벤처기업

벤처디자인

ISO 9001 / KSA9001 인증기업

INNOBIZ
중소기업 기술혁신 협회

koita
기업부설연구소

SUNGIL

Ultra-precision Couplings
Connecting Shaft
Support Units
FA Units
A.P. Lock

SUNGIL MACHINERY

Sungil's products are certainly reliable!

Sungil is the first company that has developed zero backlash small precision coupling in Korea. We develop and manufacture zero-backlash Oldham, Disk, Radial beam, Cross joint, Jaw, Flexible, Gum Type, and Rigid coupling through industrial and educational cooperation with relentless effort to make ultra-precision machinery items.

Our company received the Korea Venture Design Award for its compact design and was recognized for its quality and technology by exhibiting products at various domestic and international exhibitions such as Hanover Exhibition (exhibition of factory automation) in Germany. Through such activities, Sungil Machinery has become a world class small size coupling brand.

In addition, Sungil Machinery recently introduced a series of support units into the Korean market for the first time, which had been exported to Southeast Asia, EU and America with couplings.

Sungil's support units have micron unit precision in straightness, parallelism and perpendicularity of housing. With ultra-precision process in housing, spacer and lock nuts, we maximized the motion and control performance.

Sungil has formally released the connecting shaft with our know-how and technology. We are developing and providing A.P. Lock, set collars and other F.A. components. Connecting shafts are made with Sungil's manufacturing and assembling technology. A.P. Lock and other F.A. components also show our will that we provide high quality machinery products in a competitive price.

We will do our best to provide ultra-precise, high performance products and satisfaction of our customers as a world-class F.A. component brand.
We deeply appreciate your attention and support.

High Performance!
High Reliability!
High Quality!

Contents

Ultra-precision Couplings

'SI, CO' mark (Trade mark : 40-2012-0061376)certify the authenticity.

Connecting Shaft NEW

Support Units

FA Units

A.P. Lock NEW

New Products

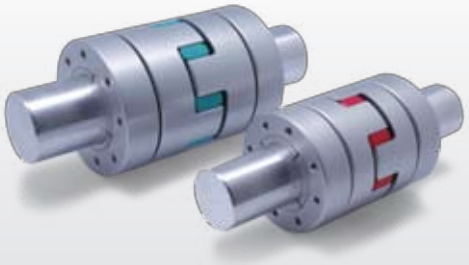
SJC- ■ ■ T

Will be released on Sept. 2013

NEW

SJC (Jaw Coupling) : Taper ring type clamping hub

- Be optimized for high speed and torque of spindle
- Perfect symmetric structure
- Ideal balanced product



P.43

SHD ■ - 110 ■

Will be released on Jul. 2013

NEW

Larger-sized High Torque Flexible Disk Coupling (SHD series)

- Will be released as the domestically first high precision and torque disk coupling.
- Single disk type(SHDS) and double disk type(SHDW) are available.
- Various kinds of clamping ways are available. (Set Screw, Clamp, Taper ring type)

P.29 ~ P.31

SD ■ ■ S- ■ ■ C

Will be released on Sept. 2013

NEW

Stainless Steel Disk Coupling

- All parts of disk type coupling is made up of stainless steel.
- Various sizes are standardized. (outer diameter : ø19 ~ ø64)
- Be optimal for vacuum or clean room environment
- It is available to manufacture larger sized product that is excluded from catalog (ex. SD□□S- 80C, 90C, 100C)

P.26

SHR- ■ ■ C

ON SALE

NEW

SHR Series : High Performance Rubber Coupling

- The middle body is made up of HNBR
- Be optimized for high gain system of servo motor.
- Can minimize the over/under shoot caused by rapid acceleration or deceleration
- Excellent ability to absorb vibration and noise and high precise positioning.

P.44 ~ P.46

New Products

A.P. Lock

ON SALE

- Sungil Accurate & Powerful Locking Device
- Product code 'SAP' was registered as the trademark at the Intellectual Property Office (Application number : 40-2011-0011919).
- Homogeneous mechanical property through stabilizing treatment
- Shaft-clamping force is improved by spreading special oil or grease on taper-shaped parts of A.P. Lock.
  (S45C – operation oil #68, Electroless Nickel Plating – Fluorinated grease.)
- Bore tolerance is thoroughly controlled by all inspection.
- Shaft Clamping force and contact ratio was qualified in In-house Lab.
- Made in Korea

SAPL-A Series

SAPL-A : S45C
SAPL-AS : SUS304
SAPL-AK : Electroless Nickel Plating

P.87 ~ P.93

SAPL-B Series

SAPL-B : S45C

P.101 ~ P.103

SAPL-C Series

SAPL-C : S45C
SAPL-CS : SUS304
SAPL-CK : : Electroless Nickel Plating

P.94 ~ P.100

※ A.P. Lock (SAPA, SAPC) made up of high strength aluminum alloy is on sale. (P.104 ~ P.109)

Connecting Shaft

ON SALE

- Two types of coupling are applied : Disk Type (SHDL), Jaw Type(SJCL)
- High precise straightness of middle long shaft
- Easy installation and disassembly
- Usage : Belt drive connection, Reducer Connection, Screw Jack System

P.48 ~ P.55

Connecting Shaft

SJCL Series

SHDL Series

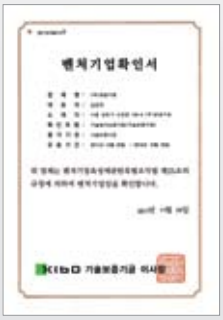
Sungil's Certifications and Prizes

Certifications


Sungil research institute

ISO 9001


INNO-BIZ certification


Venture company certification


Company specialty in components


Industrial and educational cooperation agreement

Sungil is an outstanding F.A. component manufacturer in Korea. Sungil has established 'Sungil Research Institute' to make itself competitive through researching and developing its technology to provide high quality products and services.

'Sungil Research Institute' focus on government projects, developing new products, improving performance, increasing productivity and technical support service cooperating with industries, educational institutes and other laboratories.

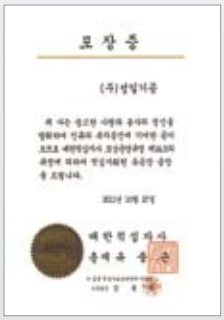
Until now, Sungil has conducted 4 government projects, pended or registered 7 patents, 5 utility models, 16 designs of F.A. components and still developing new products that correspond to customers needs.

Accumulating technology is the only way to enter the global top 3 ultra precision coupling manufacturer and be the outstanding F.A. component brand. Sungil promises to provide the best products and services to customers.

Prizes and Social Contribution

President prize (excellent component manufacturing)

Prime minister prize



Gold prize of red cross

Sungil was founded at 1991 and since then it has stuck to F.A component manufacturing. Even only a single component, from manufacture to assemble, we make it with craftsman's spirit. Quality is the first value that we pursue. Sungil made domestic customers competitive by manufacturing products domestically which were before imported. This was recognized by the government and Sungil was awarded by the president(2011).

Also Sungil is a social enterprise. We have continuously hired young workers from technical high school and passed on our technical know-how because we believe that as a manufacturing company training domestic human source is a company's responsibility. Sungil has also participated in the Red Cross Work. For these contributions Sungil has awarded by the prime minister and the Korea national red cross.

Sungil will be contribute on national competitive for F.A. industry and be a honest company as always. Thank you for your support sincerely.

Sungil research institute

Expreriment equipments

Fracture/Slip Torque Testing Machine

■ Specifications
- torque : 0 ~ 500 Nm
- speed : 5 ~ 200 rph
- twist angle : 0 ~ 30°
- exclusive SW
- auto/manual
- real time display/storage

■ Use
- testing slip torque
- testing fracture torque
- testing torsional rigidity
- testing cyclic load lifespan

Coupling lifespan Testing Machine

■ Specifications
- torque : 0 ~ 100 Nm
- max rpm : 11,000rpm
- eccentricity : 0.0 ~ 3.0 mm
- angular misalignment : 0.0 ~ 3.0°
- axis displacement : 0.0 ~ 10 mm

■ Use
- testing lifespan with axial/ parallel/angular misalignment
- testing max rotation performance

Coupling Overshoot Testing Machine

■ Specifications
- acceleration time : 0.02 sec
- max rpm : 6,000rpm
- position resolution : 0.5 micron
- possible load : 0 ~ 100kg

■ Use
- testing overshoot displacement
- testing coupling performance at initial acceleration
- testing accelerated-life

3-dimension Measuring Instrument

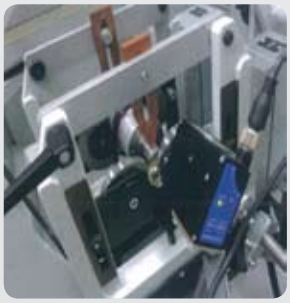
Rockwell Hardness Measuring Instrument

■ Specifications
- test load : 60, 100, 150Kgf
- standard load : 10Kgf
- max test height 210mm
- product size : 200 x 150 x 720

■ Use
- product hardness test
- heat treatment quality test

Resonant Frequency/Balancing Measuring Instrument

Resonant frequency measuring instrument



Balancing measuring instrument

Sungil utilize FEA to evaluate structure and dynamic performance for new or modified design and then verifies actual performance with in-house testing machine. Sungil cooperates with various institutes to improve and develop products. Sungil will do its best to improve quality and develop new products.

Ultra-precision Coupling

Sungil Ultra-precision Coupling

Ultra-precision Coupling

Alignment Adjustment

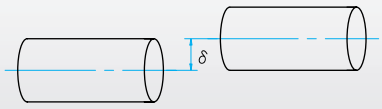
① Flexible coupling can transmit torque and rotation angle by allowing misalignment. However, when the misalignment exceeds the permissible value, vibrations may occur and the life of the coupling may reduce shortly. Be sure to adjust the alignment.

② There are three types of shaft misalignments such as eccentricity (error in parallel alignment), angularity (error in angular alignment) and end-play (shift axle direction). Adjust the alignment to be lower than limit listed in the specification table of each product provided in this catalog.

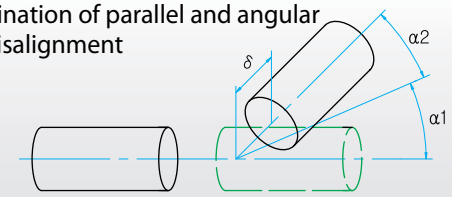
③ The limit of misalignment indicated in this catalog is for when only one misalignment(eccentricity, angularity and end-play, respective) is taking place. When there are more than 2 misalignments, we recommend you to apply misalignment lower than 1/2 of the limits.

④ Misalignments are sometimes caused not only by equipment assembly but also by vibration, heat expansion, wear of bearings and so forth during operation. Therefore, it is recommended to adjust the shaft misalignment to be below 1/3 of maximum limit.

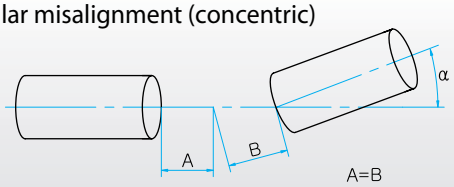
■ Parallel Offset Misalignment



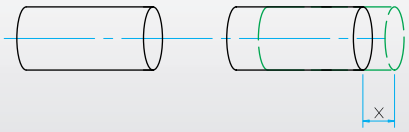
■ Combination of parallel and angular offset misalignment



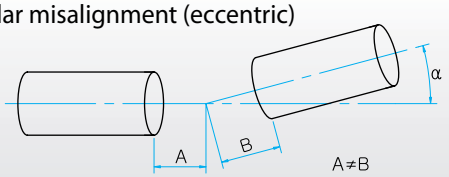
■ Angular misalignment (concentric)



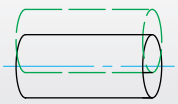
■ End-Play



■ Angular misalignment (eccentric)



■ Run Out



Adjustment of Torque according to Temperature

SOH, SFC, SJC, and SHR use polyurethane, polyacetal, plastic parts or Anti-Vibration Rubber. These models must be used in the operational temperature indicated in this catalog.
When ambient temperature exceeds 30°, maximum torque and rated torque should be checked by the correction factor on the chart.

Ambient Temperature	Correction Factor
-20℃ ~ 30℃	1.0
30℃ ~ 40℃	0.8
40℃ ~ 60℃	0.6
60℃ ~ 100℃	0.5

Cautions

- Misalignment or torque exceeding maximum limit may reduce the life of a coupling due to plastic deformation.
- Stop the operation of a machine quickly when there is abnormal metallic noise, and check shaft misalignment and any disturbance in shaft rotation. After that, operate the machine again.
- When used in harsh condition such as significant load fluctuation, apply adhesive on screw to prevent loosening or select a larger size product.
- `Rated Torque' is a torque that can be transferred continuously.
- `Max Torque' is a torque that can be transferred momentarily at the moment of starting or reversing motion.
- Rate/ Maximum transferable torques have been determined without considering slip torque of the shaft. Slip torque is dependent on inner bore diameters.

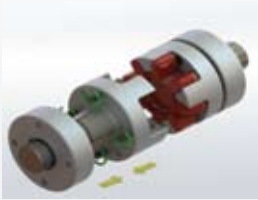
Sungil Ultra-precision Coupling

Ways to Clamp Shafts

■ Set Screw Type
- A kind of common clamping type
- Shaft is easily damaged due to direct contact of clamping bolt to the shaft and the clamping force is weak
- Be vulnerable to vibration

■ Clamp Type
- Bore is contracted by tightening bolts and than shaft is clamped. .
- No shaft damage and better shaft clamping force than set screw type.

■ Clamp Split Type
- Be consist of two separate parts.
- No need to disassemble driven and driving parts for coupling installation (easy assembly)



■ Taper Type
- Excellent shaft clamping force
- Perfect symmetry and ideal balancing.

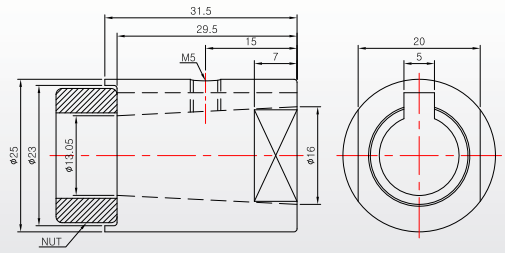
■ Keyway
- Traditional way to compensate clamping force of Set Screw, Clamp, and Clamp Split type
- Please check the recommended key size according to bore size

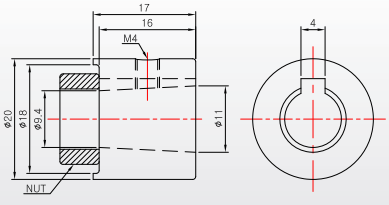
Shaft Clamping Way		SRB Series	SOH Series	SD Series	SHD Series	SRG Series	SCJ Series	SFC Series	SJC Series	SHR Series
Set Screw Type	Standard	O	O	O	O	O	O	O	O	X
	Key way	O	O	O	O	O	O	X	O	X
Clamp Type	Standard	O	O	O	O	O	O	X	O	O
	Key way	O	O	O	O	O	O	X	O	O
Taper Type	Standard	X	X	X	O	X	X	X	O	X
Clamp Split Type	Standard	X	X	▲	▲	▲	X	X	▲	O
	Key way	X	X	▲	▲	▲	X	X	▲	O

※ Keyway can be processed to all product models that have clamp type hubs
※ Set screw type is not available for SRBM, SOHM and SJCM.
※ Set screw type is not available for the Big sized SOH Series (15page)
※ Set screw type is not available for Stainless steel disk type. (SD □ □ S)

▲ For the SD Series, clamp split type is available only on cylindrical hub that's outer diameter is larger than or equal to ø54(that is not available for the flange-shaped hub)
▲ The SHD's clamping hub for the split type has different structure from the normal SHD's clamp type hub. Please check the lead time when you order.
▲ Please check the lead time when you order semi or entire split type of SRG.
▲ Split type is available for SJC Series that's outer diameter is larger than or same to ø30 (For the outer diameter ø30, it is only available on SJCB-30C)
※Please check the lead time when you order clamp split type for the all kinds of product.

1/10 Taper Bushing

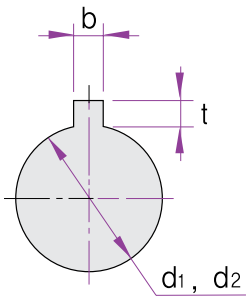




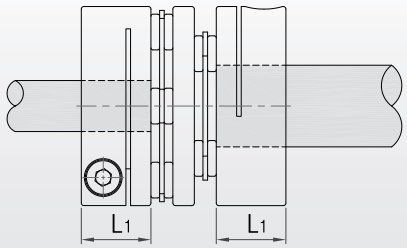
Sungil Ultra-precision Coupling

Standard Dimension of Keyway

Bore diameter	Dimension				Nominal Dimension
d1, d2	b		t		(b x h)
	Basic Size	Tolerance	Basic Size	Tolerance	
ø 8 ~ ø 10	3	±0.0125	1.4	+0.1 0	3 x 3
ø 10 ~ ø 12	4	±0.015	1.8		4 x 4
ø 12 ~ ø 17	5		2.3		5 x 5
ø 17 ~ ø 22	6		2.8		6 x 6
ø 22 ~ ø 30	8	±0.018	3.3		8 x 7
ø 30 ~ ø 38	10			+0.2 0	10 x 8
ø 38 ~ ø 44	12	±0.0215			12 x 8
ø 44 ~ ø 50	14		3.8		14 x 9
ø 50 ~ ø 58	16		4.3		16 x 10
ø 58 ~ ø 65	18		4.4		18 x 11



Shaft Insertion Length



- The shaft insertion length that we recommend is 'L1' dimension listed within catalog chart for all kinds of catalog.
- If the length is too short, the slip can be easily occurred and the damage near side slot may be caused. On the other hand, If the length is too long, an internal interference or damage can be happened.

Customer Service

1. Nickel plated bolts or stainless steel bolts can be applied to all types of coupling products.
   (Please mark the bolt type you want when you order)
2. It is available to order special bore size besides the standard listed on this catalog.
   (Please contact to us. If the bore size that customer wants reduces product's performance or durability, the sized- product can not be offered.)
3. Please contact us when you ask special product that is not a standard. SUNG IL always do our best to develop new or special order product which customers need.

Compliance with RoHS & REACH

RoHS COMPLIANT REACH The new EU chemicals legislation

1. The most types of coupling of SUNGIL MACHINERY consist of harmless raw materials and are compliant with RoHS (except SCJ Series)
2. All types of coupling is compliant with REACH that is regulation of harmful chemicals from EU

SRB Series

Radial Beam Flexible Coupling

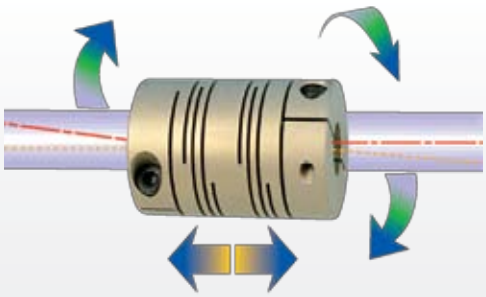
'SI. CO' mark(Trademark : 40-2012-0061376)indicates that the authenticity is certified.
'SRB' (Trademark : 40-2012-0044883) is the original trademark for SUNGIL's Radial Beam Coupling.

This product is a radial beam type flexible coupling that is made of high strength aluminum alloy(Al7075-T6) in one piece structure. Sungil machinery has maximized the advantage of the German VMT(Helical) Type and made up for the weak points.

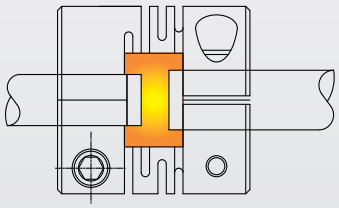
RoHS COMPLIANT REACH The new EU chemicals legislation

Features

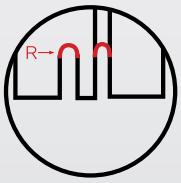
- Zero Backlash
- Body material: Al 7075-T6(High strength aluminum alloy), Stainless steel
- High Torsional Stiffness, High Permissible Torque
- Precise concentricity
- Stability in high rotational speed
- Low moment of Inertia
- Excellent durability of oil and chemical resistance.



※ Registration of Design 30-027587



It becomes easy to assemble by processing the inside of coupling widely



Rounding(R) is machined at the end part of the slit of every Sungil Radial Beam Coupling.
So it can avoid stress concentration and minimize the damage by parallel, angular misalignment.

-Registration of Design-
(※ A product that is not machined by rounding is not a Sungil(SI)'s Product)

Structure & Material

SRB Type

Clamp Type

Set Screw Type

Type	SRB-□□	SRB-□□C	SRBS-□□	SRBS-□□C
Fastening Type	Set Screw	Clamp	Set Screw	Clamp
Material	High strength aluminum alloy (Al 7075-T6)		Stainless Steel	
Surface Treatment	Alumite		-	

SRBM Type

Clamp Type

Set Screw Type

Type	SRBM-□□	SRBM-□□C	SRBMS-□□C
Fastening Type	Set Screw	Clamp	Clamp
Material	High strength aluminum alloy (Al 7075-T6)		Stainless Steel
Surface Treatment	Alumite		-

How to order product

Product No
Shaft Diameter(d_1)

SRB - 26C - 8 K3 x 12 K4

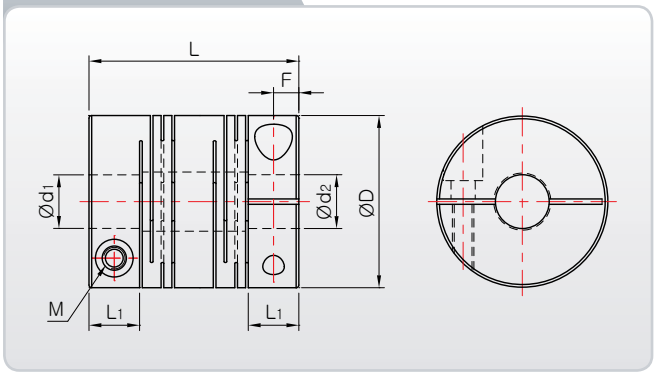
Shaft Diameter(d_2)
Key Size (No mark: Standard inner Diameter)

※ Please mark each inner diameter size.

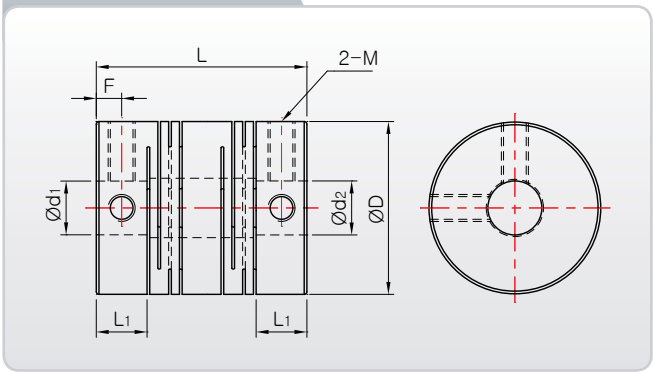
SRB Series
Radial Beam Flexible Coupling

Please, download CAD DATA from www.sungilfa.com

SRB ■ - ■ ■ C [CLAMP TYPE]



SRB - ■ ■ [SET SCREW TYPE]



Dimensions & Performance

※ Material : High strength aluminum alloy (Al 7075-T6)

Product Number	Dimension (±0.3)				Fastening Bolt M	Fastening Torque (N · m)	Max. RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia ($kg \cdot m^2$)	Mass (g)	Permissible Misalignment		
	D	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SRB-12C	12.7	19	5	2.5	M2	0.5	35,000	0.4	0.2	40	1.05×10^{-7}	4.4	2.5	0.1	±0.3
SRB-16C	16	21.5	6.05	3	M2.6	1	27,000	0.8	0.4	75	3.1×10^{-7}	8.2	2.5	0.15	±0.3
SRB-19C	19.1	23	6.16	3.05	M2.6	1	20,000	1.2	0.6	150	6.4×10^{-7}	12	2.5	0.15	±0.3
SRB-22C	22.2	26.5	7.15	3.55	M3	1.7	18,000	2.0	1.0	200	1.4×10^{-6}	17.9	2.5	0.15	±0.4
SRB-26C	26.2	31.5	7.48	3.7	M3	1.7	17,000	4	2	340	3.16×10^{-6}	29.9	2.5	0.2	±0.4
SRBA-32C	31.8	39	9.4	4.65	M4	3.5	14,000	7.6	3.8	450	8.61×10^{-6}	54.9	2.5	0.2	±0.4
SRBB-32C	31.8	44	9.4	4.65	M4	3.5	14,000	7.6	3.8	450	1.0×10^{-5}	62.3	2.5	0.2	±0.4
SRBA-39C	39	43	10.74	5.3	M5	8	10,000	14	7	640	2.1×10^{-5}	87.8	2.5	0.25	±0.4
SRBB-39C	39	56	12.04	5.45	M5	8	10,000	14	7	640	2.79×10^{-5}	117	2.5	0.25	±0.4
SRBA-49C	49	63.5	15.05	7.5	M6	13	10,000	30	15	1,500	8.35×10^{-5}	236	2.5	0.25	±0.5
SRBB-49C	49	70	14.5	7.2	M6	13	8,400	30	15	1,500	1.0×10^{-4}	258	2.5	0.25	±0.5
SRBA-60C	60	76.2	19	9.35	M8	30	7,000	60	30	2,500	2.17×10^{-4}	407	2.5	0.25	±0.5
SRBB-60C	60	88	19	9.35	M8	30	7,000	60	30	2,500	2.58×10^{-4}	483	2.5	0.25	±0.5
SRB-12	12.7	18	4.5	2.15	M2.5	0.5	40,000	0.4	0.2	40	1.04×10^{-7}	4.4	2.5	0.1	±0.3
SRB-16	16	18.5	4.7	2.3	M3	0.7	30,000	0.8	0.4	75	2.8×10^{-7}	7.2	2.5	0.15	±0.3
SRB-19	19.1	22	5.96	2.9	M3	0.7	24,000	1.2	0.6	150	6.4×10^{-7}	12	2.5	0.15	±0.3
SRB-22	22.2	25	6.5	3.2	M4	1.7	20,000	2.0	1.0	200	1.4×10^{-6}	17.4	2.5	0.15	±0.4
SRB-26	26.2	30	7.73	3.4	M4	1.7	18,000	4	2	340	3.1×10^{-6}	29.2	2.5	0.2	±0.4
SRB-32	31.8	39	9.4	4.7	M5	4	18,000	7.6	3.8	450	9.4×10^{-6}	56.8	2.5	0.2	±0.4
SRB-39	39	56	16.04	5.9	M5	4	12,000	14	7	640	2.8×10^{-5}	124	2.5	0.25	±0.4
SRB-49	49	70	19.75	9.4	M6	7	10,000	30	15	1,500	1.0×10^{-4}	280	2.5	0.25	±0.5
SRB-60	60	88	19	9	M8	15	8,500	60	30	2,500	2.67×10^{-4}	500	2.5	0.3	±0.5

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

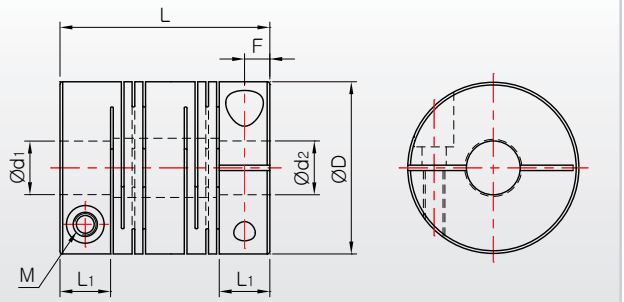
Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																		
	ø2	ø3	ø4	ø5	ø6	ø6.35	ø8	ø9.525	ø10	ø11	ø12	ø14	ø15	ø16	ø18	ø19	ø20	ø22	ø24	ø25
SRB-12□		●	●	●																
SRB-16□		●	●	●	●															
SRB-19□			●	●	●	●	●													
SRB-22□				●	●	●	●	●	●											
SRB-26□				●	●	●	●	●	●	●	●									
SRB□-32□							●	●	●	●	●	●	●							
SRB□-39□									●	●	●	●	●	●	●	●				
SRB□-49□											●	●	●	●	●	●	●			
SRB□-60□													●	●	●	●	●	●	●	●

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.

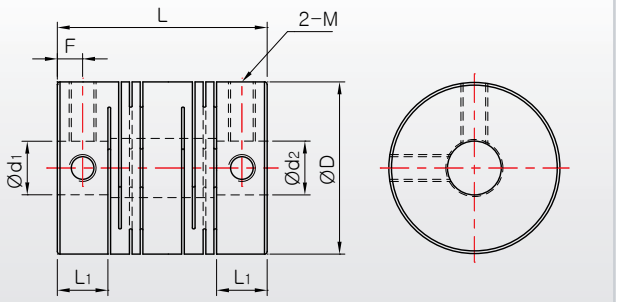
SRB Series

Radial Beam Flexible Coupling

SRBS - ■ ■ C [CLAMP TYPE]



SRBS - ■ ■ [SET SCREW TYPE]



Dimensions & Performance

※ Material : Stainless Steel

Product Number	Dimension (±0.3)				Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SRBS-12C	12.7	19	5	2.5	M2	0.5	32,000	0.6	0.3	65	3.0×10^{-7}	13	2.5	0.1	±0.3
SRBS-16C	16	21.5	6.05	3	M2.6	1	25,000	1	0.5	85	9.0×10^{-7}	26	2.5	0.15	±0.3
SRBS-19C	19.1	23	6.16	3.05	M2.6	1	18,000	1.8	0.9	230	1.7×10^{-6}	32	2.5	0.15	±0.3
SRBS-22C	22.2	26.5	7.15	3.55	M3	1.5	15,000	3.2	1.6	290	3.8×10^{-6}	43	2.5	0.15	±0.4
SRBS-26C	26.2	31.5	7.48	3.7	M3	1.5	14,000	4.2	2.1	350	8.6×10^{-6}	84	2.5	0.2	±0.4
SRBS-32C	31.8	39	9.4	4.65	M4	2.5	12,000	7.6	3.8	840	2.5×10^{-5}	160	2.5	0.2	±0.4
SRBAS-39C	39	43	10.74	5.3	M5	4	9,000	16	8	1,200	6.1×10^{-5}	280	2.5	0.25	±0.4
SRBBS-39C	39	56	12.04	5.45	M5	4	9,000	16	8	1,000	8.6×10^{-5}	360	2.5	0.25	±0.4
SRBAS-49C	49	63.5	15.05	7.5	M6	8	7,000	32	16	1,600	2.7×10^{-4}	672	2.5	0.25	±0.5
SRBBS-49C	49	70	14.5	7.2	M6	8	7,000	32	16	1,400	2.8×10^{-4}	740	2.5	0.25	±0.5
SRBAS-60C	60	76.2	19	9.35	M8	16	5,000	60	30	2,000	7.2×10^{-4}	1,150	2.5	0.25	±0.5
SRBBS-60C	60	88	19	9.35	M8	16	5,000	60	30	1,800	8.6×10^{-4}	1,370	2.5	0.25	±0.5
SRBS-12	12.7	18	4.5	2.15	M2.5	0.5	34,000	0.6	0.3	65	3.0×10^{-7}	12.4	2.5	0.1	±0.3
SRBS-16	16	18.5	4.7	2.3	M3	0.7	27,000	1	0.5	85	7.7×10^{-7}	21	2.5	0.15	±0.3
SRBS-19	19.1	22	5.94	2.9	M3	0.7	20,000	1.8	0.9	230	1.8×10^{-6}	34	2.5	0.15	±0.3
SRBS-22	22.2	25	6.5	3.2	M4	1.5	17,000	3.2	1.6	290	3.8×10^{-6}	49.5	2.5	0.15	±0.4
SRBS-26	26.2	30	7.73	3.4	M4	1.5	16,000	4.2	2.1	350	8.8×10^{-6}	84	2.5	0.2	±0.4
SRBS-32	31.8	39	9.4	4.7	M5	2	14,000	7.6	3.8	840	2.7×10^{-5}	160	2.5	0.2	±0.4
SRBS-39	39	56	16.04	5.9	M5	2	10,000	16	8	1,000	8.8×10^{-5}	388	2.5	0.25	±0.4
SRBS-49	49	70	19.75	9.4	M6	4	7,000	32	16	1,400	2.8×10^{-4}	775	2.5	0.25	±0.5
SRBS-60	60	88	19	9	M8	8	6,000	60	30	1,800	7.6×10^{-4}	1,416	2.5	0.3	±0.5

* Please check inventory and delivery for SRB-60 series * Mass and mass moment of inertia are measured with max. bore size

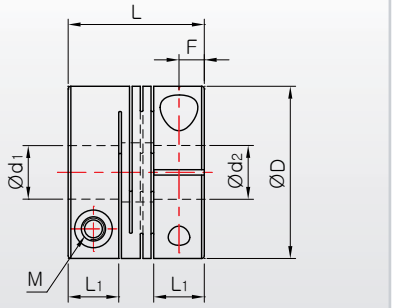
Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)							
SRBS-12□	3×3	3×4	4×4	4×5	4.5×5	5×5		
SRBS-16□	3×3	4×4	4×5	4×6	4.5×5	4.5×6	5×5	5×6
	6×6							
SRBS-19□	4×4	4×5	5×5	5×6	5×8	6×6	6×6.35	6×8
	6.35×8	8×8						
SRBS-22□	5×5	5×6	6×6	6×6.35	6×8	6×10	6.35×8	6.35×10
	8×8	8×9.525	8×10	10×10				
SRBS-26□	5×5	6×6	6×6.35	6×8	6×10	6.35×8	6.35×10	8×8
	8×9.525	8×10	10×10	10×12	12×12			
SRBS-32□	6×6	6×8	6×10	6.35×8	8×8	8×9.525	8×10	8×12
	10×10	10×12	10×14	12×12	12×14	14×14	15×15	
SRB□S-39□	8×8	10×10	10×12	10×14	12×12	14×14	15×15	16×16
SRB□S-49□	12×14	14×14	14×16	15×15	16×16	18×18	20×20	
SRB□S-60□	15×15	16×16	18×18	20×20	22×22	24×24	25×25	

Please, download CAD DATA from www.sungilfa.com

SRBM- ■ ■ C

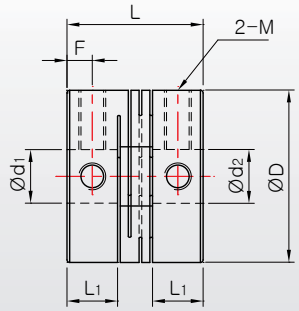
[CLAMP TYPE]



※ Material : High strength aluminum alloy (Al 7075-T6)

SRBM - ■ ■

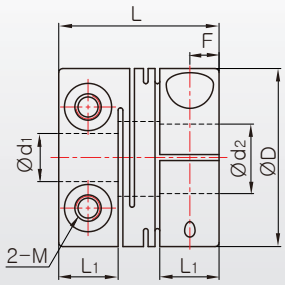
[SET SCREW TYPE]



※ Material : High strength aluminum alloy (Al 7075-T6)

SRBMS - ■ ■ C

[SET SCREW TYPE]



※ Material : Stainless steel

Dimensions & Performance

Product Number	Dimension (±0.3)				Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SRBM-12C	12.7	14	5	2.5	M2	0.5	35,000	0.4	0.2	60	7.88×10^{-8}	3.2	1	0	±0.15
SRBM-16C	16	16	6	2.95	M2.6	1	27,000	0.8	0.4	130	2.3×10^{-7}	6.3	1	0	±0.15
SRBM-19C	19.1	17	6.31	3.1	M2.6	1	20,000	1.2	0.6	160	5.0×10^{-7}	9.2	1	0	±0.15
SRBM-22C	22.2	20	7.4	3.65	M3	1.7	18,000	2.0	1.0	180	1.1×10^{-6}	15	1	0	±0.15
SRBM-26C	26.2	23	8.4	4.1	M3	1.7	17,000	4.0	2.0	480	2.5×10^{-6}	25	1	0	±0.15
SRBM-32C	31.8	30	11	5.4	M4	3.5	14,000	7.6	3.8	780	6.84×10^{-6}	44	1	0	±0.15
SRBMS-12C	12.7	14	5	2.5	M2	0.5	20,000	0.6	0.3	120	2.4×10^{-7}	10	1	0	±0.15
SRBMS-16C	16	16	6	2.95	M2.6	1	20,000	1.0	0.5	240	7.0×10^{-7}	20	1	0	±0.15
SRBMS-19C	19.1	17	6.31	3.1	M2.6	1	19,000	1.8	0.9	300	1.5×10^{-6}	32	1	0	±0.15
SRBMS-22C	22.2	20	7.4	3.65	M3	1.5	17,000	3.2	1.6	350	3.1×10^{-6}	42	1	0	±0.15
SRBMS-26C	26.2	23	8.4	4.1	M3	1.5	15,000	4.2	2.1	720	7.2×10^{-6}	70	1	0	±0.15
SRBMS-32C	31.8	30	11	5.4	M4	2.5	10,000	7.6	3.8	1,300	2.0×10^{-5}	140	1	0	±0.15
SRBM-12	12.7	13	4.5	2.2	M2.5	0.5	40,000	0.4	0.2	60	7.89×10^{-8}	3.2	1	0	±0.15
SRBM-16	16	14	5.0	2.4	M3	0.7	30,000	0.8	0.4	130	2.15×10^{-7}	5.8	1	0	±0.15
SRBM-19	19.1	17	6.31	3.1	M3	0.7	24,000	1.2	0.6	160	5.34×10^{-7}	10	1	0	±0.15
SRBM-22	22.2	19	6.9	3.3	M4	1.7	20,000	2.0	1.0	180	1.1×10^{-6}	14	1	0	±0.15
SRBM-26	26.2	22	7.9	3.8	M4	1.7	18,000	4.0	2.0	480	2.5×10^{-6}	25	1	0	±0.15
SRBM-32	31.8	29	10.5	5.1	M5	4	16,000	7.6	3.8	780	6.94×10^{-6}	44.9	1	0	±0.15

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)												
	ø2	ø3	ø4	ø5	ø6	ø6.35	ø8	ø9.525	ø10	ø11	ø12	ø14	ø15
SRBM(S)-12□		●	●	●									
SRBM(S)-16□		●	●	●	●								
SRBM(S)-19□			●	●	●	●	●						
SRBM(S)-22□				●	●	●	●	●	●				
SRBM(S)-26□				●	●	●	●	●	●	●	●		
SRBM(S)-32□					●	●	●	●	●	●	●	●	●

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.

SOH Series

Zero Backlash Oldham Coupling

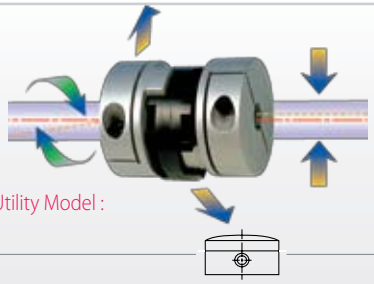
'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SOH' (Trademark : 40-2012-0044882) is the original trademark for SUNGIL's Oldham Coupling.

The major characteristic of OLDHAM COUPLING is excellent flexibility and wide range of parallel misalignment acceptability. Since there is no restoring force, there is little weight(load) on the bearing and shaft. Torque is transferred through a disk that is capable of accepting misalignment error and mechanical intermittence. However, excessive load can damage the disk. Replacement of a disk is easy without disassembling the hub from the shaft.

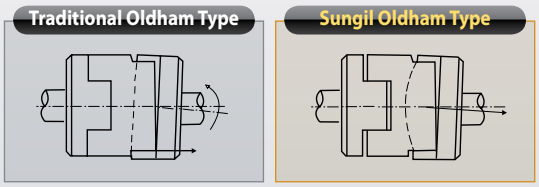
RoHS COMPLIANT REACH The new EU chemicals legislation

Features

- Superior performance absorbing parallel and angular misalignment (the middle disk's slip and the hub's rounding effect)
- Easy to assemble and replace
- Minimizes the load on the shaft under misalignment
- Electrical insulation
- Minimizes backlash by pre-loaded assembly



※ Registration of Utility Model : 20-0271943

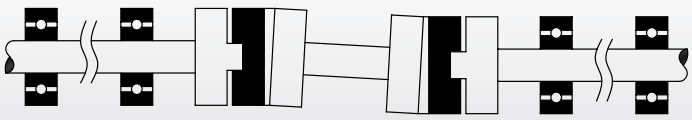


When there is an angular misalignment, the conventional OLDHAM couplings encounter bending moment on the outer diameter which leads to a bending moment on the shaft. However, since SUNGIL OLDHAM coupling is featured after being machined in micro rounding process, it can accept angular misalignment. Also, it reduces the load on the shaft and transmits torque constantly.

Proper installation of OLDHAM COUPLING

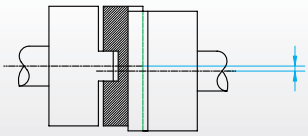
- It should be avoid to install with relatively long driven/driving shaft from bearing supports and proper bearing shaft is necessary.
- OLDHAM coupling is inadequate for connecting fluctuating shafts or being used in pair.

