



METAL DISC COUPLING SERVOFLEX SFC-SA2/DA2

Instruction Manual

☆ This instruction manual describes mainly installation, removal, and notes pertaining to same for standard-specification products after purchase; see the Miki Pulley website and our latest catalog for product specifications and performance.

☆ Before use this product, read the instruction manual carefully and use the product safely and correctly.

☆ First, please check that it is the correct product and if the product was damaged during transportation.

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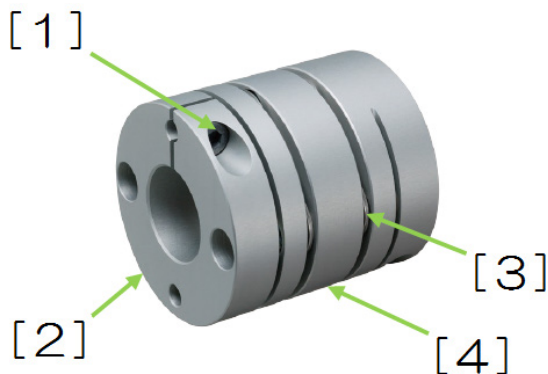
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1. STRUCTURE AND PARTS

Note

Also see information in our catalog for optional productions (products supporting tapered shafts, length-specified products, products with milled keyways).





[1] Clamping bolt [2] Clamping hub [3] Element [4] Spacer (type DA2)

2. NOTES




2.1 SAFETY PRECAUTIONS

Please read carefully through the instruction manual and the technical information for proper use and safety. In this manual, safety precautions are classified by "DANGER" and "CAUTION".




[CLASS]

 DANGER	When death or serious injury may result by mishandling.
 CAUTION	When disability or only physical damage may result by mishandling.




[FIGURE SIGN]

 PROHIBITION	In the handling of the product, it indicates that prohibit the act.
 CAUTION	In the handling of the product, it indicates that attention is required.
 MANDATORY	In the handling of the product, it indicates that the action is compulsory on the basis of the instructions.





DANGER

	Make sure that the main power of the product is off before mounting or performing maintenance/inspection.		Set up a safety mechanism such as a safety brake to avoid any danger.
	It is extremely dangerous if the driving part starts operating by accident while handling the product.		The driven and driving sides could become completely detached if the product is damaged while in operation and not immediately halted.
	Be sure to use a safety cover.		
	It is extremely dangerous if hands, fingers, hair, clothing, etc. get caught in the product or a rotating part while in operation.		

CAUTION









	Always use clamping bolts specified by Miki Pulley and a calibrated torque wrench correctly and clamp at the specified tightening torque.		Use a safety glasses or gloves.
	Depending on the tightening adjustment of bolt or screw, exceptionally dangerous situations such as product damage or performance degradation could occur.		Sharp portions of element comprising the thin disc spring, product bore diameter, keyway, shaft keyway, etc. may cause injury.
	Be careful lifting a heavy weight. Do not lift with a bad posture.		
	Straining yourself to lift a heavy product or using a torque wrench, or an awkward posture when installing the product in a machine could cause back injury.		

2. 2 IMPORTANT POINTS OF PRODUCT SPECIFICATIONS

	Do not use the product in a bad environment.		Request disposal with a waste-collection company, or dispose of according to laws and regulations.
	Operating temperature range : -30~+100°C Do not use the product in an environment where water, oil, or chemicals may spill (no matter how little), that is corrosive, where temperature is extremely high or low, that is dusty, where condensation forms, that is exposed to wind and rain, or that is subject to a high degree of vibration/impact; may cause product damage or performance deterioration.		When disposing of the product, request disposal with professionals, or dispose of according to law and local regulations if disposing of product by yourself. Do not dispose of or leave unattended where children play or in a public space.
	Comes as a finished product. Do not disassemble, modify, or additionally process the product.		Always be careful of allowable parallel, angular, and axial misalignment. (See table)
	We do not guarantee quality nor shall we be liable for damages in the event of damage or affected performance of the product or of injury or accident occurring as a result of the product being disassembled, modified, or additionally processed by the customer.		Specify any length for the length-specified special order option. 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. (See catalog)

