※ The maximum rotation speed is not designed as dynamic balanced. ※ The value of the torsional stiffness is that of the element alone.
※ The moment of inertia and mass are the values at the maximum bore diameter.

Dimensions



Model	d1 · d2 [mm]		D [mm]	N [mm]	L [mm]	LU [mm]	LS [mm]	LF [mm]	LP [mm]	S [mm]	F [mm]	d3 [mm]	K [mm]	Assembling Bolt M1	
	Min.	Max.												Description	Tightening torque[N·m]
SFU-070DS-100N	8	25	68	40	83.8	42.6	37.8	23	8	5.9	1	36	38	6-M4	3.4
SFU-080DS-200N	11	35	78	54	100.4	54.2	48.4	26	10	7.7	5	38	42	6-M6	14
SFU-090DS-300N	11	38	88	58	108.6	55.6	48.6	30	10	8.3	2	48	50	6-M6	14
SFU-100DS-450N	16	42	98	68	128.4	65.4	58.4	35	12	10.2	0	50	56	6-M8	34
SFU-120DS-600N	19	50	118	78	134.4	65.4	58.4	38	12	10.2	1	66	68	6-M8	34
SFU-140DS-1000N	22	60	138	88	157.2	74.2	67.2	45	15	10.6	8	76	78	6-M8	34

Standard bore combination

型式	Standard bore diamters d1·d2 [mm]																												
	d1·d2	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
SFU-070DS-□-□-100N	d1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●													
	d2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●													
SFU-080DS-□-□-200N	d1				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	d2				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
SFU-090DS-□-□-300N	d1				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
	d2				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
SFU-100DS-□-□-450N	d1								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	d2								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
SFU-120DS-□-□-600N	d1											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	d2											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
SFU-140DS-□-□-1000N	d1													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	d2													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

How to Place an Oder

SFU-080SS-25H-30H-200N

Size
Type
SS : Single Element

Description of Permissible torque

bore d1-d2 bore & tolerance
No mark : Old JIS(Class2,E9)
H : JIS B 0401 H9
J : JIS B 0401 JS9
P : JIS B 0401 P9
N : New Motor Standard G7 / F7

For the detail, refer to page 008 bottom part.

Semi-assembled design by flanges, spacer unit & bolts reduce assembling time.

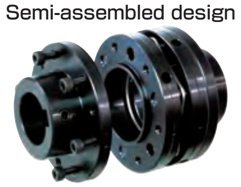
SFU is new partially designed metal disc coupling (flanges, spacer unit & bolts) that enable quick assemble/disassemble compared with existing parts distribution type.(model:SFS) Assembling/disassembling without moving both side shafts improve productivity significantly. We' ve launched both single element & more flexible double elements type to meet the diverse assembly needs of customers.

RoHS

Semi-assembled unit design with High torque, Ultra-High stiffnes

SFU has both single & double elements unit semi-assembled precisely in-house. Customer could finish assemble just tightening bolts between flange & unit. Elements are same with that of high stiffness SFF model, realized high torque, ultra-high stiffness.

Semi-assembled design

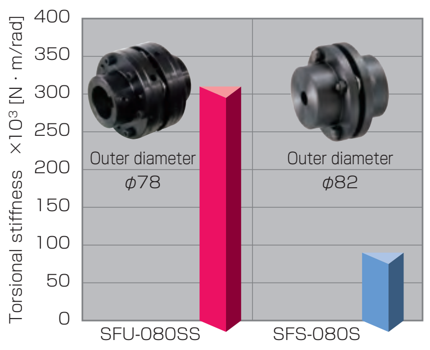


Finish assemble by tightening bolts only.