Right Use

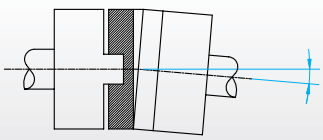


Wrong Use

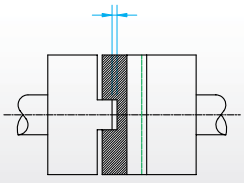
Misaligment



Permissible Parallel Misalignment : ±mm



Permissible Angular Misalignment : ± °



Permissible End-play : ±mm

Application

- X-Y Position Table
- Suitable for small sized motor such as AC motor, DC motor, and Servo motor
- Hydraulic distribution system and optical instrument
- Ventilation equipment, environmental equipment
- Encoder
- Transtering equipment of Paper, disk, tape transporting device

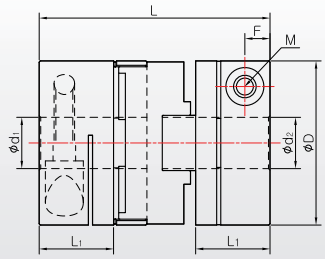
Structure & Material

- Material : Polyacetal

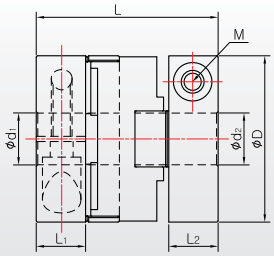
- Penetrative spacer is available
- Material : Aluminum Alloy
- Surface Treatment : Alumite

Please, download CAD DATA from www.sungilfa.com

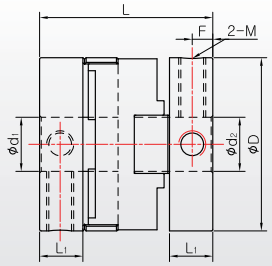
SOH - ■ ■ C [CLAMP TYPE]



SOHM - ■ ■ C [CLAMP TYPE]



SOH - ■ ■ [SET SCREW TYPE]



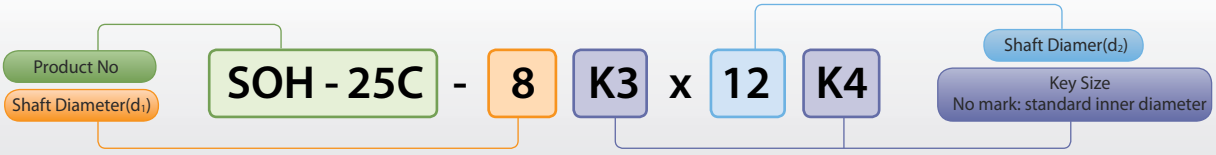
Dimensions & Performance

Product Number	Dimension (±0.3)				Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia ($kg \cdot m^2$)	Mass (g)	Permissible Misalignment		
	D	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SOH-16C	16	23.9	7.7	2.7	M2.6	1	13,000	2	1	65	3.07×10^{-7}	8.5	1.5	1	0.1
SOH-20C	20	25.7	8	2.8	M2.6	1	11,000	3	1.5	120	8.16×10^{-7}	14.2	1.5	1.5	0.1
SOH-25C	25.5	32	10.2	3.5	M3	1.7	10,000	5	2.5	200	2.71×10^{-6}	29.3	1.5	2	0.1
SOH-32C	32	44.7	14.4	4.9	M4	3.5	9,000	14	7	620	9.18×10^{-6}	59.6	1.5	2.5	0.15
SOH-43C	43	52	16.5	5.8	M5	8	8,000	25	12.5	1,200	3.4×10^{-5}	127.1	1.5	3.0	0.15
SOH-53C	53	58.3	19.5	6.3	M5	8	7,000	40	20	1,400	9.1×10^{-5}	217	1.5	3.2	0.2
SOH-57C	57	76.2	26.9	7.7	M6	13	6,000	68	34	2,600	1.6×10^{-4}	329	1.5	3.5	0.2
SOHM-16C	16	20.7	6.1	3	M2.6	1	13,000	2	1	65	2.6×10^{-7}	7.4	1.5	1	0.1
SOHM-20C	20	21.9	6.1	2.9	M2.6	1	11,000	3	1.5	120	6.8×10^{-7}	12	1.5	1.5	0.1
SOHM-25C	25.5	26.4	7.4	3.7	M3	1.7	10,000	5	2.5	200	2.2×10^{-6}	23	1.5	2	0.1
SOHM-32C	32	34.9	9.5	4.7	M4	3.5	9,000	14	7	620	6.8×10^{-6}	44	1.5	2.5	0.2
SOHM-43C	43	47	14.7	7.3	M5	8	8,000	25	12.5	1,200	3.0×10^{-5}	114	1.5	3.0	0.15
SOHM-53C	53	53.1	16.9	8.3	M5	8	7,400	40	20	1,400	8.3×10^{-5}	197	1.5	3.2	0.15
SOHM-57C	57	56.8	18	8.7	M6	13	6,000	68	34	2,600	1.2×10^{-4}	232	1.5	3.5	0.2
SOHM-70C	73	75.5	25	12.3	M8	30	4,500	120	60	4,800	4.5×10^{-4}	547	1.5	3.5	0.2
SOH-16	16	17.9	4.7	2.2	M3	0.7	13,000	2	1	65	2.4×10^{-7}	7	1.5	1	0.1
SOH-20	20	19.9	5.1	2.4	M4	1.7	11,000	3	1.5	120	6.4×10^{-7}	12	1.5	1.5	0.1
SOH-25	25.5	25.4	6.9	3.1	M4	1.7	10,000	5	2.5	200	2.2×10^{-6}	24	1.5	2	0.1
SOH-32	32	31.9	8	3.8	M5	4	9,000	14	7	620	6.3×10^{-6}	41	1.5	2.5	0.2
SOH-43	43	52	16.5	7.1	M5	4	8,000	25	12.5	1,200	3.7×10^{-5}	135	1.5	3.0	0.15
SOH-53	53	58.3	19.5	7.5	M6	7	7,000	40	20	1,400	1.0×10^{-4}	228	1.5	3.2	0.15
SOH-57	57	76.2	26.9	9.9	M8	15	6,000	68	34	2,600	1.8×10^{-4}	345	1.5	3.5	0.2
SOH-70	73	75.5	25	12.2	M8	15	4,500	120	60	4,800	4.5×10^{-4}	567	1.5	3.5	0.2

* Mass and mass moment of inertia are measured with max. bore size

※ SOH-16 and SOH-20 have different number of tightening bolts according to inner bore sizes (1ea or 2ea)

How to order product

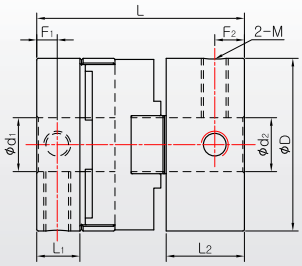


※ Please mark each inner diameter size.
※ When you order 'penetration type', please mark 'penetration-type'

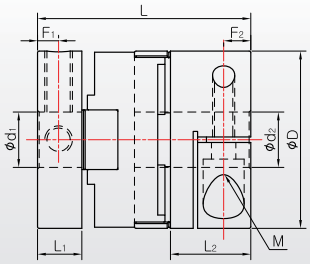
SOH Series

Zero Backlash Oldham Coupling

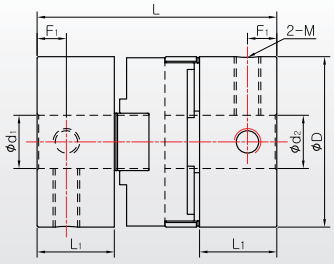
SOH - ■ ■ S [SET SCREW TYPE]



SOH - ■ ■ SC [COMBINATION TYPE]



SOH - ■ ■ SS [SET SCREW TYPE]



Dimensions & Performance

Product Number	Dimension (±0.3)						Fastening Torque (N · m)	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/ rad)	Moment of Inertia ($kg \cdot m^2$)	Mass (g)	Permissible Misalignment		
	D	L	L_1	L_2	F1	F2									Angle (°)	Parallel (mm)	End-Play (mm)
SOH-16S	16	20.9	4.7	7.7	2.2	3.8	M3	0.7	13,000	2	1	65	2.7×10^{-7}	79	1.5	1	0.1
SOH-20S	20	22.8	5.1	8	2.4	3.6	M4	1.7	11,000	3	1.5	120	7.5×10^{-7}	13	1.5	1.5	0.1
SOH-25S	25.5	28.7	6.9	10.2	3.1	4.9	M4	1.7	10,000	5	2.5	200	2.6×10^{-6}	27.2	1.5	2	0.1
SOH-32S	32	38.3	8	14.4	3.8	5.5	M5	4	9,000	14	7	620	8.1×10^{-6}	52	1.5	2.5	0.2
SOH-16SC	16	20.9	4.7	7.7	2.2	2.7	M3/M2.6	0.7/1	13,000	2	1	65	2.9×10^{-7}	7.5	1.5	1	0.1
SOH-20SC	20	22.8	5.1	8	2.4	2.8	M4/M2.6	1.7/1	11,000	3	1.5	120	7.2×10^{-7}	12.6	1.5	1.5	0.1
SOH-25SC	25.5	28.7	6.9	10.2	3.1	3.5	M4/M3	1.7/1.7	10,000	5	2.5	200	2.6×10^{-6}	26	1.5	2	0.1
SOH-32SC	32	38.3	8	14.4	3.8	4.9	M5/M4	4/3.5	9,000	14	7	620	7.8×10^{-6}	50.3	1.5	2.5	0.2
SOH-16SS	16	23.9	7.7	7.7	3.8	3.8	M3	0.7	13,000	2	1	65	3.4×10^{-7}	9.3	1.5	1	0.1
SOH-20SS	20	25.7	8	8	3.6	3.6	M4	1.7	11,000	3	1.5	120	8.9×10^{-7}	15	1.5	1.5	0.1
SOH-25SS	25.5	32	10.2	10.2	4.9	4.9	M4	1.7	10,000	5	2.5	200	2.9×10^{-6}	31	1.5	2	0.1
SOH-32SS	32	44.7	14.4	14.4	5.5	5.5	M5	4	9,000	14	7	620	9.5×10^{-6}	63	1.5	2.5	0.2

* Mass and mass moment of inertia are measured with max. bore size

* SOH- □ □ SC-d1 (set screw hub) x d2(clamp type hub) * SOH- □ □ S-d1 (shorter set screw hub) x d2(longer set screw hub)

(the order of inner bore size is important)

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																								
	3	4	5	6	6.35	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	25.4	28	30	32	35	40
SOH□-16□□	●	●	●	●																					
SOH□-20□□		●	●	●	●	●																			
SOH□-25□□			●	●	●	●	●	●																	
SOH□-32□□				●	●	●	●	●	●	●	●	●													
SOH□-43□□						●	●	●	●	●	●	●	●	●★	●★										
SOH□-53□□								●	●	●	●	●	●	●	●	●	●	●	●						
SOH□-57□□												●	●	●	●	●	●	●	●	●	●				
SOH□-70□□														●	●	●	●	●	●	●	●	●	●	●	

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available

■ Keyway is available ■ The recommendation for shaft tolerance is h7. ■ For the ★ inner bore, the shaft cannot penetrate through a spacer.

■ The following is the size of the inner diameter of penetration-type spacer (SOH-16 =Ø7.7, SOH-20=Ø10.7, SOH-25=Ø14.5, SOH-32=Ø16.5, SOH-43=Ø21.7, SOH-53=Ø25.7, SOH-70=Ø35.3)

SOH - ■ ■

SOH - ■ ■ SC

SOH - ■ ■ S

SOH - ■ ■ SS

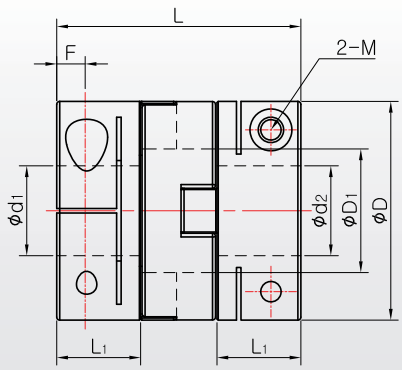
SOH Series
SOH Big Series Zero Backlash Oldham Coupling

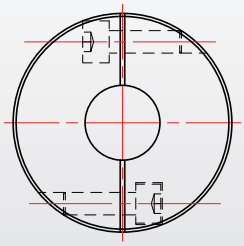
Please, download CAD DATA from www.sungilfa.com

Features

- Allowable Inner Diameter Size: Ø15 ~ Ø60
- High permissible torque, High torsional stiffness
- High Absorptivity of misalignment
- Excellent fastening due to double clamping
- Excellent balancing due to perfect bilateral symmetry

※ Registration of Design : 30-0593190-4





The following is the size of the inner diameter of penetration-type spacer
Please refer to this when ordering key-type or penetration type.

- SOH-70C = Ø35.3
- SOH-90C = Ø40.5
- SOH-120C = Ø50.5

Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max. RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D_1	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SOH-70C	73	35.3	81.5	28	10	M8	30	4,500	130	65	2,000	5.4×10^{-4}	670	1.5	3.5	0.3
SOH-90C	88	40.5	97	33.5	12	M10	50	4,500	210	105	2,500	1.2×10^{-3}	1240	1.5	4	0.35
SOH-120C	118	50.5	138	40.5	13	M12	90	3,500	400	200	6,300	6.5×10^{-3}	2600	1.5	4.5	0.4

* Mass and mass moment of inertia are measured with max. bore size

Permissible Misalignment

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																			
	Ø15	Ø16	Ø18	Ø19	Ø20	Ø22	Ø24	Ø25	Ø28	Ø30	Ø32	Ø34	Ø35	Ø40	Ø42	Ø45	Ø50	Ø52	Ø55	Ø58	Ø60
SOH-70C	●	●	●	●	●	●	●	●	●	●	●	●	●	●							
SOH-90C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●				
SOH-120C								●	●	●	●	●	●	●	●	●	●	●	●	●	●

- For the inner diameter, INCH type is available
- Nonstandard inner diameter is also available
- Keyway is available
- The recommendation for shaft tolerance is h7.

SD Series

Zero Backlash Disk Coupling

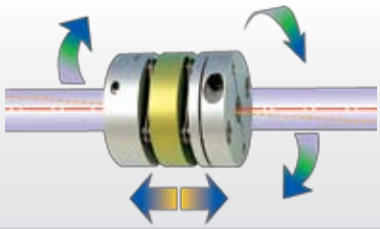
'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SDS, SDW'(Trademark : 40-2012-0044877, 0044876) is the original trademark for SUNGIL's Disk Coupling.

SUNGIL's DISK COUPLING has large torsional stiffness and zero backlash, and it is a highly precise coupling that has a infinite life. SUNGIL's DISK COUPLING can rotate with high speed in uni-direction or bi-directions and is used mainly in high-precision measuring equipments, high speed movement control systems, dynamometer, precision encoder and so forth.

RoHS COMPLIANT REACH The new EU chemicals legislation

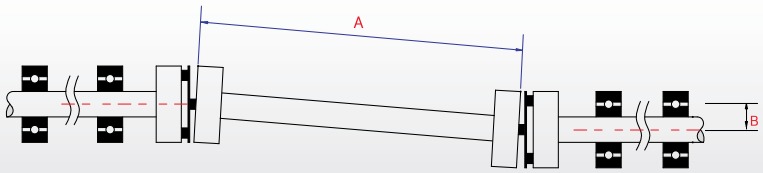
Features

- Absorbs misalignment by plat spring (Single disk type cannot accept parallel misalignment)
- High torsional stiffness
- Zero backlash
- Semi-permanent life time
- Identical clockwise and counter-clockwise rotational characteristics
- Low moment of inertia
- Accurate and fast response performance
- 2 types: Single disk, Double disk
- Assembly of Disk Coupling with stainless steel component(bolt, collar) is available(please contact us)



※ Patent application : 10-2012-0057200

Allowance for Parallel misalignment when applying midde shaft



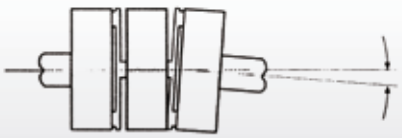
Allowance for parallel misalignment B

$B = A \times \sin\theta$

A : Fluctuating shaft length

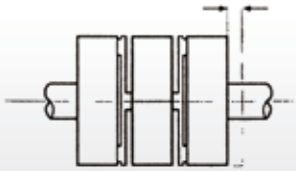
θ : Allowance for Angular misalignment of Coupling

Misalignment



Angular Misalignment : ± °

Parallel Misalignment : ±mm



End-Play : ±mm

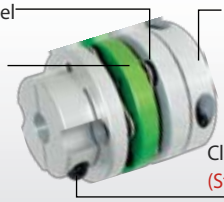
Application

- Servo motor, Stepping Motor
- Encorder for high precision
- High speed & precise position controlling system
- X-Y positioning, Linear Robot

Structure & Material

Disk : Stainless steel

Middle Plate: High strength aluminum Surface treatment: Alumite



Hub: High strength aluminum Surface treatment: Alumite

Clamping : SCM435 (Stainless bolts are available)

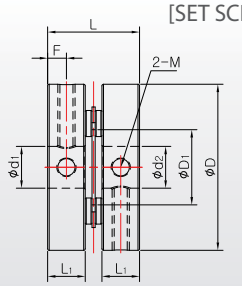
How to order product

※ Please mark each inner diameter size.
※ It is impossible to ask for additional keyways and change inner diameter size after ordering.
※ Do not disassemble because each part is assembled in an optimized position.
※ The clamp split hub can be applied to SDWB,C-54CW, SD□□-64CW(cylindrical hub), SD□□-80CW, SD□□-90CW and SD□□-100CW.)

Please, download CAD DATA from www.sungilfa.com

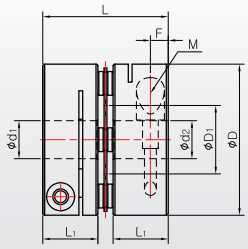
SDS - ■ ■

[SET SCREW TYPE]



SD ■ S - ■ ■ C

[CLAMP TYPE]



SDCS-54C

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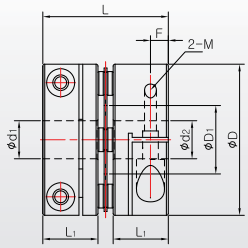


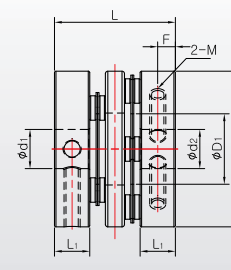
Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D1	L	L1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDS-16	16	6.7	12	5.1	2.5	M2.5	0.5	16,000	1	0.5	270	1.8×10^{-7}	5	0.5	0	±0.1
SDS-16C	16	6.7	17.4	7.8	2.5	M2	0.5	14,000	1	0.5	270	2.6×10^{-7}	7	1	0	±0.1
SDS-19	19	8.5	14.5	6.1	3	M3	0.7	16,000	1.8	0.9	600	3.0×10^{-7}	6	1	0	±0.1
SDS-19C	19	8.5	19.3	8.7	2.9	M2.6	1	14,000	1.8	0.9	600	4.0×10^{-7}	8	1	0	±0.1
SDS-22	22.2	10	14.8	6.2	3	M3	0.7	12,000	2.2	1.1	600	6.9×10^{-7}	10	1	0	±0.1
SDS-22C	22.2	10	19.7	8.7	2.8	M2.6	1	10,000	2.2	1.1	600	1.0×10^{-6}	15	1	0	±0.1
SDS-26	26.6	12.2	17.6	7.4	3.6	M4	1.7	12,000	3	1.5	900	2.0×10^{-6}	20	1	0	±0.15
SDS-26C	26.6	12.2	24.1	10.6	3.4	M3	1.7	10,000	3	1.5	900	2.4×10^{-6}	25	1	0	±0.15
SDS-31	31.8	14.4	17.6	7.2	3.6	M4	1.7	10,000	6	3	1,700	4.4×10^{-6}	30	1	0	±0.2
SDS-31C	31.8	14.4	26.4	11.6	3.7	M3	1.7	9,000	6	3	1,700	5.8×10^{-6}	40	1	0	±0.2
SDS-39C	39	17	31.3	13.7	4.3	M4	3.5	8,000	10	5	2,300	1.6×10^{-5}	70	1	0	±0.25
SDCS-42C	42.5	18	31.4	13.7	4.3	M4	3.5	8,000	14	7	2,800	3.4×10^{-5}	95	1	0	±0.25
SDCS-47C	47	20.4	35.6	16	5.2	M4	3.5	8,000	24	12	6,000	5.4×10^{-5}	140	1	0	±0.25
SDCS-54C	54	25	42.3	19	6.3	M5	8	8,000	44	22	11,000	9.8×10^{-5}	200	1	0	±0.25

* Mass and mass moment of inertia are measured with max. bore size

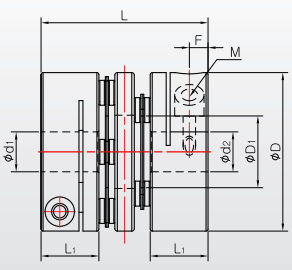
SDWA - ■ ■

[SET SCREW TYPE]



SDWA - ■ ■ C

[CLAMP TYPE]



Dimensions & Performance

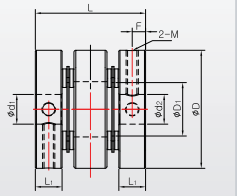
Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM(min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D1	L	L1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDWA-16	16	6.3	15.8	5.1	2.5	M2.5	0.5	16,000	1	0.5	200	2.2×10^{-7}	6	1	0.05	±0.2
SDWB-16	16	6.3	17.8	5.1	2.5	M2.5	0.5	16,000	1	0.5	200	2.6×10^{-7}	7	1	0.05	±0.2
SDWA-16C	16	6.3	21.2	7.8	2.5	M2	1	14,000	1	0.5	200	3.3×10^{-7}	9	1	0.05	±0.2
SDWB-16C	16	6.3	23.2	7.8	2.5	M2	1	14,000	1	0.5	200	3.7×10^{-7}	10	1	0.05	±0.2
SDWA-19	19	8.5	18.1	6.1	3	M3	0.7	16,000	1.8	0.9	300	5.3×10^{-7}	10	1	0.05	±0.2
SDWB-19	19	8.5	21.1	6.1	3	M3	0.7	16,000	1.8	0.9	300	5.8×10^{-7}	11	1	0.05	±0.2
SDWA-19C	19	8.5	23.3	8.7	2.9	M2.6	1	14,000	1.8	0.9	300	7.4×10^{-7}	14	1	0.05	±0.2
SDWB-19C	19	8.5	26.3	8.7	2.9	M2.6	1	14,000	1.8	0.9	300	7.9×10^{-7}	15	1	0.05	±0.2

* Mass and mass moment of inertia are measured with max. bore size

SD Series

Zero Backlash Disk Coupling

SDW ■ - ■ ■ [SET SCREW TYPE]



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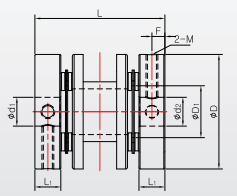

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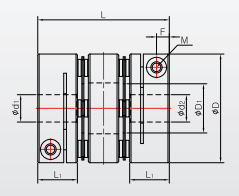

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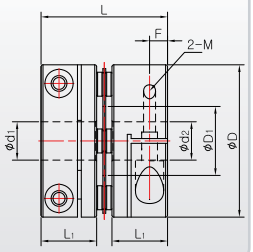
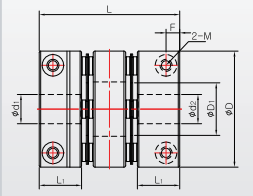


SDWB(C)-54C [CLAMP TYPE]



Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D_1	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDWA-22	22.2	9	20.1	6.3	3	M3	0.7	12,000	2.2	1.1	400	1.0×10^{-6}	16	1.5	0.12	±0.2
SDWB-22	22.2	9	22.3	6.3	3	M3	0.7	12,000	2.2	1.1	400	1.1×10^{-6}	17	1.5	0.12	±0.2
SDA-22	22.2	8.3	28.3	6.3	3	M3	0.7	12,000	2.2	1.1	400	1.3×10^{-6}	18	1.5	0.12	±0.2
SDWA-22C	22.2	9	25	8.7	2.8	M2.6	1	10,000	2.2	1.1	400	1.3×10^{-6}	18	1.5	0.12	±0.2
SDWB-22C	22.2	9	27.2	8.7	2.8	M2.6	1	10,000	2.2	1.1	400	1.4×10^{-6}	19	1.5	0.12	±0.2
SDA-22C	22.2	8.3	33.2	8.7	2.8	M2.6	1	10,000	2.2	1.1	400	1.5×10^{-6}	20	1.5	0.12	±0.2
SDWA-26	26.6	12.2	26	7.4	3.6	M4	1.7	12,000	3	1.5	600	2.3×10^{-6}	28	1.5	0.15	±0.3
SDA-26	26.6	10.5	31.7	7.4	3.6	M4	1.7	12,000	3	1.5	600	3.2×10^{-6}	32	1.5	0.15	±0.3
SDWA-26C	26.6	12.2	32.5	10.6	3.4	M3	1.7	10,000	3	1.5	600	3.4×10^{-6}	34	1.5	0.15	±0.3
SDA-26C	26.6	10.5	38.2	10.6	3.4	M3	1.7	10,000	3	1.5	600	3.9×10^{-6}	39	1.5	0.15	±0.3
SDWA-31	31.8	14.4	24.7	7.2	3.6	M4	1.7	10,000	6	3	1,300	4.3×10^{-6}	30	1.5	0.15	±0.4
SDWB-31	31.8	14.4	29.7	7.2	3.6	M4	1.7	10,000	6	3	1,300	5.5×10^{-6}	38	1.5	0.15	±0.4
SDA-31	31.8	12.7	36.1	7.2	3.6	M4	1.7	10,000	6	3	1,300	5.5×10^{-6}	38	1.5	0.15	±0.4
SDWA-31C	31.8	14.4	33.5	11.6	3.7	M3	1.7	9,000	6	3	1,300	7.5×10^{-6}	52	1.5	0.15	±0.4
SDWB-31C	31.8	14.4	38.5	11.6	3.7	M3	1.7	9,000	6	3	1,300	8.8×10^{-6}	60	1.5	0.15	±0.4
SDA-31C	31.8	12.7	44.9	11.6	3.7	M3	1.7	9,000	6	3	1,300	8.8×10^{-6}	60	1.5	0.15	±0.4
SDWA-39C	39	17	39.5	13.7	4.3	M4	3.5	8,000	10	5	1,800	2.1×10^{-5}	95	1.5	0.18	±0.4
SDWC-39C	39	17	45	13.7	4.3	M4	3.5	8,000	10	5	1,800	2.4×10^{-5}	110	1.5	0.18	±0.4
SDA-39C	39	15.3	56.5	13.7	4.3	M4	3.5	8,000	10	5	1,800	3.0×10^{-5}	120	1.5	0.18	±0.4
SDWC-42C	42.5	18	46.2	13.7	4.3	M4	3.5	8,000	14	7	2,000	3.3×10^{-5}	120	1.5	0.18	±0.5
SDWC-47C	47	20.4	50	16	5.2	M4	3.5	8,000	24	12	4,000	5.5×10^{-5}	160	1.5	0.2	±0.5
SDWB-54C	54	25	52.6	19	6.3	M5	8	8,000	44	22	7,000	1.1×10^{-4}	250	1.5	0.2	±0.5
SDWC-54C	54	25	58.6	19	6.3	M5	8	8,000	44	22	7,000	1.2×10^{-4}	280	1.5	0.2	±0.5

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit: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	24	25
SD□□-16□	●	●	●	●																				
SD□□-19□	●	●	●	●	●																			
SD□□-22□	●	●	●	●	●	●	●	●	●★	●★														
SD□□-26□		●	●	●	●	●	●	●	●	●	●													
SD□□-31□				●	●	●	●	●	●	●	●	●	●	●	●	●★								
SD□□-39□				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●						
SD□□-42C					●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★			
SD□□-47C								●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
SD□□-54□											●	●	●	●	●	●	●	●	●	●	●	●	●	●

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available

■ Keyway is available ■ The recommendation for shaft tolerance is h7.

■ In case of the ★ inner bore diameter, a shaft cannot penetrate through the stainless steel plate spring.

Please, download CAD DATA from www.sungilfa.com

SDS - ■ ■ C

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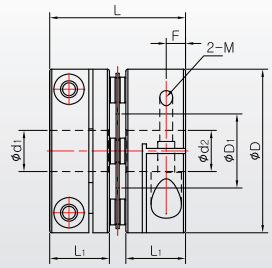

SDW - ■ ■ C

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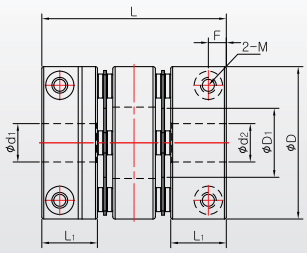

SDA - ■ ■ C

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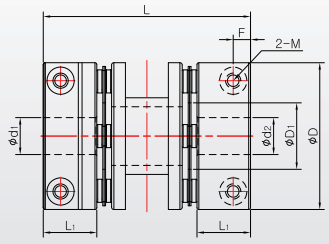


Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D_1	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDS-80C	80	35.8	66.1	29.7	9.4	M8	30	7,000	150	75	40,000	7.5×10^{-4}	800	1	0	±0.4
SDW-80C	80	35.8	81.8	29.7	9.4	M8	30	6,000	150	75	20,000	8.4×10^{-4}	900	2	0.4	±0.6
SDA-80C	80	32	98.3	29.7	9.4	M8	30	6,000	150	75	20,000	9.5×10^{-4}	1,000	2	0.5	±0.6
SDS-90C	94.5	41.6	68.9	30.4	9.3	M8	30	6,000	300	150	60,000	1.2×10^{-3}	930	1	0	±0.5
SDW-90C	94.5	41.6	98.9	30.4	9.3	M8	30	6,000	300	150	35,000	1.8×10^{-3}	1,350	2	0.4	±0.8
SDS-100C	104.5	47.7	71.7	30.7	9.3	M8	30	6,000	440	220	70,000	2.2×10^{-3}	1,300	1	0	±0.6
SDW-100C	104.5	47.7	103.8	30.7	9.3	M8	30	6,000	440	220	50,000	2.9×10^{-3}	1,700	2	0.4	±0.8

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)															
	15	16	18	19	20	22	24	25	28	30	32	35	40	45	50	50
SDS-80C	●	●	●	●	●	●	●	●	●	●	●					
SDW-80C	●	●	●	●	●	●	●	●	●	●	●					
SDS-90C					●	●	●	●	●	●	●	●	●	●		
SDW-90C					●	●	●	●	●	●	●	●	●	●		
SDS-100C					●	●	●	●	●	●	●	●	●	●	●★	
SDW-100C					●	●	●	●	●	●	●	●	●	●	●★	

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available

■ Keyway is available ■ The recommendation for shaft tolerance is h7.

■ In case of the ★ inner bore diameter, a shaft cannot penetrate through the stainless steel plate spring.

SDS - ■ ■ C SDWA - ■ ■ C SDWB - ■ ■ C SDWC - ■ ■ C SDAA - ■ ■ C SDAB - ■ ■ C SDAC - ■ ■ C

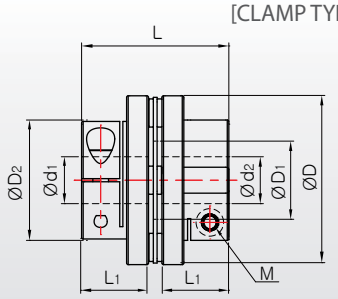
※ Hub design can be changed according to diameter size

SD Series

Zero Backlash Disk Coupling

SDS - ■ ■ C

[CLAMP TYPE]



SDW ■ - ■ ■ C

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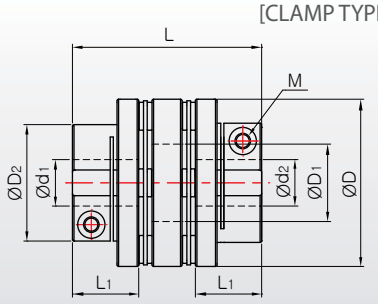

SDA ■ - ■ ■ C

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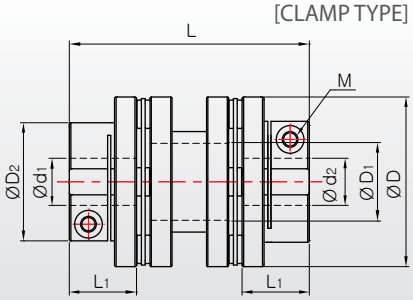

Dimensions & Performance

Product Number	Dimension (±0.3)						Fastening Bolt	Fastening Torque	Max. RPM	Max Torque	Rated Torque	Torsional Stiffness	Moment of Inertia	Mass	Permissible Misalignment		
	D	D_1	D_2	L	L_1	F	M	(N · m)	(min^{-1})	(N · m)	(N · m)	(N · m/rad)	(kg · m^2)	(g)	Angle (°)	Parallel (mm)	End-Play (mm)
SDS-42C	42.5	18	29.3	30.8	13.4	3.8	M3	1.7	8,000	14	7	2,800	1.7×10^{-5}	65	1	0	±0.25
SDWA-42C	42.5	18	29.3	39.7	13.4	3.8	M3	1.7	8,000	14	7	2,000	2.1×10^{-5}	84	1.5	0.18	±0.5
SDWB-42C	42.5	18	29.3	44.2	13.4	3.8	M3	1.7	8,000	14	7	2,000	2.4×10^{-5}	94	1.5	0.18	±0.5
SDAA-42C	42.5	18	29.3	50	13.4	3.8	M3	1.7	8,000	14	7	2,000	2.7×10^{-5}	105	1.5	0.18	±0.5
SDAB-42C	42.5	18	29.3	57.9	13.4	3.8	M3	1.7	8,000	14	7	2,000	2.8×10^{-5}	110	1.5	0.18	±0.5
SDAC-42C	42.5	18	29.3	67.3	13.4	3.8	M3	1.7	8,000	14	7	2,000	2.9×10^{-5}	115	1.5	0.18	±0.5
SDS-47C	47	20.4	33	37	16.7	5	M4	3.5	8,000	24	12	6,000	3.2×10^{-5}	108	1	0	±0.25
SDWA-47C	47	20.4	33	45.6	16.7	5	M4	3.5	7,500	24	12	4,000	3.6×10^{-5}	120	1.5	0.2	±0.5
SDWB-47C	47	20.4	33	51.4	16.7	5	M4	3.5	7,500	24	12	4,000	3.9×10^{-5}	132	1.5	0.2	±0.5
SDAA-47C	47	20	33	63.8	16.7	5	M4	3.5	7,500	24	12	4,000	4.5×10^{-5}	152	1.5	0.2	±0.5
SDAB-47C	47	20	33	90.7	16.7	5	M4	3.5	7,500	24	12	4,000	5.1×10^{-5}	172	1.5	0.2	±0.5
SDS-54C	54	25	38.5	47.1	21.4	6.1	M5	8	8,000	44	22	11,000	5.5×10^{-5}	145	1	0	±0.25
SDWA-54C	54	25	38.5	60.6	21.4	6.1	M5	8	7,500	44	22	7,000	7.2×10^{-5}	192	1.5	0.2	±0.5
SDAA-54C	54	24.3	38.5	76	21.4	6.1	M5	8	7,500	44	22	7,000	9.0×10^{-5}	240	1.5	0.2	±0.5
SDAB-54C	54	24.3	38.5	89.9	21.4	6.1	M5	8	7,500	44	22	7,000	1.1×10^{-4}	266	1.5	0.2	±0.5
SDS-64C	64	25.8	48	58.2	26	7.5	M6	13	7,000	62	31	20,000	1.8×10^{-4}	292	1	0	±0.25
SDWA-64C	64	25.8	48	74.4	26	7.5	M6	13	6,500	62	31	11,000	2.2×10^{-4}	373	1.5	0.3	±0.5
SDA-64C	64	25.8	48	89.9	26	7.5	M6	13	6,500	62	31	11,000	2.7×10^{-4}	450	1.5	0.3	±0.5

* Mass and mass moment of inertia are measured with max. bore size.
■ For SDW □ -64C, cylinderical-shaped hubs are used from Φ28(inner bore diameter).

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																										
	5	6	6.35	7	8	9	9.525	10	11	12	12.7	14	15	15.875	16	17	18	19	20	21	22	24	25	26	28	30	35
SD□□-42C		●	●	●	●	●	●	●	●	●	●	●	●														
SD□□-47C					●	●	●	●	●	●	●	●	●	●	●	●	●	●									
SD□□-54C								●	●	●	●	●	●	●	●	●	●	●	●								
SD□□-64C										●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★	●★	●★	

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.
■ In case of the ★ inner bore diameter, a shaft cannot penetrate through the stainless steel plate spring.

SDS - ■ ■

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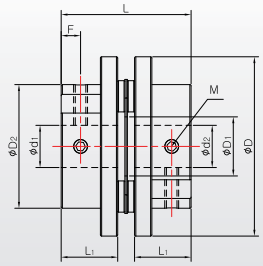

SDW ■ - ■ ■

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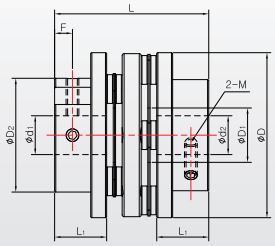

SDA ■ - ■ ■

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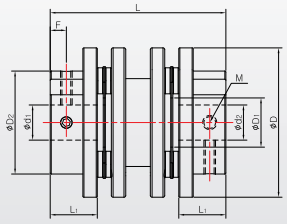


Dimensions & Performance

Product Number	Dimension (±0.3)						Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia ($kg \cdot m^2$)	Mass (g)	Permissible Misalignment		
	D	D_1	D_2	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDS-42	42.5	18	29.3	30.8	13.4	4.6	M4	1.7	8,000	14	7	2,800	1.7×10^{-5}	65	1	0	±0.25
SDWA-42	42.5	18	29.3	39.7	13.4	4.6	M4	1.7	8,000	14	7	2,000	2.1×10^{-5}	84	1.5	0.18	±0.5
SDWB-42	42.5	18	29.3	44.2	13.4	4.6	M4	1.7	8,000	14	7	2,000	2.4×10^{-5}	94	1.5	0.18	±0.5
SDAA-42	42.5	18	29.3	50	13.4	4.6	M4	1.7	8,000	14	7	2,000	2.7×10^{-5}	105	1.5	0.18	±0.5
SDAB-42	42.5	18	29.3	57.9	13.4	4.6	M4	1.7	8,000	14	7	2,000	2.8×10^{-5}	110	1.5	0.18	±0.5
SDAC-42	42.5	18	29.3	67.3	13.4	4.6	M4	1.7	8,000	14	7	2,000	2.9×10^{-5}	115	1.5	0.18	±0.5
SDS-47	47	20.4	33	31.4	13.9	4.5	M5	4	8,000	24	12	6,000	2.7×10^{-5}	91	1	0	±0.25
SDWA-47	47	20.4	33	39.9	13.9	4.5	M5	4	8,000	24	12	4,000	3.4×10^{-5}	115	1.5	0.2	±0.5
SDWB-47	47	20.4	33	45.7	13.9	4.5	M5	4	8,000	24	12	4,000	3.6×10^{-5}	120	1.5	0.2	±0.5
SDAA-47	47	20	33	58.1	13.9	4.5	M5	4	8,000	24	12	4,000	4.2×10^{-5}	140	1.5	0.2	±0.5
SDAB-47	47	20	33	85	13.9	4.5	M5	4	8,000	24	12	4,000	4.7×10^{-5}	160	1.5	0.2	±0.5
SDS-54	54	25	38.5	42.3	19	5.8	M5	4	7,500	44	22	11,000	4.9×10^{-5}	130	1	0	±0.25
SDWA-54	54	25	38.5	55.8	19	5.8	M5	4	7,500	44	22	7,000	6.7×10^{-5}	177	1.5	0.2	±0.5
SDAA-54	54	24.3	38.5	71.2	19	5.8	M5	4	7,500	44	22	7,000	9.0×10^{-5}	230	1.5	0.2	±0.5
SDAB-54	54	24.3	38.5	85.1	19	5.8	M5	4	7,500	44	22	7,000	1.1×10^{-4}	250	1.5	0.2	±0.5
SDS-64	64	25.8	48	58.2	26	8	M8	15	7,000	80	40	20,000	1.8×10^{-4}	292	1	0	±0.25
SDWA-64	64	25.8	48	74.4	26	8	M8	15	7,000	80	40	11,000	2.2×10^{-4}	373	1.5	0.3	±0.5
SDA-64	64	25.8	48	89.9	26	8	M8	15	7,000	80	40	11,000	2.7×10^{-4}	450	1.5	0.3	±0.5

* Mass and mass moment of inertia are measured with max. bore size.
■ For SDW □-64C, cylinderical-shaped hubs are used from Φ28(inner bore diameter).

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																										
	5	6	6.35	7	8	9	9.525	10	11	12	12.7	14	15	15.875	16	17	18	19	20	21	22	24	25	26	28	30	35
SD□□-42		●	●	●	●	●	●	●	●	●	●	●	●														
SD□□-47					●	●	●	●	●	●	●	●	●	●	●	●	●	●									
SD□□-54								●	●	●	●	●	●	●	●	●	●	●	●								
SD□□-64										●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★	●★	●★	

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available ■ Keyway is available
■ The recommendation for shaft tolerance is h7.
■ In case of the ★ inner bore diameter, a shaft cannot penetrate through the stainless steel plate spring.

SD Series (Stainless)

Zero Backlash Disk Coupling (Stainless)

'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SDS, SDW' (Trademark : 40-2012-0044877, 0044876) are the original trademarks for SUNGIL's Disk Coupling.

RoHS COMPLIANT REACH The new EU chemicals legislation

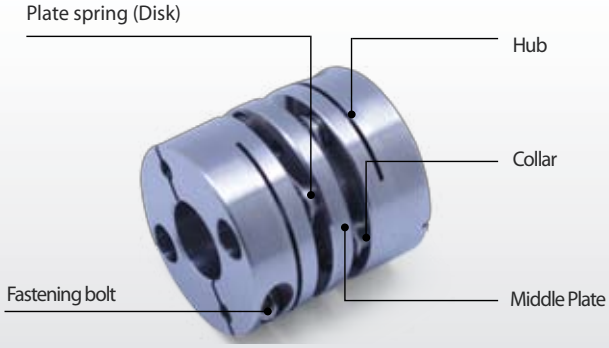
Features

- Standardized disk couplings made up of stainless steel domestically for the first time.
- Various sizes of outer diameter and inner bore is available
- High torsional stiffness
- Identical clockwise and counter-clockwise rotational characteristics
- Single Disk Type/Double Disk Type
- Excellent corrosion resistance (Cleanroom, High vacuum equipment, High, High Humidity)

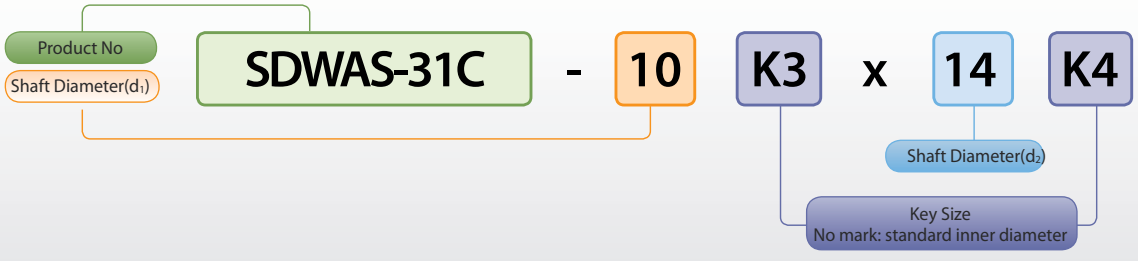
Application

- High precise stage
- Position controlling system
- Index table
- Servo Motor, Stepping Motor
- Power and motion transmission in vacuum or clean room
- Used in acidic or alkaline environments

Structure



How to order product



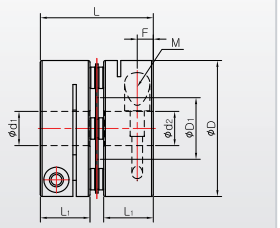
※ Please mark each inner bore diameter.
※ It is impossible to order the additional keyways after ordering.
※ Do not disassemble because each part is optimally assembled for the exact concentricity between each shaft hole.

SD Series (Stainless)
Zero Backlash Disk Coupling (Stainless)

Please, download CAD DATA from www.sungilfa.com

SDSS - ■■C

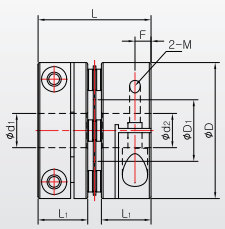
[CLAMP TYPE]



Outer diameter (D) : ø 19 ~ ø 47

SDSS - ■■C

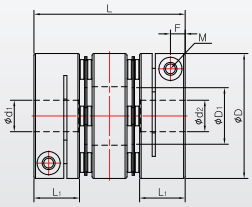
[CLAMP TYPE]



Outer diameter(D) : ø 54 ~ ø 64

SDW■S - ■■C

[CLAMP TYPE]



Outer diameter (D) : ø 19~ ø 47

SDW■S - ■■C

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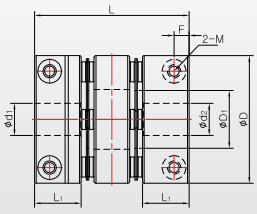


Outer diameter (D) : ø 54 ~ ø 64

Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max. RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	D_1	L	L_1	F									Angle (°)	Parallel (mm)	End-Play (mm)
SDSS-19C	19	8.5	19.3	8.7	2.9	M2.6	1	14000	1	0.5	960	1.0×10^{-6}	21	1	0	±0.1
SDSS-22C	22.2	10	19.7	8.7	2.8	M2.6	1	10,000	2.2	1.1	960	2.5×10^{-6}	42	1	0	±0.1
SDSS-26C	26.6	12.2	24.1	10.7	3.4	M3	1.5	10,000	3	1.5	1,200	6.0×10^{-6}	70	1	0	±0.15
SDSS-31C	31.8	14.4	26.4	11.6	3.7	M3	1.5	9,000	6	3	2,600	1.5×10^{-5}	112	1	0	±0.2
SDSS-39C	39	17	31.3	13.7	4.3	M4	2.5	8,000	10	5	2,800	4.0×10^{-5}	196	1	0	±0.2
SDSS-42C	42.5	18	31.4	13.7	4.3	M4	2.5	8,000	14	7	3,300	8.5×10^{-5}	266	1	0	±0.25
SDSS-47C	47	20.4	36	16	5.2	M4	2.5	8,000	24	12	7,000	1.4×10^{-4}	392	1	0	±0.25
SDSS-54C	54	25	42	19	6.3	M5	4	8,000	44	22	12,000	2.5×10^{-4}	560	1	0	±0.25
SDSS-64C	64	25.8	57.5	26	7.5	M6	8	6,000	62	31	22,000	6.5×10^{-4}	950	1	0	±0.25
SDWAS-19C	19	8.5	23.3	8.7	2.9	M2.6	1	14,000	1	0.5	400	1.6×10^{-6}	37	1	0.05	±0.2
SDWBS-19C	19	8.5	26.3	8.7	2.9	M2.6	1	14,000	1	0.5	400	2.0×10^{-6}	39	1	0.05	±0.2
SDWAS-22C	22.2	9	25	8.7	2.8	M2.6	1	10,000	2.2	1.1	520	3.3×10^{-6}	47	1.5	0.12	±0.2
SDWBS-22C	22.2	9	27.2	8.7	2.8	M2.6	1	10,000	2.2	1.1	520	3.5×10^{-6}	50	1.5	0.12	±0.2
SDWAS-26C	26.6	12.2	32.5	10.7	3.4	M3	1.5	10,000	3	1.5	750	8.5×10^{-6}	92	1.5	0.15	±0.3
SDWAS-31C	31.8	14.4	33.5	11.6	3.7	M3	1.5	10,000	6	3	1,650	1.9×10^{-5}	140	1.5	0.15	±0.4
SDWBS-31C	31.8	14.4	38.5	11.6	3.7	M3	1.5	8,000	6	3	1,650	2.2×10^{-5}	162	1.5	0.15	±0.4
SDWAS-39C	39	17	39.5	13.7	4.3	M4	2.5	8,000	10	5	2,250	5.3×10^{-5}	257	1.5	0.18	±0.4
SDWCS-39C	39	17	45	13.7	4.3	M4	2.5	8,000	10	5	2,250	6.0×10^{-5}	297	1.5	0.18	±0.4
SDWCS-42C	42.5	18	46.2	13.7	4.3	M4	2.5	8,000	14	7	2,500	8.3×10^{-5}	324	1.5	0.18	±0.5
SDWCS-47C	47	20.4	50.7	16	5.2	M4	2.5	8,000	24	12	5,000	1.4×10^{-4}	432	1.5	0.2	±0.5
SDWBS-54C	54	25	52	19	6.3	M5	4	8,000	44	22	8,750	2.8×10^{-4}	675	1.5	0.2	±0.5
SDWCS-54C	54	25	58	19	6.3	M5	4	8,000	44	22	8,750	3.0×10^{-4}	756	1.5	0.2	±0.5
SDWAS-64C	64	25.8	73	26	7.5	M6	8	6,500	62	31	13,800	6.8×10^{-4}	1200	1.5	0.3	±0.5

※ Mass and mass moment of inertia are measured with max. bore size

Standard bore diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																											
	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	21	22	24	25	26	28	30
SD□□S-19C	●	●	●	●																								
SD□□S-22C	●	●	●	●	●	●	●	●★	●★																			
SD□□S-26C			●	●	●	●	●	●	●	●																		
SD□□S-31C				●	●	●	●	●	●	●	●	●	●	●	●★													
SD□□S-39C							●	●	●	●	●	●	●	●	●	●	●											
SD□□S-42C							●	●	●	●	●	●	●	●	●	●	●	●	●★	●★								
SD□□S-47C										●	●	●	●	●	●	●	●	●	●	●	●							
SD□□S-54C										●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			
SD□□S-64C												●	●	●	●	●	●	●	●	●	●	●	●	●	●★	●★	●★	●★

■ For the inner diameter, INCH type is available ■ Non-standard inner bore diameter is also available ■ h7 shaft tolerance is recommended.
■ Keyway is available. ■ The inner diameter marked ★ is not available for Shaft-penetration type.