SIZE	TYPE	Misalignment			TYPE	Misalignment		
		Parallel [mm]	Angular [°]	Axial [mm]		Parallel [mm]	Angular (※On one side) [°]	Axial [mm]
002	SA2	0.01	0.5	±0.04	DA2	0.03	※ 0.5	±0.08
005	SA2	0.02	0.5	±0.05	DA2	0.05	※ 0.5	±0.1
010	SA2	0.02	1	±0.1	DA2	0.11	※ 1	±0.2
020	SA2	0.02	1	±0.15	DA2	0.15	※ 1	±0.33
025	SA2	0.02	1	±0.19	DA2	0.16	※ 1	±0.38
030	SA2	0.02	1	±0.2	DA2	0.18	※ 1	±0.4
035	SA2	0.02	1	±0.25	DA2	0.24	※ 1	±0.5
040	SA2	0.02	1	±0.3	DA2	0.24	※ 1	±0.6
050	SA2	0.02	1	±0.4	DA2	0.28	※ 1	±0.8
055	SA2	0.02	1	±0.42	DA2	0.31	※ 1	±0.84
060	SA2	0.02	1	±0.45	DA2	0.34	※ 1	±0.9
080	SA2	0.02	1	±0.55	DA2	0.52	※ 1	±1.10
090	SA2	0.02	1	±0.65	DA2	0.52	※ 1	±1.30
100	SA2	0.02	1	±0.74	DA2	0.55	※ 1	±1.48

2. 3 IMPORTANT POINTS BEFORE MOUNTING

	Never tighten the clamping bolts before inserting the shaft to this product.		Do not deform the element.
	The clamping hub will become deformed and the shaft uninsertable. The product is shipped with the clamping bolts pretightened.		Be careful when inserting the coupling onto the shaft so as not to subject to strong shock or apply excessive force of compression or tensile force to the element.
	Do not use any bolt or screw other than the clamping bolts on the product.		If needing to use a non-round shaft, installation locations are specified.
	Use Miki Pulley-specified clamping bolts because they are processed with solid lubrication films.		Installation on shafts with milled keyways or chamfered (D-cut) shafts are limited by the position of the slit on the clamping hub.
	Thread lock or other adhesives to prevent loosening, oil, or the like cannot be used on the clamping bolts.		Wipe off any rust, dust, or oil on the shaft and inner diameter surface of the hub. Wipe away any antirust grease, dirt, etc. with a cloth.
	Lubricant components will create excessive axial forces and potentially damage the clamping bolts or coupling.		
	Fasten nuts for products supporting tapered shafts (optional products) with the tightening torque recommended by the motor manufacturer.		Soiling will degrade shaft holding power and prevent the product from performing to capacity. 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.
	Allows coupling via a clamping hub when a taper adapter is mounted on the tapered shaft of a servo motor. Refer to motor manufacturer instructions for nut tightening torque and how to install on a tapered shaft.		

3. MOUNTING

(1)

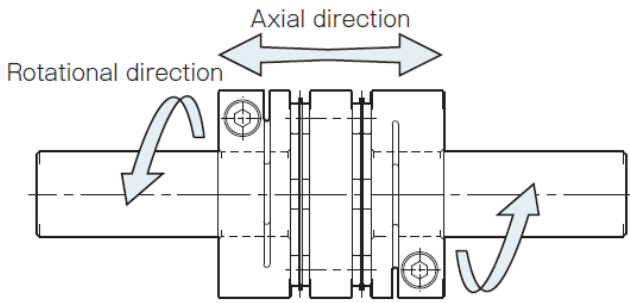
Wipe off any rust, dust, oil, etc. from the shaft and inner diameter surfaces of the coupling. In particular, never allow oil or grease containing antifriction or other agent (molybdenum-, silicon-, or fluorine-based), which would dramatically affect the friction coefficient, to contact the surface.

(2)

Check that coupling clamping bolts have been loosened. Be careful when inserting the shaft in the coupling 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 the paired shaft into the coupling after attaching the coupling to the motor.

(3)

With the two clamping bolts loosened, make sure that the coupling moves gently along the axial and rotational directions. Readjust the centering of the two shafts if the coupling fails 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.