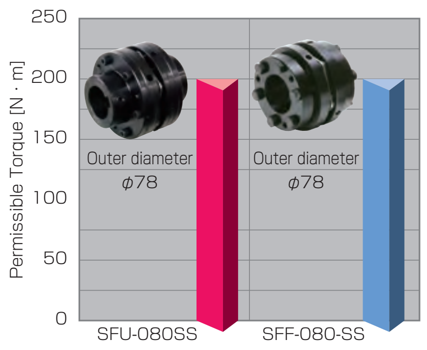
2 type of units

Single element type   Double elements type

Stiffness comparison by type

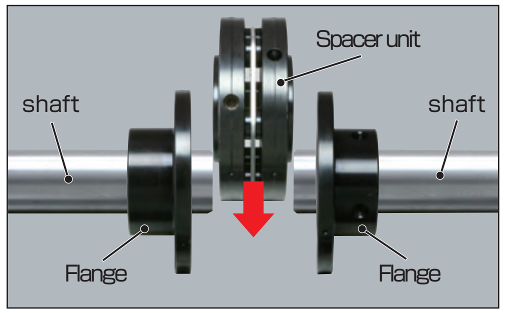


Permissible torque comparison

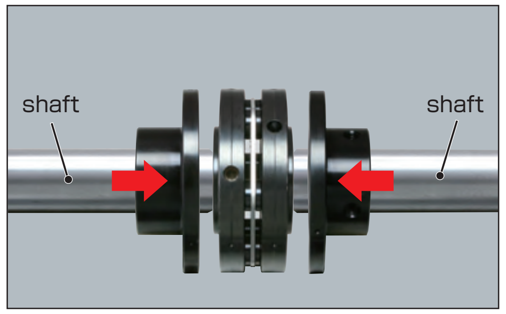


Easy to install

Less parts rather than existing model(SFS). Separatable flanges & unit makes it possible to install, uninstall coupling without moving both shafts, shorten assembly & disassembly time significantly.



Flange & unit is separate, assembly without moving shaft in narrow space is available.



Allocate unit between both shafts, move both flanges to arrow direction and tighten bolts to assemble

Single & Double element unit specification

Both single & double element type built-in disc spring unit is assembled by accurate specialized jig to achieve high concentricity.

Single element

- ●Permissble torque 100～1000N · m
- ●Outer diameter φ68～138
- ●Adaptable shaft diameter φ8～60
- ●Ambient temperature −30～120℃ deg.(C)

Double element

- ●Permissble torque 100～1000N · m
- ●Outer diameter φ68～138
- ●Adaptable shaft diameter φ8～60
- ●Ambient temperature −30～120 deg.(C)

SERVOFLEX SFU(SS)

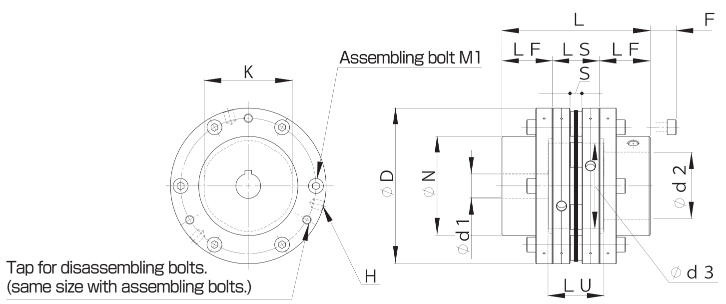
Single element type

Specification

Model	Permissible torqu [N·m]	permissible misalignment			Max.rotation speed [min⁻¹]	Tortional stiffness [N·m/rad]	Axial stiffness [N/mm]	Moment of inertia [kg·m²]	Mass [kg]
		Parallel [mm]	Angular [°]	Axial [mm]					
SFU-070SS-100N	100	0.02	1	±0.5	18000	240000	484	0.53×10^{-3}	0.86
SFU-080SS-200N	200	0.02	1	±0.5	17000	310000	546	1.26×10^{-3}	1.52
SFU-090SS-300N	300	0.02	1	±0.6	15000	520000	321	2.01×10^{-3}	1.90
SFU-100SS-450N	450	0.02	1	±0.65	13000	740000	540	3.88×10^{-3}	3.01
SFU-120SS-600N	600	0.02	1	±0.8	11000	970000	360	8.17×10^{-3}	4.31
SFU-140SS-1000N	1000	0.02	1	±1.0	9500	1400000	360	18.43×10^{-3}	6.93

※ The maximum rotation speed is not designed as dynamic balanced. ※ The value of the torsional stiffness is that of the element alone.
※ The moment of inertia and mass are the values at the maximum bore diameter.

