

Prices

- ① Made-to-order products, semi-custom orders, and semi-custom order J Series products are estimated separately. Contact your dealer.
- ② In addition, since the prices are per unit (excluding SRS), the total unit price of miters and the like is the set price.
- ③ Product prices may be changed without prior notice.

Changes and Cancellations

[Standard Machined Products *Note 1, Made to Order Products, Semi-custom Products, Semi-custom J Series Products]
Because production begins upon ordering, cancellations and changes cannot be made.

[KHK Quick-Mod Products, Custom Gears]
Because production begins upon ordering, cancellations and changes are difficult.
Changes may be possible in some cases, depending on modification status, but a further estimate will be required. Contact your dealer for details.
As the product is manufactured to customer-specified dimensions, it cannot be used elsewhere; therefore, returns are not possible.

Out of Stock

[Standard Gears (gears in stock), Standard Machined Products *Note 1, KHK Quick-Mod Gears]
Production takes place according to stock status, so there may not be sufficient quantities available as ordered.
Some time may be required for production after orders.
Lead times may be longer depending on material acquisition status and modification processes.

*Note 1 Standard machined products: J Series, F Series, R Series, E Series, Hardened Plus, Hardened Plus J Series



Spur Gears

MSGA/MSGB Ground Spur Gears	KSG Ground Spur Gears	SSGS Ground Spur Pinion Shafts	SSG Ground Spur Gears	SSG F Series Ground Spur Gears	SSG E Series Ground Spur Gears	SSG R Series Ground Spur Gears
						
Material: SCM415 m1~4 Page 50	Material: SCM440 m1~3 Page 54	Material: S45C m1.5~3 Page 56	Material: S45C m0.5~10 Page 58	Material: S45C m2~3 Page 76	Material: S45C m1.5~6 Page 82	Material: S45C m1.5~6 Page 92
Pinion Gears for Nabtesco GH Series	SSAG Ground Spur Gears	KS-H Hardened Spur Gears	KS Thermal Refined Spur Gears	SSS Spur Pinion Shafts	SS-H Hardened Spur Gears	SS Spur Gears
						
Material: S45C/SCM440 m3~6 (CP10~20) Page 94	Material: S45C m1~6 Page 96	Material: SCM440 m1.5~5 Page 100	Material: SCM440 m1.5~5 Page 100	Material: S45C m1, 1.5 Page 102	Material: S45C m1~6 Page 106	Material: S45C m0.5~10 Page 104
SS F Series Spur Gears	SSA-H Hardened Spur Gears	SSA Spur Gears	SSA F Series Spur Gears	SSY Spur Gears	SSAY Spur Gears	SUS/SUSA Stainless Steel Spur Gears
						
Material: S45C m1.5~3 Page 130	Material: S45C m1~5 Page 138	Material: S45C m1~5 Page 138	Material: S45C m2~3 Page 144	Material: S45C m0.8, 1 Page 148	Material: S45C m1 Page 152	Material: SUS303 m1~4 Page 154
SUSF F-Loc Gears	DSF F-Loc Gears	NSU Plastic Spur Gears with Steel Core	PU Plastic Spur Gears with Steel Core	PS/PSA Plastic Spur Gears	SUKB Stainless Steel Hubs	PSUKB SUKB Assembled PSA Spur Gear
						
Material: SUS303 m0.5, 1 Page 160	Material: Polyacetal (SUS303) m0.5, 1 Page 162	Material: MC602ST (S45C) m1~3 Page 164	Material: MC901 (SUS303) m1~2 Page 168	Material: MC901 m1~3 Page 170	Material: SUS303 φ 30~100 Page 180	Material: MC901/SUS303 m2~3 Page 181
DS Injection Molded Spur Gears	BB Sintered Metal Bushings	BSS Spur Gears	SSR Steel Ring Gears (Spur Gears)			
						
Material: Duracon (R) (M90-44) m0.5~1 Page 182	Material: Oil-free copper alloy φ 5~8 Page 184	Material: Free cutting brass (C3604) m0.5~1 Page 186	Material: S45C m2~3 Page 188			

M Includes Made to Order

Catalog Number of KHK Stock Gears

The Catalog Number for KHK stock gears is based on the simple formula listed below. Please order KHK gears by specifying the Catalog Numbers.

(Example) Spur Gears

S S G 1 - 15

No. of Teeth (15)

Module (1)

Other Products (Ground Gears)

Type (Spur Gear)

Material (S45C)

Material	
M	SCM415
K	SCM440
S	S45C
SU	Stainless Steel
P	MC901
N	MC602ST
D	Polyacetal
BS	Brass
L	Sintered Metal Alloy

Type	
S	Spur Gears

Other Information

A	Without Hub
G	Ground Gears
F	F-loc Hub Gears
R	Ring Gears
S	Pinion Shafts
U	Plastic Gears with Steel Core
Y	Thin Face Gears
H	Gear Teeth Induction Hardened

Spur Gears

Helical Gears

Internal Gears

Racks

CP Racks & Pinions

Miter Gears

Bevel Gears

Screw Gears

Worm Gears

Gearboxes

Other Products

Features



To meet your applications, KHK stock gears are made in a variety of types, materials, configurations, modules and numbers of teeth. We also provide finished gears that are ready to use. Secondary operations can be performed to many of the products, allowing for a wider range of designs. The following table lists the main features.