SHD Series

High Torque Flexible Disk Coupling

'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SHD' (Trademark : 40-2012-0044879) is the original trademark for SUNGIL's High Performance Disk Coupling.

2007
Venture Design Award

Optimal Design with New concept!!

We realize ideal Servo System

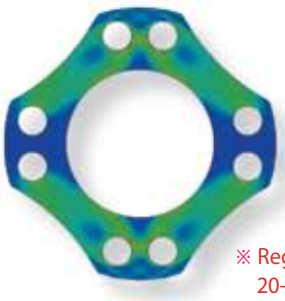
The newly developed flexible disk coupling is realized by optimized design using computational simulations and it maximizes the stainless plate spring's mobility space.
We increased the number of mounting holes to distribute the stress around the bolts and made stainless plate springs flexible to realize a perfect servo system

We consider all components to maximize the life time. For example, stainless plates are assembled with bushing in one-piece package.

The outer diameter size of bushing is larger than the diameter size of the mounting hole. It is manufactured in rounding shape, so this product has durability against bending during parallel, angular misalignment and end-play. Also, we combined several stainless plates with the bushing as a package. Therefore, it is possible to make extremely precise concentric combinations and prevent and protect the disks deformation while there is any load and misalignment.

SUNGIL machinery assembles products perfectly.
We measure and adjust concentricity in every process for perfect concentricity of the both-side holes.

Taper Clamp type can solve the balancing problem that happens in the conventional fastening methods. The small hole on the outer diameter of coupling prevents the product from rotating with the bolt when user fastens with a fastening bolt. It is manufactured to assemble easily.



※ Registration of utility model : 20-0386586

RoHS COMPLIANT REACH The new EU chemicals legislation

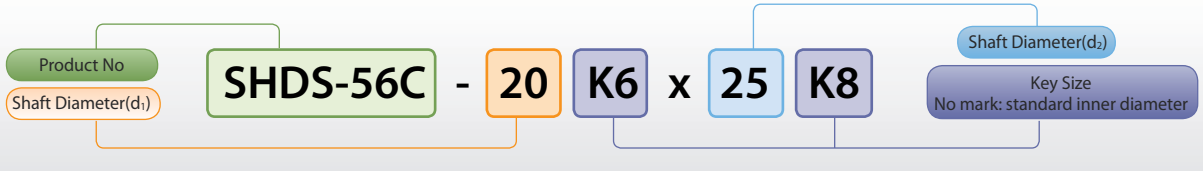
Features

- Stainless disk absorb misalignments
- High torsional stiffness
- Zero backlash
- Identical CW/CCW rotational performance
- Suitable for high rotation speed
- Accurate and fast response performance
- Retaining 1/10 Taper Busing

Material

- Hub : High strength Aluminum alloy(Surface treatment : Alumite)
- Middle plate : High strength Aluminum alloy(Surface treatment : Alumite)
- Disk : Stainless steel
- Bolt : SCM435(Assembly with stainless steel components(collar, bolt) is available

How to order product



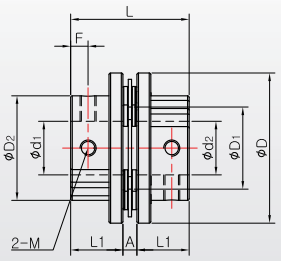
※ Please mark each inner diameter size.
※ Clamp split hub is available for the SHD □-□ □C, but the lead time must be checked.

SHD Series
High Torque Flexible Disk Coupling

Please, download CAD DATA from www.sungilfa.com

SHDS - □ □

[SET SCREW TYPE]



SHDS - □ □

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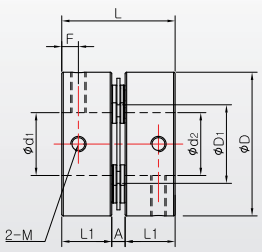
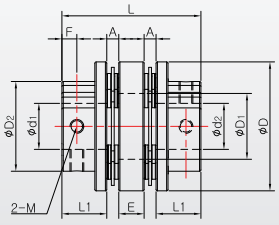


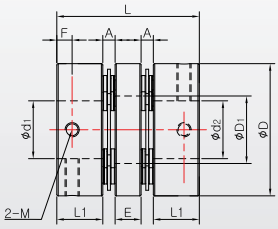
SHDW - □ □

[SET SCREW TYPE]



SHDW - □ □

[SET SCREW TYPE]



Dimensions & Performance

※ SHD□-110 will be released on June 13'

Product Number	SHDS - 56	SHDW - 56	SHDS - 66	SHDW - 66	SHDS - 88	SHDW - 88	SHDS -110	SHDW -110
ø D	56	56	66	66	88	88	108	108
ø D_2	39	39	46	46	63	63	77	77
F	6.5	6.5	7.5	7.5	9.5	9.5	13	13
L_1	19.5	19.5	24.5	24.5	30	30	34.5	34.5
A	5.2	5.2	7.5	7.5	9.9	9.9	8.7	8.7
L	44.2	60.4	56.5	80	69.9	99.8	77.7	111
ø D_1	30.6	28.6	35.6	35.6	46	46	61.5	61.5
E	-	11	-	16	-	20	-	24.6
M	M6	M6	M8	M8	M8	M8	M10	M10
Wrench Torque(N · m)	7	7	15	15	15	15	30	30
Allowable Torque(N · m)	60	60	120	120	200	200	350	350
Max . RPM	7,700	7,700	7,000	7,000	65,500	5,500	4,000	4,000
Moment of Inertia(Kg · m^2)	2.9×10^{-5}	4.6×10^{-5}	8.0×10^{-5}	1.2×10^{-4}	2.9×10^{-4}	4.3×10^{-4}	2.0×10^{-3}	3.2×10^{-3}
Torsional Stiffness(N · m/rad)	2.0×10^{4}	1.0×10^{4}	3.0×10^{4}	1.5×10^{4}	7.0×10^{4}	3.5×10^{4}	1.4×10^{5}	7.0×10^{4}
Mass(g)	150	240	300	440	600	900	1,190	1,750
Allowable Angular Misalignment(°)	0.7	1	0.7	1	0.7	1	0.7	1
Allowable Parallel Misalignment(±mm)	0	0.2	0	0.2	0	0.2	0	0.25
Allowable End-Play(±mm)	0.3	0.6	0.3	0.6	0.3	0.6	0.5	1

* Mass and mass moment of inertia are measured with max. bore size.

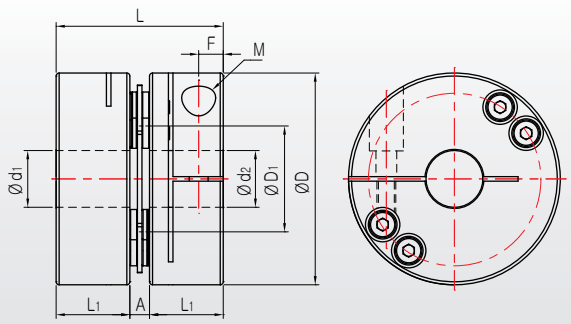
※ SHD□-56 : Cylinderical shape hub from Ø22 ※ SHD□-66 : Cylinderical shape hub from Ø26
※ SHD□-88 : Cylinderical shape hub from Ø32 ※ SHD□-110 : Cylinderical shape hub from Ø48

Product Number	Single Disk Type			
SHDS	 SHDS-□□	 SHDS-□□	 SHDS-□□C	 SHDS-□□T
Product Number	**Double Disk Type**			
SHDS	 SHDW-□□	 SHDW-□□	 SHDW-□□C	 SHDW-□□T

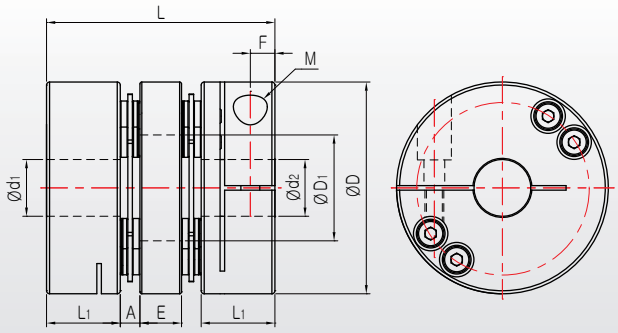
SHD Series

High Torque Flexible Disk Coupling

SHDS - ■ ■ C [CLAMP TYPE]



SHDW - ■ ■ C [CLAMP TYPE]



Dimensions & Performance

※ SHD□−110 will be released on June 13'

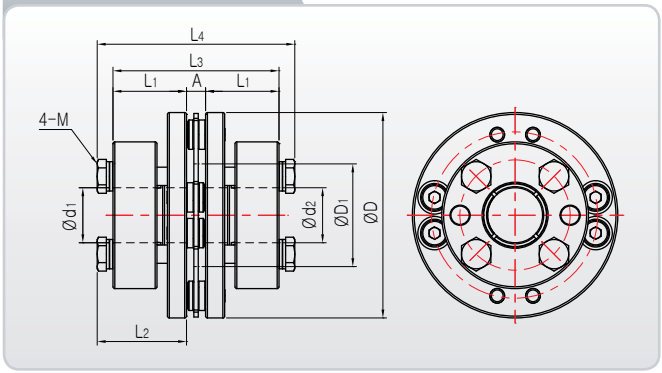
Product Number	SHDS - 56C	SHDW - 56C	SHDS - 66C	SHDW - 66C	SHDS - 88C	SHDW - 88C	SHDS - 110C	SHDW - 110C
ø D	56	56	66	66	88	88	108	108
L_1	19.5	19.5	24.5	24.5	30	30	34.5	34.5
A	5.2	5.2	7.5	7.5	9.9	9.9	8.7	8.7
L	44.2	60.4	56.5	80	69.9	99.8	77.7	111
F	6.5	6.5	7.5	7.5	10	10	10.5	10.5
ø D_1	30.6	28.6	35.6	35.6	46	46	61.5	61.5
E	-	11	-	16	-	20	-	24.6
M	M6	M6	M6	M6	M8	M8	M10	M10
Wrench Torque(N · m)	13	13	13	13	30	30	25	25
Allowable Torque(N · m)	60	60	120	120	200	200	350	350
Max. RPM	7,000	7,000	6,500	6,500	5,500	5,500	4,000	4,000
Moment of Inertia(Kg · m^2)	4.0×10^{-5}	5.8×10^{-5}	1.0×10^{-4}	1.4×10^{-4}	4.3×10^{-4}	5.7×10^{-4}	2.3×10^{-3}	3.7×10^{-3}
Torsional Stiffness(N · m/rad)	2.0×10^{4}	1.0×10^{4}	3.0×10^{4}	1.5×10^{4}	7.0×10^{4}	3.5×10^{4}	1.4×10^{5}	7.0×10^{4}
Mass(g)	210	300	380	520	900	1,200	1,350	1,920
Allowable Angular Misalignment(°)	0.7	1	0.7	1	0.7	1	0.7	1
Allowable Parallel Misalignment(±mm)	0	0.2	0	0.2	0	0.2	0	0.25
Allowable End-Play(±mm)	0.3	0.6	0.3	0.6	0.3	0.6	0.5	1

* Mass and mass moment of inertia are measured with max. bore size

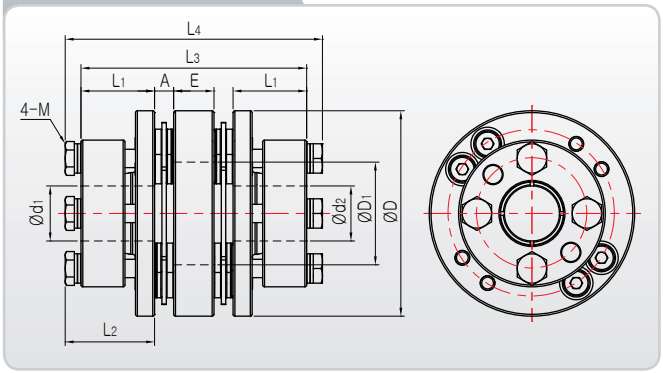
SHD Series
High Torque Flexible Disk Coupling

Please, download CAD DATA from www.sungilfa.com

SHDS - ■■T [TAPER TYPE]



SHDW - ■■T [TAPER TYPE]



Dimensions & Performance

※ SHD□-110 will be released on June 13'

Product Number	SHDS - 56T	SHDW - 56T	SHDS - 66T	SHDW - 66T	SHDS - 88T	SHDW - 88T	SHDS - 110T	SHDW - 110T
ø D	56	56	66	66	88	88	108	108
L_1	20.2	20.2	25	25	30	30	30.7	30.7
L_2	24.7	24.7	30	30	35.2	35.2	35.9	35.9
A	5.2	5.2	7.5	7.5	9.9	9.9	8.7	8.7
L_3	45.6	61.8	57.5	81	69.9	99.8	70.1	103.4
L_4	54.6	70.8	67.5	91	80.3	110.2	80.5	113.8
ø D_1	30.6	28.6	35.6	35.6	46	46	61.5	61.5
E	-	11	-	16	-	20	-	24.6
M	M5	M5	M6	M6	M6	M6	M6	M6
Wrench Torque(N · m)	8	8	13	13	13	13	13	13
Allowable Torque(N · m)	60	60	120	120	200	200	350	350
Max . RPM	7,700	7,700	7,000	7,000	6,000	6,000	4,500	4,500
Moment of Inertia(Kg · m^2)	3.6×10^{-5}	5.4×10^{-5}	8.6×10^{-5}	1.2×10^{-4}	3.2×10^{-4}	4.6×10^{-4}	1.6×10^{-3}	3.7×10^{-3}
Torsional Stiffness(N · m/rad)	2.0×10^{4}	1.0×10^{4}	3.0×10^{4}	1.5×10^{4}	7.0×10^{4}	3.5×10^{4}	1.4×10^{5}	7.0×10^{4}
Mass(g)	190	280	320	460	670	970	980	1,530
Allowable Angular Misalignment(°)	0.7	1	0.7	1	0.7	1	0.7	1
Allowable Parallel Misalignment(±mm)	0	0.2	0	0.2	0	0.2	0	0.25
Allowable End-Play(±mm)	0.3	0.6	0.3	0.6	0.3	0.6	0.5	1

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																								
	10	11	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	38	40	42	45	48	50	55	60
SHD □ - 56 □	●	●	●	●	●	●	●	●	●	●	●	●													
SHD □ - 66 □					●	●	●	●	●	●	●	●	●	●	●	●									
SHD □ - 88 □									●	●	●	●	●	●	●	●	●	●	●	●	●				
SHD □ - 110 □															●	●	●	●	●	●	●	●	●	●	●

■ We recommend that tolerance of shaft is h7.

SRG Series

Miniature Rigid Coupling

'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.

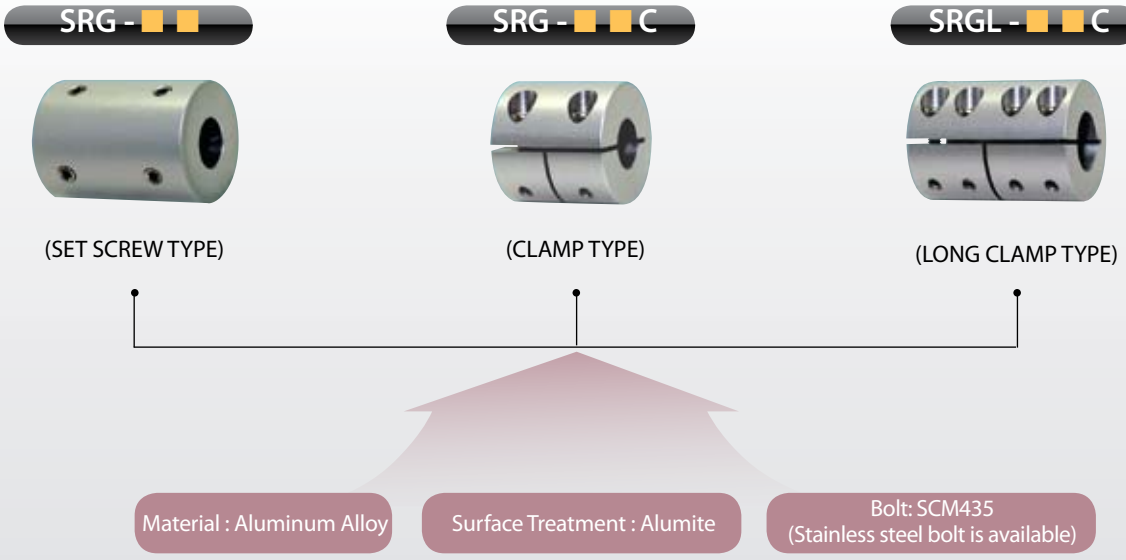
SUNGIL's small precise Rigid coupling has a One-Piece structure.It is used to connect two shafts as a joint, and shows excellent performance in any conditions (low or high speed, high torque and etc). However, it does not accept misalignments such as parallel, angular misalignment and end-play because it is might be deformed thereby. Therefore, to protect the coupling and machine, please use after arranging shafts perfectly.

RoHS COMPLIANT REACH The new EU chemicals legislation

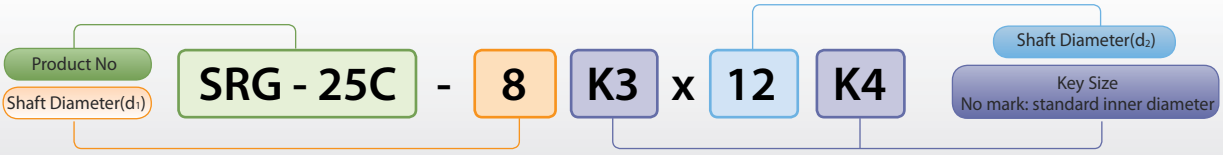
Features

- Zero Backlash
- Identical CW/CCW rotational performance
- High torsional stiffness, High allowable torque
- One-piece type
- Precise concentricity
- No allowable misalignment

Structure and material



How to order product

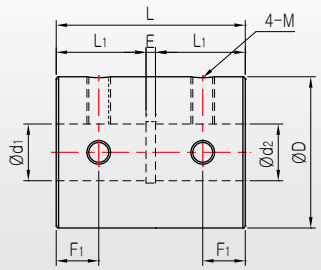


※ Please mark each inner diameter size.
※ For clamp type SRG model, split hub is available, but the lead time must be checked.

Please, download CAD DATA from www.sungilfa.com

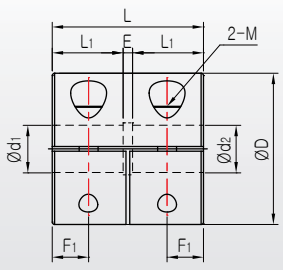
SRG - ■ ■

[SET SCREW TYPE]



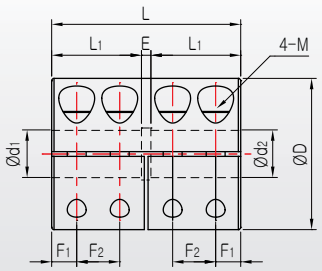
SRG - ■ ■ C

[CLAMP TYPE]



SRGL - ■ ■ C

[LONG CLAMP TYPE]



Dimensions & Performance

Product Number	Dimension (±0.3)						Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Moment of Inertia ($kg \cdot m^2$)	Mass (g)
	D	L	L_1	E	F_1	F_2							
SRG-16	16	22.5	10.25	2	5	-	M3	0.7	25,000	0.6	0.3	3.9×10^{-7}	10
SRG-20	20	24	11	2	5.5	-	M3	0.7	20,000	1	0.5	9.7×10^{-7}	15.4
SRG-25	25	35	16.5	2	7.5	-	M4	1.7	18,000	2	1	3.5×10^{-6}	36
SRG-32	32	40	19	2	9	-	M5	4	14,000	4	2	1.1×10^{-5}	69
SRG-43	43	52	25	2	12	-	M6	7	12,000	9	4.5	4.6×10^{-5}	153
SRG-53	53	66	32	2	15.5	-	M8	15	8,000	22	11	1.4×10^{-4}	316
SRG-16C	16	16	7	2	3.7	-	M2.6	1	18,000	0.6	0.3	2.5×10^{-7}	6.8
SRG-20C	20	20	9	2	4.6	-	M2.6	1	15,000	1	0.5	7.5×10^{-7}	12
SRG-25C	25	25	11.5	2	5.8	-	M3	1.7	12,000	2	1	2.3×10^{-6}	24
SRG-32C	32	32	15	2	7.6	-	M4	3.5	10,000	4	2	8.0×10^{-6}	52
SRG-43C	43	41	19.5	2	10	-	M5	8	8,000	9	4.5	3.3×10^{-5}	114
SRG-53C	53	51	24.5	2	12.5	-	M6	13	6,000	22	11	9.2×10^{-5}	234
SRGL-16C	16	22.5	10.25	2	3	5.4	M2.6	1	16,000	0.8	0.4	3.4×10^{-7}	9.3
SRGL-20C	20	24	11	2	3.1	5.6	M2.6	1	14,000	1.2	0.6	8.6×10^{-7}	14
SRGL-25C	25	35	16.5	2	4.7	7.6	M3	1.7	10,000	2.4	1.2	3.2×10^{-6}	34
SRGL-32C	32	40	19	2	5.3	9.1	M4	3.5	9,000	4.8	2.4	9.8×10^{-6}	63
SRGL-43C	43	52	25	2	7	11.5	M5	8	7,000	10	5	4.1×10^{-5}	141
SRGL-53C	53	66	32	2	9	14.5	M6	13	5,500	24	12	1.3×10^{-4}	297

■ For the inner diameter, INCH type is available
■ The recommendation for shaft tolerance is h7.
■ Nonstandard inner diameter is also available
* Mass and mass moment of inertia are measured with max. bore size
■ Keyway is available

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)															
	3	4	5	6	8	10	11	12	14	15	16	18	20	22	24	25
SRG-16 / SRG-16C / SRGL-16C	●	●	●	●												
SRG-20 / SRG-20C / SRGL-20C		●	●	●	●	●										
SRG-25 / SRG-25C / SRGL-25C			●	●	●	●	●	●								
SRG-32 / SRG-32C / SRGL-32C				●	●	●	●	●	●	●						
SRG-43 / SRG-43C / SRGL-43C						●	●	●	●	●	●	●	●	●		
SRG-53 / SRG-53C / SRGL-53C								●	●	●	●	●	●	●	●	

SCJ Series

Ultra-precision Cross Joint Coupling

'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SCJ' (Trademark : 40-2012-0044875) is the original trademark for SUNGIL's Cross Joint Coupling.

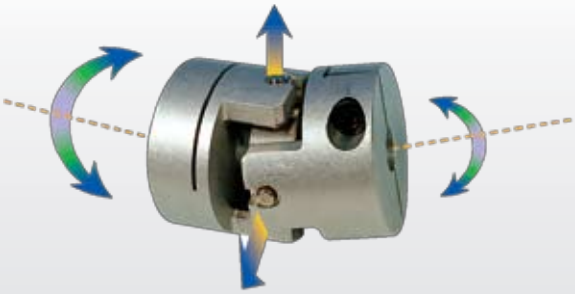
2006
Venture Design Award

SUNGIL's Cross Joint type is a precise compensation coupling that absorbs parallel and angular misalignment by the unique combination of pin and dry bearing. We combined the advantages of Oldham coupling and Universal joint to prevent internal stress induced by misalignment or vibration. It is designed simply with high strength and low moment of inertia, so it has accurate response performance

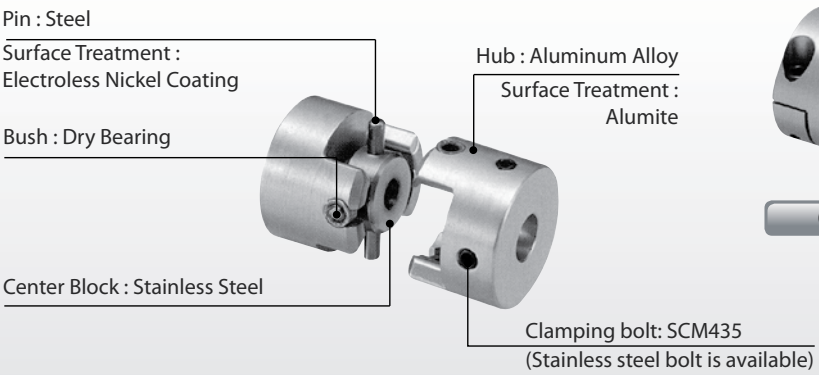
REACH
The new EU chemicals legislation

Features

- Excellent absorbability in eccentricity and angular misalignment(bearing, center block, pin)
- Identical CW/CCW rotational performance
- Minimized backlash
- Minimized load on shaft
- Various sizes are available
- Excellent durability
- Resistance against chemical and oil



Structure & Material



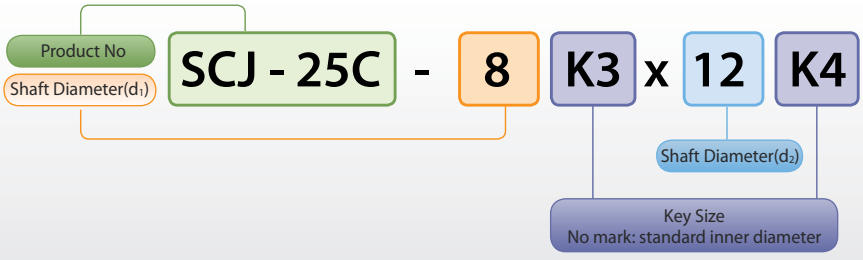
CLAMP TYPE

SET SCREW TYPE

Application

- Robot, X-Y table
- Equipment related to Semiconductor and Display
- CNC, MCT, Machining tool
- Medical Instrument
- Optical instrument, Measuring tool

How to order product

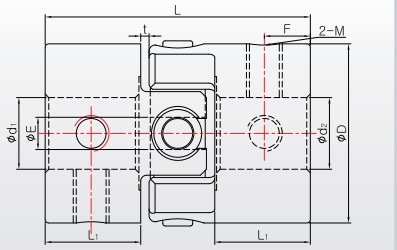


※ Please mark each inner diameter size.

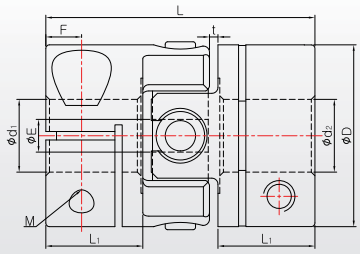
SCJ Series
Ultra-precision Cross Joint Coupling

Please, download CAD DATA from www.sungilfa.com

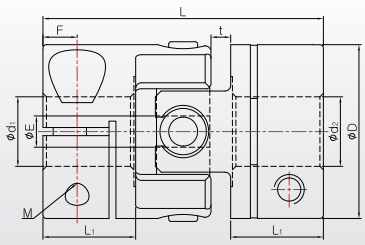
SCJ - ■ ■ [SET SCREW TYPE]



SCJA - ■ ■ C [CLAMP TYPE]



SCJB - ■ ■ C [CLAMP TYPE]



Dimensions & Performance

Product Number	Fastening Bolt M	Fastening Torque (N · m)	Max. RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
									Angle (°)	Parallel (mm)	End-Play (mm)
SCJA-15C	M2.6	1	21,000	0.5	0.25	220	3.3×10^{-7}	9	1.5	0.3	0
SCJA-20C	M2.6	1	16,000	1	0.5	350	1.2×10^{-6}	19	1.5	0.5	0
SCJA-25C	M3	1.7	12,000	2	1	800	3.3×10^{-6}	34	1.5	0.5	0
SCJA-32C	M4	3.5	9,000	4	2	1,200	1.1×10^{-5}	72	1.5	0.5	0
SCJA-40C	M5	8	7,000	10	5	1,900	3.2×10^{-5}	140	1.5	0.5	0
SCJB-15C	M2.6	1	18,000	0.5	0.25	200	3.5×10^{-7}	10	2	0.3	0
SCJB-20C	M2.6	1	12,000	1	0.5	300	1.3×10^{-6}	20	2	0.5	0
SCJB-25C	M3	1.7	9,000	2	1	700	3.4×10^{-6}	35	2	0.5	0
SCJB-32C	M4	3.5	7,000	4	2	1,000	1.2×10^{-5}	75	2	0.5	0
SCJB-40C	M5	8	5,000	10	5	1,800	3.3×10^{-5}	145	2	0.5	0
SCJ-15	M3	0.7	21,000	0.5	0.25	200	2.9×10^{-7}	9	1.5	0.3	0
SCJ-20	M3	0.7	16,000	1	0.5	450	1.0×10^{-6}	20	1.5	0.5	0
SCJ-25	M4	1.7	12,000	2	1	800	3.1×10^{-6}	35	1.5	0.5	0
SCJ-32	M4	4	9,000	4	2	1,200	1.1×10^{-5}	75	1.5	0.5	0
SCJ-40	M5	4	7,000	10	5	1,900	3.1×10^{-5}	145	1.5	0.5	0

* Mass and mass moment of inertia are measured with max. bore size

Dimensions and Standard Inner Diameter

Product Number	Dimension						Dimensions and Standard Inner Diameter(d_1, d_2, unit:mm)										
	D	L	L_1	E	t	F	3	4	5	6	6.35	8	10	11	12	14	15
SCJA-15C	15	22.2	8	2.7	0.7	2.95	●	●	●	●							
SCJA-20C	20	23.4	7.9	4.2	0.8	2.75		●	●	●	●	●					
SCJA-25C	25	30.4	10.4	5.2	1.3	3.55			●	●	●	●	●				
SCJA-32C	32	39	13.5	8.2	1.6	4.4				●	●	●	●	●	●	●	
SCJA-40C	40	45.6	16	10	1.8	5.9						●	●	●	●	●	●
SCJB-15C	15	24.2	8	2.7	1.7	2.95	●	●	●	●	●						
SCJB-20C	20	26.4	7.9	4.2	2.3	2.75		●	●	●	●	●					
SCJB-25C	25	33.4	10.4	5.2	2.8	3.55			●	●	●	●	●				
SCJB-32C	32	43	13.5	8.2	3.6	4.4				●	●	●	●	●	●	●	
SCJB-40C	40	51	16	10	4.5	5.9						●	●	●	●	●	●
SCJ-15	15	22.2	8	2.7	0.7	3.85	●	●	●	●	●						
SCJ-20	20	23.4	7.9	4.2	0.8	3.75		●	●	●	●	●					
SCJ-25	25	30.4	10.4	5.2	1.3	4.95			●	●	●	●	●				
SCJ-32	32	39	13.5	8.2	1.6	6.55				●	●	●	●	●	●	●	
SCJ-40	40	45.6	16	10	1.8	7.8						●	●	●	●	●	●

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available ■ Keyway is available

■ The recommendation for shaft tolerance is h7.

SFC Series

Ultra-precision Flexible Coupling

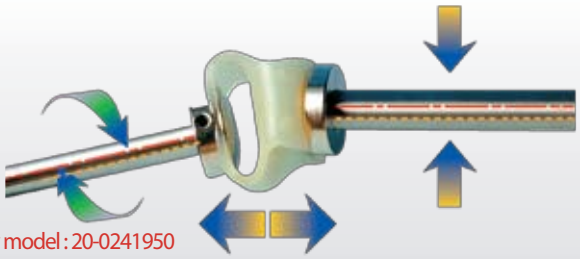
'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.

2006 Venture Design Award

RoHS COMPLIANT REACH The new EU chemicals legislation

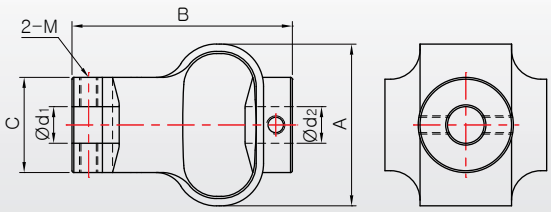
Features

- Excellent absorbability in misalignment (eccentricity, angular misalignment, end-play)
- Absorbs impact and vibration
- No lubrication
- Low moment of inertia

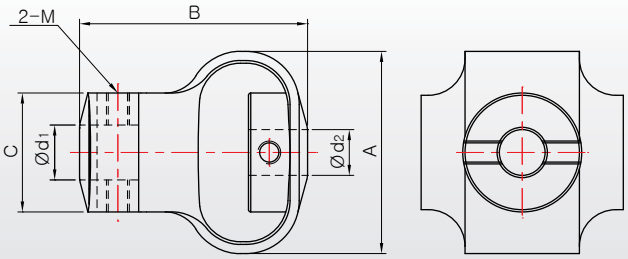


※ Patent /Utility model : 20-0241950

SFC 29, 38



SFC 48, 54



Dimensions & Performance

Product Number	Dimension (mm)(±0.3)			Fastening Bolt M	Fastening Torque (N · m)	Mass (g)	Max. RPM (min^{-1})	Max Torque (N · m)	Permissible Angular misalignment (°)	Permissible Parallel misalignment (mm)	End-Play (mm)
	A	B	C								
SFC-29	25	28	18	M4	1.7	19	3,000	0.35	10	2	1.5
SFC-38	32	35	22.5	M4	1.7	38	3,000	1.35	10	2.5	2
SFC-48	43	50	26	M5	4	60	3,000	1.8	12	2.5	2
SFC-54	50	59	29.5	M6	7	140	3,000	4.5	12	3	2

Standard Inner diameter

Product Number	Standard Inner diameter (d_1, d_2) Standard INNER Diameter (mm)								
	4	5	6	8	10	12	14	15	16
SFC-29	●	●	●	●	●				
SFC-38			●	●	●	●			
SFC-48				●	●	●	●		
SFC-54					●	●	●	●	●

※ Please contact us when you order a product which is not a standard inner diameter

How to order product

Product No / Shaft Diameter(d_1) : SFC - 29 - 6 x 10 : Shaft Diameter(d_2)

※ For INNER diameter, key type is not available for SFC type ※Please mark each inner diameter size. ※Please contact us when you order

SJC Series

Zero Backlash Jaw Coupling

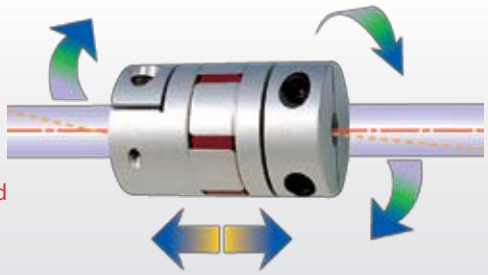
'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SJC' (Trademark : 40-2012-0044881) is the original trademark for SUNGIL's Jaw Coupling.

SUNGIL's Jaw coupling has a unique hub and sleeve structure, so it has maximized the advantages of zero backlash metallic coupling and common coupling with rubber elastic material.

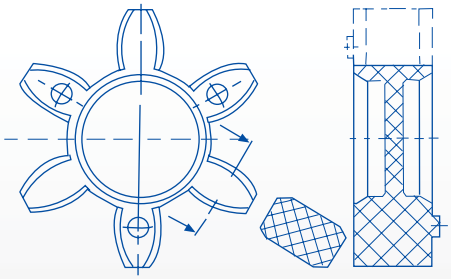
RoHS COMPLIANT REACH The new EU chemicals legislation

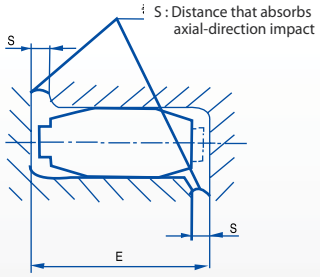
Features

- Structure is manufactured with pre-load on Sleeve
- Zero backlash (low operational torque environment)
- Excellent durability and torsional stiffness
- Absorbs parallel and angular misalignment and vibration through Sleeve
- Identical CW and CCW rotational characteristics
- Oil resistance, electric insulation
- Operational temperature: -30℃~80℃
- Several holes are machined hub's inside surface for the well-balanced product



Sleeve





※ SUNGIL's sleeve is different from other sleeves because the center is non-penetrativbe. The teeth are made in a from shape by considering the dimensions (tolerance) of them very carefully, so there is no clearance and backlash on operation
※ There is penetrative sleeve that is machined after molding for easy assembly

※ S : Distance that absorbs axial-direction impact. Sungil's Jaw coupling is assembled with special tools for the uniform distance.

Out Diameter Size ø 14~ ø 30

Out Diameter Size ø 40

Out Diameter Size ø 55~ ø 100

Application

- Position controlling-positioning
- Robot system
- Boring and grinding machine
- Machining center (machine tool)
- Medical equipment
- Servo Motor
- X-Y and X-Y-Z axle driving
- Reduction geared motor

Structure & Material

SET SCREW TYPE | CLAMP TYPE

SJC Series

Zero Backlash Jaw Coupling

Selection Method

SJC coupling has 2 different usages. One for transmitting angular rotation with zero backlash and another for transmitting extremely high torque. Choose the appropriate coupling because we have 2 different sleeves with different physical characteristics.

1. To transmit rotation with zero backlash mainly

In order to transmit angular rotation and control for the main purpose in low torque range, the same characteristic, metal spring coupling having zero backlash can be used. In addition, it can absorb torsional vibration which you cannot get from general couplings. To use for zero backlash, the operating torque is less than the rated torque on the table. (Refer to the table below) For zero backlash, the permissible torque is the same for 2 sleeves. However, for accurate transmission concerning necessary responsiveness, higher strength is required for sleeves .

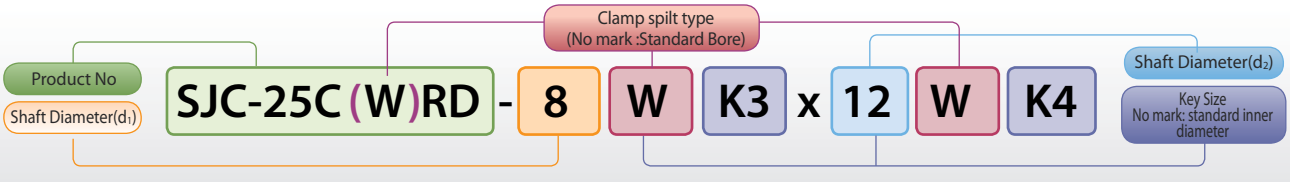
2. To transmit extremely high torque mainly

SJC type coupling can be used for higher torque compared with metal coupling because it transmits torque by compressing sleeve. Therefore, it can be applied to general industrial machines such as pump that does not need zero backlash seriously. SJC couplings sleeves are offered in two different types, green sleeve which has lower strength is used in lower rated and maximum torque condition, while a red sleeve has higher values. On the contrary, the green sleeve's misalignment permissible value is higher than the red sleeve's and thus, this type of sleeve is more suitable for absorbing vibration or impact. So, select the proper sleeve for your use.

Sleeve			Fastening way	
Hardness (Shore D)	Color	Material	SET SCREW TYPE	CLAMP TYPE
55D (98A)	Green	Hytrel	SJC - □□ - GR	SJC - □□ C - GR
64D	Red	Hytrel	SJC - □□ - RD	SJC - □□ C - RD

Product Number		Sleeve Hardness	For Zero Backlash (N · m)	Rated Torque (N · m)	Max Torque (N · m)	Torsional Stiffness (N · m/rad)	Permissible Parallel Misalignment (mm)	Permissible Parallel Misalignment t(°)	Permissible End-play (mm)
SJC-14	GR	55D (98A)	0.2	1.6	3.6	20	0.05	1.0	+0.6 −0.2
	RD	64D		2	4	30	0.03		
SJC-20	GR	55D (98A)	0.2	4	8	40	0.07	1.0	+0.8 −0.3
	RD	64D		5	10	65	0.05		
SJC-25	GR	55D (98A)	0.35	8	10	180	0.07	1.0	+1.0 −0.4
	RD	64D		10	20	220	0.05		
SJC-30	GR	55D (98A)	0.5	10	20	180	0.08	1.0	+1.0 −0.5
	RD	64D		14	28	220	0.06		
SJC-40	GR	55D (98A)	1.2	16	32	1,200	0.06	1.0	+1.2 −0.6
	RD	64D		18	36	2,000	0.04		
SJC-55	GR	55D (98A)	-	45	90	2,500	0.09	1.0	+1.4 −0.6
	RD	64D		60	120	4,000	0.06		
SJC-65	GR	55D (98A)	-	120	240	4,000	0.1	1.0	+1.5 −0.6
	RD	64D		180	360	8,000	0.08		
SJC-80	GR	55D (98A)	-	240	480	10,000	0.1	1.0	+1.5 −0.6
	RD	64D		320	640	20,000	0.08		
SJC-100	GR	55D (98A)	-	300	600	20,000	0.15	1.0	+2.0 −0.6
	RD	64D		600	1,200	40,000	0.1		

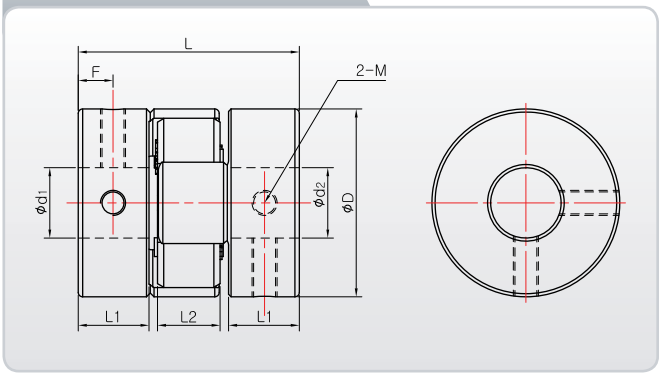
How to order product



※ Please mark each inner diameter size.
※ When you order 'penetrate-type sleeve', please mark 'penetrate-type'.
※ The following is the size of the inner diameter of penetrate-type sleeves.
SJC-14 =Ø4.5, SJC-20=Ø7, SJC-25=Ø7.6, SJC-30=Ø9.6, SJC-40=Ø15.5, SJC-55=Ø25.3, SJC-65=Ø26.7, SJC-80=Ø30.8, SJC-100=Ø50.5
※ Clamp split type is available for SJCB-30C, SJC □ -40C, SJC-55C, SJC-65C, SJC-80C and SJC-100C. Please mark 'W' right behind the bore diameter where you want to separate.