Dimensions



Model	d1 · d2 [mm]		D [mm]	N [mm]	L [mm]	LU [mm]	LS [mm]	LF [mm]	S [mm]	F [mm]	d3 [mm]	K [mm]	Assembling Bolt M1	
	Min.	Max.											Description	Tightening torque[N·m]
SFU-070SS-100N	8	25	68	40	69.9	28.7	23.9	23	5.9	1	36	38	6-M4	3.4
SFU-080SS-200N	11	35	78	54	82.7	36.5	30.7	26	7.7	5	38	42	6-M6	14
SFU-090SS-300N	11	38	88	58	90.3	37.3	30.3	30	8.3	2	48	50	6-M6	14
SFU-100SS-450N	16	42	98	68	106.2	43.2	36.2	35	10.2	0	50	52	6-M8	34
SFU-120SS-600N	19	50	118	78	112.2	43.2	36.2	38	10.2	1	66	72	6-M8	34
SFU-140SS-1000N	22	60	138	88	131.6	48.6	41.6	45	10.6	8	76	80	6-M8	34

Standard bore combination

Model	Standard bore diamters d1·d2 [mm]																											
	d1·d2	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
SFU-070SS-□-□-100N	d1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●													
	d2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●													
SFU-080SS-□-□-200N	d1				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
	d2				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									
SFU-090SS-□-□-300N	d1				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
	d2				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●								
SFU-100SS-□-□-450N	d1								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
	d2								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
SFU-120SS-□-□-600N	d1											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
	d2											●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
SFU-140SS-□-□-1000N	d1													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	d2													●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

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

How to Place an Oder

SFU-080SS-25H-30H-200N

Size
Type
SS : Single Element

Description of Permissible torque

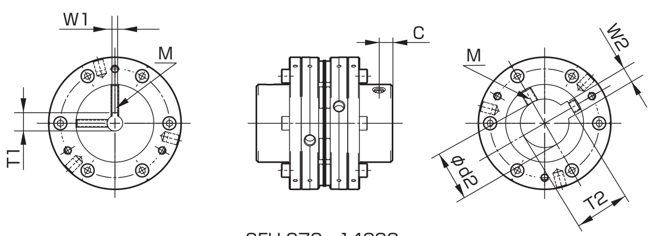
bore d1-d2 bore & tolerance
No mark : Old JIS(Class2,E9)
H : JIS B 0401 H9
J : JIS B 0401 JS9
P : JIS B 0401 P9
N : New Motor Standard G7 / F7

For the detail, refer to page 008 bottom part.

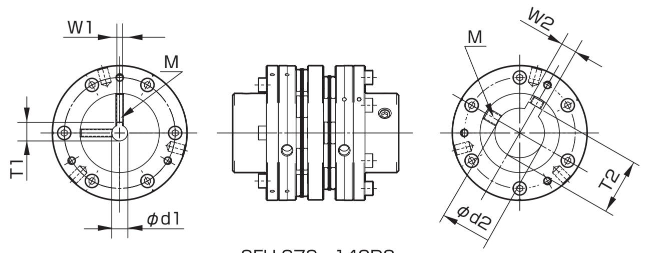
SERVOFLEX SFU

Standard Bore-Drilling reference table

Refer to below table for bore drilling specification of keyway with set screw type.



