

SAD SERIES

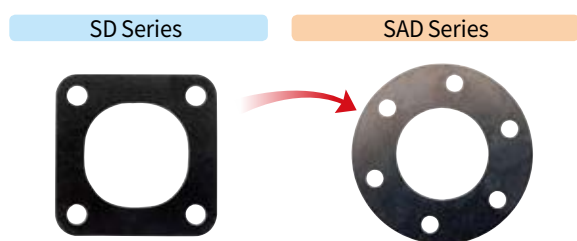


Advanced Disk Coupling

SAD vs SD

SAD Series is an advanced version of general Disk type Coupling (SD series), with its plate-spring structure modified to make the coupling more durable and stiff. SAD series uses 3-point fixation method for its plate spring rather than 2-point as in general SD Series, which allows users to use smaller sized product but keep the similar performance level.

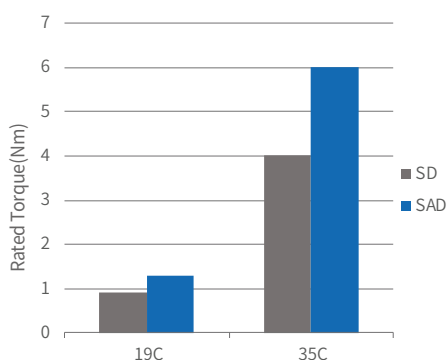
1. Advanced version of Plate Spring shape



- The advanced plate spring with 6 assembly holes and these holes have narrower distance than 4-hole structure (SD series). Thus, SAD series is less flexible than SD series. On the other hand, increasing the number of assembly holes helps to disperse stress and it makes its module more durable and stiff. This advanced disk coupling is suitable for the purpose of enhanced performance, being able to replace similar small sized disk couplings.

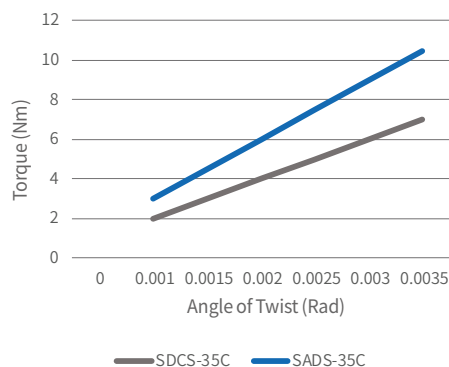
2. Maximized Torque Transmission

The rated torque values (transmittable torque) of SAD series are higher compared to the similar sized general SD series.



3. High Torsional Stiffness

SAD Series helps to obtain faster response time (excellent for high speed and high accuracy applications)

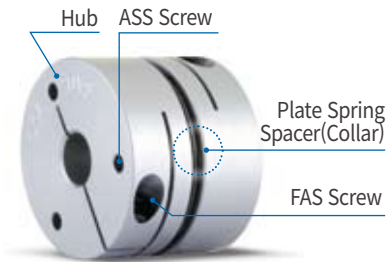


Classification: SAD Series

Model	Type	Plate-spring Modules	Clamping Methods	Feature	Transmission level of Torque	Shape
SADS-C	Single Disk	1	Side-clamp	More stiff More durable	SADS-C = SADW-C Both types have higher level than similar sized SD series	
SADW-C	Double Disk	2		More flexible (compared to SADS-C)		

SAD SERIES (SADS)

Advanced Single Disk Type Coupling



Structure and Material

Structure	Material	Surface Treatment
Hub	High Strength Aluminum Alloy	Anodizing
Plate Spring	Stainless Steel	-
Spacer(Collar)	Steel	Black Oxide
Assembly Screw	SCM435	Black Oxide
Fastening Screw	SCM435	Black Oxide

Product Features & Application

Backlash free (Precision)		☆
High Torque (Durability)		☆
Torsional Stiffness		☆
Vibration Absorption		-
Misalignment Absorption		△
Applicable Motors	Servo	☆
	Stepping	☆
	Encoder	○
	General	○

Application : Semi-conductor manufacturing machine, SMT, Cartesian Robot, UVW Stage, Machine tools, Index Table

Parts with Alternative Material Options

- Sung-il Machinery provides alternative material options for Coupling parts for customers who are worried about corrosion on Black oxide finish. Please see the below table for more details.

Mark	Material	Surface Treatment
No mark	Steel	Black Oxide
SUS/ASS	Stainless Steel	-



No mark



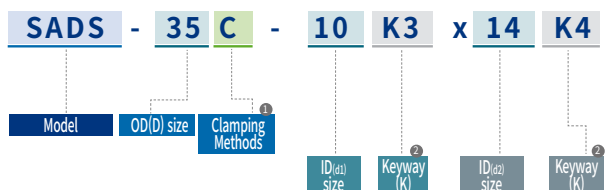
SUS/ASS

- Caution: Slip torque would become lower if the body material or surface treatment of screws are changed from the standard version.