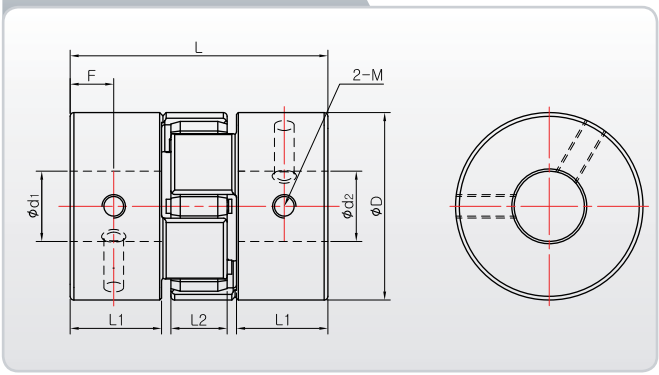
Please, download CAD DATA from www.sungilfa.com

SJC ■ - ■ ■ -GR(RD) [SET SCREW TYPE]



Ø D: ø 14 ~ ø 30

SJC ■ - ■ ■ -GR(RD) [SET SCREW TYPE]



Ø D: ø 40

Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	L_2	F									Angle (°)	Parallel (mm)	End-Play (mm)
SJC-14 GR	14	22	7	6	3.45	M3	0.7	27,000	3.2	1.6	20	1.9×10^{-7}	6.7	1.0	0.05	$^{+0.6}_{-0.2}$
SJC-20 GR	20	30	10	8	4.65	M3	0.7	19,000	8	4	40	1.0×10^{-6}	18.3	1.0	0.07	$^{+0.8}_{-0.3}$
SJC-25 GR	25	31.25	10	9	4.95	M4	1.7	15,000	16	8	180	2.7×10^{-6}	30	1.0	0.07	$^{+1.0}_{-0.4}$
SJCA-30 GR	30	35.3	11.3	10	5.55	M4	1.7	13,000	20	10	180	6.2×10^{-6}	46	1.0	0.08	$^{+1.0}_{-0.4}$
SJCB-30 GR	30	44.7	16	10	7.25	M4	1.7	13,000	20	10	180	8.2×10^{-6}	60	1.0	0.08	$^{+1.0}_{-0.4}$
SJCA-40 GR	40	55	19.5	12	9.3	M5	4	9,600	32	16	1,200	3.3×10^{-5}	132	1.0	0.06	$^{+1.2}_{-0.5}$
SJCB-40 GR	40	66	25	12	11.6	M5	4	9,600	32	16	1,200	4.0×10^{-5}	163	1.0	0.06	$^{+1.2}_{-0.5}$
SJC-14 RD	14	22	7	6	3.45	M3	0.7	27,000	4	2	30	2.1×10^{-7}	6.7	1.0	0.03	$^{+0.6}_{-0.2}$
SJC-20 RD	20	30	10	8	4.65	M3	0.7	19,000	10	5	65	1.0×10^{-6}	18.4	1.0	0.05	$^{+0.8}_{-0.3}$
SJC-25 RD	25	31.25	10	9	4.95	M4	1.7	15,000	20	10	220	2.4×10^{-6}	30	1.0	0.05	$^{+1.0}_{-0.4}$
SJCA-30 RD	30	35.3	11.3	10	5.55	M4	1.7	13,000	28	14	220	5.9×10^{-6}	46	1.0	0.06	$^{+1.0}_{-0.4}$
SJCB-30 RD	30	44.7	16	10	7.25	M4	1.7	13,000	28	14	220	7.2×10^{-6}	60	1.0	0.06	$^{+1.0}_{-0.4}$
SJCA-40 RD	40	55	19.5	12	9.3	M5	4	9,600	36	18	2,000	3.1×10^{-5}	132	1.0	0.04	$^{+1.2}_{-0.5}$
SJCB-40 RD	40	66	25	12	11.6	M5	4	9,600	36	18	2,000	4.0×10^{-5}	163	1.0	0.07	$^{+1.2}_{-0.5}$

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

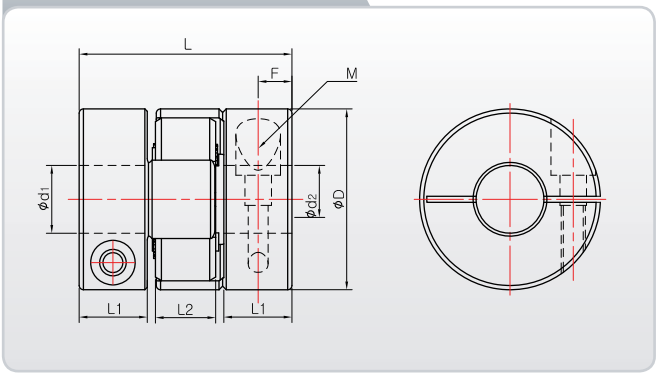
Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																	
	3	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16	18	19	20
SJC-14	●	●	●	●														
SJC-20		●	●	●	●	●	●	●										
SJC-25				●	●	●	●	●	●	●								
SJC-30					●	●	●	●	●	●	●	●	●					
SJC-40								●	●	●	●	●	●	●	●	●		

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.

SJC Series

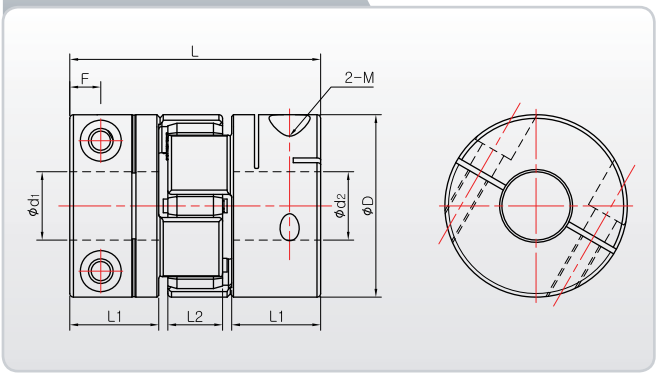
Zero Backlash Jaw Coupling

SJC ■ - ■ ■ C-GR(RD) [CLAMP TYPE]



Ø D: ø 14~ ø 30

SJC ■ - ■ ■ C-GR(RD) [CLAMP TYPE]



Ø D: ø 40

Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	L_2	F									Angle (°)	Parallel (mm)	End-Play (mm)
SJC-14C GR	14	22	7	6	3.5	M2	0.5	22,000	3.2	1.6	20	1.6×10^{-7}	6	1.0	0.05	$^{+0.6}_{-0.2}$
SJC-20C GR	20	30	10	8	4.95	M2.6	1	15,000	8	4	40	1.1×10^{-6}	19	1.0	0.07	$^{+0.8}_{-0.3}$
SJC-25C GR	25	31.25	10	9	4.95	M3	1.7	13,000	16	8	180	2.4×10^{-6}	25	1.0	0.07	$^{+1.0}_{-0.4}$
SJCA-30C GR	30	35.3	11.3	10	5.6	M4	3.5	10,000	20	10	180	6.2×10^{-6}	50	1.0	0.08	$^{+1.0}_{-0.4}$
SJCB-30C GR	30	44.7	16	10	5.4	M4	3.5	10,000	20	10	180	7.5×10^{-6}	55	1.0	0.08	$^{+1.0}_{-0.4}$
SJCA-40C GR	40	55	19.5	12	6.8	M5	8	8,500	32	16	1,200	3.1×10^{-5}	135	1.0	0.06	$^{+1.2}_{-0.5}$
SJCB-40C GR	40	66	25	12	8.4	M5	8	8,500	32	16	1,200	3.9×10^{-5}	160	1.0	0.06	$^{+1.2}_{-0.5}$
SJC-14C RD	14	22	7	6	3.5	M2	0.5	22,000	4	2	30	1.6×10^{-7}	6	1.0	0.03	$^{+0.6}_{-0.2}$
SJC-20C RD	20	30	10	8	4.95	M2.6	1	15,000	10	5	65	1.1×10^{-6}	19	1.0	0.05	$^{+0.8}_{-0.3}$
SJC-25C RD	25	31.25	10	9	4.95	M3	1.7	13,000	20	10	220	2.4×10^{-6}	25	1.0	0.05	$^{+1.0}_{-0.4}$
SJCA-30C RD	30	35.3	11.3	10	5.6	M4	3.5	10,000	28	14	220	6.2×10^{-6}	50	1.0	0.06	$^{+1.0}_{-0.4}$
SJCB-30C RD	30	44.7	16	10	5.4	M4	3.5	10,000	28	14	220	7.5×10^{-6}	55	1.0	0.06	$^{+1.0}_{-0.4}$
SJCA-40C RD	40	55	19.5	12	6.8	M5	8	8,500	36	18	2,000	3.1×10^{-5}	135	1.0	0.04	$^{+1.2}_{-0.5}$
SJCB-40C RD	40	66	25	12	8.4	M5	8	8,500	36	18	2,000	3.9×10^{-5}	160	1.0	0.04	$^{+1.2}_{-0.5}$

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

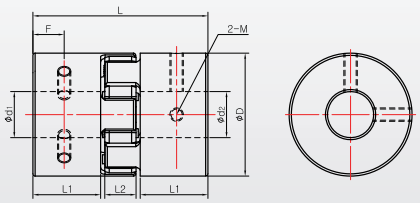
Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																	
	3	4	4.5	5	6	6.35	7	8	9.525	10	11	12	14	15	16	18	19	20
SJC-14C	●	●	●	●														
SJC-20C		●	●	●	●	●	●	●										
SJC-25C				●	●	●	●	●	●	●								
SJC-30C					●	●	●	●	●	●	●	●	●					
SJC-40C								●	●	●	●	●	●	●	●	●		

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.

Please, download CAD DATA from www.sungilfa.com

SJC - ■ ■ -GR(RD)

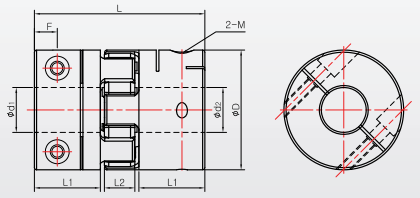
[SET SCREW TYPE]



Ø D: ø 55~ ø 100

SJC - ■ ■ C-GR(RD)

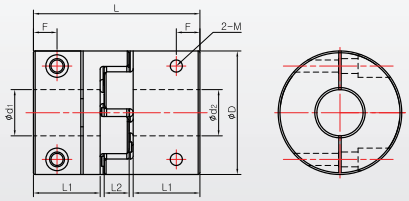
[CLAMP TYPE]



Ø D: ø 55~ ø 80

SJC -100C-GR(RD)

[CLAMP TYPE]



Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	L_2	F									Angle (°)	Parallel (mm)	End-Play (mm)
SJC-55 GR	55	78.3	30.3	14	14	M6	7	7,500	90	45	2,500	1.7×10^{-4}	344	1	0.09	$^{+1.4}_{-0.5}$
SJC-65 GR	65	90.3	35.3	15	17.2	M8	15	6,000	240	120	4,000	3.7×10^{-4}	535	1	0.1	$^{+1.5}_{-0.6}$
SJC-80 GR	80	114.2	45.2	18	21.7	M8	15	5,000	480	240	10,000	1.1×10^{-3}	1,150	1	0.1	$^{+1.5}_{-0.6}$
SJC-100 GR	104	140.2	56.2	21	27.25	M10	25	4,000	600	300	20,000	4.8×10^{-3}	2,650	1	0.1	$^{+2.0}_{-0.6}$
SJC-55C GR	55	78.3	30.3	14	10.5	M6	13	6,500	90	45	2,500	1.6×10^{-4}	330	1	0.09	$^{+1.4}_{-0.5}$
SJC-65C GR	65	90.3	35.3	15	12.45	M8	30	5,500	240	120	4,000	3.8×10^{-4}	560	1	0.1	$^{+1.5}_{-0.6}$
SJC-80C GR	80	114.2	45.2	18	14.7	M10	50	4,500	480	240	10,000	1.0×10^{-3}	1,050	1	0.1	$^{+1.5}_{-0.6}$
SJC-100C GR	104	140.2	56.2	21	19.9	M12	90	3,500	600	300	20,000	4.6×10^{-3}	2,550	1	0.15	$^{+2.0}_{-0.6}$
SJC-55 RD	55	78.3	30.3	14	14	M6	7	7,500	120	60	4,000	1.7×10^{-4}	344	1	0.06	$^{+1.4}_{-0.5}$
SJC-65 RD	65	90.3	35.3	15	17.2	M8	15	6,000	360	180	8,000	3.9×10^{-4}	535	1	0.08	$^{+1.5}_{-0.6}$
SJC-80 RD	80	114.2	45.2	18	21.7	M8	15	5,000	640	320	20,000	1.1×10^{-3}	1,150	1	0.08	$^{+1.5}_{-0.6}$
SJC-100 RD	104	140.2	56.2	21	27.25	M10	25	4,000	1,200	600	40,000	4.8×10^{-3}	2,650	1	0.1	$^{+2.0}_{-0.6}$
SJC-55C RD	55	78.3	30.3	14	10.5	M6	13	6,500	120	60	4,000	1.6×10^{-4}	330	1	0.6	$^{+1.4}_{-0.5}$
SJC-65C RD	65	90.3	35.3	15	12.45	M8	30	5,500	360	180	8,000	3.8×10^{-4}	560	1	0.08	$^{+1.5}_{-0.6}$
SJC-80C RD	80	114.2	45.2	18	14.7	M10	50	4,500	640	320	20,000	1.0×10^{-3}	1,050	1	0.08	$^{+1.5}_{-0.6}$
SJC-100C RD	104	140.2	56.2	21	19.9	M12	90	3,500	1,200	600	40,000	4.6×10^{-3}	2,550	1	0.1	$^{+2.0}_{-0.6}$

* Mass and mass moment of inertia are measured with max. bore size

Standard Inner diameter

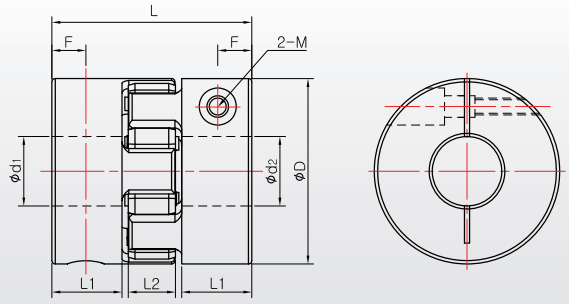
Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																			
	10	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	40	45	50	60
SJC-55 □		●	●	●	●	●	●	●	●	●	●	●	●							
SJC-65 □				●	●	●	●	●	●	●	●	●	●	●	●	●				
SJC-80 □				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
SJC-100 □								●	●	●	●	●	●	●	●	●	●	●	●	●

■ For the inner diameter, INCH type is available
■ Nonstandard inner diameter is also available
■ Keyway is available
■ The recommendation for shaft tolerance is h7.

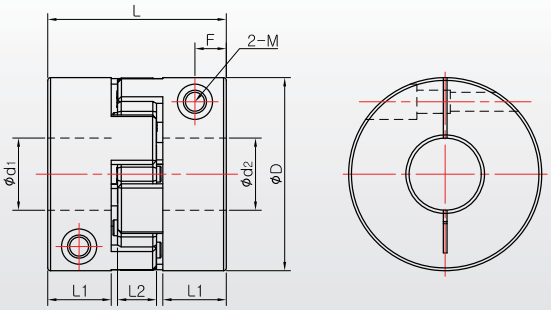
SJC Series

Zero Backlash Jaw Coupling

SJCM - ■ ■ C-GR(RD) [CLAMP M TYPE]



SJCM -100C-GR(RD) [CLAMP M TYPE]



Ø D: ø 55~ ø 80

Dimensions & Performance

Product Number	Dimension (±0.3)					Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Permissible Misalignment		
	D	L	L_1	L_2	F									Angle (°)	Parallel (mm)	End-Play (mm)
SJCM-55C GR	55	59.3	20.8	14	10.1	M6	13	4,000	90	45	2,500	1.3×10^{-4}	280	1	0.09	$^{+1.4}_{-0.5}$
SJCM-65C GR	65	63.3	21.8	15	10.45	M8	30	3,500	240	120	4,000	2.6×10^{-4}	400	1	0.1	$^{+1.5}_{-0.6}$
SJCM-80C GR	80	87.2	31.7	18	15.5	M10	50	3,000	480	240	10,000	8.7×10^{-4}	860	1	0.1	$^{+1.5}_{-0.6}$
SJCM-100C GR	104	96.2	34.2	21	16.9	M12	90	3,000	600	300	7,000	3.1×10^{-3}	1,700	1	0.15	$^{+2.0}_{-0.6}$
SJCM-55C RD	55	59.3	20.8	14	10.1	M6	13	4,000	120	60	4,000	1.3×10^{-4}	280	1	0.06	$^{+1.4}_{-0.5}$
SJCM-65C RD	65	63.3	21.8	15	10.45	M8	30	3,500	360	180	8,000	2.6×10^{-4}	400	1	0.08	$^{+1.5}_{-0.6}$
SJCM-80C RD	80	87.2	31.7	18	15.5	M10	50	3,000	640	320	20,000	8.7×10^{-4}	860	1	0.08	$^{+1.5}_{-0.6}$
SJCM-100C RD	104	96.2	34.2	21	16.9	M12	90	3,000	1,200	600	40,000	3.1×10^{-3}	1,700	1	0.1	$^{+2.0}_{-0.6}$

* Mass and mass moment of inertia are measured with max. bore size

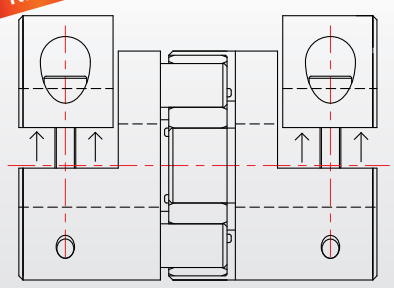
Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																			
	10	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	40	45	50	60
SJCM-55C		●	●	●	●	●	●	●	●	●	●	●	●							
SJCM-65C				●	●	●	●	●	●	●	●	●	●	●	●	●				
SJCM-80C				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
SJCM-100C								●	●	●	●	●	●	●	●	●	●	●	●	●

■ For the inner diameter, INCH type is available ■ Nonstandard inner diameter is also available ■ Keyway is available

■ The recommendation for shaft tolerance is h7.

NEW



※ It is possible to order the CLAMP Split Type for outer Diameter Size Ø30-Ø100 (Ø 30 is available B TYPE)

※ It is impossible for SJCM series.

NEW

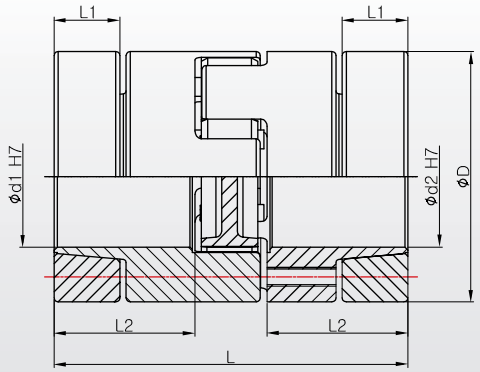
CLAMP SPLIT TYPE

GENERAL CLAMP TYPE

SJC Series

Zero Backlash Jaw Coupling

SJC-■■T

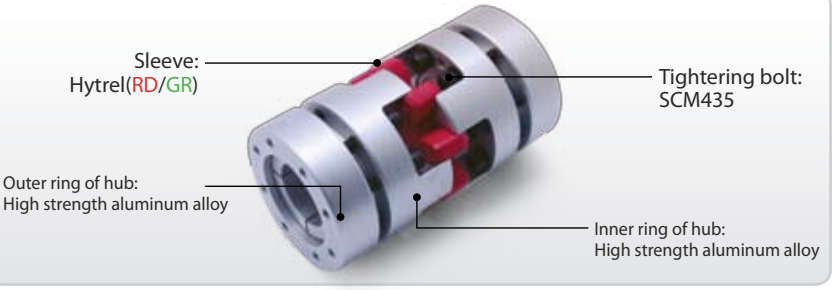


SJC-□□T will be released Sep. 13
For lead time contact us.

Features

- Perfect balancing
- Various inner diameter sizes
- Optimized for high speed rotation
- High clamping force (No slip without key)

Structure & Material



Dimensions & Performance

Model No.	Dimension (±0.3)(mm)				Fastening Bolt M	Fastening Torque (N · m)	Max• RPM (min^{-1})	Max Torque (N · m)	Rated Torque (N · m)	Torsional Stiffness (N · m/rad)	Moment of Inertia (kg · m^2)	Mass (g)	Misalignment tolerance		
	D	L	L_1	L_2									Angle (°)	Parallel (mm)	End-Play (mm)
SJC-55T-GR	55	76	16	29.5	M5	8	12,000	90	45	2,500	1.59×10^{-4}	345	1	0.09	$^{+1.4}_{-0.5}$
SJC-65T-GR	65	89	18.5	35	M5	8	10,000	240	120	4,000	3.75×10^{-4}	536	1	0.1	$^{+1.5}_{-0.6}$
SJC-80T-GR	80	113	21	45	M6	13	8,000	480	240	10,000	1.09×10^{-3}	1043	1	0.1	$^{+1.5}_{-0.6}$
SJC-100T-GR	104	140.2	27	56	M10	50	6,500	600	300	20,000	3.70×10^{-3}	2126	1	0.15	$^{+2.0}_{-0.6}$
SJC-55T-RD	55	76	16	29.5	M5	8	12,000	120	60	4,000	1.59×10^{-4}	345	1	0.06	$^{+1.4}_{-0.5}$
SJC-65T-RD	65	89	18.5	35	M5	8	10,000	360	180	8,000	3.75×10^{-4}	536	1	0.08	$^{+1.5}_{-0.6}$
SJC-80T-RD	80	113	21	45	M6	13	8,000	640	320	20,000	1.09×10^{-3}	1,043	1	0.08	$^{+1.5}_{-0.6}$
SJC-100T-RD	104	140.2	27	56	M10	50	6,500	1200	600	40,000	3.70×10^{-3}	2,126	1	0.1	$^{+2.0}_{-0.6}$

※ Torque transition ability, torsional stiffness and hardness are dependent on sleeve type(GR/RD)

Standard Inner diameter

Product Number	Standard Inner Diameter(d_1, d_2, unit:mm)																				
	10	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	38	40	45	45	55
SJC-55T-□□		●	●	●	●	●	●	●	●	●	●	●	●								
SJC-65T-□□				●	●	●	●	●	●	●	●	●	●	●	●	●	●				
SJC-80T-□□				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
SJC-100T-□□								●	●	●	●	●	●	●	●	●	●	●	●	●	●

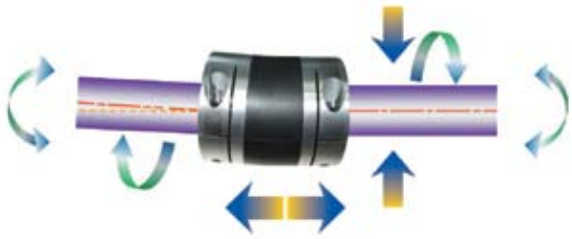
※ h7 shaft tolerance is recommended.

SHR Series

Sungil High Performance Rubber Coupling

'SI. CO' mark(Trademark : 40-2012-0061376) indicates that the authenticity is certified.
'SHR' (Trademark : 40-2012-0044880) is the original trademark for SUNGIL's High performance Rubber Coupling.

Sungil High Performance Rubber coupling is realized by optimized hub and anti-vibration rubber's design. It shows the ideal responsiveness of a servo system by high torsional stiffness and absorbability in vibrations and gain. The hub designed to increased the contact area has distributed the shear stress that applies on the anti vibration rubber. It is the best product which can transmit high torque not attected by any mechanical vibrations.



※ Registration of Patent : 10-1165885

Features

RoHS COMPLIANT REACH The new EU chemicals legislation

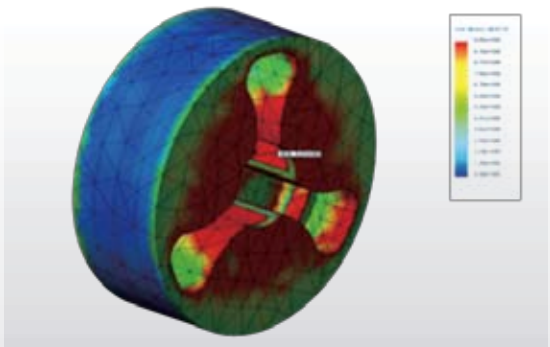
- Excellent vibration absorbability
- Excellent positioning in high gain of servo motor
- Stable in high rotation speed
- CW and CCW rotational characteristics are identical
- Electric insulation
- High torsional stiffness
- High permissible torque

Application

- Servo motor
- Stepping motor
- General-purpose motor
- Precise Position controlling system
- X-Y table drive, Precise measuring instrument
- Index table

Structure & Material

※ Registration of patent : 10-1165885
※ Registration of design : 30-0593190 and its similar design



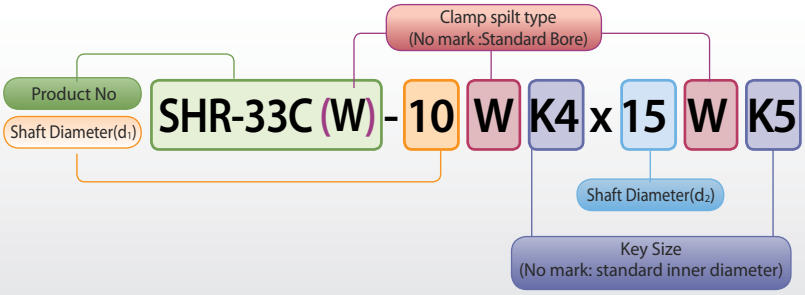
- High torsional stiffness and permissible torque value of SGF is realized by an optimal design of Anti-Vibration rubber with CAE.
- To avoid the stress concentration on the hub's leg which contacts with the rubber medium, we rounded the legs.

Chemical Resistance of HNBR

Aging Resistance, Weather Resistance, Ozone Resistance	◎
Gasoline, Light Oil	○~◎
Water, Organic Acid, Alcohol	◎
Strong, Weak Alkali	◎
Acetic Ethyl, Ether	×~△

◎ : Excellent, ○ : Usable,
△ :Usable under certain conditions, × : Unusable

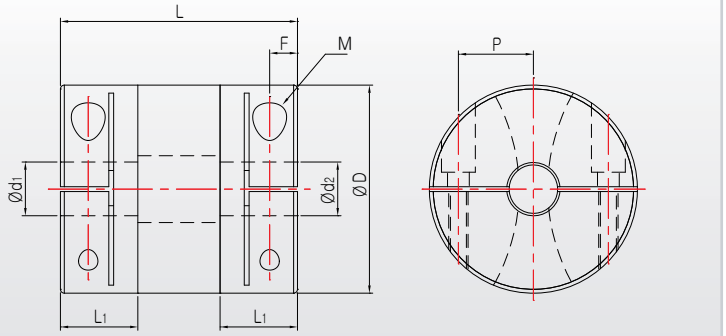
How to order product



※ Please mark each inner diameter size.
※Clamp split hub is also available. (Please mark 'W' right behind the inner bore you want to separate)

Please, download CAD DATA from www.sungilfa.com

SHR- ■ ■ C



Dimensions & Performance

Product Number	Dimension (mm)(±0.3)					Fastening Bolt M	Fastening Torque (N^m)
	D	L	L1	F	P		
SHR-14C	13.8	22.4	6.7	2.05	4.5	M1.6	0.3
SHR-18C	17.8	25.5	7.95	2.65	6.1	M2	0.6
SHR-24C	23.8	31.2	9.6	3.1	8.5	M2.6	1.1
SHR-29C	28.8	35	11	3.7	10.5	M3	1.8
SHR-33C	32.8	37	12	3.8	11.75	M3	1.8
SHR-38C	37.8	47	15.5	4.55	14	M4	3.7
SHR-43C	42.8	48	15.5	4.75	15.5	M4	3.7
SHR-55C	54.8	59	19.5	5.5	19.5	M5	8.5

Product Number	Max Inner Dia (mm)	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		
								Angle (°)	Parallel (mm)	End-Play (mm)
SHR-14C	6	1.0	2.0	42,000	1.6×10^{-7}	41	8	1.5	0.15	±0.2
SHR-18C	8	1.9	3.8	33,000	3.9×10^{-7}	84	12	1.5	0.15	±0.2
SHR-24C	12	3.5	7	25,000	1.5×10^{-6}	162	28	1.5	0.15	±0.2
SHR-29C	15	5.7	11.4	21,000	3.9×10^{-6}	209	50	1.5	0.20	±0.3
SHR-33C	16	7	14	18,000	7.2×10^{-6}	370	70	1.5	0.20	±0.3
SHR-38C	20	12	24	16,000	1.4×10^{-5}	479	112	1.5	0.20	±0.3
SHR-43C	20	16	32	14,000	2.4×10^{-5}	610	140	1.5	0.20	±0.3
SHR-55C	25	31.5	63	11,000	8.6×10^{-5}	1430	310	1.5	0.20	±0.3

SHR Series

Sungil High Performance Rubber Coupling

Standard Inner diameter

Product Number	Stock Bores							
	Standard Inner diameter (d_1,d_2) Standard Inner Diameter(mm)							
SHR-14C	3×4	3×5	4×4	4×5	4×6	4.5×5	5×5	5×6
	6×6							
SHR-18C	4×4	4×5	4×6	5×5	5×6	5×7	5×8	6×6
	6×6.35	6×7	6×8	6.35×8	8×8			
SHR-24C	5×5	5×6	5×8	6×6	6×8	6×10	6×11	6×12
	6.35×8	6.35×10	8×8	8×10	8×11	8×12	10×10	10×12
	12×12							
SHR-29C	6×6	6×8	6×10	8×8	8×10	8×11	8×12	8×14
	8×15	10×10	10×11	10×12	10×14	10×15	11×12	12×12
	12×14	12×15	14×14	14×15	15×15			
SHR-33C	8×8	8×10	8×11	8×12	8×14	8×15	10×10	10×11
	10×12	10×14	10×15	11×11	11 X 12	12×12	12×14	12×15
	14×14	14×15	15×15	16×16				
SHR-38C	8×8	8×10	8×12	10×10	10×12	10×14	10×15	10×16
	12×12	12×14	12×15	12×16	12×19	12×20	14×14	14×15
	14×16	15×15	15×16	15×19	16×16	17×17	20×20	
SHR-43C	10×10	10×12	10×14	12×12	12×14	12×15	12×16	12×19
	14×14	14×15	14×16	14×19	15×15	15×16	15×19	15×20
	16×16	16×19	17×17	19×20	20×20			
SHR-55C	12×12	12×14	14×14	14×15	14×16	15×15	15×19	15×20
	15×25	19×20	19×24	20×20	20×25	24×25	25×25	

- Hexagonal socket headed bolts are included in every product
- We recommend h7 for shaft tolerance.
- Non-standard inner diameter or keyway is available
- Please contact us for nonstandard inner diameter before ordering Slip Torque
- About each inner diameter size, sometimes slip torque can be smaller than max torque.
- Please contact us about detail information.

Correction factor according to Temperature

Ambient temperature	-20℃ ~ 30℃	30℃ ~ 40℃	40℃ ~ 60℃	60℃ ~ 80℃
Correction factor	1	0.8	0.7	0.55

- No correction is needed for rated torque and maximum torque under load fluctuation.
- When the ambient temperature exceeds 30℃, you need to correct the rated and maximum torque by using the correction factor in the table above.
- Operational temperature is from-20℃ to 80℃.

Connecting Shaft

Sungil Connecting Shaft

Features

1. Have largest kinds of products domestically : Jaw coupling type, disk coupling type
2. Middle shaft has perfect straightness and concentricity
3. Realized low mass and low moment of inertia by using high stiffness aluminum alloy
4. Can be used with various kinds of fastening methods
5. Excellent in balancing performance
6. Increased convenience of long-distance connection and reduced cost

Use

- Pump system
- Gantry system
- Linear module
- Screw Jack system
- Lifting, printing machine
- Machine tool and special use machine

How to install

1. Line up each axis which has to be connected
   - Misalignment(eccentricity, angular misalignment, end-play) over tolerance between both end axis can shorten connecting shaft's lifetime and cause severe vibration and noise.
   - Check each connecting shaft's model number and its misalignment tolerance
   - If you have any difficulties with axis line-up, contact Sungil Machinery Co., Ltd.

2. Install connecting shaft.
   - Remove foreign substances on each axis and inner diameter of hub.
   - Fasten the fastening bolts with torque wrench.

SJCL Series

Sungil Jaw Coupling Long Type

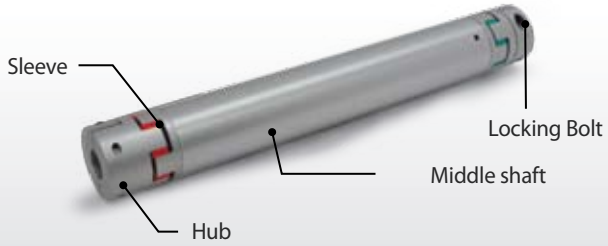
'SI. CO' mark(trademark application : 40-2012-0061376) indicates Sungil's orginal product certified with authenticity.
'SJC' (trademark application : 40-2012-0044881) is the trademark of Sungil's JAW coupling.

RoHS COMPLIANT REACH The new EU chemicals legislation

Characteristics

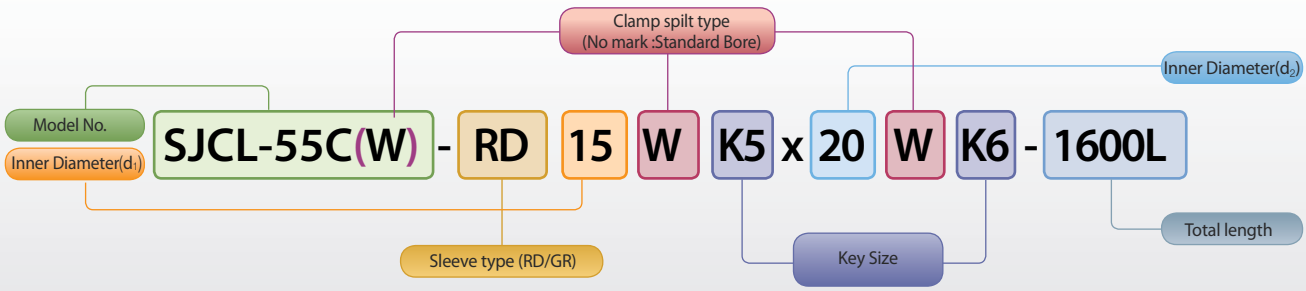
- Transmits high torque
- High precision concentricity and straightness
- Perfect balancing due to manufacturing a hole inside hubs
- Split coupling hub is available
- Easy to assemble and disassemble
- Low moment of inertia due to aluminum alloy material
- 2 type sleeves(GR-55D, RD-64D) can be used
- Absorbs vibration
- Zero backlash

Structure and Material



Parts	Raw Material	Surface Treatment
Hub	High stiffness aluminum alloy	Alumite
Outer Ring	GR (Hytrel, Sh 98A)	-
	RD (Hytrel, Sh 64D)	
Middle shaft	High stiffness aluminum alloy	Alumite
Bolt	SCM 435 (SUS Bolt is also available)	-

How to order product



※ Contact us for longer length than given max. length(2000mm).

※ Specify each bore diameter and sleeve type when ordering.

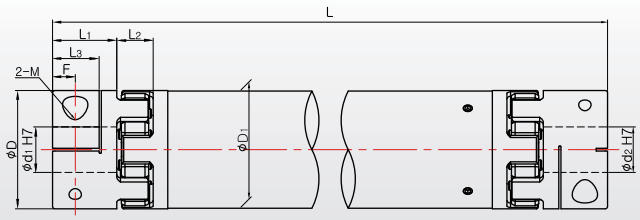
※Clamp split hub is also available. (Please mark 'W' right behind the inner bore you want to separate)

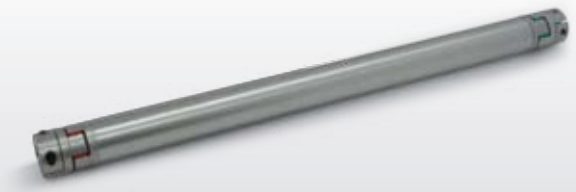
※ Contact us for Set-Screw type.

SJCL Series

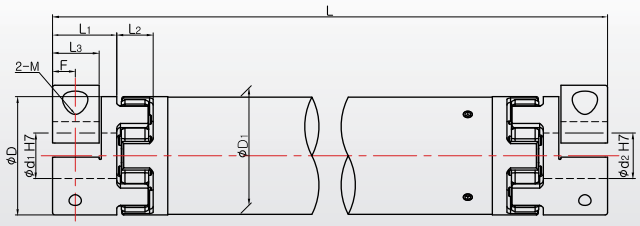
Sungil Jaw Coupling Long Type

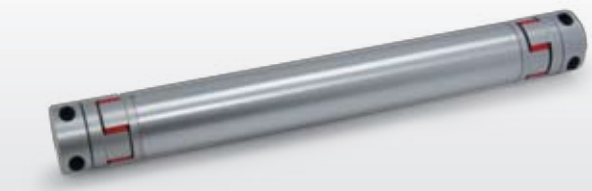
SJC ■ L- ■ ■ C





SJC ■ L- ■ ■ CW [SPLIT HUB TYPE]





Dimension and performance

Model	Dimension [mm](±0.3)						Clamping Bolt		length(L)		Rated Torque [N · m]	Max Torque [N · m]	Max Rot. Speed [rpm]	Torsional Stiffness [N · m/rad]		Mass Moment of Inertia		Allowable Misalignment		
	D	D_1	L_1	L_2	L_3	F	Size	Tightening Torque [N · m]	Min	Max				Coupling	Pipe per m	Coupling [kg · ㎡]	Pipe per m [kg · ㎡]	Parallel [mm/m]	Angular [deg]	End-play [mm]
SJCBL-30□□- GR	30	29.5	15.8	12.4	11.1	5.4	M4	3.5	95	2,000	10	20	1,500	180	1,380	7.5×10^{-6}	1.58×10^{-4}	5	2	± 1.0
SJCBL-40□□- GR	40	39.5	25	16	16.5	8.4	M5	8	130	2,000	16	32	1,500	1,200	3,800	3.9×10^{-5}	4.31×10^{-4}	5	2	± 1.0
SJCL-55□□- GR	55	54.5	30.3	18	21	10.5	M6	13	175	2,000	45	90	1,500	2,500	11,150	1.6×10^{-4}	1.25×10^{-3}	5	2	± 1.0
SJCL-65□□- GR	65	64.5	35.3	20	25.6	12.45	M8	30	200	2,000	120	240	1,500	4,000	19,310	3.8×10^{-4}	2.16×10^{-3}	5	2	± 1.0
SJCL-80□□- GR	80	79.5	45.2	24	30.2	14.7	M10	30	245	2,000	240	480	1,500	10,000	37,840	1.0×10^{-3}	4.22×10^{-3}	5	2	± 1.0
SJCBL-30□□- RD	30	29.5	15.8	12.4	11.1	5.4	M4	3.5	95	2,000	14	28	1,500	220	1,380	7.5×10^{-6}	1.58×10^{-4}	5	2	± 1.0
SJCBL-40□□- RD	40	39.5	25	16	16.5	8.4	M5	8	130	2,000	18	36	1,500	2,000	3,800	3.9×10^{-5}	4.31×10^{-4}	5	2	± 1.0
SJCL-55□□- RD	55	54.5	30.3	18	21	10.5	M6	13	175	2,000	60	120	1,500	4,000	11,150	1.6×10^{-4}	1.25×10^{-3}	5	2	± 1.0
SJCL-65□□- RD	65	64.5	35.3	20	25.6	12.45	M8	30	200	2,000	180	360	1,500	8,000	19,310	3.8×10^{-4}	2.16×10^{-3}	5	2	± 1.0
SJCL-80□□- RD	80	79.5	45.2	24	30.2	14.7	M10	30	245	2,000	320	640	1,500	20,000	37,840	1.0×10^{-3}	4.22×10^{-3}	5	2	± 1.0

※ Torque transmission ability and torsional stiffness are different depending on sleeve type(GR/RD)

Standard inner diameter

Model	Inner diameter (d_1, d_2) [mm]																						
	7	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	40	45	50	55
SJCBL-30□□ -□□	●	●	●	●	●	●	●																	
SJCBL-40□□ -□□		●	●	●	●	●	●	●	●	●														
SJCL-55□□ -□□						●	●	●	●	●	●	●	●	●	●	●	●							
SJCL-65□□ -□□								●	●	●	●	●	●	●	●	●	●	●	●	●				
SJCL-80□□ -□□												●	●	●	●	●	●	●	●	●	●	●		

※ Non standard inner bore size is also available. ※ Keyway is available. ※ h7 shaft Tolerance is recommended

SJCTL Series

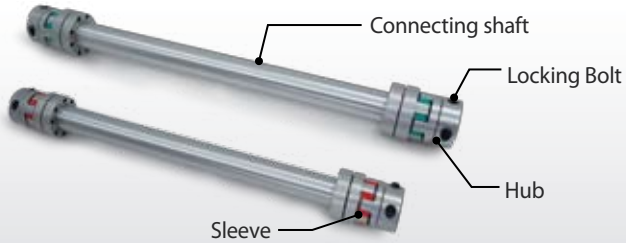
Sungil Jaw Coupling Long Type (Standard)

'SI. CO' mark(trademark application : 40-2012-0061376) indicates Sungil's orginal product certified with authenticity.
'SJC' (trademark application : 40-2012-0044881) is the trademark of Sungil's JAW coupling.

Characteristics

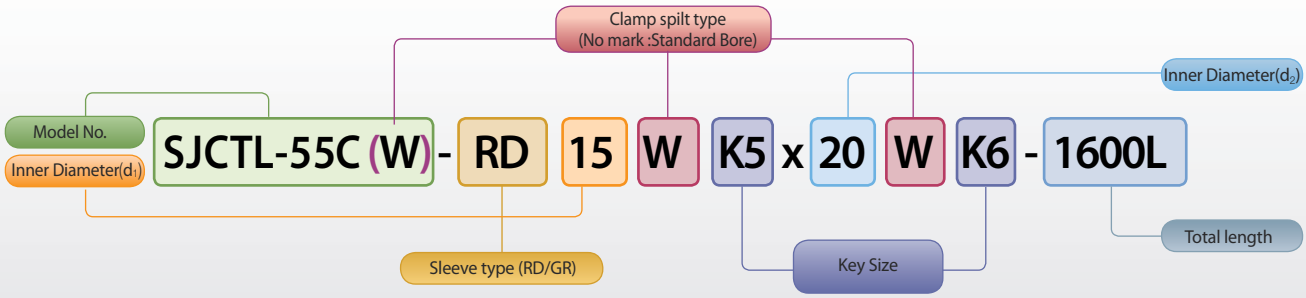
- For normal torque tranmission
- Perfect concentricity due to powerlock
- Perfect balancing due to manufacturing a hole inside hub
- Split coupling hub is available
- Easy Installation
- Low moment of inertia due to aluminum alloy material
- 2 types of sleeves(GR- Sh 55D, RD-Sh 64D) can be used
- Absorbs vibration
- Zero backlash
- For this type, contact us

Structure and Material



Parts	Raw Material	Surface Treatment
Hub	High stiffness aluminum alloy	Alumite
Outer Ring	GR (Hytrel, Sh 98A)	-
	RD (Hytrel, Sh 64D)	
Middle shaft	High stiffness aluminum alloy	Alumite
Bolt	SCM 435 (SUS Bolt is also available)	-

How to order product



※ When you need a longer length than the given maximum length.

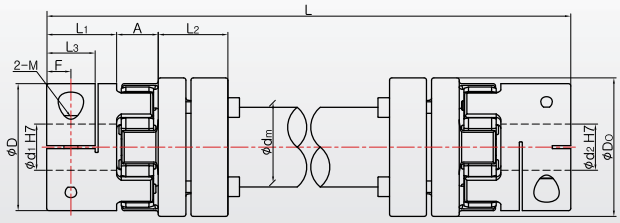
※ Decide each bore diameter and sleeve type when ordering.

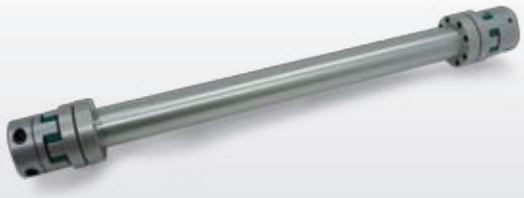
※ Clamp split hub is also available. (Please mark 'W' right behind the inner bore you want to separate)

SJCTL Series

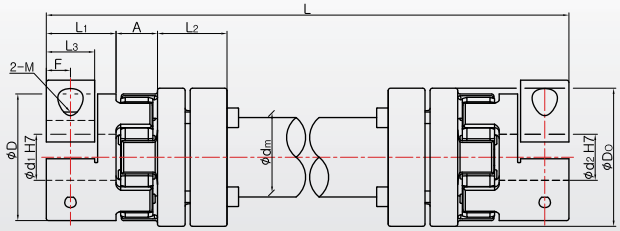
Sungil Jaw Coupling Long Type (Standard)

SJCTL-□□C





SJCTL-□□CW [SPLIT HUB TYPE]



Dimension and performance

Model	Dimension [mm](±0.3)								Clamping Bolt		length(L)		Allowable torque [N · m]	max rotarional speed [rpm]	Torsional stiffness [N · m/rad]		Moment of inertia[kg · m²]		Allowable Misalignment		
	D	Do	dm	L1	L2	L3	A	F	Size	Tightening Torque [N · m]	Min	Max			coupling	Pipe per m	coupling [kg · m²]	Pipe per m [kg · m²]	Parallel [mm/m]	Angular [deg]	End-play [mm]
SJCTL-55□□-GR	55	60	34.5	30.3	30.2	21	18	10.5	M6	13	220	2,000	128	1,500	2,500	2,540	1.6×10^{-4}	2.66×10^{-4}	5	2	± 1.0
SJCTL-65□□-GR	65	72	44.5	35.3	35.5	25.6	20	12.45	M8	30	250	2,000	243	1,500	4,000	6,100	3.8×10^{-4}	6.39×10^{-4}	5	2	± 1.0
SJCTL-80□□-GR	80	90	54.5	45.2	45	30.2	24	14.7	M10	30	290	2,000	398	1,500	10,000	12,000	1.0×10^{-3}	1.26×10^{-3}	5	2	± 1.0
SJCTL-55□□-RD	55	60	34.5	30.3	30.2	21	18	10.5	M6	13	220	2,000	128	1,500	4,000	2,540	1.6×10^{-4}	2.66×10^{-4}	5	2	± 1.0
SJCTL-65□□-RD	65	72	44.5	35.3	35.5	25.6	20	12.45	M8	30	250	2,000	243	1,500	8,000	6,100	3.8×10^{-4}	6.39×10^{-4}	5	2	± 1.0
SJCTL-80□□-RD	80	90	54.5	45.2	45	30.2	24	14.7	M10	30	290	2,000	398	1,500	20,000	12,000	1.0×10^{-3}	1.26×10^{-3}	5	2	± 1.0

※Torque transmission ability and torsional stiffness are different depending on sleeve type(GR/RD)

Standard inner diameter

Model	Inner diameter (d_1, d_2) [mm]																							
	7	8	9.525	10	11	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	40	45	50	55
SJCTL-55□□-□□						●	●	●	●	●	●	●	●	●	●	●	●							
SJCTL-65□□-□□								●	●	●	●	●	●	●	●	●	●	●	●	●				
SJCTL-80□□-□□												●	●	●	●	●	●	●	●	●	●	●		

※ Non standard inner bore size is also available. ※Keyway is available. ※ h7 shaft Tolerance is recommended

SHDL series

Sungil High Torque Flexible Disk Coupling Long Type

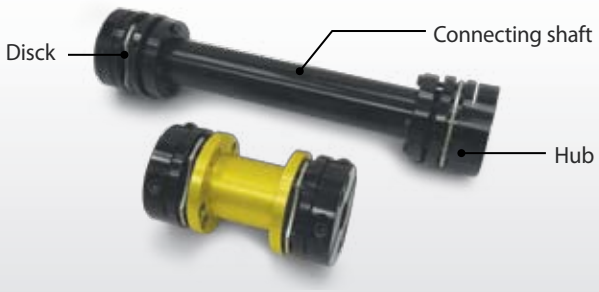
'SI. CO' mark(trademark application : 40-2012-0061376) indicates Sungil's orginal product certified with authenticity.
'SHD' (trademark : 40-2012-0044879) is the trademark of Sungil's high performance disk coupling.