SFU-070～140SS



SFU-070～140DS

Models compliant with the old JIS standard (class 2) JIS B 1301 1959				
Bore description	Bore diameter [d1·d2]	Keyway width [W1·W2]	Keyway height [T1·T2]	Set screw hole [M]
	Tolerance H7, H8	Tolerance E9	-	-
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 $^{+0.3}_{0}$	2-M4
14	14 $^{+0.018}_{0}$	5 $^{+0.050}_{+0.020}$	16.0 $^{+0.3}_{0}$	2-M4
15	15 $^{+0.018}_{0}$	5 $^{+0.050}_{+0.020}$	17.0 $^{+0.3}_{0}$	2-M4
16	16 $^{+0.018}_{0}$	5 $^{+0.050}_{+0.020}$	18.0 $^{+0.3}_{0}$	2-M4
17	17 $^{+0.018}_{0}$	5 $^{+0.050}_{+0.020}$	19.0 $^{+0.3}_{0}$	2-M4
18	18 $^{+0.018}_{0}$	5 $^{+0.050}_{+0.020}$	20.0 $^{+0.3}_{0}$	2-M4
19	19 $^{+0.021}_{0}$	5 $^{+0.050}_{+0.020}$	21.0 $^{+0.3}_{0}$	2-M4
20	20 $^{+0.021}_{0}$	5 $^{+0.050}_{+0.020}$	22.0 $^{+0.3}_{0}$	2-M4
22	22 $^{+0.021}_{0}$	7 $^{+0.061}_{+0.025}$	25.0 $^{+0.3}_{0}$	2-M6
24	24 $^{+0.021}_{0}$	7 $^{+0.061}_{+0.025}$	27.0 $^{+0.3}_{0}$	2-M6
25	25 $^{+0.021}_{0}$	7 $^{+0.061}_{+0.025}$	28.0 $^{+0.3}_{0}$	2-M6
28	28 $^{+0.021}_{0}$	7 $^{+0.061}_{+0.025}$	31.0 $^{+0.3}_{0}$	2-M6
30	30 $^{+0.021}_{0}$	7 $^{+0.061}_{+0.025}$	33.0 $^{+0.3}_{0}$	2-M6
32	32 $^{+0.025}_{0}$	10 $^{+0.061}_{+0.025}$	35.5 $^{+0.3}_{0}$	2-M8
35	35 $^{+0.025}_{0}$	10 $^{+0.061}_{+0.025}$	38.5 $^{+0.3}_{0}$	2-M8
38	38 $^{+0.025}_{0}$	10 $^{+0.061}_{+0.025}$	41.5 $^{+0.3}_{0}$	2-M8
40	40 $^{+0.025}_{0}$	10 $^{+0.061}_{+0.025}$	43.5 $^{+0.3}_{0}$	2-M8
42	42 $^{+0.025}_{0}$	12 $^{+0.075}_{+0.032}$	45.5 $^{+0.3}_{0}$	2-M8
45	45 $^{+0.025}_{0}$	12 $^{+0.075}_{+0.032}$	48.5 $^{+0.3}_{0}$	2-M8
48	48 $^{+0.025}_{0}$	12 $^{+0.075}_{+0.032}$	51.5 $^{+0.3}_{0}$	2-M8
50	50 $^{+0.025}_{0}$	12 $^{+0.075}_{+0.032}$	53.5 $^{+0.3}_{0}$	2-M8
55	55 $^{+0.030}_{0}$	15 $^{+0.075}_{+0.032}$	60.0 $^{+0.3}_{0}$	2-M10
56	56 $^{+0.030}_{0}$	15 $^{+0.075}_{+0.032}$	61.0 $^{+0.3}_{0}$	2-M10
60	60 $^{+0.030}_{0}$	15 $^{+0.075}_{+0.032}$	65.0 $^{+0.3}_{0}$	2-M10