Catalog Number	Module	Material	Heat Treatment	Tooth Surface Finish	Precision JIS B 1702-1:1998	Secondary Operations	Features
MSGA/MSGB	1~4	SCM415	Carburized	Ground	N5	×	Fully hardened, ground and keyway machined gears with excellent accuracy, strength and abrasion resistance.
KSG	1~3	SCM440	Thermal refined, gear teeth induction hardened	Ground	N6	△	Gears that have been tempered, hardened and ground that have excellent accuracy, strength and abrasion resistance. Secondary operations can be performed except for the teeth. This product is ideal for the pinion of the KRGF rack.
SSGS	1.5~3	S45C	Thermal refined, gear teeth induction hardened	Ground	N7	△	Gears with shafts that have been tempered, hardened and ground. Secondary operations can be performed except for the teeth.
SSG	0.5~10	S45C	Gear teeth induction hardened NOTE 1	Ground	N7	△	Gears that have been hardened and ground with a good balance of accuracy, wear resistance and cost. Secondary operations are possible except for the teeth.
SSAG	1~6						
KS	1.5~5	SCM440	Thermal refined	Cut	N8	○	Tempered gears with excellent bending strength. The teeth can be additionally hardened. This product is ideal for the pinion of the KRF rack.
SSS	1, 1.5	S45C	Thermal refined NOTE 2	Cut	N8 NOTE 3	○	Gears with a tempered shaft.
SS	0.5~10	S45C	—	Cut	N8 NOTE 3	○	Many lineups are available at a low price. The teeth can be additionally hardened.
SSA	1~5						
SSY/SSAY	0.8, 1	S45C	—	Cut	N8 NOTE 3	○	Gears with narrow teeth. Suitable for light loads.
SUS/SUSA	1~4	SUS303	—	Cut	N8	○	Stainless steel gears with rust resistance.
SUSF	0.5, 1	SUS303	—	Cut	N8 NOTE 3	×	Stainless steel gears with rust resistance. Locking Hub allows easy attachment.
DSF	0.5, 1	Polyacetal (SUS303)	—	Cut	N10 NOTE 3	×	Gears made of polyacetal. Locking Hub allows easy attachment.
NSU	1~3	MC602ST (S45C)	—	Cut	N9	○	Steel hubs are fused and fixed to reinforced nylon gears for secure fastening.
PU	1~2	MC901 (SUS303)	—	Cut	N9	○	Stainless steel hubs are fused and fixed to nylon gears for secure fastening.
PS/PSA	1~3	MC901	—	Cut	N9	○	Nylon gears can be used with no lubrication.
DS	0.5~1	Duracon (R) (M90-44) NOTE 4	—	Injection Molded	N12 equivalent	△	Low-priced gears made through injection molding. Suitable for light loads.
BSS	0.5~1	Free-cutting Brass (C3604)	—	Cut	N8 NOTE 3	○	Brass gears with excellent machinability.
SSR	2~3	S45C	—	Cut	N9	○	They have a ring shape with a large number of teeth.

[NOTE 1] Products with module under 1 are thermal refined. Gear teeth are not hardened. ○ Possible △ Partly possible × Not possible

[NOTE 2] SA-shaped products with module 1 have no material thermal refinement treatment.

[NOTE 3] The product accuracy class having a module under 1 corresponds to 'equivalent' as shown in the table.

[NOTE 4] "Duracon (R)" is a registered trademark of Polyplastics Co., Ltd. in Japan as well as other countries.

● KHK stock spur gears (m1.5 and higher) have semi-topping on the tooth tips.

● Black products are KHK stock gears that have an applied black oxide coating for rust resistance.

Application Examples



KHK stock spur gears are widely used in various industrial machines including food machinery.

■ Fish processing machine manufactured by TOYO SUI SAN KIKAI CO.,LTD.



SS spur gears used for filleting fish

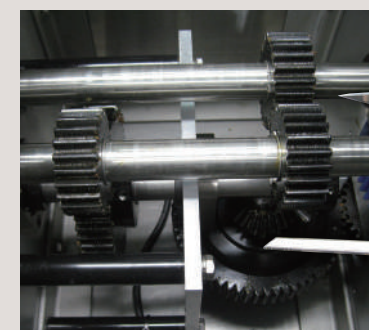
■ Carton former



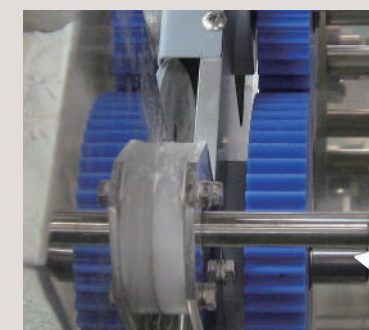
SS spur gears used in automatic carton formers



■ Food machinery by Jey Machine Co.



SSA/SS spur gears used in stirrers



PS/PSA spur gears used in fully-automatic food forming machines



■ High-speed automatic wire straightening/cutting machine manufactured by Takashima Sangyo Co.



SS spur gears used for wire feeder

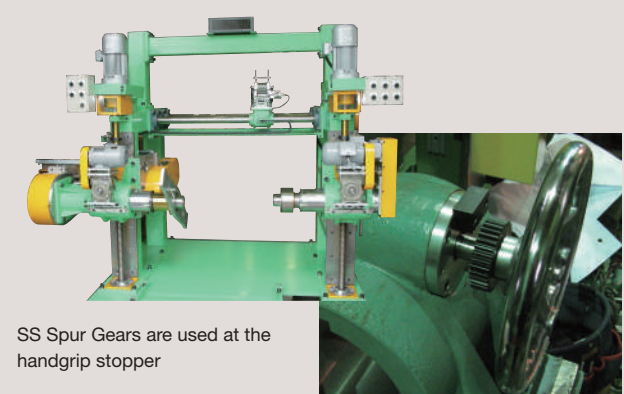


■ Packing machine by New Max



SS Spur Gears, segment shaped by secondary operation

■ Electric wire winder by Sakuma Tekko KK.



SS Spur Gears are used at the handgrip stopper

Selection Hints

Please select the most suitable products by carefully considering the characteristics of items and contents of the product tables. It is also important to read all applicable "CAUTION" notes shown below before the final selection.

1. Caution in Selecting the Mating Gears

- ① Basically, all spur gears, internal gears and racks can be paired as long as the module and pressure angle match. Products with different materials, tooth widths or accuracy can be mated.

2. Caution in Selecting Gears Based on Gear Strength

The gear strength values shown in the product pages were computed by assuming the application environment in the table below. Therefore, they should be used as reference only. We recommend that each user computes their own values by applying the actual usage conditions. Also, F-loc hub spur gears and various F series that use the friction coupling method to fasten the gear shaft need additional consideration for starting torque.