RoHS COMPLIANT REACH The new EU chemicals legislation

Characteristics

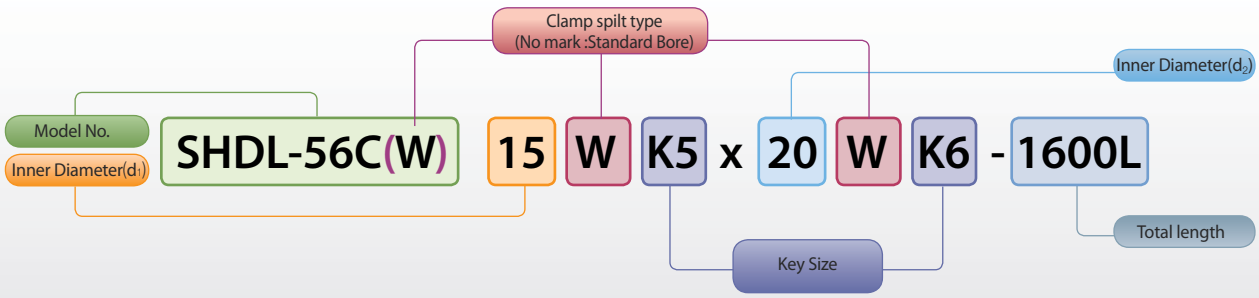
- Improved durability
- Perfect concentricity
- Split or taper coupling hub is available
- Easy assembly and disassembly
- Low moment of inertia due to aluminum alloy material
- Zero backlash, High torsional stiffness

Structure and Material



Parts	Raw Material	Surface Treatment
Hub	High stiffness aluminum alloy	Alumite
Outer Ring	Stainless steel	-
Middle shaft	High stiffness aluminum alloy	Alumite
Bolt	SCM 435 (SUS bolt is also available)	-

How to order product



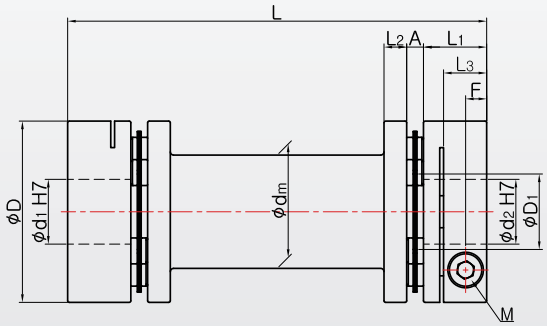
※Contact us for longer length than given max. length(2000mm).
※Split coupling hub is also available
(Ex. SHDL-56CW - 5WK5 x 20K6 – 1600L : one-side split hub)
(Ex. SHDL-56CW – 5WK5 x 20WK6 – 1600L : both-side split hub)
※Please mark 'W' right behind the inner bore you want to separate

※Decide each shaft diameter type when ordering.

SHDL series

Sungil High Torque Flexible Disk Coupling Long Type

SHDL-■■C



One-piece type

Shaft insertion type

※Contact us for split coupling hub

※There are one-piece middle shaft type and shaft-insertion type with difference in total length(L).
Confirm the max total length on the dimension and performance table below

Dimension and Performance

Model (One-piece type)	Dimension [mm]							Fastening bolt		Length(L)		Rated torque [N · m]	Max Rotational Speed [rpm]	Torsional stiffness [N · m/rad]		Allowable Misalignment		
	D	dm	L_1	L_2	L_3	A	F	bolt	Fastening torque [N · m]	Min	Max			Coupling	Pipe per m	Parallel [mm/m]	Angular [deg]	End-play [mm]
SHDL-56C	56	35	19.5	6	13.3	5.2	6.5	M6	13	80	250	20	1,500	2.0×10^4	1.6×10^4	0.5	1.4	± 1.2
SHDL-66C	66	41	24.5	8	15.5	7.5	7.5	M6	13	100	300	50	1,500	3.0×10^4	2.9×10^4	0.5	1.4	± 1.6
SHDL-88C	88	55	30	10	19	9.6	9.9	M8	30	120	330	120	1,500	7.0×10^4	6.0×10^4	0.5	1.4	± 2.0

Model (Shaft insertion type)	Dimension [mm]							Fastening bolt		Length(L)		Rated torque [N · m]	max Rotational Speed [rpm]	Torsional stiffness [N · m/rad]		Moment of inertia [kg · ㎡]		Allowable Misalignment		
	D	dm	L_1	L_2	L_3	A	F	bolt	Fastening torque [N · m]	Min	Max			Coupling	Pipe per m	Coupling	Pipe per m	Parallel [mm/m]	Angular [deg]	End-play [mm]
SHDL-56C	56	44.5	19.5	20	13.3	5.2	6.5	M6	13	250	2000	20	1,500	2.0×10^4	6,000	3.8×10^{-5}	1.53×10^{-4}	0.5	1.4	± 1.2
SHDL-66C	66	49.5	24.5	25	15.5	7.5	7.5	M6	13	300	2000	50	1,500	3.0×10^4	8,000	9.3×10^{-5}	2.72×10^{-4}	0.5	1.4	± 1.6
SHDL-88C	88	64.5	30	30	19	9.6	9.9	M8	30	330	2000	120	1,500	7.0×10^4	20,000	3.8×10^{-4}	8.50×10^{-4}	0.5	1.4	± 2.0

Standard inner diameter

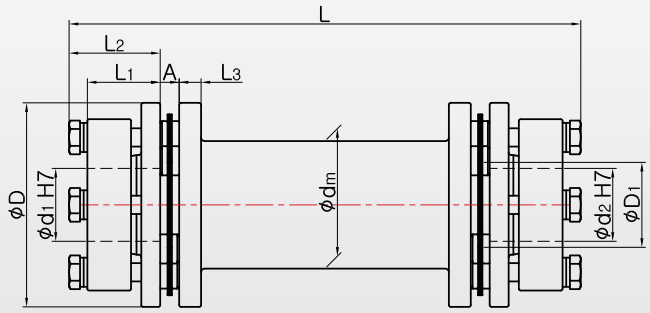
Model	Inner diameter (d_1, d_2) [mm]																								
	10	11	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	38	40	42	45	50	55	50	55
SHDL-56C	●	●	●	●	●	●	●	●	●	●	●	●													
SHDL-66C					●	●	●	●	●	●	●	●	●	●	●	●									
SHDL-88C									●	●	●	●	●	●	●	●	●	●	●	●	●				

※ Non standard inner bore size is also available. ※ Keyway is available. ※h7 shaft Tolerance is recommended

SHDL series

Sungil High Torque Flexible Disk Coupling Long Type

SHDL- ■ ■ T



One-piece type

Shaft insertion type

※There are one-piece middle shaft type and shaft-insertional type with difference in total length(L).
Confirm the max total length on the dimension and performance table below.

Dimension and Performance

Model (One-piece type)	Dimension [mm]						Fastening bolt		Length(L)		Rated torque [N · m]	Max Rotational Speed [rpm]	Torsional stiffness [N · m/rad]		Allowable Misalignment		
	D	dm	L_1	L_2	L_3	A	bolt	Fastening torque [N · m]	Min	Max			Coupling	Pipe per m	Parallel [mm/m]	Angular [deg]	End-play [mm]
SHDL-56T	56	35	20	25	6	5.2	M5	8	90	250	20	1,500	2.0×10^4	1.6×10^4	0.5	1.4	± 1.2
SHDL-66T	66	41	25	30.5	8	7.5	M6	16	110	300	50	1,500	3.0×10^4	2.9×10^4	0.5	1.4	± 1.6
SHDL-88T	88	55	30	35.5	10	9.6	M6	16	130	330	120	1,500	7.0×10^4	6.0×10^4	0.5	1.4	± 2.0

Model (Shaft insertion type)	Dimension [mm]						Fastening bolt		Length(L)		Rated torque [N · m]	max Rotational Speed [rpm]	Torsional stiffness [N · m/rad]		Moment of inertia [kg · ㎡]		Allowable Misalignment		
	D	dm	L_1	L_2	L_3	A	bolt	Fastening torque [N · m]	Min	Max			Coupling	Pipe per m	Coupling	Pipe per m	Parallel [mm/m]	Angular [deg]	End-play [mm]
SHDL-56T	56	44.5	20	25	20	5.2	M5	8	250	2,000	20	1,500	2.0×10^4	6,000	3.6×10^{-5}	1.53×10^{-4}	0.5	1.4	± 1.2
SHDL-66T	66	49.5	25	30.5	25	7.5	M6	16	300	2,000	50	1,500	3.0×10^4	8,000	8.6×10^{-5}	2.72×10^{-4}	0.5	1.4	± 1.6
SHDL-88T	88	64.5	30	35.5	30	9.6	M6	16	330	2,000	120	1,500	7.0×10^4	20,000	3.2×10^{-4}	8.50×10^{-4}	0.5	1.4	± 2.0

Standard inner diameter

Model	Inner diameter (d_1, d_2) [mm]																						
	10	11	12	14	15	16	18	19	20	22	24	25	26	28	30	32	35	38	40	42	45	50	55
SHDL-56T	●	●	●	●	●	●	●	●	●	●	●	●											
SHDL-66T					●	●	●	●	●	●	●	●	●	●	●	●							
SHDL-88T									●	●	●	●	●	●	●	●	●	●	●	●	●		

※h7 shaft Tolerance is recommended

Support Units

Sungil Support Units

EK, EF Type Support Units

BK, BF Type Support Units

AK, AF Type Support Units

FK, FF Type Support Units

Characteristics of SI Support Units

The Support Units of SI Machinery are standardized in order to firmly support and fasten a ball screw for transmitting linear motion very precisely.

RoHS COMPLIANT REACH The new EU chemicals legislation

Features

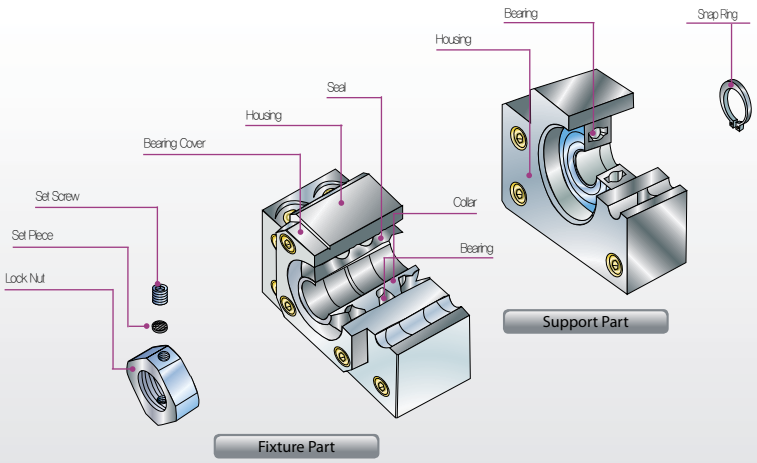
Simplicity of Design and Assembly
The design is very effective for use due to its standardization. Rigid angular contact bearings in a fixed part are combined with an optimized pre-load, so it can improve precision of liner motion of a ball screw easily without additional assembly or operation. Moreover, the standardized product ensures superior compatibility.

High Precision
Angular contact ball bearings in the fixed parts are precisely assembled in face-to-face combination. Because it is designed in a structure to absorb the parallel error between shaft and guide, it has minimized the effect of assembly error and can maintain precise concentricity of the shaft.

Dust-Proof Effect
The support unit is framed with oil seal to prevent the influx of fine dusts or foreign substances and thus enhances operation precision. Furthermore, it allows longtime use as grease leakage is prevented by minimizing the tolerance between the oil seal and the rotation shaft.

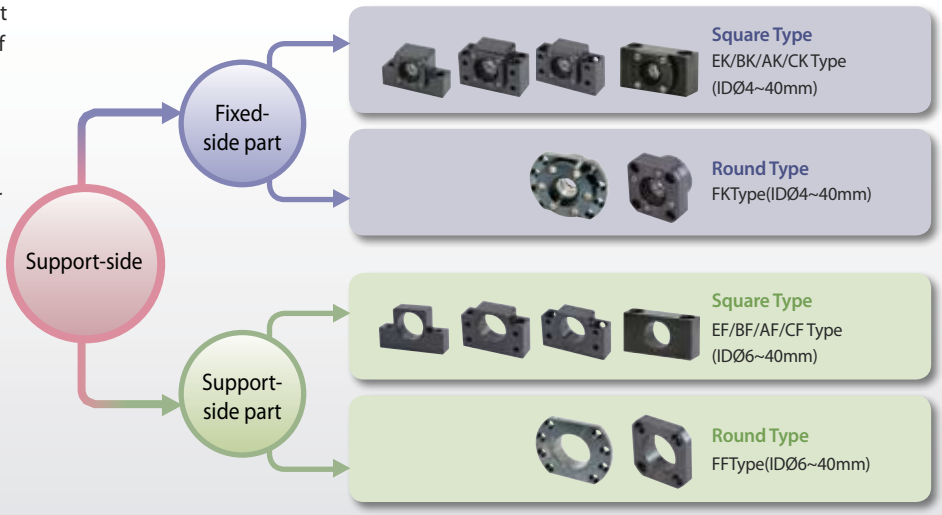
Structure

In the fixed part of support unit, highly rigid angular contact ball bearings are assembled in face-to-face combination, which is appropriate to the dynamic characteristic of the rotational shaft or screw. In addition, it can achieve highly accurate rotational or linear motion due to precisely controlled pre-load in assembly process. The angular contact bearings are filled with the appropriate volume of high quality grease, and Oil seal is framed in the fixed part to prevent fine dusts and the grease from leaking. Deep groove ball bearing is used for the simple support part of support unit.



Shape and Classification

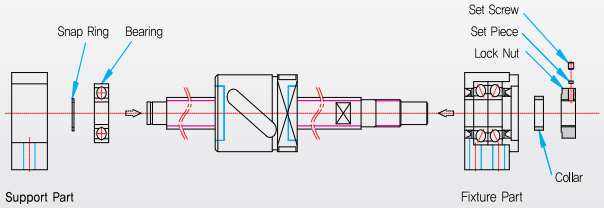
There are 2 different types of support units for installation and condition of use.
One is the square type that fixes the unit on base surface and another is the round type to fix in a hole.
Depending on the position of power transmission shaft, the fixed-side(motor) support unit and support-side support unit can be selected.



Mounting Procedure

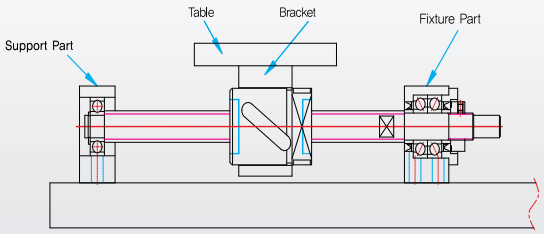
1. Installing the Support Unit

1) Connect the fixed-side part with ball screw shaft
 - Do not disassemble the support unit as its preload has already been adjusted
 - Take care not to let the oil seal lip turn outward when ball screw is inserted into the unit.
2) After inserting the ball screw into the unit, put the collar and secure the locknut by fastening the set piece and setscrew
 - Adhesive can be used to prevent the locknut from being loosened.
3) Mount the nut bracket on ball screw.
4) After connecting the ball bearing for supportive part to the ball screw shaft, fix the snap ring and mount the bearing onto the housing.



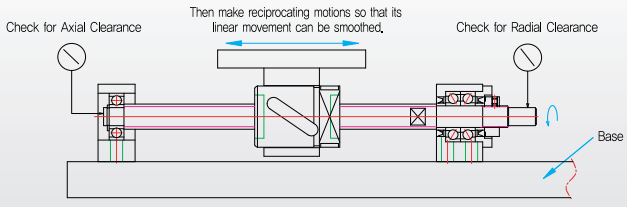
2. Installation onto Table and Base

1) Fasten a table with the nut bracket of ball screw.
2) Pre-assemble the fixed-side support unit with base as designed
 - If using the fixed side Support Unit as the reference point, provide a clearance between the ball screw nut and the table or inside the bracket when making adjustment.
 - If using the table as the reference point, make the adjustment either by using the shim (for a square type Support Unit), or providing the clearance between the outer surface of the nut and the inner surface of the mounting section (for a round type Support Unit)
3) Assemble the housing of support-side support unit with ball screw and then pre-assemble the unit with base as designed.



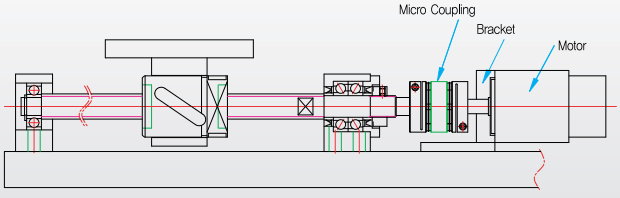
3. Checking the accuracy and Fully Mounting the Support Unit

1) Move the table assembled to the ball screw toward the center of the shaft in order to make it concentric. Make back-and-forth motion so that its linear movement can be smooth.
2) Measure the axial clearance of the shaft and the rou-out at the end of the shaft of the ball screw with a dial gauge. Fully fasten in the order of nut bracket and table, the fixed-side unit, and then the support-side unit.



4. Connection with Motor

1) Precisely connect the bracket installed on the motor to the base by matching it to the shaft center of the ball screw.
2) Connect the motor and the ball screw by using a SUNGIL coupling
 - Careful attention is necessary during assembly as the assembly condition of the motor bracket and the coupling affects the positioning of table.
3) Check the precision of the shaft center by conducting enough test operation while driving the motor at slow speed.

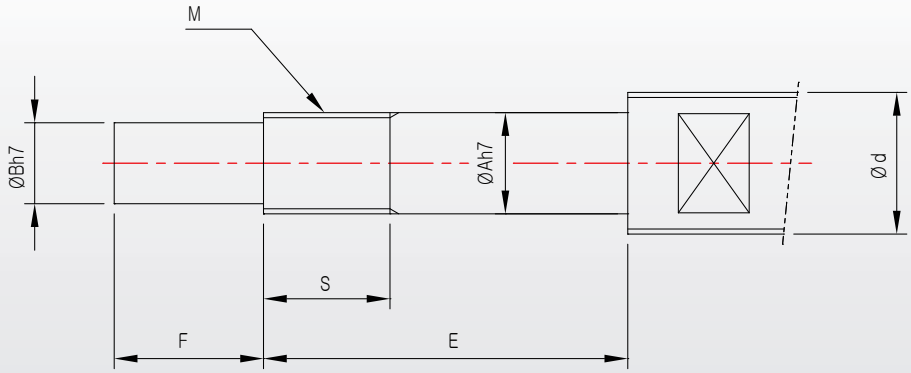


Characteristics of SI Support Units

Please, download CAD DATA from www.sungilfa.com

Recommendable Shape of the Shaft End(Fixed-Side)

Application of Support Unit EK, BK, AK, FK Type



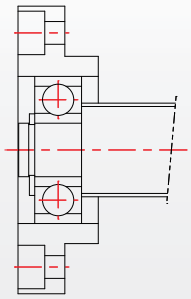
Unit : mm

Model No.																				Outer Diameter of Ball Screw	Inner Diameter of Bearing	Dimension	Metric Screw
AK	Dimension			BK	Dimension			CK	Dimension			EK	Dimension			FK	Dimension			d	A	B	M
	E	F	S		E	F	S		E	F	S		E	F	S		E	F	S				
-	-	-	-	-	-	-	-	-	-	-	-	4	23	5	8	4	23	5	8	6	4	3	M4×0.5
-	-	-	-	-	-	-	-	-	-	-	-	5	25	6	8	5	25	6	8	8	5	4	M5×0.5
-	-	-	-	6	30	8	8	-	-	-	-	6	30	8	8	6	30	8	8	8	6	4	M6×0.75
-	-	-	-	8	35	9	10	8	35	9	10	8	35	9	10	8	35	9	10	12	8	6	M8×1/0.75
10	36	15	16	10	39	15	16	10	38	15	11	10	36	15	11	10	36	15	11	14/15	10	8	M10×1/0.75
12	36	15	14	12	39	15	14	12	38	15	11	12	36	15	11	12	36	15	11	16/18	12	10	M12×1
15	49	20	12	15	40	20	12	15	50	20	23	15	49	20	13	15	49	20	13	20/25	15	12	M15×1
-	-	-	-	17	53	23	17	-	-	-	-	-	57	27	14	17	57	27	14	25	17	15	M17×1
20	64	25	16	20	53	25	16	-	-	-	-	20	64	25	17	20	64	25	17	28/30/32	20	17	M20×1
-	-	-	-	25	65	30	19	-	-	-	-	25	76	30	20	25	76	30	20	36	25	20	M25×1.5
-	-	-	-	30	72	38	25	-	-	-	-	-		38	25	30	72	38	25	40	30	25	M30×1.5
-	-	-	-	35	83	45	28	-	-	-	-	-		45	28	35	83	45	28	45	35	30	M35×1.5
-	-	-	-	40	98	50	35	-	-	-	-	-		50	35	40	98	50	35	50/55	40	35	M40×1.5

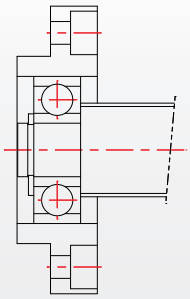
Recommendable Shape of the Shaft End(Support-side)

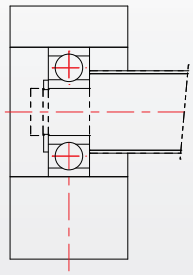
Application of Support Unit EF, BF, AF, FF Type

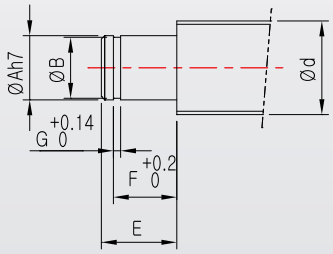
FF Type



AF Type / EF Type / BF Type







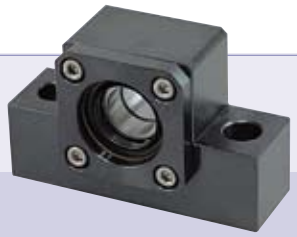
Unit : mm

Model No.				Outer Diameter of Ball Screw	Inner Diameter of Bearing		Snap Ring Dimension		
AF	FF	EF	BF	d	A	E	B	F	G
-	FF6	EF6	BF6	8	6	9	5.6	6.9	0.9
AF8	FF8	EF8	BF8	12	6	9	5.6	6.9	0.9
AF10	FF10	EF10	BF10	14	8	10	7.6	7.9	0.9
AF10	FF10	EF10	BF10	15	8	10	7.6	7.9	0.9
AF12	FF12	EF12	BF12	16	10	11	9.6	9.15	1.15
AF12	FF12	EF12	BF12	18	10	11	9.6	9.15	1.15
AF15	FF15	EF15	BF15	20	15	13	14.3	10.15	1.15
AF15	FF15	EF15	BF15	25	15	13	14.3	10.15	1.15
-	FF17	-	BF17	25	17	16	16.2	13.15	1.15
AF20	FF20	EF20	BF20	28	20	19(16)	19	15.35(13.35)	1.35
-	FF20	EF20	BF20	30	20	19(16)	19	15.35(13.35)	1.35
-	FF20	EF20	BF20	32	20	19(16)	19	15.35(13.35)	1.35
-	FF25	-	BF25	36	25	20	23.9	16.35	1.35
-	FF30	-	BF30	40	30	21	28.6	17.75	1.75
-	-	-	BF35	45	35	22	33	18.75	1.75
-	-	-	BF40	50	40	23	38	19.95	1.95
-	-	-	BF40	55	40	23	38	19.95	1.95

※ The numbers in parenthesis indicate dimensions of BF 20.

EK Type Support Unit

Square Type for Support



RoHS COMPLIANT REACH The new EU chemicals legislation

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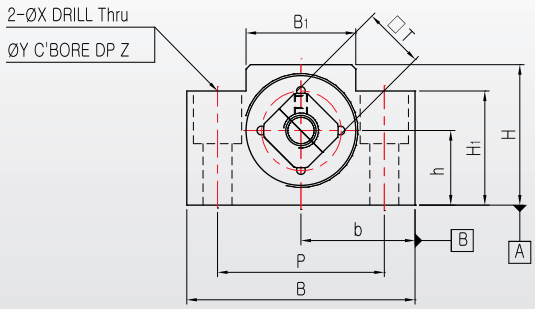
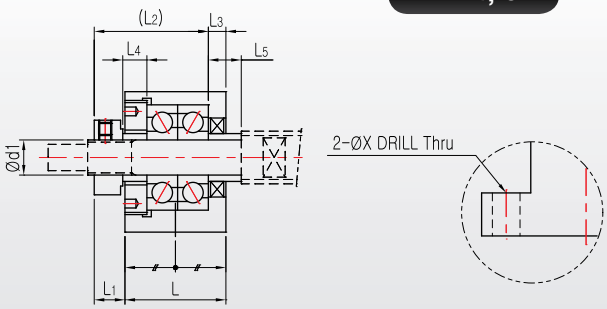
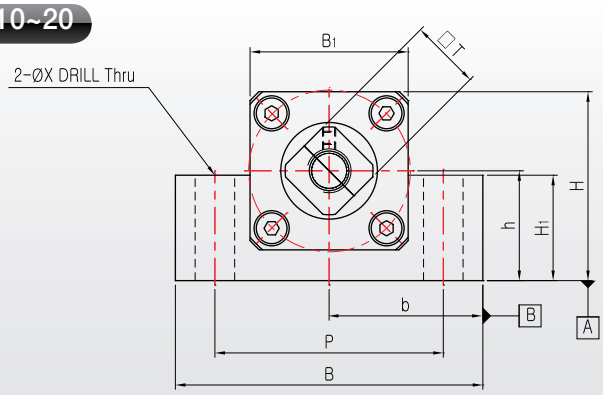
EK 6~8

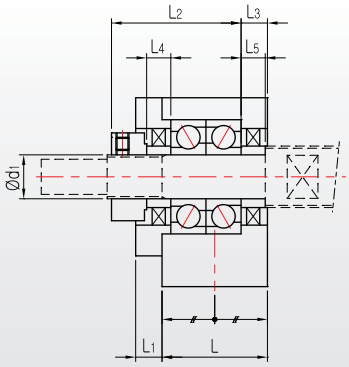


EK 4, 5



EK 10~20

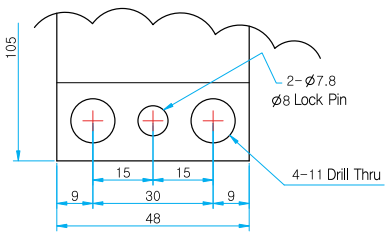




Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Radial ball bearing is in EK-4 and EK-5 and it is suitable for use on portions it where axial load is small.
5. Please refer to page 73 about bearing type and characteristic according to Support Unit grade
6. Please refer to page 80 for fastening torque of the lock nut.

EK 25 Reference

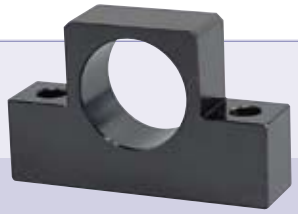


Unit : mm

Model No.	d1	L	L1	L2	L3	B	H	b±0.02	h±0.02	B1	H1	P	X	Y	Z	Collar Size L4	Collar Size L5	□T	Mass (g)
EK4	4	15	5.5	18.5	2	34	19	17	10	18	7	26	4.5	-	-	3.5	3.5	10	50
EK5	5	16.5	6.5	19.5	3.5	36	21	18	11	20	8	28	4.5	-	-	4.5	4.5	11	68
EK6	6	20	5.5	22	3.5	42	25	21	13	18	20	30	5.5	9.5	11	5	7	12	120
EK8	8	23	7	26	4	52	32	26	17	25	26	38	6.6	11	12	5.5	7.5	14	230
EK10	10	24	6	29.5	6	70	43	35	25	36	24	52	9	-	-	5.5	5.5	16	430
EK12	12	24	6	29.5	6	70	43	35	25	36	24	52	9	-	-	5.5	5.5	19	420
EK15	15	25	6	36	5	80	50	40	30	41	25	60	11	-	-	10	10	22	530
EK20	20	42	10	50	10	95	58	47.5	30	56	25	75	11	-	-	11	11	30	1310
EK25	25	48	13	59	14	105	68	52.5	35	66	25	85	⟨Refer to Drawing⟩			14	14	35	1950

EF Type Support Unit

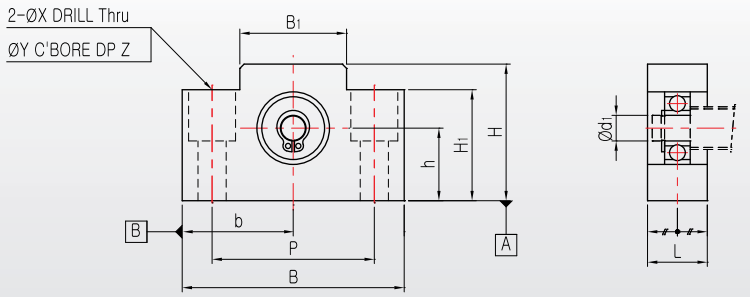
Square Type for Support



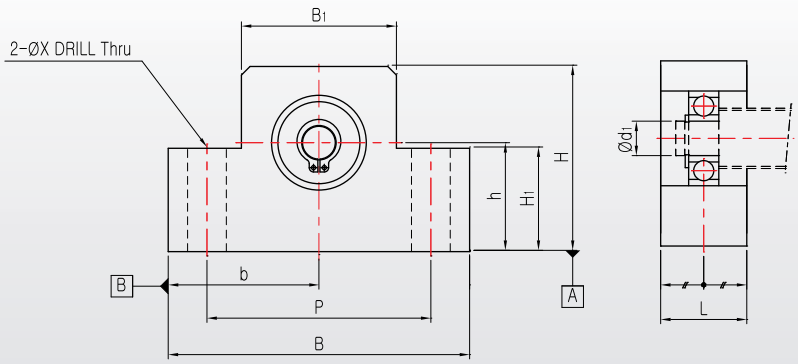
RoHS COMPLIANT REACH The new EU chemicals legislation

Please, download CAD DATA from www.sungilfa.com

EF 6 ~ 8



EF 10 ~ 25



Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.

Unit : mm

Model No.	d1	L	B	H	b±0.02	h±0.02	B1	H1	P	X	Y	Z	Mass (g)	Bearing	Snap Ring
EF6	6	12	42	25	21	13	18	20	30	5.5	9.5	11	60	606ZZ	C6
EF8	6	14	52	32	26	17	25	26	38	6.6	11	12	120	606ZZ	C6
EF10	8	20	70	43	35	25	36	24	52	9	-	-	300	608ZZ	C8
EF12	10	20	70	43	35	25	36	24	52	9	-	-	280	6000ZZ	C10
EF15	15	20	80	50	40	30	41	25	60	9	-	-	320	6002ZZ	C15
EF20	20	26	95	58	47.5	30	56	25	75	11	-	-	570	6204ZZ	C20
EF25	25	30	105	68	52.5	35	66	25	85	11	-	-	880	6205ZZ	C25

BK Type Support Unit

Square Type for Fixture

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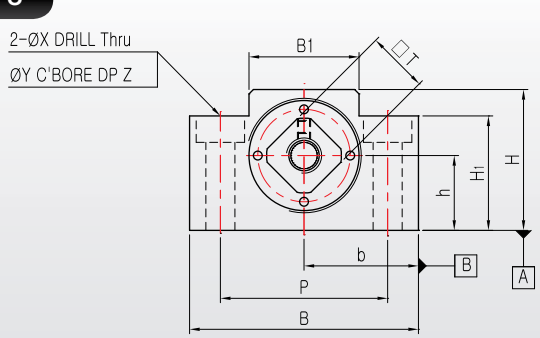
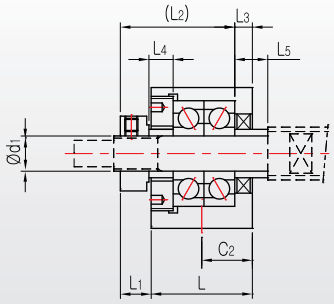
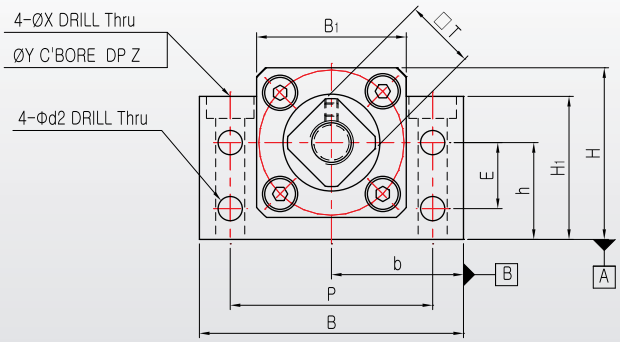
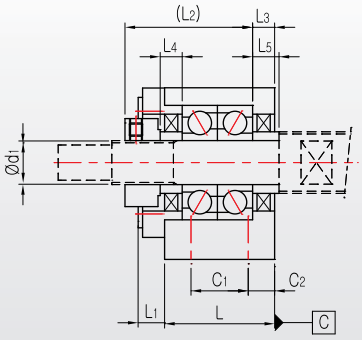
BK 6 ~ 8





BK10~ 40





Note

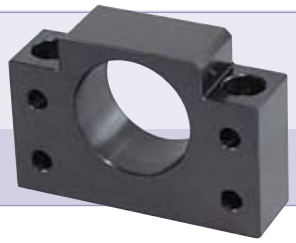
1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Please refer to page 74 about bearing type and characteristic according to Support Unit grade
5. Please refer to page 80 for fastening torque of the lock nut.

Unit : mm

Model No.	d_1	L	L_1	L_2	L_3	B	H	b±0.02	h±0.02	B_1	H_1	E	P	C_1	C_2	d_2	X	Y	Z	Collar Size L_4	Collar Size L_5	□T	Mass (g)
BK6	6	23	5	24	4	52	32	26	17	25	26	-	38	-	11.5	-	6.6	11	6	5	5	12	230
BK8	8	23	7	26	4	52	32	26	17	25	26	-	38	-	11.5	-	6.6	11	6	5.5	7.5	14	230
BK10	10	25	5	29	5	60	39	30	22	34	32.5	15	46	13	6	5.5	6.6	10.8	5	5	5	16	360
BK12	12	25	5	29	5	60	43	30	25	34	35	18	46	13	6	5.5	6.6	10.8	6	5	5	19	390
BK15	15	27	6	32	6	70	48	35	28	40	38	18	54	15	6	5.5	6.6	10.8	6	6	6	22	530
BK17	17	35	9	44	7	86	64	43	39	50	55	28	68	19	8	6.6	9	14	8.5	7	7	24	1270
BK20	20	35	8	43	8	88	60	44	34	52	50	22	70	19	8	6.6	9	14	8.5	8	8	30	1650
BK25	25	42	12	54	9	106	80	53	48	64	70	33	85	22	10	9	11	17.5	11	9	9	35	2310
BK30	30	45	14	61	9	128	89	64	51	76	78	33	102	23	11	11	14	20	13	9	9	40	3330
BK35	35	50	14	67	12	140	96	70	52	88	79	35	114	26	12	11	14	20	13	12	12	50	4380
BK40	40	61	18	76	15	160	110	80	60	100	90	37	130	33	14	14	18	26	17.5	15	15	50	6670

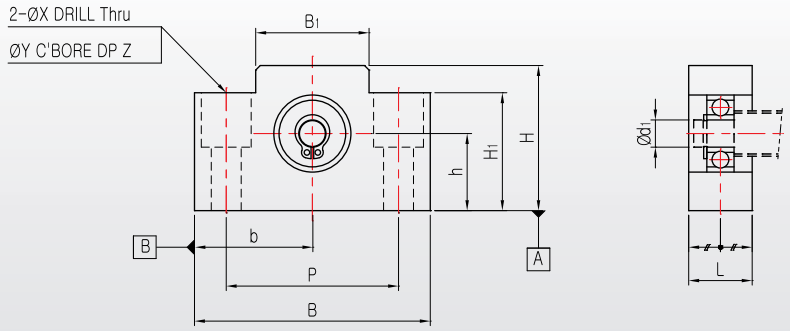
BF Type Support Unit

Square Type for Support

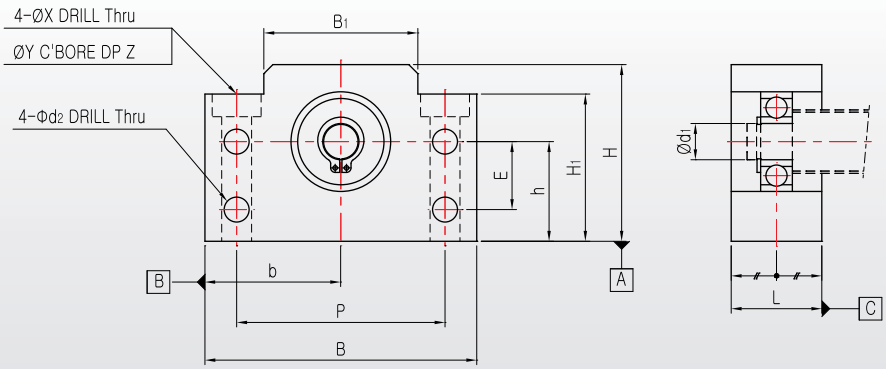


Please, download CAD DATA from www.sungilfa.com

BF6~8



BF10~40



Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.

Unit : mm

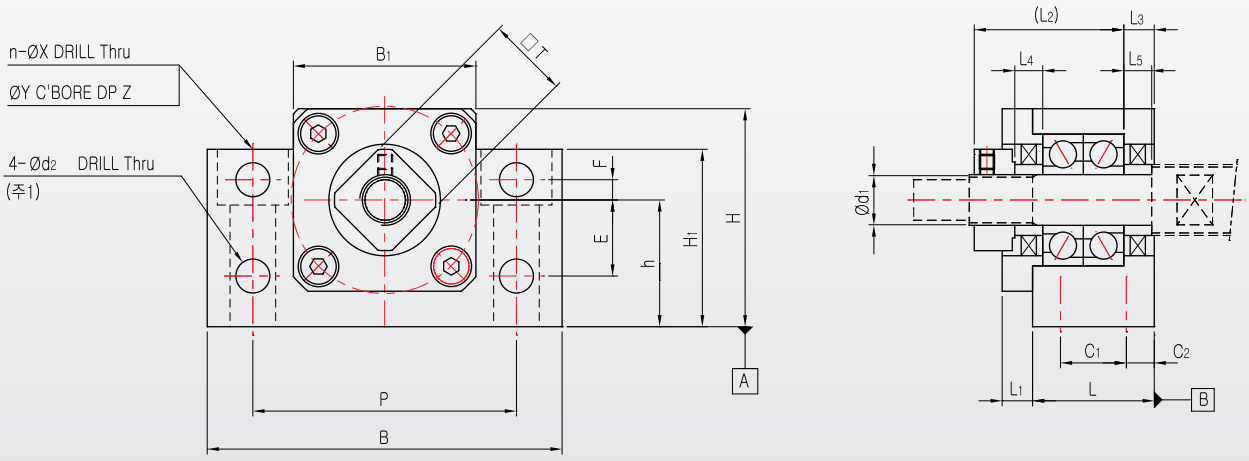
Model No.	d1	L	B	H	b±0.02	h±0.02	B1	H1	E	P	d2	X	Y	Z	Mess(g)	Bearing	Snap Ring
BF6/8	6	14	52	32	26	17	25	26	-	38	-	6.6	11	12	120	606ZZ	C6
BF10	8	20	60	39	30	22	34	32.5	15	46	5.5	6.6	10.8	5	260	608ZZ	C8
BF12	10	20	60	43	30	25	34	35	18	46	5.5	6.6	10.8	6.5	270	6000ZZ	C10
BF15	15	20	70	48	35	28	40	38	18	54	5.5	6.6	10.8	6.5	310	6002ZZ	C15
BF17	17	23	86	64	43	39	50	55	28	68	6.6	9	14	8.5	680	6203ZZ	C17
BF20	20	26	88	60	44	34	52	50	22	70	6.6	9	14	8.5	710	6004ZZ	C20
BF25	25	30	106	80	53	48	64	70	33	85	9	11	17.5	11	1340	6205ZZ	C25
BF30	30	32	128	89	64	51	76	78	33	102	11	14	20	13	1880	6206ZZ	C30
BF35	35	32	140	96	70	52	88	79	35	114	11	14	20	13	2080	6207ZZ	C35
BF40	40	37	160	110	80	60	100	90	37	130	14	18	26	17.5	3100	6208ZZ	C40

AK Type Support Unit

Square Type for Fixture

Please, download CAD DATA from www.sungilfa.com

AK 8 ~ 20



Remark (1) : AK 20 has no drilled hole at the annotated position

Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Please refer to page 73 about bearing type and characteristic according to Support Unit grade
5. Please refer to page 80 for fastening torque of the lock nut.

Unit : mm

Model No.	d1	L	L1	L2	L3	B	H	h±0.02	B1	H1	E	F	P	C1	C2	d2	n	X	Y	Z	Collar Size L4	Collar Size L5	□T	Mass (g)
AK8	8	20	3	24	4	52	32	17	25	26	10	4	38	-	10	5.5	2	6.6	11	12	4	4	14	190
AK10	10	24	6	29.5	6	70	43	25	36	35	15	4	52	-	12	6.6	2	9	14	11	5.5	5.5	16	450
AK12	12	24	6	29.5	6	70	43	25	36	35	15	4	52	-	12	6.6	2	9	14	11	5.5	5.5	19	440
AK15	15	25	6	36	5	80	50	30	41	40	15	4	60	-	12.5	6.6	2	11	17	15	10	10	22	570
AK20	20	42	10	50	10	95	58	30	56	45	-	-	75	22	10	-	4	11	17	15	11	11	30	1400

AF Type Support Unit

Square Type for Support

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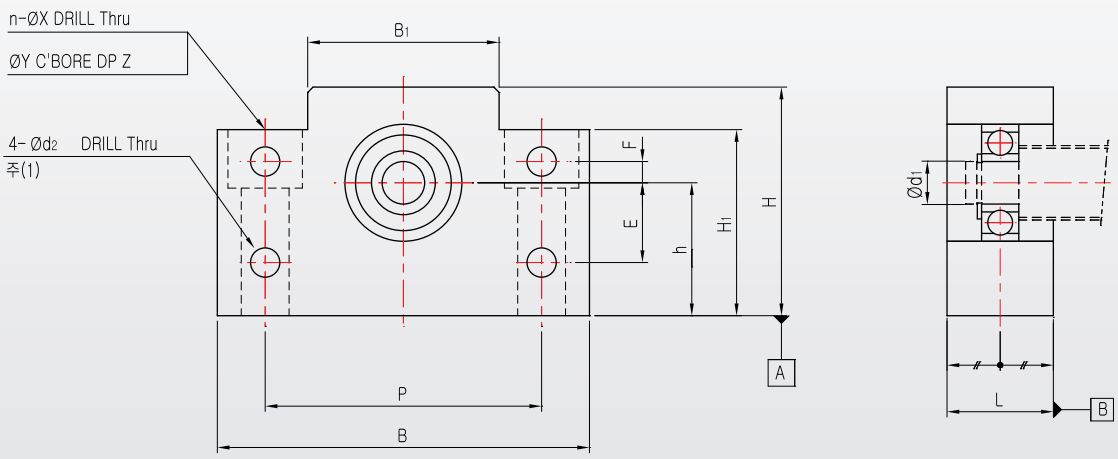
AF 8 ~ 20



Remark (1) : AK 20 has no drilled hole at the annotated position

Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.