Models compliant with the new JIS standard (H9) JIS B 1301 1996				
Bore description	Bore diameter [d1·d2]	Keyway width [W1·W2]	Keyway height [T1·T2]	Set screw hole [M]
	Tolerance H7, H8	Tolerance E9	-	-
8H	8 $^{+0.022}_{0}$	3 $^{+0.025}_{0}$	9.4 $^{+0.3}_{0}$	2-M4
9H	9 $^{+0.022}_{0}$	3 $^{+0.025}_{0}$	10.4 $^{+0.3}_{0}$	2-M4
10H	10 $^{+0.022}_{0}$	3 $^{+0.025}_{0}$	11.4 $^{+0.3}_{0}$	2-M4
11H	11 $^{+0.018}_{0}$	4 $^{+0.030}_{0}$	12.8 $^{+0.3}_{0}$	2-M4
12H	12 $^{+0.018}_{0}$	4 $^{+0.030}_{0}$	13.8 $^{+0.3}_{0}$	2-M4
14H	14 $^{+0.018}_{0}$	5 $^{+0.030}_{0}$	16.3 $^{+0.3}_{0}$	2-M4
15H	15 $^{+0.018}_{0}$	5 $^{+0.030}_{0}$	17.3 $^{+0.3}_{0}$	2-M4
16H	16 $^{+0.018}_{0}$	5 $^{+0.030}_{0}$	18.3 $^{+0.3}_{0}$	2-M4
17H	17 $^{+0.018}_{0}$	5 $^{+0.030}_{0}$	19.3 $^{+0.3}_{0}$	2-M5
18H	18 $^{+0.018}_{0}$	6 $^{+0.030}_{0}$	20.8 $^{+0.3}_{0}$	2-M5
19H	19 $^{+0.021}_{0}$	6 $^{+0.030}_{0}$	21.8 $^{+0.3}_{0}$	2-M5
20H	20 $^{+0.021}_{0}$	6 $^{+0.030}_{0}$	22.8 $^{+0.3}_{0}$	2-M5
22H	22 $^{+0.021}_{0}$	6 $^{+0.030}_{0}$	24.8 $^{+0.3}_{0}$	2-M5
24H	24 $^{+0.021}_{0}$	8 $^{+0.036}_{0}$	27.3 $^{+0.3}_{0}$	2-M6
25H	25 $^{+0.021}_{0}$	8 $^{+0.036}_{0}$	28.3 $^{+0.3}_{0}$	2-M6
28H	28 $^{+0.021}_{0}$	8 $^{+0.036}_{0}$	31.3 $^{+0.3}_{0}$	2-M6
30H	30 $^{+0.021}_{0}$	8 $^{+0.036}_{0}$	33.3 $^{+0.3}_{0}$	2-M6
32H	32 $^{+0.025}_{0}$	10 $^{+0.036}_{0}$	35.3 $^{+0.3}_{0}$	2-M8
35H	35 $^{+0.025}_{0}$	10 $^{+0.036}_{0}$	38.3 $^{+0.3}_{0}$	2-M8
38H	38 $^{+0.025}_{0}$	10 $^{+0.036}_{0}$	41.3 $^{+0.3}_{0}$	2-M8
40H	40 $^{+0.025}_{0}$	12 $^{+0.043}_{0}$	43.3 $^{+0.3}_{0}$	2-M8
42H	42 $^{+0.025}_{0}$	12 $^{+0.043}_{0}$	45.3 $^{+0.3}_{0}$	2-M8
45H	45 $^{+0.025}_{0}$	14 $^{+0.043}_{0}$	48.8 $^{+0.3}_{0}$	2-M10
48H	48 $^{+0.025}_{0}$	14 $^{+0.043}_{0}$	51.8 $^{+0.3}_{0}$	2-M10
50H	50 $^{+0.025}_{0}$	14 $^{+0.043}_{0}$	53.8 $^{+0.3}_{0}$	2-M10
55H	55 $^{+0.030}_{0}$	16 $^{+0.043}_{0}$	59.3 $^{+0.3}_{0}$	2-M10
56H	56 $^{+0.030}_{0}$	16 $^{+0.043}_{0}$	60.3 $^{+0.3}_{0}$	2-M10
60H	60 $^{+0.030}_{0}$	18 $^{+0.043}_{0}$	64.4 $^{+0.3}_{0}$	2-M10