■ Calculation of Bending Strength of Gears

Item	Catalog Number	MSGAG	SSGS	SSG	SSAG	SSS,SS SSA,SSY SSAY,SSR	SS-H	SUS SUSA SUSF	BSS	KSG	KS	KS-H	SSG SSCPG Note 6	ZSTP Note 6	NSU	PU PS PSA	DSF DS
Formula NOTE 1	Formula of spur and helical gears on bending strength (JGMA401-01)														The Lewis formula		
No. of teeth of mating gears	Same number of teeth (30 for SSGS, SSS, SSR)														Racks		
Rotational Speed	600rpm NOTE 2														100rpm		
Design Life (Durability)	Over 10 ⁷ cycles														400rpm		
Impact from motor	Uniform load														100rpm		
Impact from load	Uniform load														Allowable bending stress (kgf/mm ²)		
Direction of load	Bidirectional load (calculated with allowable bending stress of 2/3)														1.38 (40°C with no lubrication)		
Allowable bending stress at root σ_{lim} (kgf/mm ²)	47	24.5	19 (24.5) Note 3	19 (24.5) Note 4	19	10.5	4	30	32	32	30	19	1.15 (40°C with no lubrication)	m 0.5 4.0 m 0.8 4.0 m 1.0 3.5 (40°C with grease lubrication)			
Safety factor S_F	1.2																

■ Calculation of Surface Durability (Except where it is common with bending strength)

Formula NOTE 1	Formula of spur and helical gears on surface durability (JGMA402-01)											
Kinematic viscosity of lubricant	100cSt (50°C)											
Gear support	Symmetric support by bearings NOTE 5								Supported on one end.			
Allowable Hertz stress σ_{Hlim} (kgf/mm ²)	166	99	90 (62.5) NOTE 3	49 (62.5) NOTE 4	90	41.3	—	112	79	112	112	90
Safety factor S_H	1.15											

[NOTE 1] The gear strength formula is based on JGMA (Japanese Gear Manufacturers Association) specifications, "MC Nylon Technical Data" by Mitsubishi Chemical Advanced Materials and "Duracon (R) Gear" by Polyplastics Co. The units for the rotational speed (rpm) and the stress (kgf/mm²) are adjusted to the units needed in the formula.

[NOTE 2] For semi-custom gears, the rotation speed is based on 300rpm.

[NOTE 3] For SSG Ground Spur Gears, with module under 1, thermal refining is applied. Allowable bending stress and allowable hertz stress values are shown in parentheses.

[NOTE 4] For SSS Spur Pinion Shafts, with module over 1.5, tooth induction hardening is not applied. Allowable bending stress and allowable hertz stress values are shown in parentheses.

[NOTE 5] SSS Spur Pinion Shafts with module 1 or less (SA configuration) are set to cantilever support as they are single shaft types.

[NOTE 6] For Nabtesco GH Series.

When selecting KHK standard gears, glance over the Cautions on Product Characteristics and Cautions on Performing Secondary Operations on Page 46.

- ① Products not listed in this catalog or materials, modules, number of teeth and the like not listed in the dimensional tables can be manufactured as custom items. Please see Page 24 for more details.
- ② The color and shape of the product images listed on the dimension table page of each product may differ from the actual product.
Be sure to confirm the shape in the dimension table before selection.
- ③ The details (specifications, dimensions, etc.) listed in the catalog may be changed without prior notice.
Changes are announced on the KHK website.

Website URL: <https://khkgears.net/new/>
Overseas Sales Department: Phone: +81-48-254-1744 Fax: +81-48-254-1765
E-mail: info@khkgears.net

Selecting the Gears

Step 1

Determine the calculated load torque applied to the gear and the gear type suitable for the purpose.

Step 2

Select provisionally from the allowable torque table in this catalog based on the load torque.

■ For provisional selection from this catalog

Step 3

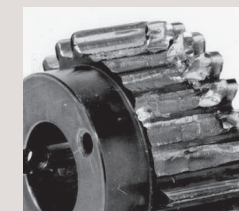
Calculate the strength under the actual usage conditions.

Calculate the strength formally using the various gear strength formulas. We recommend using the simple strength calculation available on our website.

■ Use the strength calculation function on our website.

■ Bending strength

Calculated values of the strength at which the gear teeth do not break due to fatigue.



Example of failure due to insufficient bending strength

■ Surface durability

Calculated values of the strength at which the gear teeth do not wear due to surface fatigue damage.



Example of wear due to insufficient surface durability



Product Precautions



Common Notes

[Caution on Product Characteristics]

- (1) The allowable torque shown in the table are calculated values according to the assumed usage conditions. Please see Page 44 for more details.
- (2) The backlash values shown in the table are the theoretical values for the backlash in the normal direction of a pair of identical gears in mesh.
- (3) Significant variations in temperature or humidity can cause dimensional changes in plastic gears, including tooth diameter, bore, and backlash. The accuracy and tolerances shown in the catalog are values obtained when machining is performed.
- (4) For hole lengths 3.5x the bore or more, the hole center is out of H7 tolerance.
- (5) For bores of ϕ 4 or below, the bore tolerance is H8. As well, the tolerance is H8 for ϕ 5 or ϕ 6 bores with hole length (total length) 3x the bore or more.
- (6) Keyways are made according to JIS B1301 standards, Js9 tolerance. Also note that keyway tooth position alignment is not performed.
- (7) For products having a tapped hole, a set screw is included.
- (8) Products with S at the end of the Catalog No. are semi-custom stock products. For lead time details, see Page 38.
- (9) For S semi-custom standard products weighing 15 kg or more, eyebolt mounting screws (2-M12 depth 25 mm) are machined around the periphery of the boss side surface. Confirm the PCD of the screw on the website.

[Caution on Secondary Operations]

- (1) Please read "Cautions on Performing Secondary Operations" on Page 48 when performing modifications and/or secondary operations for safety concerns.
- (2) Due to the gear teeth being induction hardened, no secondary operations can be performed on tooth areas including the bottom land (approx. 2 to 3 mm).
- (3) See Page 22 for more details on Hardened Plus (H Series and HJ Series).

[J Series]

- (1) Cancellation is not possible for made-to-order products. For lead time details, see Page 38.
- (2) Certain products which would otherwise have a very long tapped hole are counterbored. For details, please see the KHK website.
- (3) Black oxide is not re-applied to parts undergoing secondary operations.
- (4) For bores over ϕ 50, the bore tolerance is H8.

MSG/MSGB Ground Spur Gears

[Caution on Product Characteristics]

- (1) The keyway tolerance is the value before hardening.
- (2) Products marked with "****" have a small amount of material between the corner of the keyway and the tooth root. This mode of failure must be considered when selecting these gears. For details, please see the KHK website.