Clamping Methods

Set-screw (No mark)	General	X
	With Keyway	X
Side-clamp (C)	General	○
	Hub Split	X
	With Keyway	○
Taper-ring (T)		X

How to Order



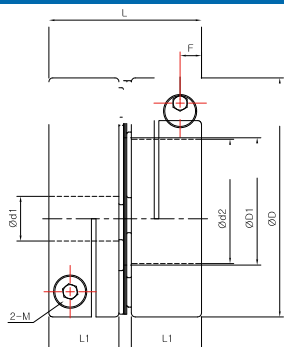
- Clamping Methods
C General Side-clamp

- Keyway
No mark No Keyway
K(b size) Keyway processed according to the indicated b size.

SAD SERIES (SADS)

Advanced Single Disk Type Coupling

Side-clamp



Dimensions / Performance

Model	Size (±0.3mm)					Screw		Rated Torque (N·m)	Max. Torque (N·m)	Max. rpm (min ⁻¹)	Moment of Inertia (kg·m ²)	Static Torsional Stiffness (N·m/rad)	Mass (g)	Permissible Misalignment			Side-clamp Hub Split
	D	D ₁	L	L ₁	F	Size	Fastening Torque (N·m)							Angular (°)	Parallel (mm)	End-play (mm)	
SADS-19C	19	8.5	18.8	8.5	2.6	M2	0.5	1.3	2.6	14,000	6.2X10 ⁻⁷	800	12	1	0.02	±0.1	X
SADS-27C	27	14.5	24	11	3.3	M2.6	1	3	6	10,000	3.3X10 ⁻⁶	1,800	28	1	0.02	±0.15	X
SADS-32C	32	15.5	26.2	12	3.6	M3	1.7	4.5	9	9,000	7.2X10 ⁻⁶	1,800	46.4	1	0.02	±0.2	X
SADS-35C	35	16.5	27.2	12.5	3.8	M3	1.7	6	12	8,500	1.1X10 ⁻⁵	3,000	58	1	0.02	±0.2	X
SADS-40C	40	20.5	33.2	15.5	4.5	M4	3.5	12	24	8,500	2.2X10 ⁻⁵	5,500	90.1	1	0.02	±0.2	X
SADS-44C	44	22.5	33.2	15.5	4.5	M4	3.5	14	28	8,000	3.5X10 ⁻⁵	7,500	112	1	0.02	±0.3	X

- The Moment of Inertia and Mass values are based on products with max. Inner diameter.
- Max. torque/rated torque is the value regarding to a coupling's self-durability and is not related to slip-torque between the coupling bore and the shaft.

Standard Inner Diameter (ID)

Model	Standard Inner Diameter (d ₁ , d ₂) (mm)																								
	3	4	4.5	5	6	6.35	7	8	9	9.525	10	11	12	12.7	14	15	15.875	16	17	18	19	20	22		
SADS-19C	●	●	●	●	●	●	●	●★																	
SADS-27C		●	●	●	●	●	●	●	●	●	●	●	●	●	●★										
SADS-32C				●	●	●	●	●	●	●	●	●	●	●	●	●★									
SADS-35C				●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★							
SADS-40C					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●★		
SADS-44C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●★	

- The recommended shaft tolerance is h7.
- Custom process (e.g. non-standard Inner diameter, special tolerance etc.) is also available upon a special request in prior to order placement.
- Keyway is available. (Optional)
- Due to interference of the middle parts, make sure the shaft is only inserted into L1 depth for IDs with ★ mark.

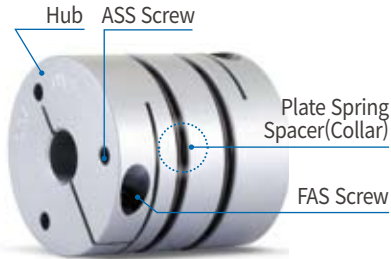
Slip Torque

- The below table shows the actual permissible torque values when the slip torque value is lower than the coupling's max. torque value.
- If the slip torque value is lower than the coupling's max. torque value, please check and compare between the slip torque in the below table and the operating torque value of the connected motor. It is safer to size up the coupling or use a key/keyway when the slip torque value is lower than the motor's operating torque.
- The below slip torque values may be subject to change according to different testing conditions. (e.g. shaft tolerance, Surface roughness, or acceleration/deceleration of driving shafts). On the other hand, the values could be affected when a different kind of fastening screw is used (body material or surface treatment). Therefore, we recommend you test under the same conditions before mounting.

Model	Max. Torque (N·m)	Slip Torque (N·m) by Inner Diameter(d_1, d_2)													
		3	4	4.5	5	6	6.35	7	8	9	9.525	10	11	12	12.7
SADS-19C	2.6	0.7	1.3	1.5	1.9	2.3	2.4								
SADS-27C	6		2.1	2.5	2.6	3	3.5	3.7	4.8						
SADS-32C	9				3.1	3.9	4.1	4.5	5.3	6	7	8.8			
SADS-35C	12				3.3	4.5	6.9	6.9	8.6	9.3	10.4	11.1			
SADS-40C	24					4.8	6.5	7.5	8.3	9	10.2	14.2	15.5	17.6	19.4
SADS-44C	28								8	10	12	13	17	24	25