Models compliant with the new JIS standard (JS9) JIS B 1301 1996				
Bore description	Bore diameter [d1·d2]	Keyway width [W1·W2]	Keyway height [T1·T2]	Set screw hole [M]
	Tolerance H7, H8	Tolerance E9	-	-
8J	8 $^{+0.022}_{0}$	3 ±0.0125	9.4 $^{+0.3}_{0}$	2-M4
9J	9 $^{+0.022}_{0}$	3 ±0.0125	10.4 $^{+0.3}_{0}$	2-M4
10J	10 $^{+0.022}_{0}$	3 ±0.0125	11.4 $^{+0.3}_{0}$	2-M4
11J	11 $^{+0.018}_{0}$	4 ±0.0150	12.8 $^{+0.3}_{0}$	2-M4
12J	12 $^{+0.018}_{0}$	4 ±0.0150	13.8 $^{+0.3}_{0}$	2-M4
14J	14 $^{+0.018}_{0}$	5 ±0.0150	16.3 $^{+0.3}_{0}$	2-M4
15J	15 $^{+0.018}_{0}$	5 ±0.0150	17.3 $^{+0.3}_{0}$	2-M4
16J	16 $^{+0.018}_{0}$	5 ±0.0150	18.3 $^{+0.3}_{0}$	2-M4
17J	17 $^{+0.018}_{0}$	5 ±0.0150	19.3 $^{+0.3}_{0}$	2-M4
18J	18 $^{+0.018}_{0}$	6 ±0.0150	20.8 $^{+0.3}_{0}$	2-M5
19J	19 $^{+0.021}_{0}$	6 ±0.0150	21.8 $^{+0.3}_{0}$	2-M5
20J	20 $^{+0.021}_{0}$	6 ±0.0150	22.8 $^{+0.3}_{0}$	2-M5
22J	22 $^{+0.021}_{0}$	6 ±0.0150	24.8 $^{+0.3}_{0}$	2-M5
24J	24 $^{+0.021}_{0}$	8 ±0.0180	27.3 $^{+0.3}_{0}$	2-M6
25J	25 $^{+0.021}_{0}$	8 ±0.0180	28.3 $^{+0.3}_{0}$	2-M6
28J	28 $^{+0.021}_{0}$	8 ±0.0180	31.3 $^{+0.3}_{0}$	2-M6
30J	30 $^{+0.021}_{0}$	8 ±0.0180	33.3 $^{+0.3}_{0}$	2-M6
32J	32 $^{+0.025}_{0}$	10 ±0.0180	35.3 $^{+0.3}_{0}$	2-M8
35J	35 $^{+0.025}_{0}$	10 ±0.0180	38.3 $^{+0.3}_{0}$	2-M8
38J	38 $^{+0.025}_{0}$	10 ±0.0180	41.3 $^{+0.3}_{0}$	2-M8
40J	40 $^{+0.025}_{0}$	12 ±0.0215	43.3 $^{+0.3}_{0}$	2-M8
42J	42 $^{+0.025}_{0}$	12 ±0.0215	45.3 $^{+0.3}_{0}$	2-M8
45J	45 $^{+0.025}_{0}$	14 ±0.0215	48.8 $^{+0.3}_{0}$	2-M10
48J	48 $^{+0.025}_{0}$	14 ±0.0215	51.8 $^{+0.3}_{0}$	2-M10
50J	50 $^{+0.025}_{0}$	14 ±0.0215	53.8 $^{+0.3}_{0}$	2-M10
55J	55 $^{+0.030}_{0}$	16 ±0.0215	59.3 $^{+0.3}_{0}$	2-M10
56J	56 $^{+0.030}_{0}$	16 ±0.0215	60.3 $^{+0.3}_{0}$	2-M10
60J	60 $^{+0.030}_{0}$	18 ±0.0215	64.4 $^{+0.3}_{0}$	2-M10