[Caution on Secondary Operations]

- (1) No secondary operations can be performed on these finished gears due to the applied carburizing process.

SSGS Ground Spur Pinion Shafts

[Caution on Product Characteristics]

- (1) For the center distance of the profile shifted gear, please refer to "Center distance of stock spur gear meshing with profile shifted gear" on Page 56.
- (2) The backlash values shown in the table are the theoretical values for the normal direction for the internal ring in mesh with an SSG spur gear.

SSAG Ground Spur Gears

[Caution on Secondary Operations]

- (1) A reference surface is set for gear grinding. Use the surface opposite from the markings as the reference surface for secondary operation.

SSS Spur Pinion Shafts

[Caution on Product Characteristics]

- (1) For the center distance of the profile shifted gear, please refer to "Center distance of stock spur gear meshing with profile shifted gear" on Page 102.
- (2) The backlash values shown in the table are the theoretical values for the normal direction for the internal ring in mesh with an SS spur gear.

SUSF/DSF F-loc Gears

[Caution on Product Characteristics]

- (1) F-loc gears are attached to the shaft by a friction coupling. Recommended shaft tolerances are g6, h6, or h7. Torque slippage should be considered when making a selection.
- (2) Do not tighten the clamping screw without inserting a shaft, or the bore will be permanently deformed and will not accept a shaft.
- (3) The tooth and hub mating section has a rotation-stop pin inserted.
- (4) To reduce heat generation, it is recommended to mate DSF with steel gears.

[Caution on Secondary Operations]

- (1) Secondary operations cannot be performed, as this is a complete product.

NSU/PU Plastic Spur Gears with Steel Core

[Caution on Product Characteristics]

- (1) When the core O.D is the same as the hub diameter, you may see some serration on the hub. There is no effect on the strength of the gear.
- (2) To reduce heat generation, it is recommended to mate them with steel gears.

[Caution on Secondary Operations]

- (1) Because it affects the welded portion, there is no additional modification other than to the boss part.

PS/PSA Plastic Spur Gears

[Caution on Product Characteristics]

- (1) To reduce heat generation, it is recommended to mate them with steel gears.

[J Series]

- (1) Since tapped holes of plastic products are easily broken, avoid too much tightening when fastening screws. For some products which have a short tapped hole (products marked with "****" tap size), fasten with torques less than 0.12N · m for M4, and 0.38N · m for M5.

SUKB Stainless Steel Hubs

[Caution on Product Characteristics]

- (1) The area where PSA Plastic Spur Gears are attached, with hub tolerance h7.
- (2) The friction coupling torques shown in the table are reference values calculated according to these set values; friction factors and fastening torques of the tapping screw.
- (3) Please refer to the assembly example below, and then attach the hub to the gear with the accessories, plain washers, spring washers and hexagon socket head cap screws.
- (4) In accordance with the fastening torque values shown in the dimension table, use a torque wrench and fasten hexagon socket head cap screws firmly, to attach the hub.
- (5) If a fastened hexagon socket head cap screw comes loose, the friction tightening torque values shown in the table can not be maintained. It is recommended to check the fasteners regularly and retighten when required.
- (6) For secure positioning, it is recommended to use dowel pins.

[Caution on Secondary Operations]

- (1) Datum plane for machining hubs is the outer circumference of the hub, where PSA Plastic Spur Gears are attached, and the flank of the flange is facing the hub.
- (2) For modifying tapped holes at the outer circumference of the hub, apply machining at positions which will not interfere with the mounting bolt head, using the S1KBK figure as reference.

DS Injection Molded Spur Gears

[Caution on Product Characteristics]

- (1) The bore tolerance is -0.05 to -0.30, but it may be slightly higher at the center of the hole.
- (2) For the dimensional accuracy of each part, see the dimensional tolerance of molded items on Page 185.
- (3) To reduce heat generation, it is recommended to mate them with steel gears.

[Caution on Secondary Operations]

- (1) As it is a molded item, bubbles may form inside the material. Avoid performing secondary operations.

SSR Steel Ring Gears (Spur Gears)

[Caution on Product Characteristics]

- (1) The backlash values shown in the table are the theoretical values for the normal direction for the internal ring in mesh with an SS spur gear.
- (2) The bore tolerance is modified at H8, but there may be some errors as the ring shape deforms easily.

Application Hints

In order to use KHK stock gears safely, carefully read the Application Hints before proceeding.
If there are questions or you require clarifications, please contact your nearest distributor.

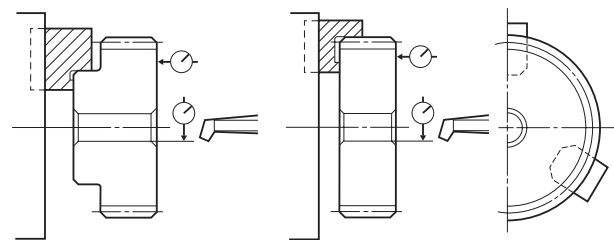
E-mail: info@khkgears.net

1. Cautions on Handling

- ① KHK products are packaged one by one to prevent scratches and dents, but if you find issues such as rust, scratches, or dents when the product is removed from the box after purchase, please contact the supplier.
- ② Depending on the handling method, the product may become deformed or damaged. Plastic gears and ring gears deform particularly easily, so please handle with care.

2. Caution on Performing Secondary Operations

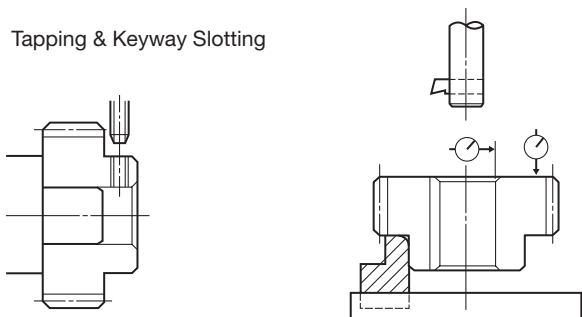
- ① If re boring, it is important to pay special attention to locating the center in order to avoid runout.
- ② The reference datum for gear machining is the bore. Therefore, use the bore for locating the center. If it is too difficult to do for small bores, the alternative is to use one spot on the bore and the runout of the side surface.
- ③ If reworking using scroll chucks, we recommend the use of new or rebored jaws for improved precision. Please exercise caution not to crush the teeth.