Unit : mm

Model No.	d1	L	B	H	h±0.02	B1	H1	E	F	P	d2	X	Y	Z	Mass (g)	Bearing	Snap Ring
AF8	6	15	52	32	17	25	26	10	4	38	5.5	6.6	11	12	130	606ZZ	C6
AF10	8	20	70	43	25	36	35	15	4	52	6.6	9	14	11	320	608ZZ	C8
AF12	10	20	70	43	25	36	35	15	4	52	6.6	9	14	11	300	6000ZZ	C10
AF15	15	20	80	50	30	41	40	15	4	60	6.6	9	14	11	370	6002ZZ	C15
AF20	20	26	95	58	30	56	45	-	-	75	-	11	17	15	660	6204ZZ	C20

FK Type Support Unit

Round Type for Fixture

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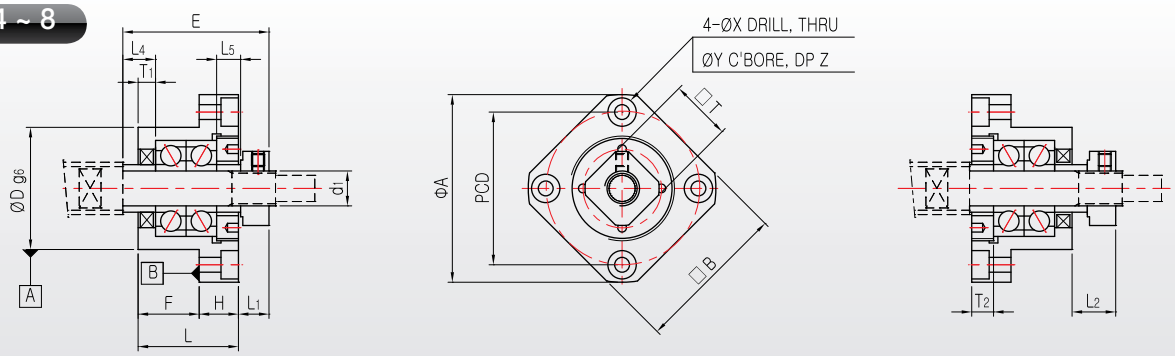
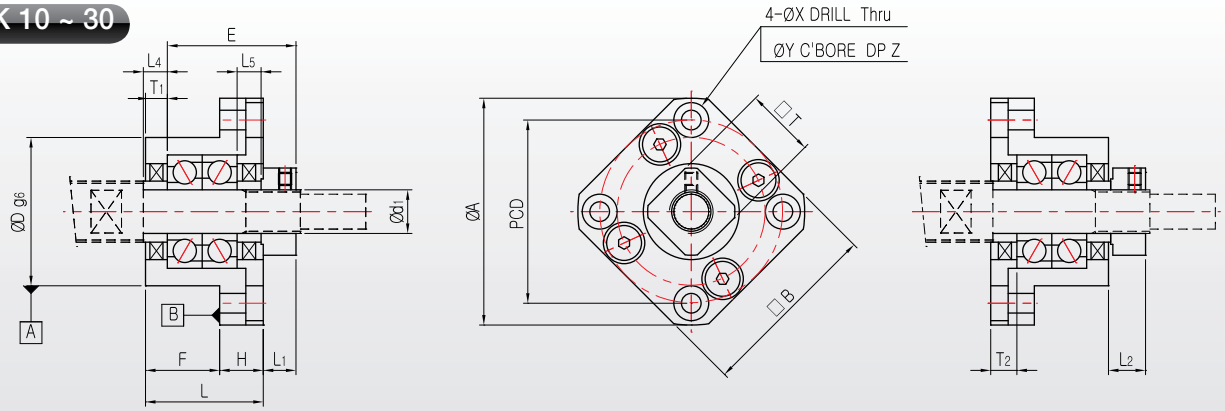
FK 4 ~ 8



[How to install A] [How to install B]

FK 10 ~ 30



[How to install A] [How to install B]

※ For the FK 30, when you install like 'B way', collar sizes must be changed, so please contact us.

Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Please refer to page 73 about bearing type and characteristic according to Support Unit grade
5. Please refer to page 80 for fastening torque of the lock nut.

Unit : mm

Model No.	d_1	L	H	F	E	D	A	PCD	□B	How to install A		How to install B		X	Y	Z	Collar Size		□T	Mass (g)
										L_1	T_1	L_2	T_2				L_4	L_5		
FK4	4	15	6	9	22	18	32	24	25	5.5	2	6.5	3	3.4	6	4	3.5	3.5	10	40
FK5	5	16.5	6	10.5	24	20	34	26	26	6.5	3.5	6	3	3.4	6.5	4	4.5	4.5	11	50
FK6	6	20	7	13	29	22	36	28	28	5.5	3.5	8.5	4.5	3.4	6.5	4	7	5	12	65
FK8	8	23	9	14	33.5	28	43	35	35	7	4	10	5	3.4	6.5	4	7.5	5.5	14	125
FK10	10	27	10	17	29.5	34	52	42	42	7.5	5	8.5	6	4.5	8	4	5.5	5.5	16	200
FK12	12	27	10	17	29.5	36	54	44	44	7.5	5	8.5	6	4.5	8	4	5.5	5.5	19	225
FK15	15	32	15	17	36	40	63	50	52	10	6	12	8	5.5	9.5	6	10	10	22	340
FK17	17	45	22	23	46	50	77	62	61	10	9	13	12	6.6	11	10	9	9	24	770
FK20	20	52	22	30	50	57	85	70	68	8	10	12	14	6.6	11	10	11	11	30	1065
FK25	25	57	27	30	60	63	98	80	79	13	10	20	17	9	15	13	15	15	35	1465
FK30	30	62	30	32	61	75	117	95	93	11	12	17	18	11	17.5	15	9	9	40	2300

FF Type Support Unit

Round Type for Support

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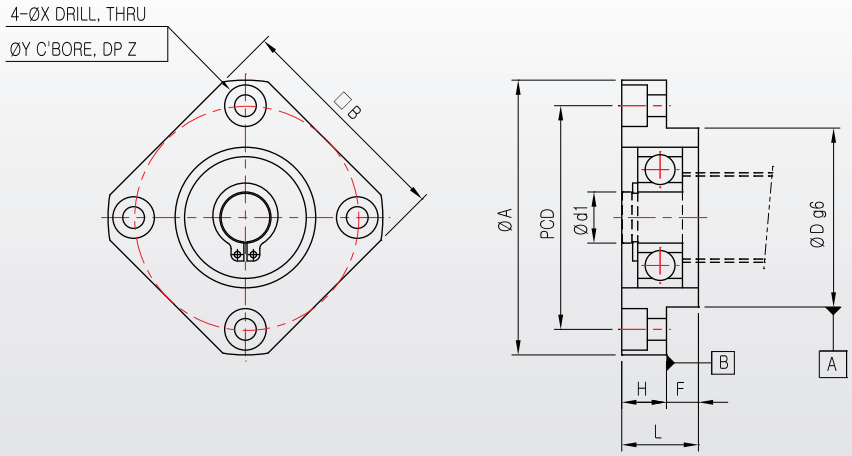
FF 6 ~ 30



Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.

Unit : mm

Model No.	d_1	L	H	F	D	A	PCD	B	X	Y	Z	Mass (g)	Bearing	Snap Ring
FF6-8	6	10	6	4	22	36	28	28	3.4	6.5	3	30	606ZZ	C6
FF10	8	12	7	5	28	43	35	35	3.4	6.5	4	60	608ZZ	C8
FF12	10	15	7	8	34	52	42	42	4.5	8	4	100	6000ZZ	C10
FF15	15	17	9	8	40	63	50	52	5.5	9.5	5.5	140	6002ZZ	C15
FF17	17	20	11	9	50	77	62	61	6.5	11	6.5	290	6203ZZ	C17
FF20	20	20	11	9	57	85	70	68	6.6	11	6.5	380	6204ZZ	C20
FF25	25	24	14	10	63	98	80	79	9	14	8.5	590	6205ZZ	C25
FF30	30	27	18	9	75	117	95	93	11	17.5	11	930	6206ZZ	C30

FK/FF Type Support Unit

Round Type for Fixture/Support

RoHS COMPLIANT REACH The new EU chemicals legislation

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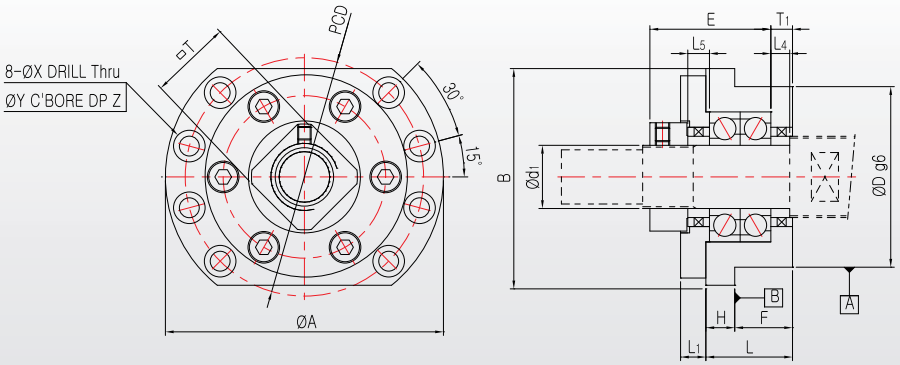
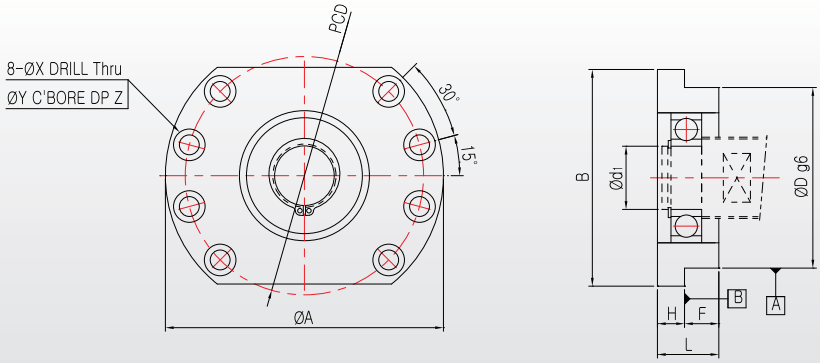
FK 35 ~ 40



FF 35 ~ 40



Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Please refer to page 73 about bearing type and characteristic according to Support Unit grade
5. Please refer to page 80 for fastening torque of the lock nut.

Unit : mm

Model No.	d_1	L	H	F	E	D	A	PCD	B	L_1	T1	X	Y	Z	Collar Size		□T	Mass (g)
															L_4	L_5		
FK35	35	48	16	32	67	100	154	132	120	14	12	11	17.5	11	12	12	50	4080
FK40	40	61	18	43	76	120	176	150	128	18	16	14	20	13	15	15	50	6750

Unit : mm

Model No.	d_1	L	H	F	D	A	PCD	B	X	Y	Z	Bearing	Snap Ring	Mass (g)
FF35	35	34	15	19	100	154	132	120	11	17.5	11	6207ZZ	C35	2050
FF40	40	36	18	18	120	176	150	128	14	20	13	6208ZZ	C40	3050

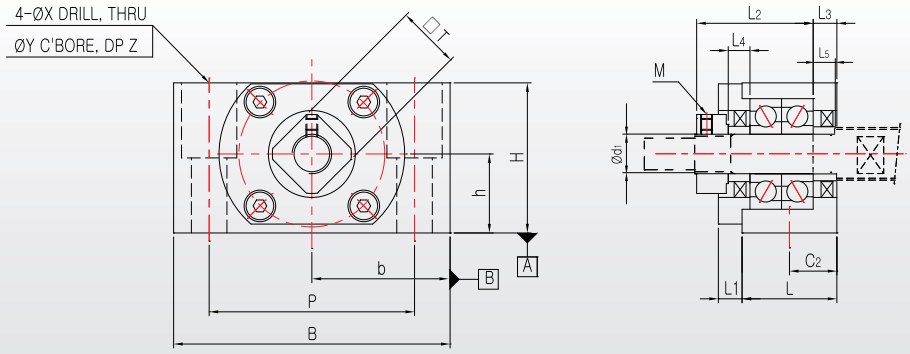
CK/CF Type Support Unit

Low Center Type for Fixture / Low Center Type for Support

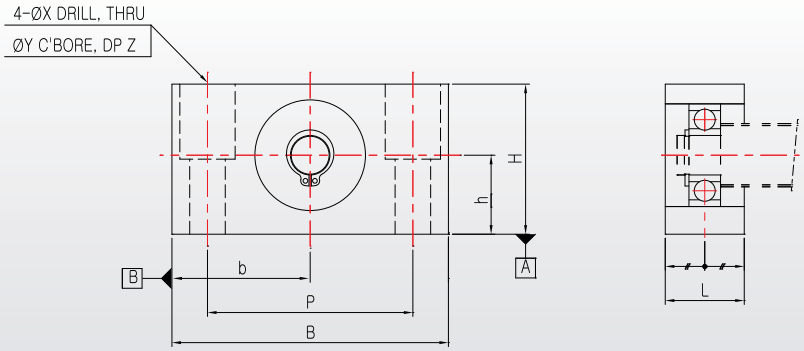
RoHS COMPLIANT REACH The new EU chemicals legislation

Please, download CAD DATA from www.sungilfa.com

CK 8 ~ 15



CF 8 ~ 15



Note

1. The surfaces A and B are reference for installation. Please, use the accurate size spacer if adjusting height is necessary.
2. Do not disassemble the support unit since the preload of the bearing has already been adjusted.
3. Appropriate amount of grease is filled in the bearing of fixed-side support unit.
4. Please refer to page 73 about bearing type and characteristic according to Support Unit grade
5. Please refer to page 80 for fastening torque of the lock nut.

Unit : mm

Model No.	d_1	L	L_1	L_2	L_3	B	H	b±0.02	h±0.02	P	C_2	X	Y	Z	Collar Size L_4	Collar Size L_5	M	□T	Mass (g)
CK8	8	21.5	4	26.5	3.5	62	31	31	15.5	46	11	9	14	18	6	6	M3x0.5	14	260
CK10	10	24	6	29.5	6	70	38	35	20	52	12	9	14	19	5.5	5.5	M4x0.7	16	430
CK12	12	24	6	29.5	6	70	38	35	20	52	12	9	14	19	5.5	5.5	M4x0.7	19	430
CK15	15	25	6	38	5	80	42	40	22	60	12.5	11	17	23	10	10	M4x0.7	22	540

Unit : mm

Model No.	d_1	L	B	H	b±0.02	h±0.02	P	X	Y	Z	Bearing	Snap Ring	Mass(g)
CF8	6	16	62	31	31	15.5	46	9	14	18	606ZZ	C6	165
★ CF12	10	20	70	38	35	20	52	9	14	19	6000ZZ	C10	285
CF15	15	20	80	42	40	22	60	9	14	23	6002ZZ	C15	355

★CF12 is used to the CK10, CK12 into the common support unit.

WBK type Support Unit

Miniature Type (미니어쳐 타입)

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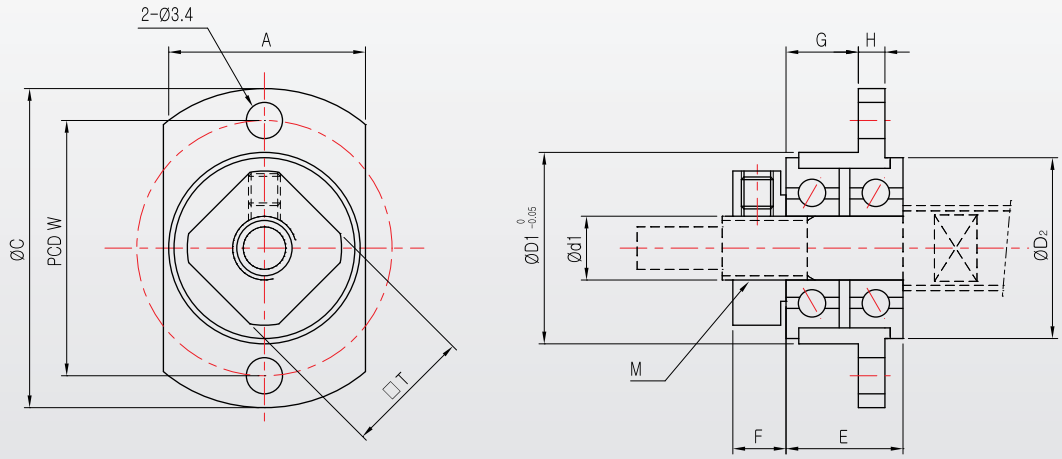
WBK TYPE Miniature Support Unit

• Support unit can be applied when precision miniature ball screw is used.



Note

1. Tighten locknut as flange type miniature ball bearing can be slightly detached from surface due to vibration during operation.
2. To prevent the collar which is inserted from slipping out, fasten it with a bolt when release

Unit : mm

Model No.	d_1	A	C	D_1	D_2	E	F	G	H	W	U	M	Space
WBK04	4	14	25	13	12.5	9	5	5	2.5	19	10	M4×0.5	ø8× ø4×1 - 1EA
WBK06	6	19	30	18	17	11	5	6.8	2.5	24	12	M6×0.75	ø9.1× ø6×1 - 1EA

Types of Support Units and Applicable Outer Diameter of Screw Shaft

Inner Diameter of the Fixed-side (mm)	Applicable Model No. of the Fixed-side	Inner Diameter of the Support-side (mm)	Applicable Model No. of the Support-side	Applicable Shaft Outer Diameter (mm)
ø4	EK4 / FK4	-	-	ø6
ø5	EK5 / FK5	-	-	ø8
ø6	BK6 / EK6 / FK6	ø6	BF6 / EF6 / FF6	ø8
ø8	AK8 / BK8 / EK8 / FK8	ø6	AF8 / BF8 / EF8 / FF8	ø10, ø12
ø10	AK10 / BK10 / EK10 / FK10	ø8	AF10 / BF10 / EF10 / FF10	ø14, ø15
ø12	AK12 / BK12 / EK12 / FK12	ø10	AF12 / BF12 / EF12 / FF12	ø16, ø18
ø15	AK15 / BK15 / EK15 /FK15	ø15	AF15 / BF15 / EF15 / FF15	ø20, ø25
ø17	BK17 / FK17	ø17	BF17 / FF17	ø25
ø20	AK20 / BK20 / EK20 / FK20	ø20	AF20 / BF20 / EF20 /FF20	ø28, ø30, ø32
ø25	BK25 / EK25 / FK25	ø25	BF25 / EF25 /FF25	ø36
ø30	BK30 / FK30	ø30	BF30 / FF30	ø40, ø45
ø35	BK35 / FK35	ø35	BF35 / FF35	ø45
ø40	BK40 / FK40	ø40	BF40 FF40	ø50, ø55

Sungil Support Units

How to Order

The Fixed Side

BK10

Model No. of the Fixed-side (EK, BK, AK, FK)

- **P5** — Grade: High Precision
- **C8** — Grade: Intermediate Pre-load
- **P0-C7** — Grade: Light Pre-load

- P5 (High Precision type): assembled with P5 bearing
- C8 (Intermediate Pre-load): assembled with preload type bearing
- P0-C7 (Light Pre-load): No clearance due to use of P0 bearing and assembled with C7 pre-load type bearing (Registration of the utility model: 20-0271941)

The Supported Side

BF10

Model No. of the Supported-side(EF, BF, AF, FF)

Please, note that the type names and numbers for the supported-side support unit (EF, BF, AF, FF (No. 8, 10, 12)) are not the same as the inner diameter of bearing used in the corresponding product. (Please, refer to page 63, 65, 67, 69)

TYPE name and number ≠ Inner diameter of bearing (EF, BF, AF, FF8=ø6, EF, BF, AF, FF12=ø10)

Support Unit Characterisic Chart

Model No.	Bearing Type			Axial Direction	
	P5	C8	P0-C7	Basic dynamic rated load (Kgf)	Static permissible load (Kgf)
EK4 / FK4	-	-	634ZZ	-	-
EK5 / FK5	-	-	625ZZ	-	-
EK6 / FK6	706ATYNDFMP5	-	606ZZ	250	110
BK6	-	-	EN6	-	-
EK8 / FK8 / CK8	708ATYNDFMP5	-	EN8	410	150
BK8	-	-	EN8	-	-
AK8	708ATYNDFMP5	-	-	410	150
EK10 / BK10 / FK10 /AK10 /CK10	7000ATYNDFMP5	7000AWDFM	7000AW	650	280
EK12 / BK12 / FK12 /AK12 /CK12	7001ATYNDFMP5	7001AWDFM	7001AW	700	310
EK15 / BK15 / FK15 /AK15	7002ATYNDFMP5	7002AWDFM	7002AW	750	350
BK17, FK17	7203ATYNDFMP5	7203AWDFM	7203AW	1300	590
EK20 / FK20 /AK20	7204ATYNDFMP5	7204AWDFM	7204AW	1750	840
BK20	7004ATYNDFMP5	7004AWDFM	7004AW	1610	840
EK25 / BK25 / FK25	7205ATYNDFMP5	7205AWDFM	7205AW	1960	1010
BK30 / FK30	7206ATYNDFMP5	7206AWDFM	7206AW	2730	1340
BK35 / FK35	7207ATYNDFMP5	7207AWDFM	7207AW	3560	1840
BK40 / FK40	7208ATYNDFMP5	7208AWDFM	7208AW	4250	2290

Bearing Combination

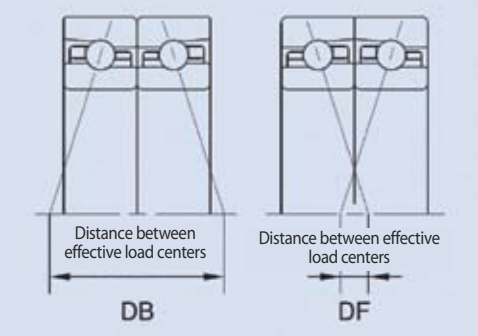
There are DB combination and DF combination in combination methods of angular bearing. SI Support Unit uses DF combination.

DB Combination

- The distance between effective load centers is long. So the stiffness is big when there is moment load. It gets flaking damage easily because of increase in internal load when there is misalignment.

DF Combination

- The distance between effective load centers is short. So the stiffness is low when there is moment load. Its absorbability of assembly error is superior so it is used normally for bearing combination.



FA Unit

SJU Type Joint Unit

Support Unit + Servor Motor Mount Plate

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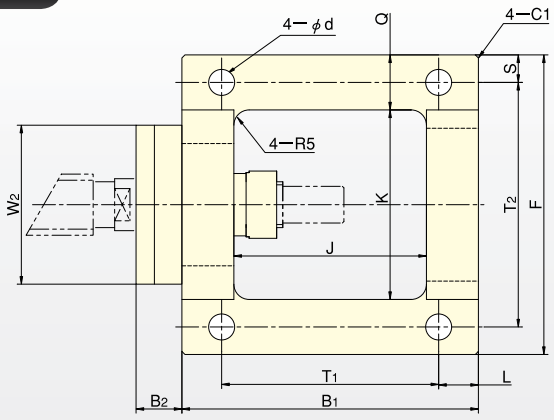
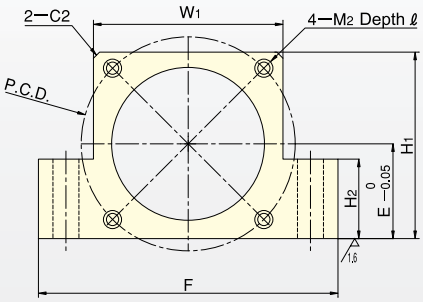
Features

- **Simple assembly** : It is easy to assemble the motor by the joint Unit because of the built-in servo unit.
- **High precision** : Error of each shaft(motor and ball screw) can be eliminated because ball screw part and motor part are assembled as a one-piece structure.

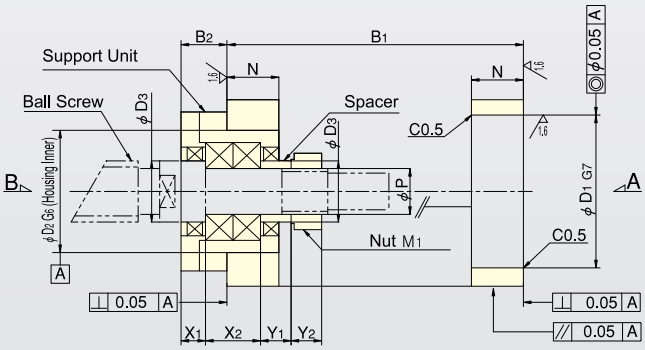
※ Notice : There are two kinds of PCD according to servo motor specification. Therefore please check this dimension when you order.

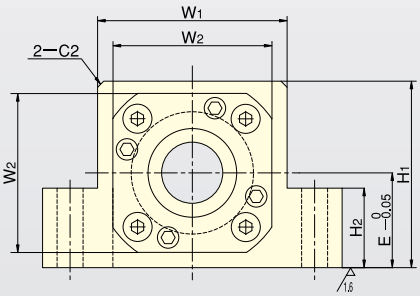
SJU 8 ~ 15





The shape shown in A part





The shape shown in B part

Unit : mm

Model Name	Model No.	P	B1	B2	D1	D2	D3	E	F	H1	H2	J	K	L	N	Q	S	T1	T2	W1	W2	X1	X2	Y1	Y2	PCD	M1	M2	d	ℓ	Snap Ring
SJU	8A	8	67	9	30	28	12	21	64	41	19	43	40	10	12	12	6	47	52	40	35	5	14	5.5	6.5	45	M8×1	M3	5.5	8	FK8
	8B																									46		M4		10	
	10A	10	74	13	30	34	14	25	70	46	23	46	42	10	14	14	7	54	56	42	42	8	16	5.5	8	45	M10×1	M3	6.5	8	FK10
	10B																									46		M4		10	
	12A	12	74	13	30	36	15.1	25	72	47	23	46	44	10	14	14	7	54	58	44	44	8	16	5.5	8	45	M12×1	M3	6.5	8	FK12
	12B																									46		M4		10	
	15	15	97	15	50	40	20	31	98	61	26	63	62	13	17	18	9	71	80	62	52	8	18	10	8	70	M15×1	M5	8.5	13	FK15

※ Please refer to catalog if you want to find SI coupling that is compatible with SI Joint Unit.

SBJU Type Joint Unit

Support Unit + Servor Motor Mount Plate

Please, download CAD DATA from www.sungilfa.com

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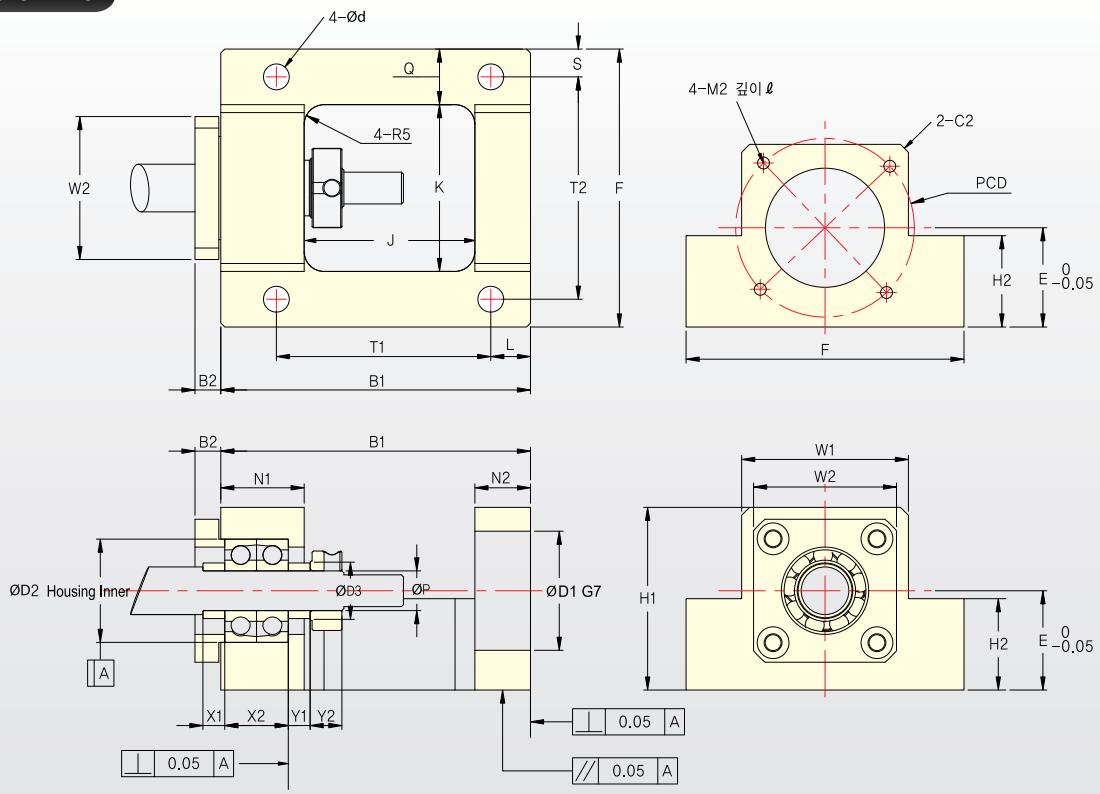
Features

- **Simple assembly** : Simple assembly: It is easy to assemble the motor by the joint Unit because of the built-in servo unit.
- **High precision** : Error of each shaft(motor and ball screw) can be eliminated because ball screw part and motor part are assembled as a one-piece structure.
- The combination of angular contact ball bearings are inserted in SBJU Type.

※ Notice : There are two kinds of PCD according to servo motor specification. Therefore please check this dimension when you order.

SBJU 8 ~ 15



Unit : mm

Model Name	Model No.	P	B_1	B_2	D_1	D_2	D_3	E	F	H_1	H_2	J	K	L	N_1	N_2	Q	S	T_1	T_2	W_1	W_2	X_1	X_2	Y_1	Y_2	PCD	M_1	M_2	d	ℓ
SBJU	8A	8	73	6.5	30	24 (22)	12	21	64	41	19	42	40	10	19	12	12	6	47	52	40	34	7.5	14	5.5	6.5	45	M8×1	M3	5.5	8
	8B																										46		M4		10
	10A	10	79	6.5	30	26	14	25	70	46	23	44	42	10	21	14	14	7	54	56	42	36	5.5	16	5.5	8	45	M10×1	M3	6.5	8
	10B																										46		M4		10
	12A	12	79	6.5	30	28	15.1	25	72	47	23	44	44	10	21	14	14	7	54	58	44	36	5.5	16	5.5	8	45	M12×1	M3	6.5	8
	12B																										46		M4		10
	15	15	105	6.5	50	32	20	31	98	61	26	65	62	13	23	17	18	9	71	80	62	40	10	18	10	8	70	M15×1	M5	8.5	13

※ Please refer to catalog when you select SUNGIL coupling for combination use with this Joint Unit.

Sungil Set-Collar

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Features

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- Slit type and separate type are available
  (Seperate type will be released on May 13')
- Various material and surface finishing are available
- Urethane damper is available
  (will be released on May 13')

How to order

Motel No. **SSC-A** - **6** x **10**

Ød (Inner diameter) — B (Thickness)

Product category

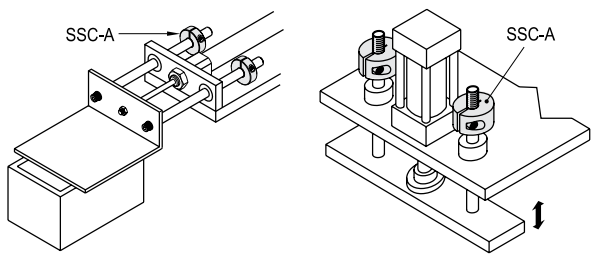
SSC-A Series

Name	SSC-A(standard)	SSC-AK	SSC-AL	SSC-AS	SSC-AU
Material	S45C	S45C	High stiffness aluminum alloy	SUS304	S45C
Surface Treatment	Ferrosoferric oxide coating	Electroless nickel plating	Alumite	-	Ferrosoferric oxide coating
Etc	-	-	-	-	Urethane Damper
Figure					

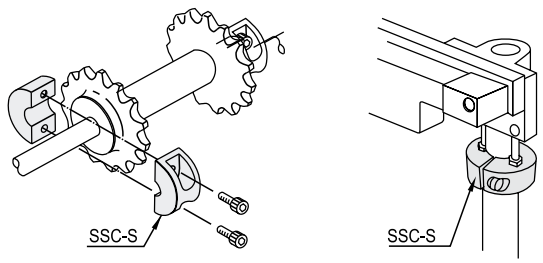
SSC-S Series (will be released in May)

Name	SSC-S(standard)	SSC-SK	SSC-SL	SSC-SS	SSC-SU
Material	S45C	S45C	High stiffness aluminum alloy	SUS304	S45C
Surface Treatment	Ferrosoferric oxide coating	Electroless nickel plating	alumite	-	Ferrosoferric oxide coating
Etc	-	-	-	-	Urethane Damper
Figure					

Example of set collar slit type



Example of set collar separate type



SSC-A Series

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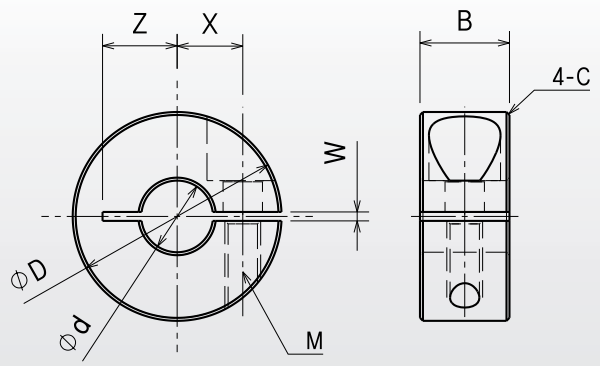
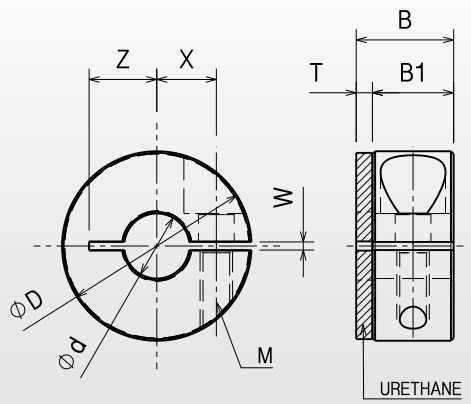
SSC-A, AK, AL, AS



SSC-AU



Dimension

Type	ø d	B	ø D	W	X	Z	Fastening bolt
SSC-A SSC-AK SSC-AL SSC-AS	5	8	20	1	6	7	M3
		10	20	1	6	6	M4
	6	8	20	1	6	7	M3
		10	20	1	6	6	M4
	8	10	25	1.5	8	9	M4
		15	30	1.5	9	10	M6
	10	12	30	1.5	9	11	M5
		15	35	1.5	10	12.5	M6
	12	15	35	1.5	11	12.5	M6
	13	15	35	1.5	11	12.5	M6
	15	15	40	1.5	13	13	M6
	16	15	40	1.5	13	13	M6
	17	15	40	1.5	13	13	M6
	18	15	45	1.5	15	15	M6
	20	15	45	1.5	15	15	M6
	25	15	50	1.5	18	18	M6
	30	15	55	1.5	20	-	M6
	35	15	60	2	23	-	M6
	40	18	70	2	26	-	M8

Dimension

Type	ø d	B	B1	ø D	T	W	X	Z	Fastening bolt
SSC-AU	5	12	10	20	2	1	6	6	M4
	6	12	10	20	2	1	6	6	M4
	8	18	15	30	3	1.5	9	10	M6
	10	18	15	35	3	1.5	10	12.5	M6
	12	18	15	35	3	1.5	11	12.5	M6
	13	18	15	35	3	1.5	11	12.5	M6
	15	18	15	40	3	1.5	13	13	M6
	16	18	15	40	3	1.5	13	13	M6
	17	18	15	40	3	1.5	13	13	M6
	18	18	15	45	5	1.5	15	15	M6
	20	20	15	45	5	1.5	15	15	M6
	25	20	15	50	5	1.5	18	18	M6
	30	20	15	55	5	1.5	20	-	M6
	35	20	15	60	5	2	23	-	M6
	40	23	18	70	5	2	26	-	M8

■ Set Collar with Urethane damper needs to be used under 70℃.

■ Urethane thickness

SSC-A inner diameter 5 ~ 6 : 2mm

SSC-A inner diameter 8 ~ 18 : 3mm

SSC-A inner diameter 20 ~ 40 : 5mm

SSC-S Series

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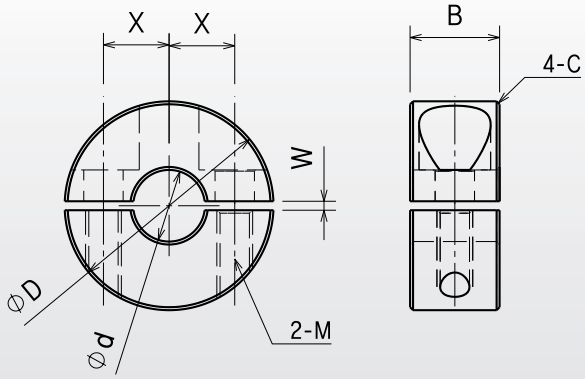
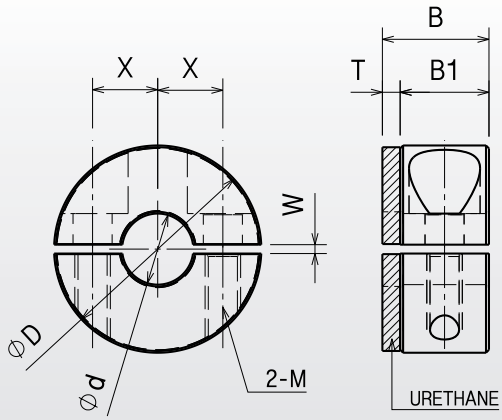
SSC-S, SK, SL, SS



SSC-SU



Dimension

Type	ø d	B	ø D	W	X	Fastening bolt
SSC-S SSC-SK SSC-SL SSC-SS	5	8	20	1	6	M3
		10	20	1	6	M4
	6	8	20	1	6	M3
		10	20	1	6	M4
	8	10	25	1.5	8	M4
		15	30	1.5	9	M6
	10	12	30	1.5	9	M5
		15	35	1.5	10	M6
	12	15	35	1.5	11	M6
	13	15	35	1.5	11	M6
	15	15	40	1.5	13	M6
	16	15	40	1.5	13	M6
	17	15	40	1.5	13	M6
	18	15	45	1.5	15	M6
	20	15	45	1.5	15	M6
	25	15	50	1.5	18	M6
	30	15	55	1.5	20	M6
	35	15	60	2	23	M6
	40	18	70	2	26	M8

Dimension

Type	ø d	B	B1	ø D	T	W	X	Fastening bolt
SSC-SU	5	12	10	20	2	1	6	M4
	6	12	10	20	2	1	6	M4
	8	18	15	30	3	1.5	9	M6
	10	18	15	35	3	1.5	10	M6
	12	18	15	35	3	1.5	11	M6
	13	18	15	35	3	1.5	11	M6
	15	18	15	40	3	1.5	13	M6
	16	18	15	40	3	1.5	13	M6
	17	18	15	40	3	1.5	13	M6
	18	18	15	45	3	1.5	15	M6
	20	20	15	45	5	1.5	15	M6
	25	20	15	50	5	1.5	18	M6
	30	20	15	55	5	1.5	20	M6
	35	20	15	60	5	2	23	M6
	40	23	18	70	5	2	26	M8

■ Set Collar with Urethane damper needs to be used under 70℃.

■ Urethane thickness

SSC-A inner diameter 5 ~ 6 : 2mm

SSC-A inner diameter 8 ~ 18 : 3mm

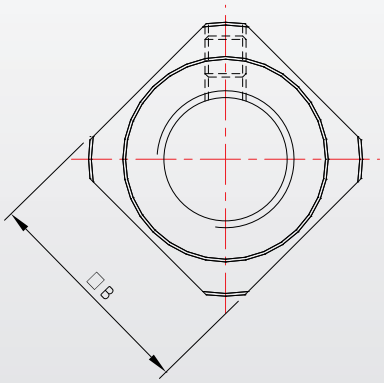
SSC-A inner diameter 20 ~ 40 : 5mm

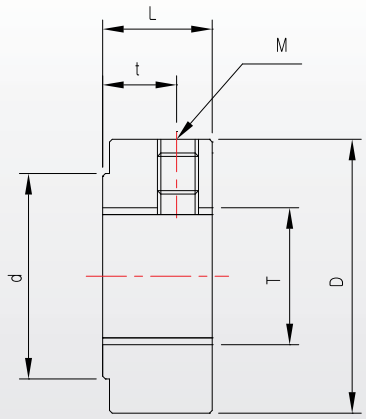
Lock Nut

Note

1. A ball screw and a bearing can be precisely assembled by using LOCK NUT.
2. The set piece connected to the stop screw ensures tight fastening , thereby preventing locknut from being loosened.

LOCK NUT





Unit : mm

Model No.	T	M	D	d	L	t	□B	Fastening Torque(Reference) (kgf.cm)
RN4	M4×0.5	M3×0.5	11	8.5	5	2.7	10	16
RN5	M5×0.5	M3×0.5	13	9	5	2.7	11	20
RN6	M6×0.75	M3×0.5	14.5	10	5	2.7	12	25
RN8	M8×1	M3×0.5	17	13	6.5	4	14	50
	★ M8×0.75							
RN10	M10×1	M4×0.7	20	15	8	5.5	16	95
	★ M10×0.75							
RN12	M12×1	M4×0.7	22	17	8	5.5	19	140
RN15	M15×1	M4×0.7	25	21	8	4.5	22	240
RN17	M17×1	M4×0.7	30	25	13	9	24	350
RN20	M20×1	M4×0.7	35	26	11	7	30	480
RN25	M25×1.5	M5×0.8	43	33	15	10	35	860
RN30	M30×1.5	M6×1	48	39	20	14	40	1,280
RN35	M35×1.5	M8×1.25	60	46	21	14	50	1,920
RN40	M40×1.5	M8×1.25	63	51	25	18	50	2,560

※ The product marked ★is a order-based one.