Models compliant with the new JIS standard (P9) JIS B 1301 1996				
Bore description	Bore diameter [d1·d2]	Keyway width [W1·W2]	Keyway height [T1·T2]	Set screw hole [M]
	Tolerance H7, H8	Tolerance E9	-	-
8P	8 $^{+0.022}_{0}$	3 $^{-0.006}_{-0.031}$	9.4 $^{+0.3}_{0}$	2-M4
9P	9 $^{+0.022}_{0}$	3 $^{-0.006}_{-0.031}$	10.4 $^{+0.3}_{0}$	2-M4
10P	10 $^{+0.022}_{0}$	3 $^{-0.006}_{-0.031}$	11.4 $^{+0.3}_{0}$	2-M4
11P	11 $^{+0.018}_{0}$	4 $^{-0.012}_{-0.042}$	12.8 $^{+0.3}_{0}$	2-M4
12P	12 $^{+0.018}_{0}$	4 $^{-0.012}_{-0.042}$	13.8 $^{+0.3}_{0}$	2-M4
14P	14 $^{+0.018}_{0}$	5 $^{-0.012}_{-0.042}$	16.3 $^{+0.3}_{0}$	2-M4
15P	15 $^{+0.018}_{0}$	5 $^{-0.012}_{-0.042}$	17.3 $^{+0.3}_{0}$	2-M4
16P	16 $^{+0.018}_{0}$	5 $^{-0.012}_{-0.042}$	18.3 $^{+0.3}_{0}$	2-M4
17P	17 $^{+0.018}_{0}$	5 $^{-0.012}_{-0.042}$	19.3 $^{+0.3}_{0}$	2-M4
18P	18 $^{+0.018}_{0}$	6 $^{-0.012}_{-0.042}$	20.8 $^{+0.3}_{0}$	2-M5
19P	19 $^{+0.021}_{0}$	6 $^{-0.012}_{-0.042}$	21.8 $^{+0.3}_{0}$	2-M5
20P	20 $^{+0.021}_{0}$	6 $^{-0.012}_{-0.042}$	22.8 $^{+0.3}_{0}$	2-M5
22P	22 $^{+0.021}_{0}$	6 $^{-0.012}_{-0.042}$	24.8 $^{+0.3}_{0}$	2-M5
24P	24 $^{+0.021}_{0}$	8 $^{-0.015}_{-0.051}$	27.3 $^{+0.3}_{0}$	2-M6
25P	25 $^{+0.021}_{0}$	8 $^{-0.015}_{-0.051}$	28.3 $^{+0.3}_{0}$	2-M6
28P	28 $^{+0.021}_{0}$	8 $^{-0.015}_{-0.051}$	31.3 $^{+0.3}_{0}$	2-M6
30P	30 $^{+0.021}_{0}$	8 $^{-0.015}_{-0.051}$	33.3 $^{+0.3}_{0}$	2-M6
32P	32 $^{+0.025}_{0}$	10 $^{-0.015}_{-0.051}$	35.3 $^{+0.3}_{0}$	2-M8
35P	35 $^{+0.025}_{0}$	10 $^{-0.015}_{-0.051}$	38.3 $^{+0.3}_{0}$	2-M8
38P	38 $^{+0.025}_{0}$	10 $^{-0.015}_{-0.051}$	41.3 $^{+0.3}_{0}$	2-M8
40P	40 $^{+0.025}_{0}$	12 $^{-0.018}_{-0.061}$	43.3 $^{+0.3}_{0}$	2-M8
42P	42 $^{+0.025}_{0}$	12 $^{-0.018}_{-0.061}$	45.3 $^{+0.3}_{0}$	2-M8
45P	45 $^{+0.025}_{0}$	14 $^{-0.018}_{-0.061}$	48.8 $^{+0.3}_{0}$	2-M10
48P	48 $^{+0.025}_{0}$	14 $^{-0.018}_{-0.061}$	51.8 $^{+0.3}_{0}$	2-M10
50P	50 $^{+0.025}_{0}$	14 $^{-0.018}_{-0.061}$	53.8 $^{+0.3}_{0}$	2-M10
55P	55 $^{+0.030}_{0}$	16 $^{-0.018}_{-0.061}$	59.3 $^{+0.3}_{0}$	2-M10
56P	56 $^{+0.030}_{0}$	16 $^{-0.018}_{-0.061}$	60.3 $^{+0.3}_{0}$	2-M10
60P	60 $^{+0.030}_{0}$	18 $^{-0.018}_{-0.061}$	64.4 $^{+0.3}_{0}$	2-M10

New motor standard JIS C 4210 2001				
Bore description	Bore (d1·d2) [mm]	Keyway (W1·W2) [mm]	Key width (T1·T2) [mm]	Set screw (M) Description
	G7 / F7	H9	-	-
14N	14 $^{+0.024}_{+0.006}$	5 $^{+0.030}_{0}$	16.3 $^{+0.3}_{0}$	2-M4
19N	19 $^{+0.028}_{+0.007}$	6 $^{+0.030}_{0}$	21.8 $^{+0.3}_{0}$	2-M5
24N	24 $^{+0.028}_{+0.007}$	8 $^{+0.036}_{0}$	27.3 $^{+0.3}_{0}$	2-M6
28N	28 $^{+0.028}_{+0.007}$	8 $^{+0.036}_{0}$	31.3 $^{+0.3}_{0}$	2-M6
38N	38 $^{+0.050}_{+0.025}$	10 $^{+0.036}_{0}$	41.3 $^{+0.3}_{0}$	2-M8
42N	42 $^{+0.050}_{+0.025}$	12 $^{+0.043}_{0}$	45.3 $^{+0.3}_{0}$	2-M8
48N	48 $^{+0.050}_{+0.025}$	14 $^{+0.043}_{0}$	51.8 $^{+0.3}_{0}$	2-M10
55N	55 $^{+0.060}_{+0.030}$	16 $^{+0.043}_{0}$	59.3 $^{+0.3}_{0}$	2-M10
60N	60 $^{+0.060}_{+0.030}$	18 $^{+0.043}_{0}$	64.4 $^{+0.3}_{0}$	2-M10

Set screw position

Model	Dimension C [mm]
SFU-070	7
SFU-080	8
SFU-090	9
SFU-100	12
SFU-120	12
SFU-140	15

NOTE

- The keyways and set screws of the left and right flanges do not align precisely because the keyway alignment is checked by visual inspection.
- Set screws are included with other parts.
- If higher precision alignment of the left and right keyways is required, please contact us from inquiry page on our website.