Lathe Operations

- ④ The maximum bore size is dictated by the requirement that the strength of the hub is to be higher than that of the gear teeth. The maximum bore size should be 60% to 70% of the hub diameter (or tooth root diameter), and 50% to 60% for keyway applied modifications.
- ⑤ In order to avoid stress concentration, round the keyway corners.

Tapping & Keyway Slotting



- ⑥ To avoid problems of reduced gear precision and other manufacturing difficulties, do not attempt to machine the gears to reduce face widths.
- ⑦ When induction-hardening S45C products, thermal stress cracks may appear. Also, note that the precision grade of the product declines by 1 or 2 grades, as deformation on material may occur. If you require tolerance for bore or other parts, machining is necessary after heat treatment.

Induction Hardening

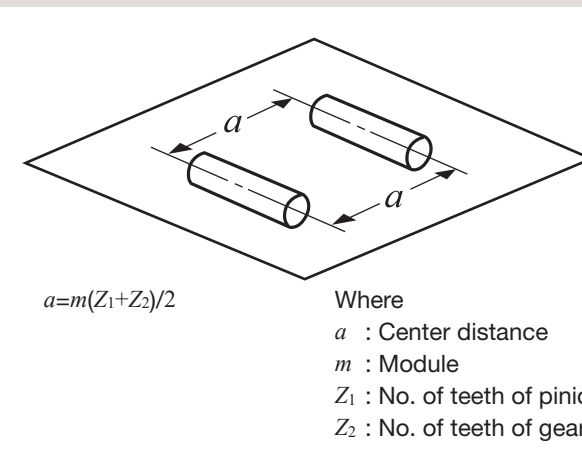
If you apply induction hardening to the gear teeth of S45C products, you need to designate the hardness and where to apply the heat treatment. Below is an example of common specifications and KHK's specifications for hardening:

- Common Specifications for Heat Treatment
Hardened location: Tooth surface, or Tooth surface and Tooth root
Hardness: Within 10 HRC in the range from 45 to 60 HRC
(Example: 48 to 58 HRC)
- KHK's Specifications for Heat Treatment
Hardened location: Tooth surface, or Tooth surface and Tooth root
Hardness: 50 to 60 HRC

* Hardness and Depth of Gear-teeth Induction Hardening
The hardening method and the state of the hardened teeth area vary depending on the size of gears.
Since different hardening treatment is applied in accordance with the module and number of teeth, the hardness level you designate is referred to as the hardness of the reference diameter. For some of our products, the hardness at tooth tip / root may not be equal to the hardness you designated. As to the effective case depth for S45C, it is specified by JIS, as "The distance from the surface of the case to the area with hardness HV450." The case depth differs from area to area of a tooth, so the depth cannot be specified.

3. Points of Caution during Assembly

- ① The recommended center distance tolerance of KHK stock spur gears is H7 for ground gears and H8 for cut gears. Backlash may be adjusted by changing the center distance of mating gears. For the connection between center distance change amount and peripheral direction backlash amount, use the gear calculation software.



- ② The table below indicates the tolerance on the total length of KHK stock spur gears. Please refer to this data when designing gearboxes or other components.

■ Total Length Tolerance for Spur and Helical Gears

Total Length (mm)	Tolerance
30 or less	0 -0.10
31 to 100	0 -0.15
Over 100	0 -0.20

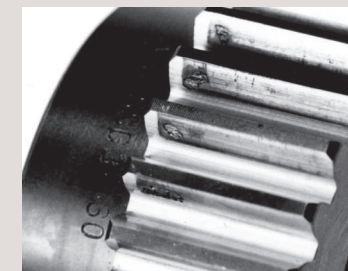
[Note] The following products are excluded from this table: Hardened plus, Spur pinion shafts, Injection molded spur gears, F-loc hub spur gears, and MC nylon products.

- ③ Spur gears produce no thrust forces; however, be sure to fasten them firmly with stepped shafts, or collars, to prevent shifting toward the shaft. Keyways are generally used in fastening gears to a shaft, and they should be fastened by applying drilled

holes for set screws, or applying flats to the shaft, in case of fastening only with set screws. There are also methods of secure settings using parts for engaging the hole and the axis.

- ④ Verify that the two shafts are parallel. Incorrect assembly will lead to uneven teeth contact which will cause noise and wear. (After assembly, check the tooth contact by painting a thin layer of red lead primer or the like on the gear teeth, meshing them together and rotating them.)

■ Test example: Abrasion occurred on SSG3-30 due to poor edge contact (only 30% with proper contact).



Poor tooth contact and pitting

In this example, the gear oil used is equivalent to the JIS gear oil category 2, No. 3. The design conditions were load torque at 278 rpm, 42.5 kg/m (12 kW), 1.5 times the allowable bending strength, and 3 times the allowable surface durability torque. The pitting occurred on the poor tooth contact area after 60 hours of continuous operation.

4. Cautions on Starting

- ① Check the following items before starting.
 - Are the gears fastened securely?
 - Is there uneven tooth contact?
 - Is there adequate backlash?
(Be sure to avoid zero-backlash.)
 - Has proper lubrication been supplied?
- ② If gears are exposed, be sure to attach a safety cover to ensure safety. Also, be careful not to touch rotating gears.
- ③ If there is any abnormality such as noise or vibration during startup, stop the operation immediately and check the assembly condition such as tooth contact, eccentricity and looseness.

KHK considers safety a priority in the use of our products.

When handling, adding secondary operations, assembling, and operating KHK products, please be aware of the following issues in order to prevent accidents.



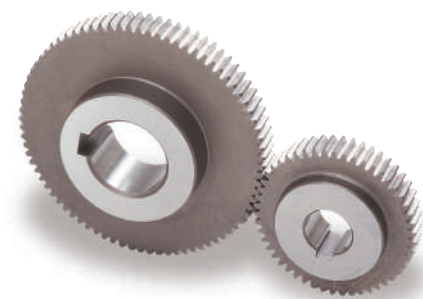
Warning: Precautions for preventing physical and property damage

1. When using KHK products, follow relevant safety regulations (Occupational Safety and Health Regulations, etc.).
2. Pay attention to the following items when installing, removing, or performing maintenance and inspection of the product.
 - ① Turn off the power switch.
 - ② Do not reach or crawl under the product.
 - ③ Wear appropriate clothing and protective equipment for the work.