SAD SERIES (SADW)

Advanced Double Disk Type Coupling



Structure and Material

Structure	Material	Surface Treatment
Hub	High Strength Aluminum Alloy	Anodizing
Middle Hub	High Strength Aluminum Alloy	Anodizing
Plate Spring	Stainless Steel	-
Spacer(Collar)	Steel	Black Oxide
Assembly Screw	SCM435	Black Oxide
Fastening Screw	SCM435	Black Oxide

Product Features & Application

Backlash free (Precision)		☆
High Torque (Durability)		☆
Torsional Stiffness		☆
Vibration Absorption		-
Misalignment Absorption		○
Applicable Motors	Servo	☆
	Stepping	☆
	Encoder	○
	General	○

Application : Semi-conductor manufacturing machine, SMT, Cartesian Robot, UVW Stage, Machine tools, Index Table

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No mark

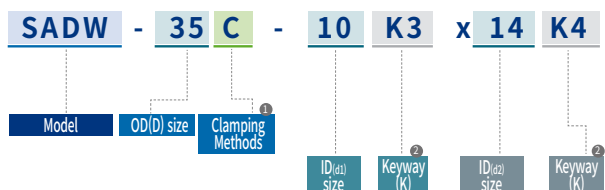
SUS/ASS

- Caution: Slip torque would become lower if the body material or surface treatment of screws are changed from the standard version.

Clamping Methods

Set-screw (No mark)	General	X
	With Keyway	X
Side-clamp (C)	General	○
	Hub Split	X
	With Keyway	○
Taper-ring (T)		X

How to Order



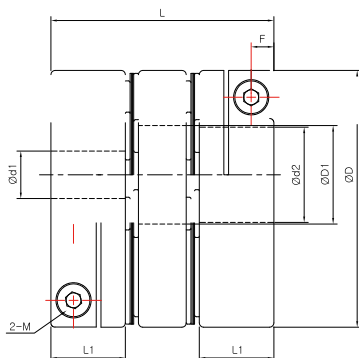
- Clamping Methods
C General Side-clamp

- Keyway
No mark No Keyway
K(b size) Keyway processed according to the indicated b size.

SAD SERIES (SADW)

Advanced Double Disk Type Coupling

Side-clamp



Dimensions/Performance

Model	Size ($\pm 0.3\text{mm}$)					Screw		Rated Torque (N·m)	Max. Torque (N·m)	Max. rpm (min^{-1})	Moment of Inertia ($\text{kg}\cdot\text{m}^2$)	Static Torsional Stiffness (N·m/rad)	Mass (g)	Permissible Misalignment			Side-clamp Hub Split (W)
	D	D ₁	L	L ₁	F	Size	Fastening Torque (N·m)							Angular (°)	Parallel (mm)	End-play (mm)	
SADW-19C	19	8.5	26.6	8.5	2.6	M2	0.5	1.3	2.6	14,000	9.1×10^{-7}	600	18	2	0.1	± 0.2	X
SADW-27C	27	14.5	34	11	3.3	M2.6	1	3	6	10,000	4.8×10^{-6}	1,300	42	2	0.15	± 0.3	X
SADW-32C	32	15.5	40	12	3.6	M3	1.7	4.5	9	9,000	1.1×10^{-5}	2,000	72.6	2	0.2	± 0.4	X
SADW-35C	35	16.5	37.4	12.5	3.8	M3	1.7	6	12	8,500	1.5×10^{-5}	2,200	83	2	0.2	± 0.4	X
SADW-40C	40	20.5	46.9	15.5	4.5	M4	3.5	12	24	8,500	3.3×10^{-5}	4,800	132.6	2	0.2	± 0.4	X
SADW-44C	44	22.5	46.9	15.5	4.5	M4	3.5	14	28	8,000	5.0×10^{-5}	6,000	161	2	0.2	± 0.6	X

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	3	4	4.5	5	6	6.35	7	8	9	9.525	10	11	12	12.7	14	15	15.875	16	17	18	19	20	22		
SADW-19C	●	●	●	●	●	●	●	●★																	
SADW-27C		●	●	●	●	●	●	●	●	●	●	●	●	●	●★										
SADW-32C				●	●	●	●	●	●	●	●	●	●	●	●	●★									
SADW-35C				●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★							
SADW-40C					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●★		
SADW-44C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●★	

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Model	Max. Torque (N·m)	Slip Torque (N·m) by Inner Diameter(d_1, d_2)													
		3	4	4.5	5	6	6.35	7	8	9	9.525	10	11	12	12.7
SADW-19C	2.6	0.7	1.3	1.5	1.9	2.3	2.4								
SADW-27C	6		2.1	2.5	2.6	3	3.5	3.7	4.8						
SADW-32C	9				3.1	3.9	4.1	4.5	5.3	6	7	8.8			
SADW-35C	12				3.3	4.5	6.9	6.9	8.6	9.3	10.4	11.1			
SADW-40C	24					4.8	6.5	7.5	8.3	9	10.2	14.2	15.5	17.6	19.4
SADW-44C	28								8	10	12	13	17	24	25