Check points for design

Special points to take note

You should note the following matters to prevent any problems at end users.

(1) Be sure to keep permissible mis-alignment of parallel, angular, and axial figures.

(2) Be sure to tighten bolts with specified torque.

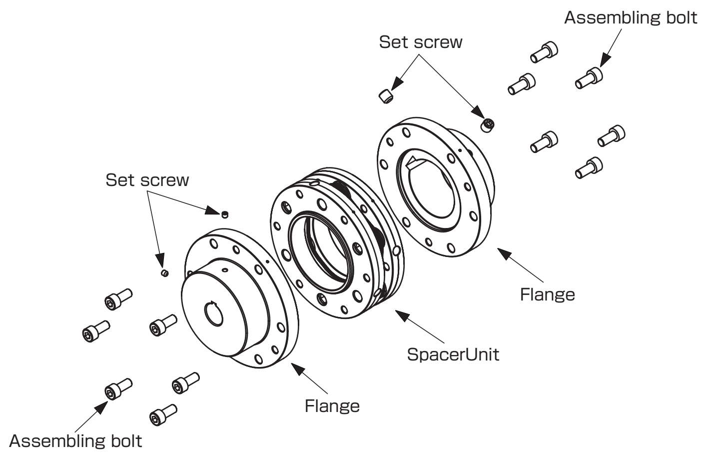
Handling Precautions

SFU model is delivered by 4 kind of parts(Flanges, Unit, Assembling bolts,Set screws) Unit is assembled with high accuracy by specialized jig. If strong impact given to the unit at assembling process, accuracy would not be kept and there would be a possibility of damage or breakage.

(1) Ambient temperature is - 30˜120 deg.(C). Even though water & oil resistance, too much is not recommended.

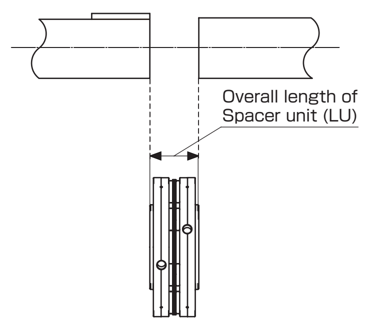
Assembly

Install flanges on both shafts first and unit next. Then tighten assembling bolts.



(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 (molybdenum-, silicon-, or fluorine-based) stick to surface which would dramatically decrease the friction coefficient.

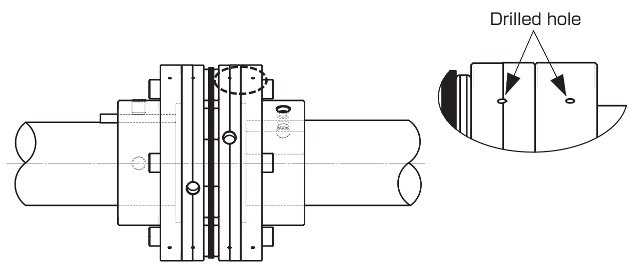
(2) Confirm the distance between both shafts is enogh for overall length of unit(dimension LU).

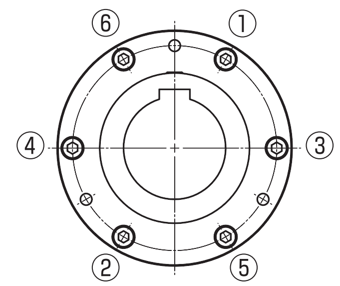


Size		Overall length of unit LU [mm]
SFU-070	SS	28.7
	DS	42.6
SFU-080	SS	36.5
	DS	54.2
SFU-090	SS	37.3
	DS	55.6
SFU-100	SS	43.2
	DS	65.4
SFU-120	SS	43.2
	DS	65.4
SFU-140	SS	48.6
	DS	74.2

(3) Install flanges on both shafts.

(4) Assemble flanges and unit by in-row and match the drilled hole marks on outer surface of flanges and unit as below picture. Then tighten assembling bolts to assemble the coupling. Use calibrated torque wrench and tighten the bolts by the order and torque described in below picture.





Size	Assembling bolts	Tightening torque [N·m]
SFU-070	M4×14	3.4
SFU-080	M6×18	14
SFU-090	M6×18	14
SFU-100	M8×18	34
SFU-120	M8×20	34
SFU-140	M8×30	34