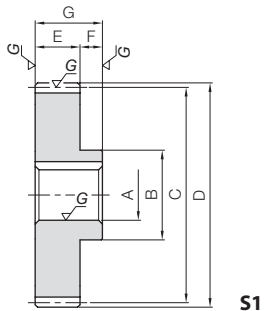


Caution: Cautions in preventing accidents

1. Before using a KHK product, read the precautions in the catalog carefully in order to use it correctly.
2. Avoid use in environments that may adversely affect the product.
3. Our products are manufactured under a superior quality control system based on the ISO9000 quality management system; if you notice any malfunctions upon purchasing a product, please contact the supplier.



Specifications	
Precision grade	JIS grade N5 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	SCM415
Heat treatment	Carburized
Tooth hardness	55 to 60HRC



S1

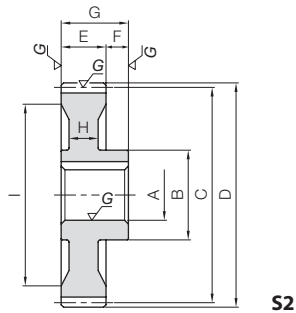
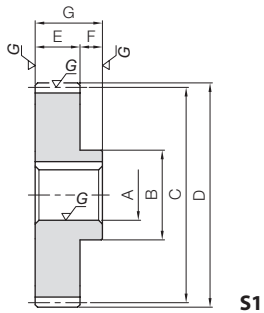
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
				A _{H7}	B	C	D	E	F	G	H	I
MSGA1-18	m1	18	S1	8	15	18	20	10	5	15	—	—
MSGA1-20		20		8	17	20	22					
MSGB1-20**		20		10	17	20	22					
MSGB1-24		24		12	20	24	26					
MSGA1-25		25		10	20	25	27					
MSGB1-25		25		12	20	25	27					
MSGA1-30		30		10	25	30	32					
MSGB1-30		30		12	25	30	32					
MSGB1-40		40		15	30	40	42					
MSGA1-48		48		12	30	48	50					
MSGB1-48		48		15	30	48	50					
MSGA1-50	m1.5	50	S1	12	35	50	52	15	10	25	—	—
MSGB1-60		60		20	40	60	62					
MSGA1-70		70		20	45	70	72					
MSGA1-80		80		20	45	80	82					
MSGA1-100		100		20	45	100	102					
MSGA1.5-15**		15		10	18	22.5	25.5					
MSGA1.5-18		18		10	22	27	30					
MSGB1.5-18		18		12	22	27	30					
MSGA1.5-20		20		12	25	30	33					
MSGB1.5-20		20		15	25	30	33					
MSGB1.5-24		24		15	28	36	39					
MSGB1.5-25		25		16	30	37.5	40.5					
MSGB1.5-30		30		18	30	45	48					
MSGB1.5-36		36		18	32	54	57					
MSGA1.5-40		40		16	35	60	63					
MSGA1.5-50	m2	50	S1	18	40	75	78	20	10	30	—	—
MSGB1.5-50		50		22	40	75	78					
MSGB1.5-60		60		25	45	90	93					
MSGA1.5-70		70		20	45	105	108					
MSGB1.5-70		70		25	45	105	108					
MSGA1.5-80		80		20	45	120	123					
MSGB1.5-80		80		25	45	120	123					
MSGA1.5-100		100		25	50	150	153					
MSGB2-15**		15		15	24	30	34					
MSGA2-18		18		12	30	36	40					
MSGB2-18		18		15	30	36	40					
MSGA2-20	m2	20	S1	15	32	40	44	20	10	30	—	—
MSGB2-20		20		18	32	40	44					
MSGB2-24		24		18	35	48	52					
MSGA2-25		25		16	35	50	54					
MSGB2-25		25		20	35	50	54					
MSGB2-30		30		22	40	60	64					
MSGA2-35		35		18	40	70	74					
MSGA2-40		40		20	45	80	84					
MSGB2-40		40		25	45	80	84					
MSGB2-45		45		25	45	90	94					
MSGA2-48		48		22	50	96	100					
MSGA2-60	m2	60	S1	25	55	120	124	20	10	30	—	—
MSGB2-80		80		35	60	160	164					

Keyway	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
	Width × Depth	Bending strength	Surface durability	Bending strength	Surface durability		
3 × 1.4	12.1	6.37	1.24	0.65	0.08~0.16	0.020	MSGA1-18
3 × 1.4	14.2	8.04	1.45	0.82		0.027	MSGA1-20
4 × 1.8	18.5	12.0	1.88	1.22		0.023	MSGB1-20**
4 × 1.8	19.6	13.1	2.00	1.33		0.034	MSGB1-24
4 × 1.8	25.1	19.0	2.56	1.94		0.041	MSGA1-25
4 × 1.8	36.5	34.6	3.72	3.53		0.037	MSGB1-25
5 × 2.3	45.8	50.6	4.67	5.16		0.065	MSGA1-30
4 × 1.8	48.1	55.1	4.91	5.62		0.061	MSGB1-30
6 × 2.8	59.9	80.6	6.11	8.22		0.10	MSGB1-40
6 × 2.8	71.9	111	7.33	11.4		0.16	MSGA1-48
6 × 2.8	83.9	147	8.55	15.0	0.08~0.16	0.15	MSGB1-48
6 × 2.8	103	224	10.5	22.8		0.18	MSGA1-50
4 × 1.8	30.8	14.8	3.15	1.51		0.27	MSGB1-60
4 × 1.8	41.0	22.1	4.18	2.26		0.37	MSGA1-70
4 × 1.8	48.0	27.9	4.89	2.84		0.47	MSGA1-80
5 × 2.3	62.4	41.5	6.36	4.24		0.69	MSGA1-100
5 × 2.3	66.0	45.4	6.73	4.63		0.050	MSGA1.5-15**
6 × 2.8	84.7	66.4	8.63	6.77		0.080	MSGA1.5-18
6 × 2.8	108	97.1	11.0	9.90		0.074	MSGB1.5-18
5 × 2.3	123	121	12.6	12.3		0.098	MSGA1.5-20
6 × 2.8	162	193	16.6	19.7	0.10~0.20	0.085	MSGB1.5-20
8 × 3.3	202	283	20.6	28.8		0.13	MSGB1.5-24
6 × 2.8	231	372	23.6	38.0		0.14	MSGB1.5-25
8 × 3.3	347	787	35.4	80.2		0.19	MSGB1.5-30
5 × 2.3	73.1	35.7	7.46	3.64		0.28	MSGB1.5-36
4 × 1.8	97.2	53.5	9.91	5.46		0.37	MSGA1.5-40
5 × 2.3	114	67.6	11.6	6.89		0.57	MSGA1.5-50
6 × 2.8	148	101	15.1	10.3		0.54	MSGB1.5-50
5 × 2.3	157	110	16.0	11.2		0.77	MSGB1.5-60
6 × 2.8	201	161	20.5	16.5		1.08	MSGA1.5-70
6 × 2.8	246	223	25.1	22.7	0.10~0.20	1.04	MSGB1.5-70
6 × 2.8	292	294	29.7	30.0		1.39	MSGA1.5-80
8 × 3.3	338	377	34.5	38.4		1.36	MSGB1.5-80
6 × 2.8	349	411	35.6	41.9		2.13	MSGA1.5-100
8 × 3.3	457	658	46.6	67.1		0.10	MSGB2-15**
10 × 3.3	610	1150	62.2	117		0.19	MSGA2-18
						0.17	MSGB2-18
						0.22	MSGA2-20
						0.20	MSGB2-20
						0.30	MSGB2-24
						0.33	MSGA2-25
						0.31	MSGB2-25
						0.45	MSGB2-30
						0.64	MSGA2-35
						0.84	MSGA2-40
						0.79	MSGB2-40
						1.00	MSGB2-45
						1.20	MSGA2-48
						1.84	MSGA2-60
						2.49	MSGB2-80