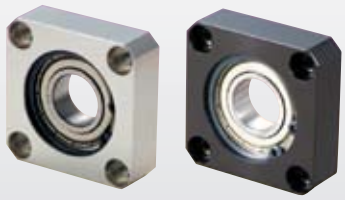
Bearing Unit

Please, download CAD DATA from www.sungilfa.com

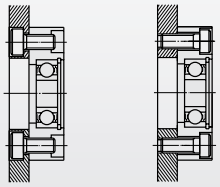
Single Bearing Type

RoHS COMPLIANT REACH The new EU chemicals legislation

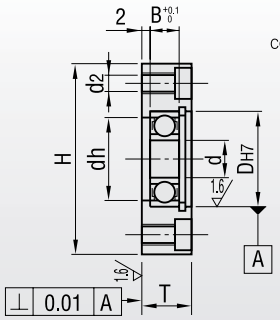
SBS - ■ ■

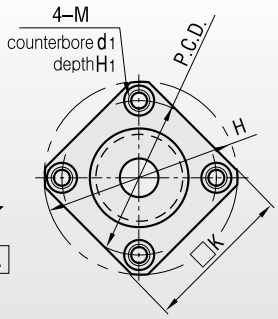


Example



<Used with Tap> <Used with counterbore>





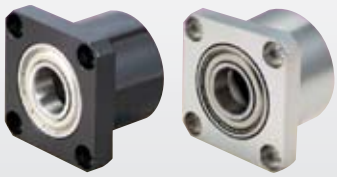
Dimension

Model No.	ø d	ø D H7	B	ø H	□K	T	dh	PCD	M	ø d2	ø d1	H1	Bearing
SBS-8	8	22	7	45	36	12	18	35	5	4.3	8	4.4	608ZZ
SBS-10	10	26	8	50	39	13	22	40	5	4.3	8	4.4	6000ZZ
SBS-12	12	28	8	52	40	13	24	42	5	4.3	8	4.4	6001ZZ
SBS-15	15	32	9	60	46	14	28	48	6	5.2	9.5	5.4	6002ZZ
SBS-17	17	40	12	72	54	18	34	60	6	5.2	9.5	5.4	6203ZZ
SBS-20	20	42	12	77	59	18	36	64	8	6.8	11	6.5	6004ZZ
SBS-25	25	52	15	94	72	22	45	78	10	8.5	14	8.6	6205ZZ
SBS-30	30	62	16	104	79	23	55	88	10	8.5	14	8.6	6206ZZ

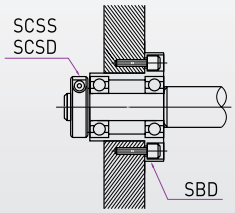
Double Bearing Type

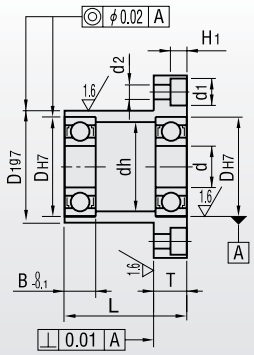
RoHS COMPLIANT REACH The new EU chemicals legislation

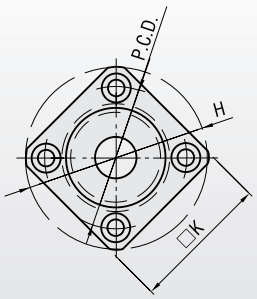
SBD - ■ ■



Example







Dimension

Model No.	ø d	ø D H7	ø D1 g7	B	L	ø H	□K	T	dh	PCD	ø d2	ø d1	H1	Bearing
SBD-8	8	22	27	7	25	45	36	8	18	35	4.3	8	4.4	608ZZ
SBD-10	10	26	32	8	30	50	39	8	22	40	4.3	8	4.4	6000ZZ
SBD-12	12	28	34	8	30	52	40	8	24	42	4.3	8	4.4	6001ZZ
SBD-15	15	32	38	9	35	60	46	10	28	48	5.2	9.5	5.4	6002ZZ
SBD-17	17	40	48	12	45	72	54	10	34	60	5.2	9.5	5.4	6203ZZ
SBD-20	20	42	50	12	45	77	59	11	36	64	6.8	11	6.5	6004ZZ
SBD-25	25	52	60	15	45	94	72	13	45	78	8.5	14	8.6	6205ZZ
SBD-30	30	62	70	16	50	104	79	13	55	88	8.5	14	8.6	6206ZZ

A.P. Lock

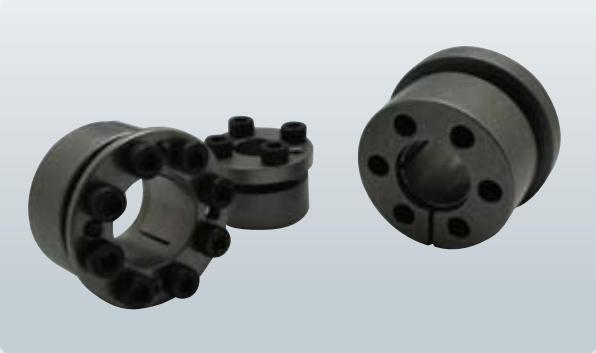
Sungil A.P. Lock

Sungil's Accurate & Powerful Locking Device

A.P. Lock

SAPL-A Series : S45C, Electroless Nickel Plating, SUS304

SAPL-C Series : S45C, Electroless Nickel Plating, SUS304



SAPL-B Series : S45C

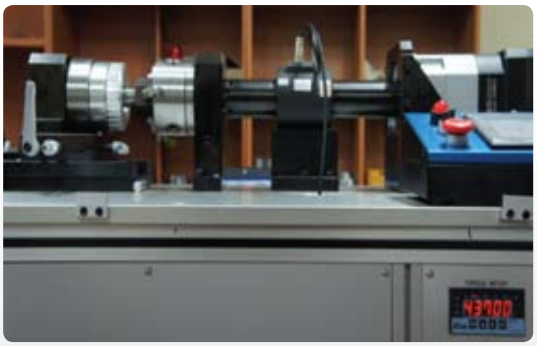
SAPA, SAPC : Aluminum Alloy

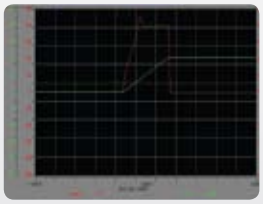
Verification of shaft clamping area

- Install A.P. Lock to shaft and hub in a proper way.
- Inject special penetrative lipuid to confirm contact ratio between shaft and A.P. Lock.

- It is possible to check whether every inner side (except innering slit) is contacting the shaft or not.

Verification of tightening force





- Sungil's A.P. Lock's tightening force is verified by torque testing machine.

Sungil A.P. Lock

Accuracy & Powerfulness

Design and Installation manual

Examining max torque

Maximum torque is calculated by motor's rotational speed(R.P.M), capacity and reduction ratio. (If there is no information about motor's torque) Safety factor(table below) has to be considered.

$$T_{max} = \frac{9554 \times Pmax}{N \times i} \times SF$$

Tmax = Max torque [N·m]
Pmax = Max capacity [KW]
N = Motor rotational speed [rpm]
i = Reduction ratio
SF = Safety factor

Load condition		Safety Factor
Small inertia	Use less than 60% of motor's rated torque with No shock	1.5~2.0
Medium inertia	Enough time to accelerate/decelerate Reverse/non-reverse motion is limited There is little impact	2.0~3.0
Large inertia	Acceleration/ deceleration time is very short Frequent impact and vibration exists	3.0~5.0

Tmax (motor max torque) < Tc (A.P. Lock's max allowable torque)

Motor's maximum torque (considering safety factor) must be lower than A.P.Lock's maximum allowable torque.

Thrust load

P (Max thrust load) < Pt (A.P.Lock's max allowable thrust)

Load on A.P. Lock's fastening part must be lower than it's maximum allowable thrust.

Combination of torque and thrust load

When torque and thrust load is combined, use the equation below.

$$T_{comb} = \sqrt{\left(\frac{9554 \times Pmax}{N}\right)^2 + \left(\frac{P \times d}{2000}\right)^2} \times SF$$

Tcomb = Combined load [N·m]
Pmax = Max capacity [KW]
N = Motor rotational speed [rpm]
d = Shaft diameter [mm]
P = Thrust load [N]
SF = Safety factor

Tcomb (combined load) < Tc (A.P. Lock's max allowable torque)

Combined load of torque and thrust must be lower than A.P.Lock's maximum allowable torque.

Increasing/decreasing allowable torque

1. Increasing allowable torque
   - When using several A.P. Locks, allowable torque and thrust load increases.
   - Foreign substances on shaft surface, hub surface A.P. Lock's inner and outer surface must be removed.

2. Decreasing allowable torque
   - Shaft with key way decreases allowable torque by about 20% due to contact area reduction

Examining shaft design

1. We recommend h7 shaft tolerance.
2. Examine strength of shaft raw material

$$\sigma_s > 1.2 \times P_i$$

σ_s : Yield stress of shaft material [Mpa]
P_1 : Surface pressure on shaft [Mpa]

3. Determining maximum inner diameter of hollow pipe
   - When fastening A.P. Lock, high surface pressure is applied to the shaft. When designing hollow pipe, please refer to the equation below.

$$d_i \leq d \times \sqrt{\frac{\sigma_s - 2 \times 0.8 \times P_i}{\sigma_s}}$$

di : Minimum inner diameter of hollow pipe
d : Outer diameter of hollow pipe
σ_s : Yield stress of shaft material [Mpa]
P_1 : Surface pressure on shaft [Mpa]

Examining hub design

1. We recommend H7 hub tolerance
2. Examine hub's material strength

$$\sigma_h > 1.2 \times P_o$$

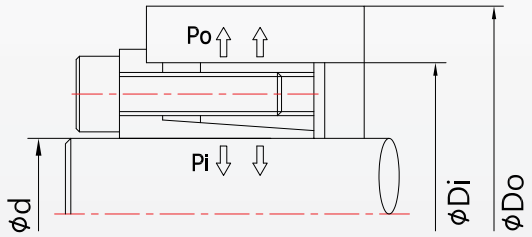
σ_h : Yield stress of hub material [Mpa]
P_o: Surface pressure on hub [Mpa]

Design and Installation manual

3. Examining hub's minimum outer diameter
- Minimum outer diameter of hub with respect to raw material is shown on the catalog.
- If there is no information for specific material, use the equation below.

$$D_O \geq D_i \times \sqrt{\frac{\sigma_h + 0.8 \times P_O}{\sigma_h - 0.8 \times P_O}}$$

D_o : Outer diameter of hub [mm]
D_i : Inner diameter of hub [mm]
σ_h : Yield stress of hub material [Mpa]
P_o : Surface pressure on hub [Mpa]



How to install (SAPL-A, B, C Series)

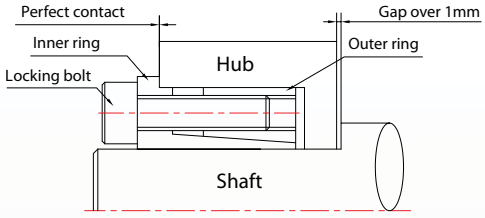
1. Clean shaft and inner side of hub (remove dust, oil and rust)

2. Clean A.P. Lock's inner side and cover's outer surface

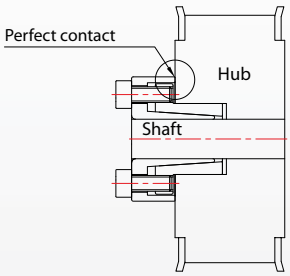
3. Apply operation oil #68 on shaft and inner side of hub
- Do not use oil which contains silicon or molybdenum

4. Unfasten A.P. Lock's bolts and apply operation oil #68
- taper side of cover and body
- Do not use oil in vacuum condition. In this case fastening force can be different with catalog

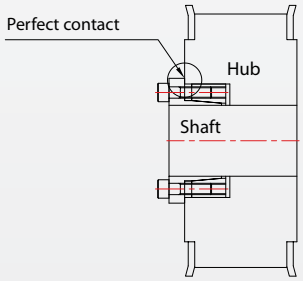
5. Pre-assemble A.P. Lock with shaft and then insert them into hub
- Confirm whether hub's edge has contacted with A.P.Lock's flange
- Decide shaft and hub's relative position
- There must be more than 1mm distance between shaft's step part and hub. (If the above distance is not established, disassembly becomes difficult and the flange might be deformed.)
- If A.P. Lock cannot be inserted into the hub smoothly, slightly unfasten the fastening bolt or slightly pound on it. (※ Do not strike with powerful force.)



Example of SAPL-A Series installation

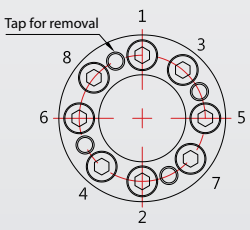


Example of SAPL-C Series installation



Example of SAPL-B Series installation

6. Fasten the bolts for complete lock



1. Must follow the order on the side figure
2. Confirm contact of outer ring flange and hub.
3. Tighten with torque wrench slowly and evenly.
   ▶Tighten with ⅛, ¼, ½, and given tightening torque in consecutive order.
4. Confirm the perfect clamping by tightening the locking bolts several times in clockwise direction.

Sungil A.P. Lock

Accuracy & Powerfulness

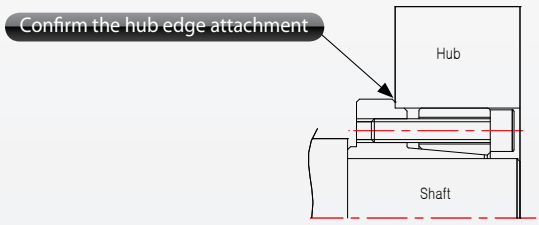
Design and Installation manual

How to install (SAPC, SAPA)

1. Clean shaft, inner side of hub and A.P. Lock's outer/inner surface (remove dust, oil)

2. There is no need of operation oil when using aluminum A.P.Lock.

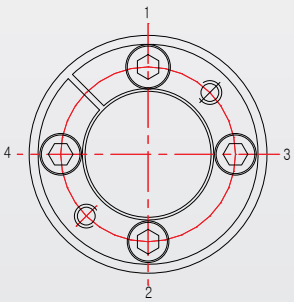
3. Pre-assemble A.P. Lock with shaft and then insert them into hub
   - Confirm whether hub's edge has contacted with A.P.Lock's flange
   - Determine shaft and hub's relative position. (Use calipers or other measuring tools)
   - If A.P.Lock cannot be inserted into the hub smoothly, slightly unfasten the fastening bolt or slightly pound on it..
   (※ Do not strike with powerful force.)



Example of SAPC Series installation

※ SAPA install structure is the same as SAPL-A Series.

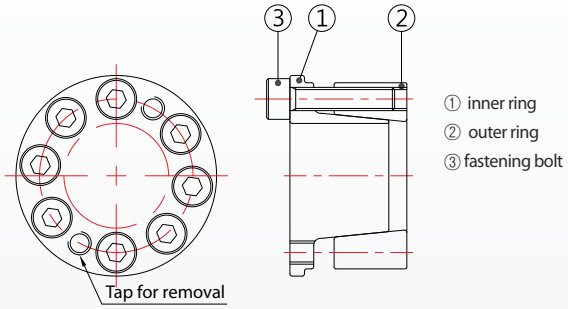
4. Fasten the bolts in a proper way for complete locking



1. Must follow the order on the side figure
2. Confirm contact of outer ring flange and hub.
3. Tighten with torque wrench slowly and evenly.
   ▶Tighten with ⅛, ¼, ½, and given tightening torque in consecutive order.
4. Confirm the perfect clamping by tightening the locking bolts several times in clockwise direction.

How to disassemble

1. Remove load on shaft and hub (torque/thrust)
2. Remove loaded weight on A.P. Lock such as belt or chain
3. Disassemble bolts in the same order as when fastening

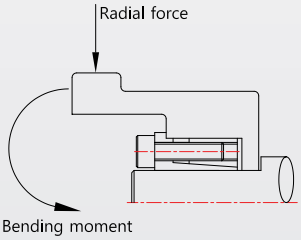


Reuse

- A.P. Lock can be used repeatedly.
- If surface pressure is stronger than shaft or hub's yield stress, shaft or hub will be deformed, and This also causes A.P. Lock's deformation.

Cautions

1. Temperature range : -30℃ ~ +200℃
2. Must use torque wrench to fasten bolts
   (Please Refer to the fastening torque on performance table)
3. A.P. Lock is weak at bending moment



4. If there is no proper operation oil before fastening, transmission torque reduces approximately 25% (Do not use operation oil in special environment (vacuum etc.))
5. Shaft with keyway decreases fastening force by about 20% due to contact area reduction.

SAPL-A Series

Sungil Accurate & Powerful Locking Device

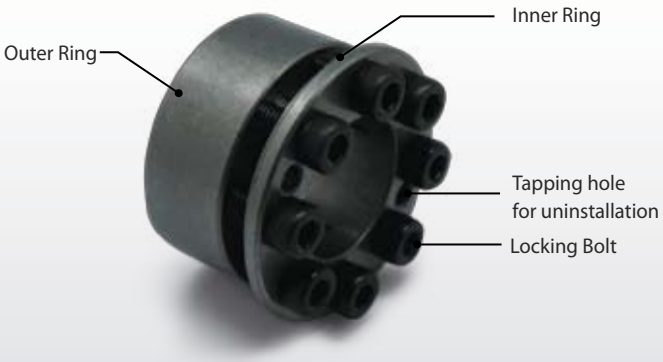
'SAP' mark(Trademark : 40-2011-0011919) is the original trademark for SUNGIL's A.P. Lock.

RoHS COMPLIANT REACH The new EU chemicals legislation

Specification

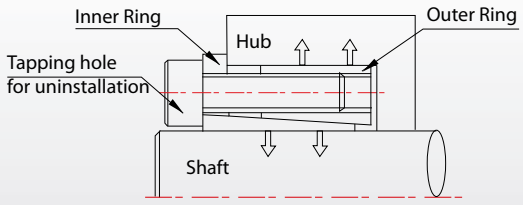
- Self centering function : prevents tiny off-centering.
- Difference between inner diameter(d) and outer diameter(D) is relatively small.
- Due to low surface pressure, it is available to relatively small sized hub.
- Standardized with inner diameter Ø5 ~ Ø40
- Simple structure and easy to assemble
- Can select stainless material(vacuum condition), electroless nickel plating(preventing corrosion)

Structure & Materials



Model	Body & Cover	
	Raw material	Surface Treatment
SAPL-A	S45C	-
SAPL-AS	SUS304	-
SAPL-AK	S45C	Electroless nickel plating

Fastening Principle



How to Order

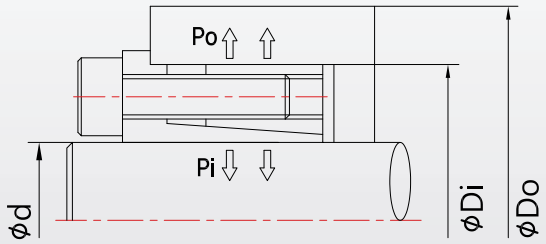
SAPL - A - 6 - 19

- SAPL - A : Model No.
- 6 : Inner Diameter(d)
- 19 : Outer Diameter(D)

SAPL-A

Sungil Accurate & Powerful Locking Device

Specifications



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-A-5 x 16	7	2.8	249	81	M3x10	4	1.9	6.27×10^{-7}	18
SAPL-A-6 x 19	14	4.7	318	102	M4x12	4	3.9	1.36×10^{-6}	26
SAPL-A-8 x 21	22	5.6	239	107	M4x12	4	3.9	2.03×10^{-6}	35
SAPL-A-10 x 23	25	5.6	186	96	M4x12	4	3.9	2.92×10^{-6}	40
SAPL-A-11 x 24	30	5.6	170	92	M4x14	4	3.9	3.45×10^{-6}	45
SAPL-A-12 x 26	50	8.4	233	115	M4x16	6	3.9	5.37×10^{-6}	53
SAPL-A-14 x 28	65	9.5	225	120	M4x16	6	3.9	7.07×10^{-6}	61
SAPL-A-15 x 29	70	9.5	186	106	M4x16	6	3.9	8.58×10^{-6}	66
SAPL-A-16 x 30	75	9.5	166	98	M4x18	6	3.9	1.02×10^{-5}	75
SAPL-A-17 x 31	110	12.6	197	121	M4x18	8	3.9	1.17×10^{-5}	75
SAPL-A-18 x 32	115	12.6	186	118	M4x18	8	3.9	1.31×10^{-5}	80
SAPL-A-19 x 33	120	12.6	177	114	M4x18	8	3.9	1.46×10^{-5}	81
SAPL-A-20 x 38	220	21.6	234	139	M5x20	8	8.8	3.70×10^{-5}	144
SAPL-A-22 x 40	290	26.0	256	159	M5x20	8	8.8	4.42×10^{-5}	165
SAPL-A-24 x 42	320	26.0	217	142	M5x20	8	8.8	5.45×10^{-5}	180
SAPL-A-25 x 43	350	27.2	216	137	M5x25	8	8.8	6.15×10^{-5}	188
SAPL-A-28 x 46	380	27.0	192	127	M5x25	10	8.8	8.15×10^{-5}	195
SAPL-A-30 x 48	410	27.0	179	122	M5x25	10	8.8	9.45×10^{-5}	208
SAPL-A-32 x 50	440	27.0	156	110	M5x25	10	8.8	1.14×10^{-4}	219
SAPL-A-35 x 57	720	41.1	204	138	M6x25	8	15.7	2.12×10^{-4}	325
SAPL-A-38 x 60	770	40.2	178	125	M6x25	10	15.7	2.62×10^{-4}	362
SAPL-A-40 x 62	810	40.2	164	118	M6x25	10	15.7	3.00×10^{-4}	380

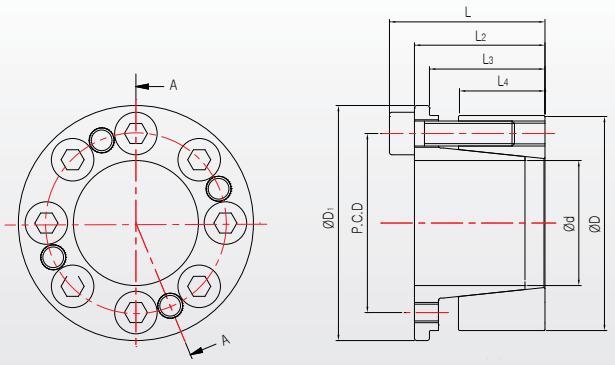
※ Pt(allowable thrust) indicates value when torque is 0, Tc(max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

※For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

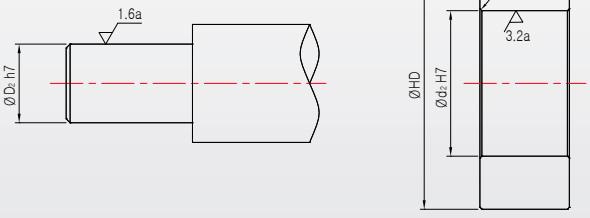
SAPL-A
Sungil Accurate & Powerful Locking Device

Please, download CAD DATA from www.sungilfa.com

Dimension



A.P. Lock



Dimensions of shaft and hub

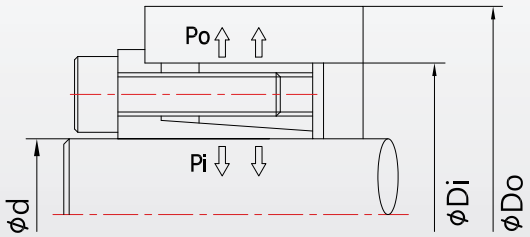
Model d x D	Dimension (A.P. Lock) [mm]						Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	L_4	D_1	P.C.D	D2	d_2	HL	S10C (206)	S35C SF590 (294)	S45C (343)
SAPL-A-5 x 16	16.0	13.0	11.2	8.0	18.5	11.7	5	16	13	25	22	21
SAPL-A-6 x 19	18.3	14.3	12.3	9.0	21.5	14.0	6	19	14	33	28	26
SAPL-A-8 x 21	18.6	14.6	12.6	9.3	23.5	15.4	8	21	15	38	31	29
SAPL-A-10 x 23	18.8	14.8	12.8	9.5	25.5	17.5	10	23	16	39	33	31
SAPL-A-11 x 24	19.8	15.8	13.8	10.5	26.5	18.5	11	24	16	39	34	32
SAPL-A-12 x 26	22.0	18.0	15.5	10.5	28.5	20.2	12	26	17	49	40	37
SAPL-A-14 x 28	22.0	18.0	15.5	10.5	30.5	22.2	14	28	17	55	44	41
SAPL-A-15 x 29	23.0	19.0	16.5	11.5	31.5	23.2	15	29	18	52	43	40
SAPL-A-16 x 30	23.6	19.6	17.1	12.0	33.0	24.2	16	30	18	51	43	41
SAPL-A-17 x 31	24.1	20.1	17.6	12.5	33.5	25.4	17	31	19	61	49	45
SAPL-A-18 x 32	24.1	20.1	17.6	12.5	34.5	26.4	18	32	19	62	49	46
SAPL-A-19 x 33	24.1	20.1	17.6	12.5	35.5	27.4	19	33	19	62	50	47
SAPL-A-20 x 38	29.1	24.1	21.1	15.3	42.0	30.8	20	38	23	87	64	59
SAPL-A-22 x 40	29.1	24.1	21.1	15.3	44.0	32.8	22	40	23	112	74	67
SAPL-A-24 x 42	30.1	25.1	22.1	16.3	46.0	34.8	24	42	24	98	72	66
SAPL-A-25 x 43	31.1	26.1	23.1	17.3	47.0	35.8	25	43	25	96	72	66
SAPL-A-28 x 46	31.6	26.6	23.1	17.3	50.0	38.8	28	46	25	95	74	68
SAPL-A-30 x 48	31.6	26.6	23.1	17.3	52.0	40.8	30	48	25	95	75	70
SAPL-A-32 x 50	32.6	27.6	24.1	18.3	54.0	42.8	32	50	26	91	75	70
SAPL-A-35 x 57	36.0	30.0	26.0	19.5	62.0	48.4	35	57	28	129	95	88
SAPL-A-38 x 60	36.5	30.5	26.5	20.0	65.0	51.4	38	60	28	122	95	88
SAPL-A-40 x 62	37.0	31.0	27.0	20.5	67.0	53.4	40	62	29	119	95	89

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-AS

Sungil Accurate & Powerful Locking Device

Specifications



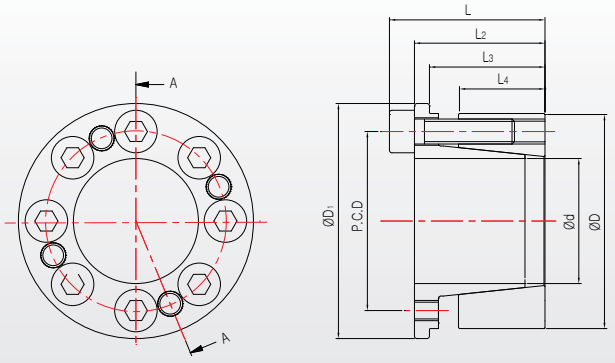
Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-AS-5 x 16	2.8	1.13	204	42.0	M3x12	4	0.88	6.27×10^{-7}	18
SAPL-AS-6 x 19	7.8	2.54	260	58.0	M4x12	4	2.7	1.36×10^{-6}	26
SAPL-AS-8 x 21	10.7	2.6	196	62.6	M4x12	4	2.7	2.03×10^{-6}	35
SAPL-AS-10 x 23	12.7	2.6	153	55.9	M4x12	4	2.7	2.92×10^{-6}	40
SAPL-AS-11 x 24	14.7	2.6	139	53.6	M4x14	4	2.7	3.45×10^{-6}	45
SAPL-AS-12 x 26	24.5	4.0	191	67.1	M4x16	6	2.7	5.37×10^{-6}	53
SAPL-AS-14 x 28	28.4	4.0	164	62.3	M4x16	6	2.7	7.07×10^{-6}	61
SAPL-AS-15 x 29	30.4	4.0	136	55	M4x16	6	2.7	8.58×10^{-6}	66
SAPL-AS-16 x 30	32.3	4.0	121	50.9	M4x16	6	2.7	1.02×10^{-5}	75
SAPL-AS-17 x 31	46.1	5.4	144	63.1	M4x18	8	2.7	1.17×10^{-5}	75
SAPL-AS-18 x 32	49	5.4	136	61.2	M4x18	8	2.7	1.31×10^{-5}	80
SAPL-AS-19 x 33	51.9	5.4	129	59.2	M4x18	8	2.7	1.46×10^{-5}	81
SAPL-AS-20 x 38	121.6	12.2	165	69.8	M5x20	8	5.6	3.70×10^{-5}	144
SAPL-AS-22 x 40	133.4	12.1	150	66.3	M5x20	8	5.6	4.42×10^{-5}	165
SAPL-AS-24 x 42	146.1	12.2	128	59.2	M5x20	8	5.6	5.45×10^{-5}	180
SAPL-AS-25 x 43	153	12.2	122	54.5	M5x25	8	5.6	6.15×10^{-5}	188
SAPL-AS-28 x 46	213.8	15.2	136	63.7	M5x25	10	5.6	8.15×10^{-5}	195
SAPL-AS-30 x 48	229.5	15.3	127	61.1	M5x25	10	5.6	9.45×10^{-5}	208
SAPL-AS-32 x 50	244.2	15.2	110	55.4	M5x25	10	5.6	1.14×10^{-4}	219
SAPL-AS-35 x 57	301.1	17.2	107	51.4	M6x25	8	9.6	2.12×10^{-4}	325
SAPL-AS-38 x 60	409	21.5	119	59.5	M6x25	10	9.6	2.62×10^{-4}	362
SAPL-AS-40 x 62	430.6	21.5	110	56.2	M6x25	10	9.6	3.00×10^{-4}	380

※Pt (allowable thrust) indicates value when torque is 0, Tc (max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

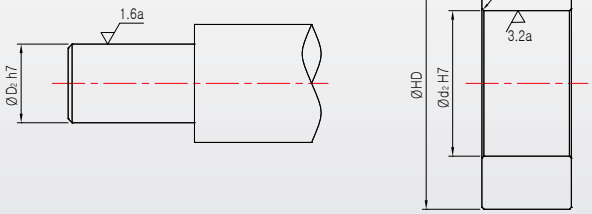
※ For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

Please, download CAD DATA from www.sungilfa.com

Dimension



A.P. Lock



Dimensions of shaft and hub

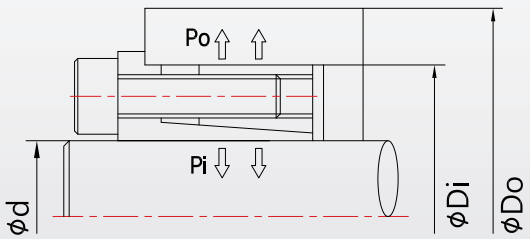
Model d x D	Dimension (A.P. Lock) [mm]						Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	L_4	D_1	P.C.D	D2	d_2	HL	SUS304 (206)	SUS410 (343)	SUS403 (392)
SAPL-AS-5 x 16	16.0	13.0	11.2	8.0	18.5	11.7	5	16	13	20	19	18
SAPL-AS-6 x 19	18.3	14.3	12.3	9.0	21.5	14.0	6	19	14	26	24	22
SAPL-AS-8 x 21	18.6	14.6	12.6	9.3	23.5	15.4	8	21	15	28	26	26
SAPL-AS-10 x 23	18.8	14.8	12.8	9.5	25.5	17.5	10	23	16	29	28	28
SAPL-AS-11 x 24	19.8	15.8	13.8	10.5	26.5	18.5	11	24	16	30	29	29
SAPL-AS-12 x 26	22.0	18.0	15.5	10.5	28.5	20.2	12	26	17	35	31	31
SAPL-AS-14 x 28	22.0	18.0	15.5	10.5	30.5	22.2	14	28	17	36	33	33
SAPL-AS-15 x 29	23.0	19.0	16.5	11.5	31.5	23.2	15	29	18	37	34	34
SAPL-AS-16 x 30	23.6	19.6	17.1	12.0	33.0	24.2	16	30	18	38	35	35
SAPL-AS-17 x 31	24.1	20.1	17.6	12.5	33.5	25.4	17	31	19	40	37	36
SAPL-AS-18 x 32	24.1	20.1	17.6	12.5	34.5	26.4	18	32	19	40	37	36
SAPL-AS-19 x 33	24.1	20.1	17.6	12.5	35.5	27.4	19	33	19	42	39	38
SAPL-AS-20 x 38	29.1	24.1	21.1	15.3	42.0	30.8	20	38	23	51	45	44
SAPL-AS-22 x 40	29.1	24.1	21.1	15.3	44.0	32.8	22	40	23	53	47	46
SAPL-AS-24 x 42	30.1	25.1	22.1	16.3	46.0	34.8	24	42	24	54	49	48
SAPL-AS-25 x 43	31.1	26.1	23.1	17.3	47.0	35.8	25	43	25	54	49	49
SAPL-AS-28 x 46	31.6	26.6	23.1	17.3	50.0	38.8	28	46	25	60	54	53
SAPL-AS-30 x 48	31.6	26.6	23.1	17.3	52.0	40.8	30	48	25	62	56	55
SAPL-AS-32 x 50	32.6	27.6	24.1	18.3	54.0	42.8	32	50	26	63	58	57
SAPL-AS-35 x 57	36.0	30.0	26.0	19.5	62.0	48.4	35	57	28	72	67	67
SAPL-AS-38 x 60	36.5	30.5	26.5	20.0	65.0	51.4	38	60	28	79	71	70
SAPL-AS-40 x 62	37.0	31.0	27.0	20.5	67.0	53.4	40	62	29	80	73	72

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-AK

Sungil Accurate & Powerful Locking Device

Specifications



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-AK-5 x 16	4.6	1.84	244	51	M3x12	4	1.9	6.27×10^{-7}	18
SAPL-AK-6 x 19	10.7	2.49	256	59	M4x12	4	3.9	1.36×10^{-6}	26
SAPL-AK-8 x 21	16.6	4.1	244	92	M4x12	4	3.9	2.03×10^{-6}	35
SAPL-AK-10 x 23	19.6	3.9	192	77	M4x12	4	3.9	2.92×10^{-6}	40
SAPL-AK-11 x 24	22.5	4.0	174	73	M4x14	4	3.9	3.45×10^{-6}	45
SAPL-AK-12 x 26	36.2	5.9	239	91	M4x16	6	3.9	5.37×10^{-6}	53
SAPL-AK-14 x 28	50.9	7.2	204	84	M4x16	6	3.9	7.07×10^{-6}	61
SAPL-AK-15 x 29	54.8	7.2	205	90	M4x16	6	3.9	8.58×10^{-6}	66
SAPL-AK-16 x 30	58.8	7.3	193	87	M4x16	6	3.9	1.02×10^{-5}	75
SAPL-AK-17 x 31	76.4	8.9	205	97	M4x18	8	3.9	1.17×10^{-5}	75
SAPL-AK-18 x 32	80.3	8.9	166	93	M4x18	8	3.9	1.31×10^{-5}	80
SAPL-AK-19 x 33	85.2	8.9	184	91	M4x18	8	3.9	1.46×10^{-5}	81
SAPL-AK-20 x 38	183	18.3	213	97	M5x20	8	8.8	3.70×10^{-5}	144
SAPL-AK-22 x 40	201	18.3	193	92	M5x20	8	8.8	4.42×10^{-5}	165
SAPL-AK-24 x 42	252	21.0	121	105	M5x20	8	8.8	5.45×10^{-5}	180
SAPL-AK-25 x 43	264	21.1	212	102	M5x25	8	8.8	6.15×10^{-5}	188
SAPL-AK-28 x 46	295	21.1	212	107	M5x25	10	8.8	8.15×10^{-5}	195
SAPL-AK-30 x 48	396	26.4	198	102	M5x25	10	8.8	9.45×10^{-5}	208
SAPL-AK-32 x 50	423	26.4	192	103	M5x25	10	8.8	1.14×10^{-4}	219
SAPL-AK-35 x 57	548	31.3	207	105	M6x25	8	15.7	2.12×10^{-4}	325
SAPL-AK-38 x 60	741	39.0	208	110	M6x25	10	15.7	2.62×10^{-4}	362
SAPL-AK-40 x 62	779	39.0	202	110	M6x25	10	15.7	3.00×10^{-4}	380

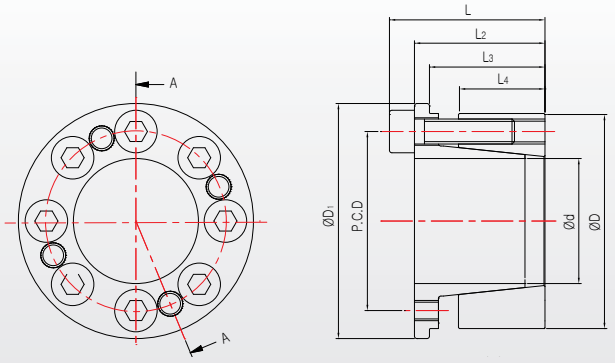
※Pt (allowable thrust) indicates value when torque is 0, Tc (max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

※For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

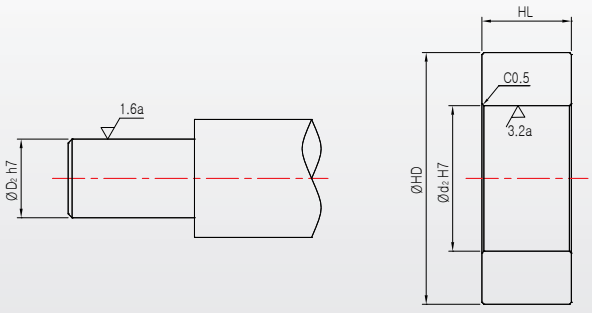
SAPL-AK
Sungil Accurate & Powerful Locking Device

Please, download CAD DATA from www.sungilfa.com

Dimension



A.P. Lock



Dimensions of shaft and hub

Model d x D	Dimension (A.P. Lock) [mm]						Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	L_4	D_1	P.C.D	D2	d_2	HL	SUS304 (206)	SUS410 (343)	SUS403 (392)
SAPL-AK-5 x 16	16.0	13.0	11.2	8.0	18.5	11.7	5	16	13	21	20	19
SAPL-AK-6 x 19	18.3	14.3	12.3	9.0	21.5	14.0	6	19	14	26	24	23
SAPL-AK-8 x 21	18.6	14.6	12.6	9.3	23.5	15.4	8	21	15	35	29	27
SAPL-AK-10 x 23	18.8	14.8	12.8	9.5	25.5	17.5	10	23	16	35	31	29
SAPL-AK-11 x 24	19.8	15.8	13.8	10.5	26.5	18.5	11	24	16	36	31	30
SAPL-AK-12 x 26	22.0	18.0	15.5	10.5	28.5	20.2	12	26	17	43	36	33
SAPL-AK-14 x 28	22.0	18.0	15.5	10.5	30.5	22.2	14	28	17	44	38	35
SAPL-AK-15 x 29	23.0	19.0	16.5	11.5	31.5	23.2	15	29	18	47	40	37
SAPL-AK-16 x 30	23.6	19.6	17.1	12.0	33.0	24.2	16	30	18	48	41	38
SAPL-AK-17 x 31	24.1	20.1	17.6	12.5	33.5	25.4	17	31	19	53	44	40
SAPL-AK-18 x 32	24.1	20.1	17.6	12.5	34.5	26.4	18	32	19	54	45	41
SAPL-AK-19 x 33	24.1	20.1	17.6	12.5	35.5	27.4	19	33	19	55	46	42
SAPL-AK-20 x 38	29.1	24.1	21.1	15.3	42.0	30.8	20	38	23	64	54	49
SAPL-AK-22 x 40	29.1	24.1	21.1	15.3	44.0	32.8	22	40	23	65	56	51
SAPL-AK-24 x 42	30.1	25.1	22.1	16.3	46.0	34.8	24	42	24	74	61	56
SAPL-AK-25 x 43	31.1	26.1	23.1	17.3	47.0	35.8	25	43	25	75	62	57
SAPL-AK-28 x 46	31.6	26.6	23.1	17.3	50.0	38.8	28	46	25	82	68	61
SAPL-AK-30 x 48	31.6	26.6	23.1	17.3	52.0	40.8	30	48	25	86	69	63
SAPL-AK-32 x 50	32.6	27.6	24.1	18.3	54.0	42.8	32	50	26	87	73	66
SAPL-AK-35 x 57	36.0	30.0	26.0	19.5	62.0	48.4	35	57	28	100	83	75
SAPL-AK-38 x 60	36.5	30.5	26.5	20.0	65.0	51.4	38	60	28	109	89	80
SAPL-AK-40 x 62	37.0	31.0	27.0	20.5	67.0	53.4	40	62	29	113	92	83

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-C Series

Sungil Accurate & Powerful Locking Device

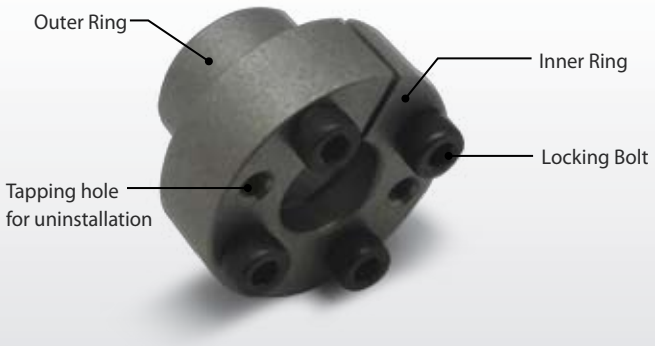
'SAP' mark(Trademark : 40-2011-0011919) is the original trademark for SUNGIL's A.P. Lock.