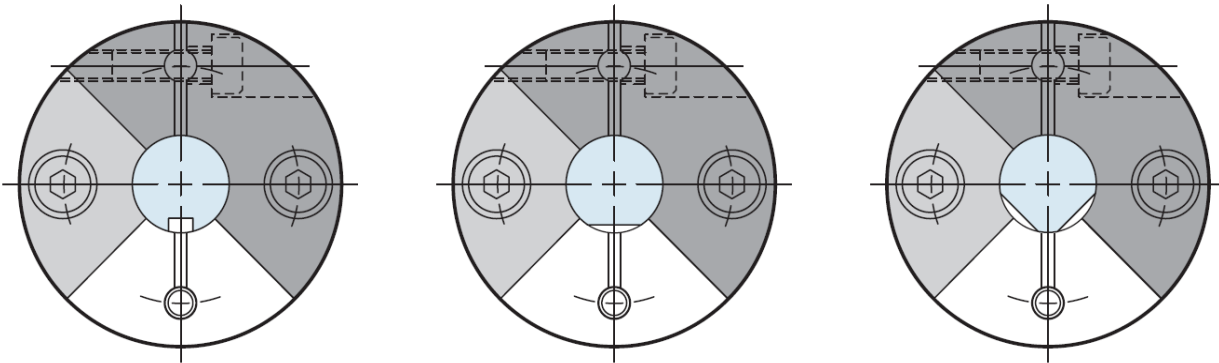
(4)

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.

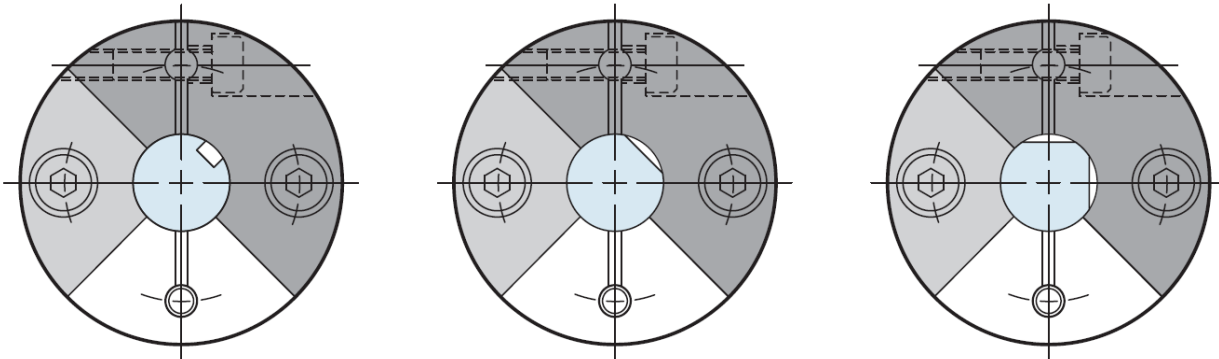
(Do not attempt to face keyways, D-shaped cuts, or other insertions to the grayed areas.)

Placing the shaft in an undesirable location may cause the coupling 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



■ 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 coupling along the entire length of the clamping hub (LF dimension), as shown in the diagram below, and does not interfere with the elements, spacers or the other shaft.

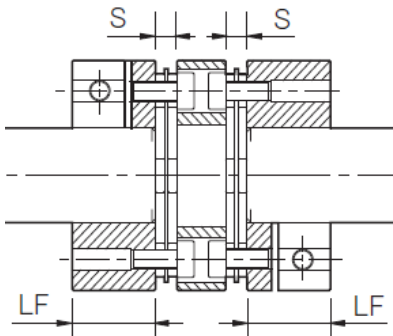
In addition, restrict the dimensions between clamping hub faces (S dimensions in the diagram) within the allowable misalignment of the axial direction displacement with respect to a reference value.

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.

Note

In particular with milled keyways, take note of the key height so that the key does not come in contact with the element.

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

Note

Use M2 bolts on 010 size with holes with a diameter of 8 mm.

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

4. REMOVAL

(1)

Before starting work, ensure safety by turning off the main equipment power and making sure no torque or thrust are applied to the coupling and there is no risk of the shaft and hub falling by their own weight.

(2)

The coupling is instantaneously released by loosening the clamping bolts.

Note

Be sure not to loosen anything other than the clamping bolts.
Product is shipped assembled, and cannot be restored if disassembled.

MIKI PULLEY

<http://www.mikipulley.co.jp/>

Contact by email

Please contact us using the inquiry form and be aware that support for inquiries received on Saturdays, Sundays, holidays, New Year's, and summer business holidays will be provided on the next business day.

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