Specifications	
Precision grade	JIS grade N5 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	SCM415
Heat treatment	Carburized
Tooth hardness	55 to 60HRC



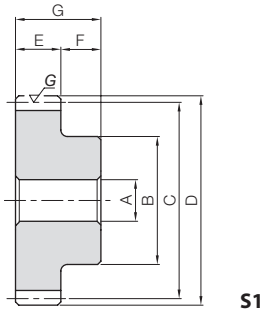
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.
				A _{H7}	B	C	D	E	F	G	H	I
MSGA2.5-15 MSGB2.5-15**	m2.5	15	S1	15	30	37.5	42.5	25	12	37	—	—
MSGB2.5-20		20		22	40	50	55					
MSGB2.5-24		24		22	40	60	65					
MSGB2.5-25		25		25	45	62.5	67.5					
MSGB2.5-36		36		30	55	90	95					
MSGA2.5-40 MSGB2.5-40		40		25 32	55	100	105					
MSGA2.5-55		55	S2	30	70	137.5	142.5	—	—	—	17	150
MSGB2.5-60		60		40	70	150	155					
MSGA2.5-70		70		40	85	175	180					
MSGA3-15 MSGB3-15**	m3	15	S1	18 22	36	45	51	30	15	45	—	—
MSGB3-20		20		25	45	60	66					
MSGB3-25		25		30	55	75	81					
MSGA3-30 MSGB3-30		30		28 35	60	90	96					
MSGA3-40 MSGB3-40		40		30 40	70	120	126					
MSGA3-45		45	S2	30	70	135	141				20	126
MSGB3-48		48		40	70	144	150					
MSGB3-50		50		40	70	150	156					
MSGA3-60		60		35	80	180	186					
MSGB4-15**	m4	15	S1	30	48	60	68	40	20	60	—	—
MSGB4-18		18		30	50	72	80					
MSGA4-20 MSGB4-20		20		28 32	60	80	88					
MSGA4-24		24		28	60	96	104					
MSGA4-25 MSGB4-25		25		30 35	60	100	108					
MSGA4-30 MSGB4-30		30		35 40	70	120	128					
MSGB4-36		36	S2	40	70	144	152				26	168
MSGA4-40 MSGB4-40		40		40 45	80	160	168					
MSGB4-45		45		45	80	180	188					
MSGB4-50		50		50	85	200	208					

Keyway Width x Depth	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
	Bending strength	Surface durability	Bending strength	Surface durability			
5 x 2.3 6 x 2.8	143	71.0	14.6	7.24	0.10~0.20	0.23 0.20	MSGA2.5-15 MSGB2.5-15**
6 x 2.8	222	134	22.7	13.7		0.39	MSGB2.5-20
6 x 2.8	289	201	29.4	20.5		0.56	MSGB2.5-24
8 x 3.3	306	220	31.2	22.4		0.60	MSGB2.5-25
8 x 3.3	498	471	50.8	48.0		1.26	MSGB2.5-36
8 x 3.3 10 x 3.3	543	560	55.3	57.1		1.61 1.52	MSGA2.5-40 MSGB2.5-40
8 x 3.3	804	1090	82.0	112		3.06	MSGA2.5-55
12 x 3.3	892	1310	90.9	134		3.45	MSGB2.5-60
12 x 3.3	1020	1730	104	176		4.24	MSGA2.5-70
6 x 2.8 6 x 2.8	247	124	25.2	12.7	0.10~0.20	0.40 0.35	MSGA3-15 MSGB3-15**
8 x 3.3	384	236	39.1	24.1		0.67	MSGB3-20
10 x 3.3	528	386	53.9	39.3		1.06	MSGB3-25
8 x 3.3 10 x 3.3	677	565	69.1	57.7		1.60 1.48	MSGA3-30 MSGB3-30
8 x 3.3 12 x 3.3	938	988	95.6	101		2.86 2.66	MSGA3-40 MSGB3-40
8 x 3.3	1090	1260	111	129		3.57	MSGA3-45
12 x 3.3	1180	1450	120	147		3.83	MSGB3-48
12 x 3.3	1240	1570	126	161		3.62	MSGB3-50
10 x 3.3	1470	2200	150	224		5.31	MSGA3-60
8 x 3.3	585	302	59.7	30.8	0.10~0.20	0.83	MSGB4-15**
8 x 3.3	777	455	79.3	46.4		1.24	MSGB4-18
8 x 3.3 10 x 3.3	910	574	92.8	58.6		1.72 1.63	MSGA4-20 MSGB4-20
8 x 3.3	1130	819	115	83.5		2.41	MSGA4-24
8 x 3.3 10 x 3.3	1190	896	122	91.4		2.56 2.44	MSGA4-25 MSGB4-25
10 x 3.3 12 x 3.3	1530	1320	156	134		3.69 3.54	MSGA4-30 MSGB4-30
12 x 3.3	1940	1930	198	197		5.11	MSGB4-36
12 x 3.3 14 x 3.8	2120	2290	216	234		6.49 6.33	MSGA4-40 MSGB4-40
14 x 3.8	2460	2930	251	299		8.01	MSGB4-45
14 x 3.8	2800	3650	285	372		8.37	MSGB4-50