Features

RoHS COMPLIANT REACH The new EU chemicals legislation

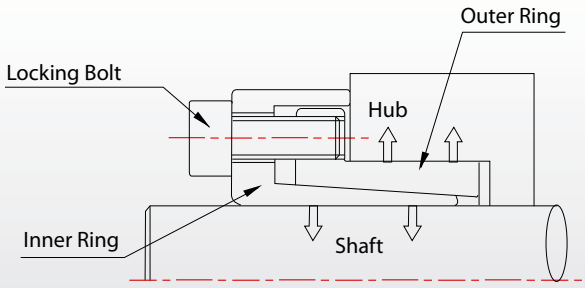
- Self centering function : prevents tiny off-centering
- Difference between inner diameter(d) and outer diameter(D) is very small. Due to low surface pressure, it is available to relatively small sized hub (The most compact design of A.P. Lock)
- Fits short hub.
- No hub movement when fastening because inner ring contacts hub surface
- Can select stainless material (vacuum condition) or electroless nickel plating (preventing corrosion)

Structure & Materials



Model	Body & Cover	
	material	Surface Treatment
SAPL-C	S45C	-
SAPL-CS	SUS304	-
SAPL-CK	S45C	Electroless nickel plating

Fastening Principle



How to Order

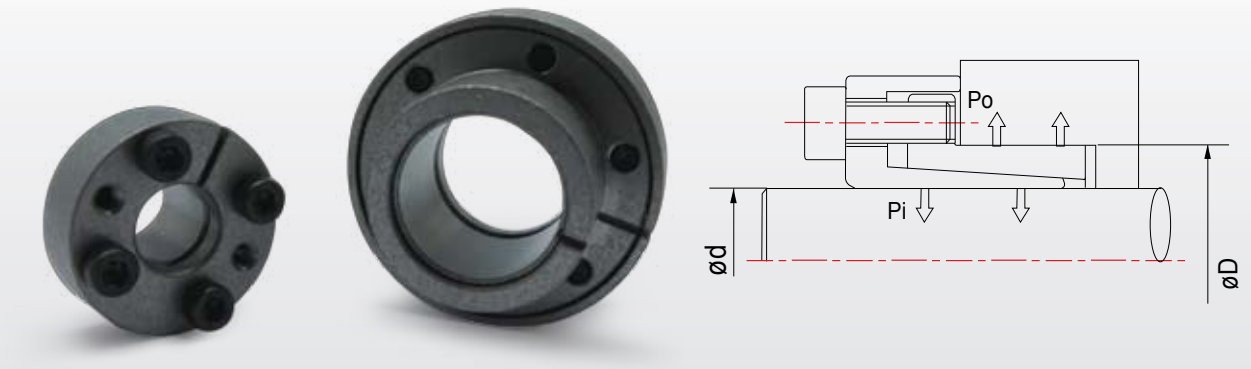
SAPL - C - 8 - 15

- SAPL - C : Product No
- 8 : Inner Diameter(d)
- 15 : Outer Diameter(D)

SAPL-C

Sungil Accurate & Powerful Locking Device

Specification



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-C-5 x 12	9	3.45	188	99	M3x8	4	1.7	2.09×10^{-6}	36
SAPL-C-6 x 12	11	3.45	156	99	M3x8	4	1.7	2.08×10^{-6}	34
SAPL-C-8 x 15	25	6.09	174	116	M4x10	4	4	5.61×10^{-6}	61
SAPL-C-10 x 18	44	8.71	193	134	M4x10	5	4	9.15×10^{-6}	78
SAPL-C-11 x 18	48	8.71	176	134	M4x10	5	4	9.07×10^{-6}	75
SAPL-C-12 x 20	53	8.71	161	121	M4x10	5	4	1.18×10^{-5}	86
SAPL-C-14 x 22	61	8.71	138	110	M4x10	5	4	1.30×10^{-5}	94
SAPL-C-15 x 23	115	15.30	178	150	M5x12	4	9	2.57×10^{-5}	135
SAPL-C-16 x 24	123	15.30	167	144	M5x12	4	9	2.84×10^{-5}	140
SAPL-C-17 x 25	131	15.30	158	138	M5x12	4	9	3.13×10^{-5}	146
SAPL-C-18 x 26	210	23.20	195	198	M6x14	4	14	6.17×10^{-5}	221
SAPL-C-19 x 27	221	23.20	185	191	M6x14	4	14	6.71×10^{-5}	228
SAPL-C-20 x 28	233	23.20	176	184	M6x14	4	14	7.29×10^{-5}	235
SAPL-C-22 x 32	256	23.20	146	141	M6x14	4	14	1.03×10^{-4}	287
SAPL-C-24 x 34	279	23.20	134	133	M6x14	4	14	1.19×10^{-4}	302
SAPL-C-25 x 34	291	23.20	128	133	M6x14	4	14	1.18×10^{-4}	293
SAPL-C-28 x 39	488	34.80	146	139	M6x14	6	14	1.79×10^{-4}	378
SAPL-C-30 x 41	523	34.80	136	132	M6x14	6	14	2.04×10^{-4}	396

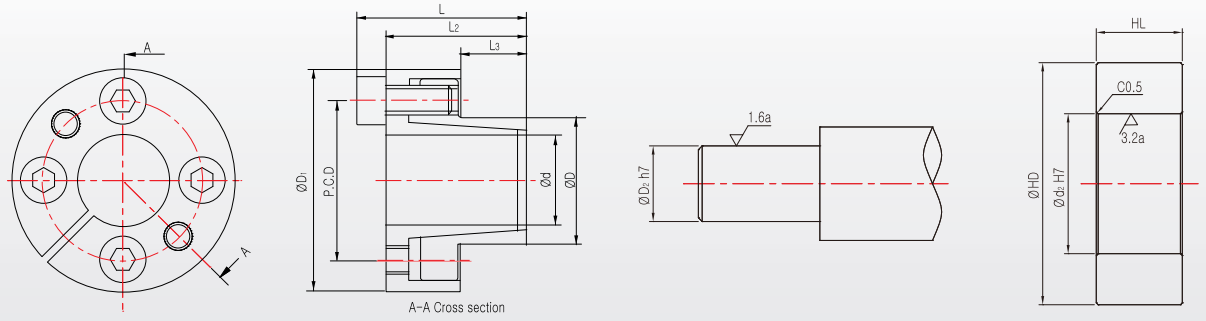
※ Pt (allowable thrust) indicates value when torque is 0, Tc (max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

※ For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

SAPL-C

Sungil Accurate & Powerful Locking Device

Dimension



A.P. Lock

Dimensions of shaft and hub

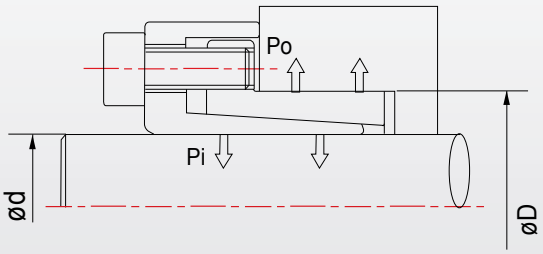
Model d x D	Dimension (A.P. Lock) [mm]					Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	D_1	P.C.D	D2	d_2	HL	S10C (206)	S35C SF590 (294)	S55C (392)
SAPL-C-5 x 12	22.0	19.0	10.0	23.0	15.5	5	12	12	23	23	23
SAPL-C-6 x 12	22.0	19.0	10.0	23.0	15.5	6	12	12	23	23	23
SAPL-C-8 x 15	27.0	23.0	12.0	28.0	19.5	8	15	14	29	28	28
SAPL-C-10 x 18	27.0	23.0	12.0	31.5	22.5	10	18	14	40	31.5	31.5
SAPL-C-11 x 18	27.0	23.0	12.0	31.5	22.5	11	18	14	40	31.5	31.5
SAPL-C-12 x 20	27.0	23.0	12.0	33.5	24.5	12	20	14	40	33.5	33.5
SAPL-C-14 x 22	27.0	23.0	12.0	35.5	26.5	14	22	14	40	35.5	35.5
SAPL-C-15 x 23	32.0	27.0	14.0	38.5	28.5	15	23	16	58	41	38.5
SAPL-C-16 x 24	32.0	27.0	14.0	39.5	29.5	16	24	16	58	42	39.5
SAPL-C-17 x 25	32.0	27.0	14.0	40.5	30.5	17	25	16	57	42	40.5
SAPL-C-18 x 26	36.0	30.0	14.0	46.0	33.0	18	26	16	-	59	46
SAPL-C-19 x 27	36.0	30.0	14.0	47.0	34.0	19	27	16	-	59	47
SAPL-C-20 x 28	36.0	30.0	14.0	48.0	35.0	20	28	16	-	59	48
SAPL-C-22 x 32	38.0	32.0	16.0	52.0	39.0	22	32	18	74	54	52
SAPL-C-24 x 34	38.0	32.0	16.0	54.0	41.0	24	34	18	74	56	54
SAPL-C-25 x 34	38.0	32.0	16.0	54.0	41.0	25	34	18	74	56	54
SAPL-C-28 x 39	42.0	36.0	20.0	59.0	46.0	28	39	22	89	66	59
SAPL-C-30 x 41	42.0	36.0	20.0	61.0	48.0	30	41	22	88	67	61

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-CS

Sungil Accurate & Powerful Locking Device

Specification



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-CS-5 x 12	3	1.05	57	30	M3x8	4	1.1	2.09×10^{-6}	36
SAPL-CS-6 x 12	4	1.05	48	30	M3x8	4	1.1	2.08×10^{-6}	34
SAPL-CS-8 x 15	8	1.92	55	37	M4x10	4	2.7	5.61×10^{-6}	61
SAPL-CS-10 x 18	14	2.75	61	43	M4x10	5	2.7	9.15×10^{-6}	78
SAPL-CS-11 x 18	16	2.75	56	43	M4x10	5	2.7	9.07×10^{-6}	75
SAPL-CS-12 x 20	17	2.75	51	39	M4x10	5	2.7	1.18×10^{-5}	86
SAPL-CS-14 x 22	20	2.75	44	35	M4x10	5	2.7	1.30×10^{-5}	94
SAPL-CS-15 x 23	38	5.0	59	49	M5x12	4	5.6	2.57×10^{-5}	135
SAPL-CS-16 x 24	41	5.0	55	47	M5x12	4	5.6	2.84×10^{-5}	140
SAPL-CS-17 x 25	43	5.0	52	46	M5x12	4	5.6	3.13×10^{-5}	146
SAPL-CS-18 x 26	68	7.4	63	64	M6x14	4	9.6	6.17×10^{-5}	221
SAPL-CS-19 x 27	71	7.4	60	62	M6x14	4	9.6	6.71×10^{-5}	228
SAPL-CS-20 x 28	75	7.4	57	59	M6x14	4	9.6	7.29×10^{-5}	235
SAPL-CS-22 x 32	83	7.4	47	46	M6x14	4	9.6	1.03×10^{-4}	287
SAPL-CS-24 x 34	90	7.4	43	43	M6x14	4	9.6	1.19×10^{-4}	302
SAPL-CS-25 x 34	94	7.4	42	43	M6x14	4	9.6	1.18×10^{-4}	293
SAPL-CS-28 x 39	157	11.1	47	45	M6x14	6	9.6	1.79×10^{-4}	378
SAPL-CS-30 x 41	168	11.1	44	43	M6x14	6	9.6	2.04×10^{-4}	396

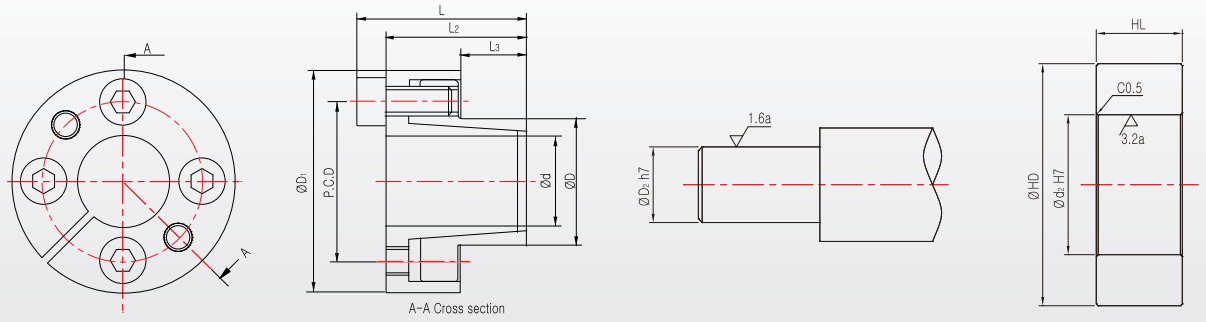
※ Pt (allowable thrust) indicates value when torque is 0, Tc (max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

※ For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

SAPL-CS

Sungil Accurate & Powerful Locking Device

Dimension



A.P. Lock

Dimensions of shaft and hub

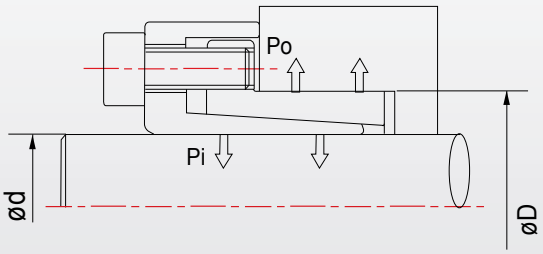
Model d x D	Dimension (A.P. Lock) [mm]					Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	D_1	P.C.D	D2	d_2	HL	SUS304 (206)	S35C SF590 (294)	SUS403 (392)
SAPL-CS-5 x 12	22.0	19.0	10.0	23.0	15.5	5	12	12	23	23	23
SAPL-CS-6 x 12	22.0	19.0	10.0	23.0	15.5	6	12	12	23	23	23
SAPL-CS-8 x 15	27.0	23.0	12.0	28.0	19.5	8	15	14	28	28	28
SAPL-CS-10 x 18	27.0	23.0	12.0	31.5	22.5	10	18	14	31.5	31.5	31.5
SAPL-CS-11 x 18	27.0	23.0	12.0	31.5	22.5	11	18	14	31.5	31.5	31.5
SAPL-CS-12 x 20	27.0	23.0	12.0	33.5	24.5	12	20	14	33.5	33.5	33.5
SAPL-CS-14 x 22	27.0	23.0	12.0	35.5	26.5	14	22	14	35.5	35.5	35.5
SAPL-CS-15 x 23	32.0	27.0	14.0	38.5	28.5	15	23	16	38.5	38.5	38.5
SAPL-CS-16 x 24	32.0	27.0	14.0	39.5	29.5	16	24	16	39.5	39.5	39.5
SAPL-CS-17 x 25	32.0	27.0	14.0	40.5	30.5	17	25	16	40.5	40.5	40.5
SAPL-CS-18 x 26	36.0	30.0	14.0	46.0	33.0	18	26	16	46	46	46
SAPL-CS-19 x 27	36.0	30.0	14.0	47.0	34.0	19	27	16	47	47	47
SAPL-CS-20 x 28	36.0	30.0	14.0	48.0	35.0	20	28	16	48	48	48
SAPL-CS-22 x 32	38.0	32.0	16.0	52.0	39.0	22	32	18	52	52	52
SAPL-CS-24 x 34	38.0	32.0	16.0	54.0	41.0	24	34	18	54	54	54
SAPL-CS-25 x 34	38.0	32.0	16.0	54.0	41.0	25	34	18	54	54	54
SAPL-CS-28 x 39	42.0	36.0	20.0	59.0	46.0	28	39	22	59	59	59
SAPL-CS-30 x 41	42.0	36.0	20.0	61.0	48.0	30	41	22	61	61	61

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-CK

Sungil Accurate & Powerful Locking Device

Specification



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-CK-5 x 12	9	3.45	188	99	M3x8	4	1.7	2.09×10^{-6}	36
SAPL-CK-6 x 12	11	3.45	156	99	M3x8	4	1.7	2.08×10^{-6}	34
SAPL-CK-8 x 15	25	6.09	174	116	M4x10	4	4	5.61×10^{-6}	61
SAPL-CK-10 x 18	44	8.71	193	134	M4x10	5	4	9.15×10^{-6}	78
SAPL-CK-11 x 18	48	8.71	176	134	M4x10	5	4	9.07×10^{-6}	75
SAPL-CK-12 x 20	53	8.71	161	121	M4x10	5	4	1.18×10^{-5}	86
SAPL-CK-14 x 22	61	8.71	138	110	M4x10	5	4	1.30×10^{-5}	94
SAPL-CK-15 x 23	115	15.30	178	150	M5x12	4	8	2.57×10^{-5}	135
SAPL-CK-16 x 24	123	15.30	167	144	M5x12	4	8	2.84×10^{-5}	140
SAPL-CK-17 x 25	131	15.30	158	138	M5x12	4	8	3.13×10^{-5}	146
SAPL-CK-18 x 26	210	23.20	195	198	M6x14	4	14	6.17×10^{-5}	221
SAPL-CK-19 x 27	221	23.20	185	191	M6x14	4	14	6.71×10^{-5}	228
SAPL-CK-20 x 28	233	23.20	176	184	M6x14	4	14	7.29×10^{-5}	235
SAPL-CK-22 x 32	256	23.20	146	141	M6x14	4	14	1.03×10^{-4}	287
SAPL-CK-24 x 34	279	23.20	134	133	M6x14	4	14	1.19×10^{-4}	302
SAPL-CK-25 x 34	291	23.20	128	133	M6x14	4	14	1.18×10^{-4}	293
SAPL-CK-28 x 39	488	34.80	146	139	M6x14	6	14	1.79×10^{-4}	378
SAPL-CK-30 x 41	523	34.80	136	132	M6x14	6	14	2.04×10^{-4}	396

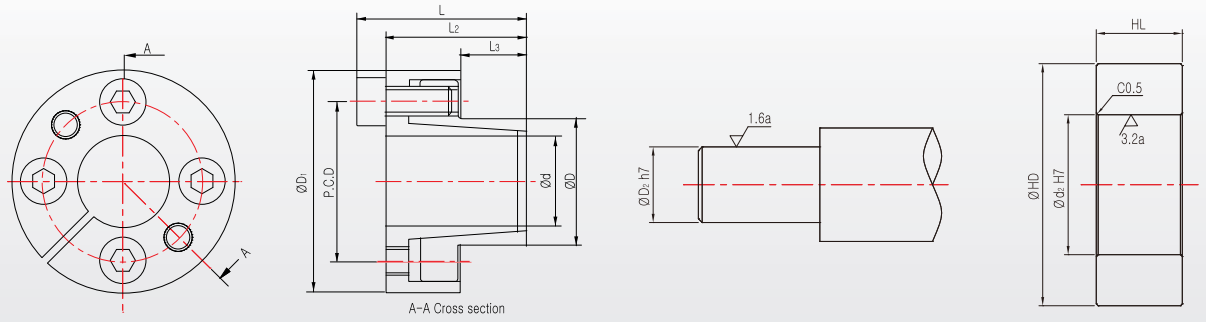
※ Pt (allowable thrust) indicates value when torque is 0, Tc (maximum allowable torque) indicates value when thrust load is 0. . When thrust and torque are combined, use the equation (design and install manual)

※ For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body, cover surface

SAPL-CK

Sungil Accurate & Powerful Locking Device

Dimension



A.P. Lock

Dimensions of shaft and hub

Model d x D	Dimension (A.P. Lock) [mm]					Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	D_1	P.C.D	D2	d_2	HL	S10C (206)	S35C SF590 (294)	S55C (392)
SAPL-CK-5 x 12	22.0	19.0	10.0	23.0	15.5	5	12	12	23	23	23
SAPL-CK-6 x 12	22.0	19.0	10.0	23.0	15.5	6	12	12	23	23	23
SAPL-CK-8 x 15	27.0	23.0	12.0	28.0	19.5	8	15	14	29	28	28
SAPL-CK-10 x 18	27.0	23.0	12.0	31.5	22.5	10	18	14	40	31.5	31.5
SAPL-CK-11 x 18	27.0	23.0	12.0	31.5	22.5	11	18	14	40	31.5	31.5
SAPL-CK-12 x 20	27.0	23.0	12.0	33.5	24.5	12	20	14	40	33.5	33.5
SAPL-CK-14 x 22	27.0	23.0	12.0	35.5	26.5	14	22	14	40	35.5	35.5
SAPL-CK-15 x 23	32.0	27.0	14.0	38.5	28.5	15	23	16	58	41	38.5
SAPL-CK-16 x 24	32.0	27.0	14.0	39.5	29.5	16	24	16	58	42	39.5
SAPL-CK-17 x 25	32.0	27.0	14.0	40.5	30.5	17	25	16	57	42	40.5
SAPL-CK-18 x 26	36.0	30.0	14.0	46.0	33.0	18	26	16	-	59	46
SAPL-CK-19 x 27	36.0	30.0	14.0	47.0	34.0	19	27	16	-	59	47
SAPL-CK-20 x 28	36.0	30.0	14.0	48.0	35.0	20	28	16	-	59	48
SAPL-CK-22 x 32	38.0	32.0	16.0	52.0	39.0	22	32	18	74	54	52
SAPL-CK-24 x 34	38.0	32.0	16.0	54.0	41.0	24	34	18	74	56	54
SAPL-CK-25 x 34	38.0	32.0	16.0	54.0	41.0	25	34	18	74	56	54
SAPL-CK-28 x 39	42.0	36.0	20.0	59.0	46.0	28	39	22	89	66	59
SAPL-CK-30 x 41	42.0	36.0	20.0	61.0	48.0	30	41	22	88	67	61

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPL-B Series

Sungil Accurate & Powerful Locking Device

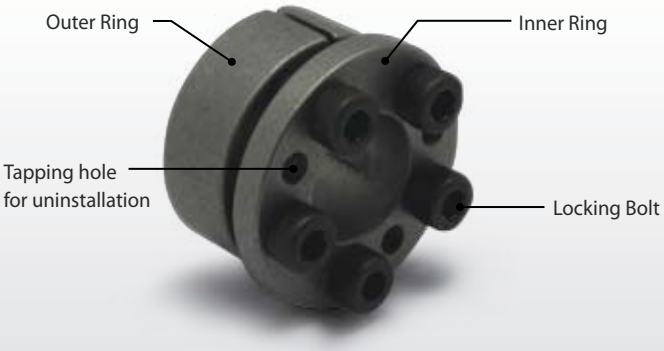
'SAP' mark(Trademark : 40-2011-0011919) is the original trademark for SUNGIL's A.P. Lock.

RoHS COMPLIANT REACH The new EU chemicals legislation

Features

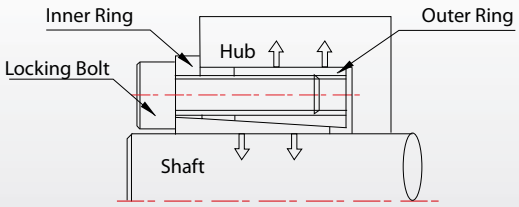
- Self centering function : prevents tiny off-centering
- Outer diameter of cover is larger than SAPL-A type and bolt size is bigger, so it has relatively larger durability compared to same inner diameter size type of SAPL-A

Structure & Materials



Model	Body & Cover	
	material	Surface Treatment
SAPL-B	S45C	-

Fastening Principle



How to Order

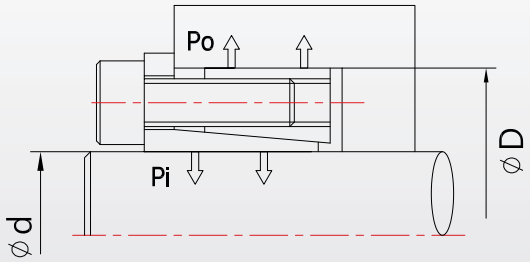
SAPL - B - 8 - 22

- SAPL - B : Product No
- 8 : Inner Diameter(d)
- 22 : Outer Diameter(D)

SAPL-B

Sungil Accurate & Powerful Locking Device

Specification



Model d x D	Max. Allowable Torque (Tc)	Allowable Thrust Load (Pt) [kN]	Surface Pressure [N/㎟]		Locking Bolt			Mass moment of Inertia [kg · ㎡]	Mass [g]
			Shaft (Pi)	Hub (Po)	Size	Number	Tightening Torque [N · m]		
SAPL-B-8 x 22	18	5.00	274	70	M4x15	3	4	2.03×10^{-6}	45
SAPL-B-9 x 23	21	5.00	243	67	M4x15	3	4	2.45×10^{-6}	50
SAPL-B-10 x 24	29	6.00	294	85	M4x15	4	4	2.92×10^{-6}	53
SAPL-B-11 x 25	33	6.00	265	82	M4x15	4	4	3.45×10^{-6}	56
SAPL-B-12 x 26	46	8.00	304	98	M4x15	5	4	5.37×10^{-6}	60
SAPL-B-13 x 27	49	7.00	280	95	M4x15	5	4	6.37×10^{-6}	63
SAPL-B-14 x 31	69	10.00	261	85	M5x15	4	8	7.07×10^{-6}	100
SAPL-B-15 x 32	74	10.00	243	82	M5x15	4	8	8.58×10^{-6}	105
SAPL-B-16 x 33	78	10.00	228	79	M5x15	4	8	1.02×10^{-5}	110
SAPL-B-17 x 34	103	12.00	268	97	M5x15	5	8	1.17×10^{-5}	115
SAPL-B-18 x 35	108	12.00	253	94	M5x15	5	8	1.31×10^{-5}	120
SAPL-B-19 x 47	284	29.00	284	92	M6x22	6	16	1.46×10^{-5}	355
SAPL-B-20 x 47	294	29.00	270	92	M6x22	6	16	3.70×10^{-5}	350
SAPL-B-22 x 47	324	29.00	245	92	M6x22	6	16	4.42×10^{-5}	335
SAPL-B-24 x 50	412	34.00	262	101	M6x22	7	16	5.45×10^{-5}	380
SAPL-B-25 x 50	431	34.00	252	101	M6x22	7	16	6.15×10^{-5}	370
SAPL-B-28 x 55	471	34.00	225	92	M6x22	7	16	8.15×10^{-5}	440
SAPL-B-30 x 55	510	34.00	210	92	M6x22	7	16	9.45×10^{-5}	425

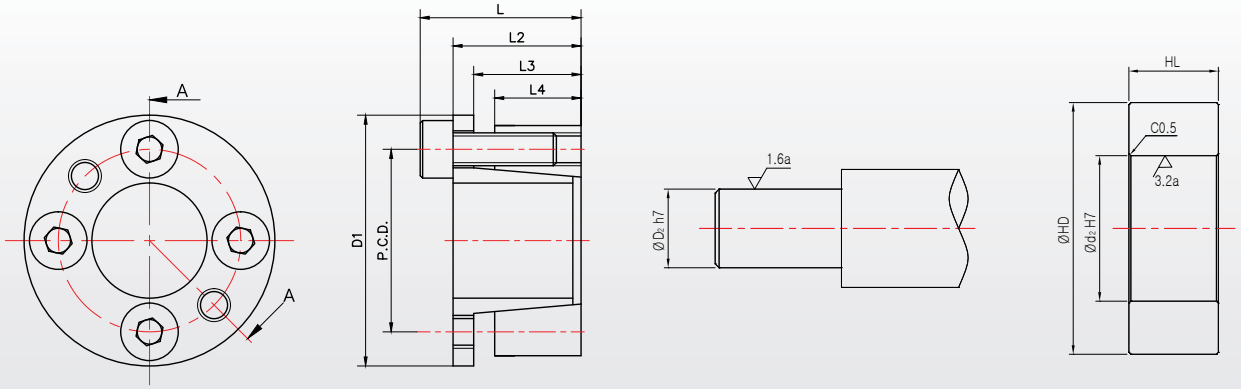
※ Pt (allowable thrust) indicates value when torque is 0, Tc (max allowable torque) indicates value when thrust load is 0. When thrust and torque are combined, use the equation given in design and install manual

※ For the best performance, you must remove rust, dust etc. on shaft, hub, inner side of body and cover's outer surface

SAPL-B
Sungil Accurate & Powerful Locking Device

Please, download CAD DATA from www.sungilfa.com

Dimension



A.P. Lock

Dimensions of shaft and hub

Model d x D	Dimension (A.P. Lock) [mm]						Dimension [mm] Shaft & Hub			Max outer diameter of Hub [mm]		
	L	L_2	L_3	L_4	D_1	P.C.D	D2	d_2	HL	FCD350 SS400 (200)	FCD450 S35C-N (300)	S20C S55C-N (400)
SAPL-B-8 x 22	21.0	17.0	13.0	10.0	25.0	17	8	22	15	30	27	26
SAPL-B-9 x 23	21.0	17.0	13.0	10.0	26.0	18	9	23	15	31	28	27
SAPL-B-10 x 24	21.0	17.0	13.0	10.0	27.0	19	10	24	15	35	31	29
SAPL-B-11 x 25	21.0	17.0	13.0	10.0	28.0	20	11	25	15	36	32	30
SAPL-B-12 x 26	21.0	17.0	13.0	10.0	29.0	21	12	26	15	40	35	32
SAPL-B-13 x 27	21.0	17.0	13.0	10.0	30.0	22	13	27	15	41	36	33
SAPL-B-14 x 31	26.0	21.0	16.0	12.5	34.0	25	14	31	18	45	40	37
SAPL-B-15 x 32	26.0	21.0	16.0	12.5	35.0	25	15	32	18	46	41	39
SAPL-B-16 x 33	26.0	21.0	16.0	12.5	36.0	26	16	33	18	47	42	39
SAPL-B-17 x 34	26.0	21.0	16.0	12.5	37.0	27	17	34	18	52	45	42
SAPL-B-18 x 35	26.0	21.0	16.0	12.5	38.0	28	18	35	18	53	46	43
SAPL-B-19 x 47	38.0	32.0	24.0	20.0	53.0	33	19	47	26	70	61	57
SAPL-B-20 x 47	38.0	32.0	24.0	20.0	53.0	33	20	47	26	70	61	57
SAPL-B-22 x 47	38.0	32.0	24.0	20.0	53.0	37	22	47	26	70	61	57
SAPL-B-24 x 50	38.0	32.0	24.0	20.0	56.0	40	24	50	26	78	67	62
SAPL-B-25 x 50	38.0	32.0	24.0	20.0	56.0	40	25	50	26	78	67	62
SAPL-B-28 x 55	38.0	32.0	24.0	20.0	62.0	45	28	55	26	82	72	67
SAPL-B-30 x 55	38.0	32.0	24.0	20.0	62.0	45	30	55	26	82	72	67

※ Values on the bottom of hub materials are the yield stress [Mpa] of the raw material

SAPC Series

Sungil Aluminum A.P. Lock

'SAP' mark(Trademark : 40-2011-0011919) is the original trademark for SUNGIL's A.P. Lock.

RoHS COMPLIANT REACH The new EU chemicals legislation

Features

1. Aluminum Material

It is important to reduce the moment of inertia for high speed servo motor positioning control. High speed can be achieved by using the suitable aluminum power lock for aluminum pulley to realize low moment of inertia.

2. Optimized for Aluminum Pulley

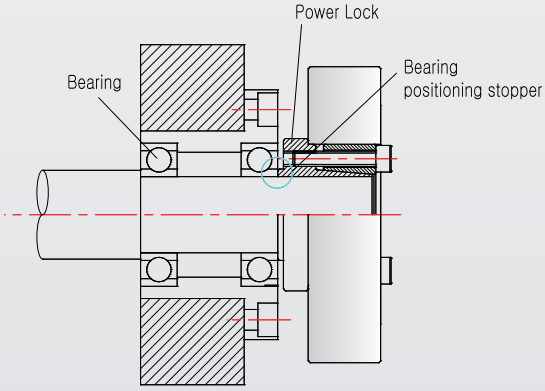
There was slipping problem with servo motor when it was run by timing pulley since conventional connection unit had high surface pressure and the hub diameter was not appropriate, and unfit to shaft diameter. SAPC series lessened the number of bolts based on the standard specification of servo motor torque and reduced the surface pressure on the hub's inner diameter so that it is possible to connect with aluminum pulley.

3. New Structure for Bearing Positioning

An additional component is unnecessary because the product is designed to work as tension plate for bearing positioning stopper

4. Easy to determine the installation position

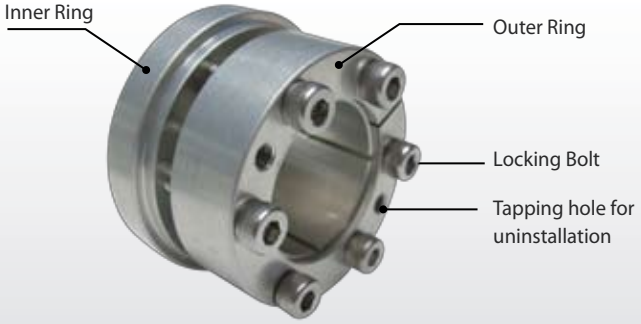
We have been suggested to leave the 1mm space for installation in advance considering the disassembling. However SAPC series does not need additional space for the hub to move when disassembling. Also it is easy to determine the power lock's position.



Registration of the patent: 10-1098255

※ Be careful for determining the hub's outer diameter because even if you select a high strength aluminum alloy for pully, its young's modulus is low.
※ Contact us if you are using the combination of aluminum alloy and steel shaft over 80 °C circumstances because high temperature may reduce torque.

Structure & Material

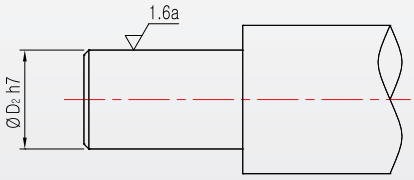


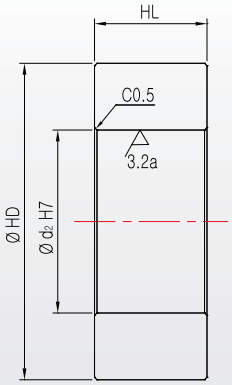
	Material	Surface Treatment
Inner Ring	Aluminum Alloy	Alumite
Outer Ring	Aluminum Alloy	Alumite
Locking Bolt	SCM 435	Electroless Nickel Coating

SAPC Series

Please, download CAD DATA from www.sungilfa.com

Specification





Shaft and Hub Dimension

Model No.	Max Permissible Torque (N.m)	Permissible Thrust Load (kN)	Surface pressure		Moment of Inertia	Shaft and Hub Dimension				
						Dimension			Minimum Diameter of Hub(HD)	
			Shaft (N/mm²)	Hub (N/mm²)	(kg/m²)	D_2	d_2	HL	Aluminum	S45C
SAPC-5-16	2.5	1.00	121	35	2.65×10^{-7}	5	16	9	20	19
SAPC-6-17	4	1.33	151	49	3.31×10^{-7}	6	17	9	23	21
SAPC-8-19	6	1.51	129	51	5.95×10^{-7}	8	19	10	26	24
SAPC-10-21	8	1.63	104	46	8.52×10^{-7}	10	21	10	29	26
SAPC-11-22	9	1.66	88	41	1.08×10^{-6}	11	22	11	30	26
SAPC-12-24	12	1.99	89	42	1.62×10^{-6}	12	24	12	33	29
SAPC-14-26	18	2.56	91	47	2.16×10^{-6}	14	26	12	38	31
SAPC-15-28	25	3.34	79	38	3.18×10^{-6}	15	28	13	40	33
SAPC-16-29	26	3.34	74	37	3.50×10^{-6}	16	29	13	41	34
SAPC-17-30	27	3.18	66	34	4.23×10^{-6}	17	30	14	42	35
SAPC-18-31	29	3.23	78	41	4.75×10^{-6}	18	31	14	46	36
SAPC-19-32	33	3.50	74	40	5.32×10^{-6}	19	32	14	49	37
SAPC-20-37	54	5.47	92	46	1.06×10^{-5}	20	37	16	54	44
SAPC-22-39	65	5.94	83	43	1.33×10^{-5}	22	39	16	56	46
SAPC-24-41	85	7.07	84	46	1.67×10^{-5}	24	41	18	59	48
SAPC-25-42	110	8.77	97	53	2.08×10^{-5}	25	42	19	64	51
SAPC-28-45	125	8.91	101	57	2.65×10^{-5}	28	45	19	72	55
SAPC-30-50	180	12.08	99	56	4.46×10^{-5}	30	50	20	76	60
SAPC-32-53	210	13.13	104	59	5.55×10^{-5}	32	53	20	81	65
SAPC-35-56	230	13.13	92	54	7.61×10^{-5}	35	56	22.5	85	67

※ The young's modulus of Aluminum is relatively low, so because of the deformation of hub, enough surface pressure might not be secured.

※ About 15-20% of transmittable Torque will be reduced due to key hole of shaft because surface contact is decreased.

SAPC Series

Sungil Aluminum A.P. Lock

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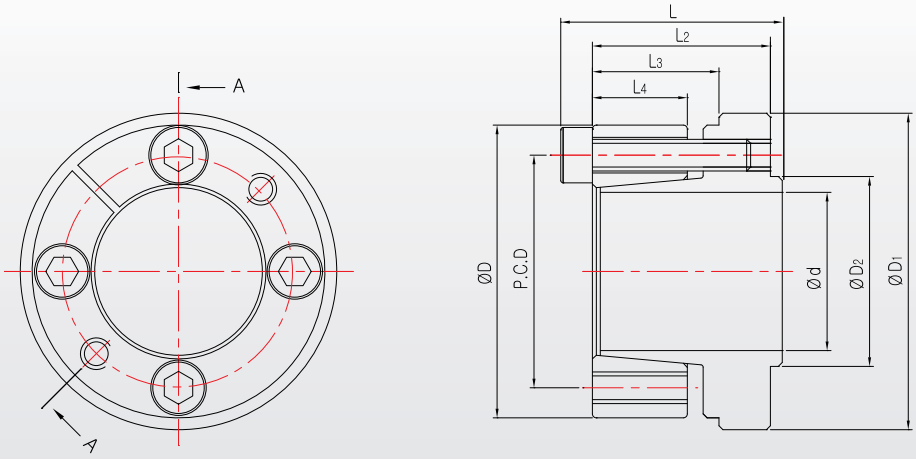
Dimension



Model No. (dxD)	Dimension (mm)							Fastening Bolt			Mass (g)
	L	L_2	L_3	L_4	D_1	D_2	P.C.D	Size	Quantity	Fastening Torque (N.m)	
SAPC-5-16	15.5	13	9	6.5	19	7.5	11.1	M2.5	2	1.3	7
SAPC-6-17	15.5	13	9	6.5	20	8.5	12.1	M2.5	3	1.3	8
SAPC-8-19	17.5	15	10	7.5	22	11	14.1	M2.5	4	1.3	11
SAPC-10-21	17.5	15	10	7.5	24	13	16.1	M2.5	4	1.3	12
SAPC-11-22	19.5	17	11	8	25	14	17.1	M2.5	4	1.3	14
SAPC-12-24	20.5	18	12	9	27	15	19.2	M2.5	5	1.3	17
SAPC-14-26	20.5	18	12	9	29	17	21.2	M2.5	6	1.3	19
SAPC-15-28	23	20	13	9.5	31	18.5	22.2	M3	4	2.3	24
SAPC-16-29	23	20	13	9.5	32	19.5	23.2	M3	4	2.3	25
SAPC-17-30	24	21	14	10	33	20.5	24	M3	4	2.3	28
SAPC-18-31	24	21	14	10	34	21.5	25	M3	5	2.3	29
SAPC-19-32	24	21	14	10	35	22.5	26	M3	5	2.3	30
SAPC-20-37	28	24	16	12	40	24	29.4	M4	4	5.1	47
SAPC-22-39	28	24	16	12	42	26	31.4	M4	4	5.1	52
SAPC-24-41	30	26	18	13	45	28	33.3	M4	5	5.1	57
SAPC-25-42	32	28	19	13.5	46	29	34.3	M4	6	5.1	67
SAPC-28-45	32	28	19	13.5	49	32	37.3	M4	7	5.1	73
SAPC-30-50	35	30	20	14.5	55	34.5	41.3	M5	5	10.0	101
SAPC-32-53	35	30	20	14.5	58	36.5	43.3	M5	6	10.0	112
SAPC-35-56	38	33	22.5	16	62	40	46.6	M5	6	10.0	134

SAPA Series

Sungil Aluminum A.P. Lock

'SAP' mark(Trademark : 40-2011-0011919) is the original trademark for SUNGIL's A.P. Lock.

RoHS COMPLIANT REACH The new EU chemicals legislation

Features

1. Aluminum Material

It is important to reduce the moment of inertia for high speed servo motor positioning control. High speed can be achieved by using the suitable aluminum power lock for aluminum pulley to realize low moment of inertia.

2. High Transmittable Torque

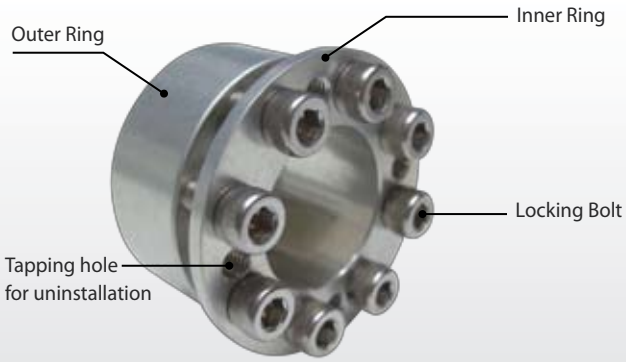
It is possible to use this type in aluminum pulley and also in steel pulley because it is made by high strength aluminum alloy which is capable to transfer high torque.

3. Optimized in clean Room

SAPA is made with aluminum alloy and nickel-chrome-coated bolt to be optimized in clean room

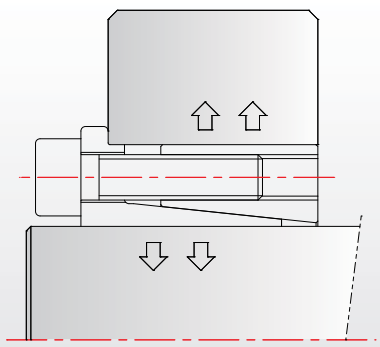
※ Be careful for determining the hub's outer diameter because even if you select a high strength aluminum alloy for pully, its young's modulus is low.
※ Contact us if you are using the combination of aluminum alloy and steel shaft over 80 ℃ circumstances because high temperature may reduce torque.

Structure & Material



	Locking Bolt	Surface Treatment
Inner Ring	Aluminum Alloy	Alumite
Outer Ring	Aluminum Alloy	Alumite
Locking Bolt	SCM 435	Electroless Nickel Coating

The Principle of Tightening



How to Order

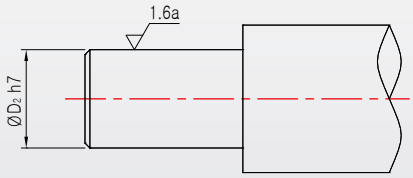
SAPA - 5 - 16

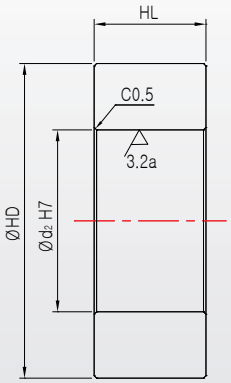
- SAPA: Product No
- 5: Inner Diameter(d)
- 16: Out Diameter(D)

SAPA Series

Sungil Aluminum A.P. Lock

Specification





Shaft and Hub Dimension

Model No. (dxD)	Max Permissible Torque (N.m)	Permissible Thrust Load (kN)	Surface pressure		Moment of Inertia	Shaft and Hub Dimension				
						Dimension			Minimum Diameter of Hub (HD)	
			Shaft(N/mm²)	Hub(N/mm²)	(kg/m²)	D_2	d_2	HL	Aluminum	S45C
SAPA-5-16	6	2.24	197	64	2.63×10^{-7}	5	16	13	28	22
SAPA-6-19	11	3.74	285	92	6.13×10^{-7}	6	19	14	35	27
SAPA-8-21	18	4.48	214	96	8.74×10^{-7}	8	21	15	39	30
SAPA-10-23	20	4.48	167	86	1.23×10^{-6}	10	23	16	41	32
SAPA-11-24	24	4.48	153	83	1.44×10^{-6}	11	24	16	42	33
SAPA-12-26	40	6.73	209	103	2.38×10^{-6}	12	26	17	50	38
SAPA-14-28	52	7.57	202	108	3.08×10^{-6}	14	28	17	56	42
SAPA-15-29	56	7.57	167	95	3.66×10^{-6}	15	29	18	53	41
SAPA-16-30	60	7.57	149	88	4.28×10^{-6}	16	30	18	54	42
SAPA-17-31	88	10.08	177	109	5.13×10^{-6}	17	31	19	61	46
SAPA-18-32	92	10.08	167	106	5.71×10^{-6}	18	32	19	62	47
SAPA-19-33	96	10.08	159	102	7.20×10^{-6}	19	33	19	63	48
SAPA-20-38	176	17.28	186	111	1.55×10^{-5}	20	38	23	82	60
SAPA-22-40	232	20.80	204	126	1.84×10^{-5}	22	40	23	96	68
SAPA-24-42	256	20.80	173	113	2.23×10^{-5}	24	42	24	92	67
SAPA-25-43	270	21.76	172	109	2.49×10^{-5}	25	43	25	91	67
SAPA-28-46	290	21.60	153	101	3.36×10^{-5}	28	46	25	92	69
SAPA-30-48	320	21.60	142	97	3.86×10^{-5}	30	48	25	94	71
SAPA-32-50	352	21.60	124	88	4.60×10^{-5}	32	50	26	92	71
SAPA-35-57	576	32.88	195	132	8.46×10^{-5}	35	57	28	121	89

※ The young's modulus of Aluminum is relatively low, so because of the deformation of hub, enough surface pressure might not be secured.
※ About 15-20% of transmittable torque will be reduced due to key hole of shaft because surface contact is decreased..

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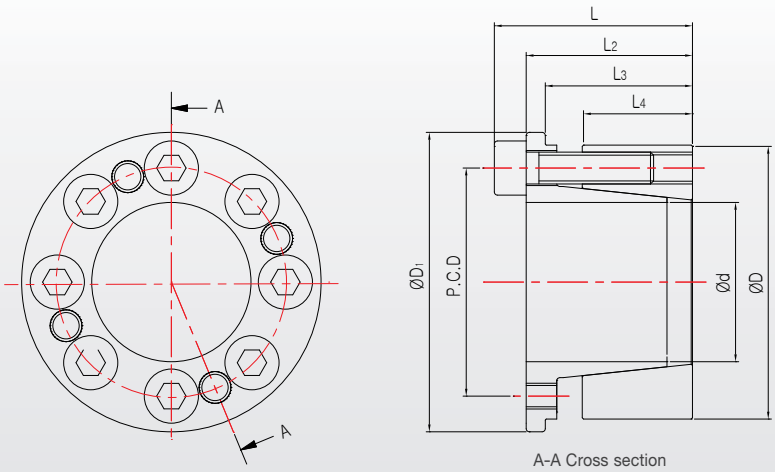
Dimension



A-A Cross section

Model No. (dxD)	Dimension (mm)						Fastening Bolt			Mass (g)
	L	L_2	L_3	L_4	D_1	P.C.D	Size	Quantity	Fastening Torque(N.m)	
SAPA-5-16	16	13	11.2	8	18.5	11.7	M3	4	2.3	7
SAPA-6-19	18.3	14.3	12.3	9	21.5	14	M4	4	5.1	10
SAPA-8-21	18.6	14.6	12.6	9.3	23.5	15.4	M4	4	5.1	13
SAPA-10-23	18.8	14.8	12.8	9.5	25.5	17.5	M4	4	5.1	15
SAPA-11-24	19.8	15.8	13.8	10.5	26.5	18.4	M4	4	5.1	17
SAPA-12-26	22	18	15.5	10.5	28.5	20.2	M4	6	5.1	20
SAPA-14-28	22	18	15.5	10.5	30.5	22.2	M4	6	5.1	23
SAPA-15-29	23	19	16.5	11.5	31.5	23.2	M4	6	5.1	25
SAPA-16-30	23.6	19.6	17.1	12	33	24.2	M4	6	5.1	28
SAPA-17-31	24.1	20.1	17.6	12.5	33.5	25.4	M4	8	5.1	28
SAPA-18-32	24.1	20.1	17.6	12.5	34.5	26.4	M4	8	5.1	30
SAPA-19-33	24.1	20.1	17.6	12.5	35.5	27.4	M4	8	5.1	31
SAPA-20-38	29.1	24.1	21.1	15.3	42	30.8	M5	8	10.0	53
SAPA-22-40	29.1	24.1	21.1	15.3	44	32.8	M5	8	10.0	60
SAPA-24-42	30.1	25.1	22.1	16.3	46	34.8	M5	8	10.0	65
SAPA-25-43	31.1	26.1	23.1	17.3	47	35.8	M5	8	10.0	68
SAPA-28-46	31.6	26.6	23.1	17.3	50	38.8	M5	10	10.0	71
SAPA-30-48	31.6	26.6	23.1	17.3	52	40.8	M5	10	10.0	76
SAPA-32-50	32.6	27.6	24.1	18.3	54	42.8	M5	10	10.0	80
SAPA-35-57	36	30	26	19.5	62	48.4	M6	8	18.0	117

※Product design and specification are subject to change without notice for product improvement.

SUNGIL MACHINERY CO., LTD.

www.sungilfa.co.kr / www.sungilfa.com

Main Office and factory
162-6, 12 Sinjung-dong Yangcheon-gu Seoul Korea 158-070 / TEL: +82-2-2635-7161 / FAX: +82-2635-7162
E-mail: info@sungilfa.co.kr / URL: www.sungilfa.com

Overseas Sales Dept.
TEL: +82-2-2613-9933 / FAX: +82-2-2613-8911 / E-mail: sales@sungilfa.co.kr

Domestic Sales Office
#1101~1104 Guro STX W-Tower 615-3 Guro-dong Guro-gu Seoul Korea 152-721
#3603 Ga-dong Chungang Circulation Complex 1258 Gurobon-dong Guro-gu Seoul Korea 152-721
TEL: +82-2-2613-9933 / FAX: +82-2-2613-8911 / E-mail: master@si-coupling.co.kr / URL: www.sungilfa.co.kr

Inquiry

TEL: +82-2-2613-9933 / FAX: +82-2-2613-8911 / URL: www.sungilfa.com / E-mail: sales@sungilfa.co.kr