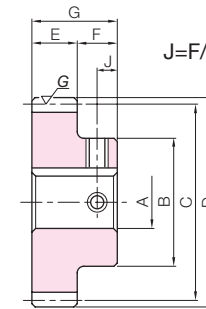
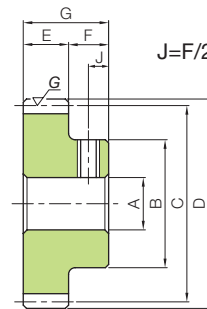
Specifications	
Precision grade	JIS grade N6 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	SCM440
Heat treatment	Thermal refined, gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



Catalog Number	Module	No. of teeth	Shape	Bore A _{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
KSG1-20	m1	20	S1	6	15	20	22	10	10	20	10.3	5.48	0.08~0.16	0.034
KSG1-25		25		8	20	25	27				13.9	9.16		0.055
KSG1-30		30		8	25	30	32				17.6	14.0		0.086
KSG1-32		32		10	25	32	34				19.1	16.2		0.089
KSG1-36		36		10	30	36	38				22.1	21.3		0.12
KSG1-40		40		10	35	40	42				25.1	27.0		0.16
KSG1.5-20	m1.5	20	S1	10	24	30	33	15	14	29	34.8	18.5	0.08~0.16	0.12
KSG1.5-25		25		10	30	37.5	40.5				47.0	31.0		0.19
KSG1.5-30		30		15	35	45	48				59.5	47.4		0.25
KSG1.5-32		32		15	40	48	51				64.5	55.0		0.31
KSG1.5-36		36		15	45	54	57				74.6	71.9		0.40
KSG1.5-40		40		15	50	60	63				84.7	91.3		0.51
KSG2-20	m2	20	S1	15	30	40	44	20	16	36	82.6	44.0	0.10~0.20	0.24
KSG2-25		25		15	40	50	54				111	73.5		0.42
KSG2-30		30		15	50	60	64				141	112		0.64
KSG2-32		32		18	55	64	68				153	131		0.73
KSG2-36		36		18	65	72	76				177	171		0.98
KSG2-40		40		18	70	80	84				201	217		1.20
KSG2.5-20	m2.5	20	S1	15	40	50	55	25	18	43	161	86.0	0.10~0.20	0.50
KSG2.5-25		25		20	50	62.5	67.5				218	144		0.77
KSG2.5-30		30		20	65	75	80				275	220		1.23
KSG2.5-32		32		20	70	80	85				298	255		1.42
KSG2.5-36		36		20	80	90	95				345	335		1.85
KSG2.5-40		40		20	90	100	105				392	425		2.33
KSG3-20	m3	20	S1	15	50	60	66	30	20	50	279	149	0.10~0.20	0.90
KSG3-25		25		20	65	75	81				376	249		1.44
KSG3-30		30		20	80	90	96				476	381		2.16
KSG3-32		32		25	85	96	102				516	442		2.40
KSG3-36		36		25	90	108	114				597	579		2.96
KSG3-40		40		25	110	120	126				678	736		3.96

J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7		* The product shapes of J Series items are identified by background color.																					
Keyway J _{s9}		6	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Screw size		—		4x1.8		5x2.3				6x2.8				8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number		M4	M5	M4						M5				M6			M8			M10			
KSG1-20J BORE	S1T																						
KSG1-25J BORE		S1T																					
KSG1-30J BORE		S1T	S1K	S1K																			
KSG1-32J BORE			S1K	S1K																			
KSG1-36J BORE			S1K	S1K	S1K	S1K	S1K	S1K															
KSG1-40J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K													
KSG1.5-20J BORE			S1K	S1K																			
KSG1.5-25J BORE			S1K	S1K	S1K	S1K	S1K																
KSG1.5-30J BORE						S1K	S1K	S1K	S1K	S1K													
KSG1.5-32J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K											
KSG1.5-36J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
KSG1.5-40J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
KSG2-20 J BORE						S1K	S1K	S1K															
KSG2-25 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K											
KSG2-30 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
KSG2-32 J BORE										S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
KSG2-36 J BORE										S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
KSG2-40 J BORE										S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
KSG2.5-20J BORE						S1K	S1K	S1K	S1K	S1K	S1K												
KSG2.5-25J BORE												S1K	S1K	S1K	S1K	S1K							
KSG2.5-30J BORE												S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
KSG2.5-32J BORE												S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
KSG2.5-36J BORE												S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KSG2.5-40J BORE												S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KSG3-20J BORE						S1K	S1K	S1K	S1K	S1K													
KSG3-25J BORE												S1K	S1K	S1K	S1K	S1K	S1K	S1K					
KSG3-30J BORE												S1K	S1K		S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KSG3-32J BORE														S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KSG3-36J BORE														S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KSG3-40J BORE														S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		

Recommended mating rack

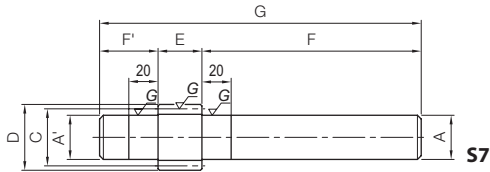


KRGF-H/KRGFD-H
Hardened Ground Racks

Please see Page 226 for more details.



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Thermal refined, gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for ground part



Catalog Number	Module	No. of teeth	Profile shift coefficient	Shape	Shaft diameter (L)	Shaft length (L)	Pitch dia.	Outside dia.	Face width	Shaft diameter (R)	Shaft length (R)	Total Length
					A'	F'	C	D	E	A	F	G
SSGS1.5-10 SSGS1.5-11 SSGS1.5-12 SSGS1.5-13	m1.5	10	+0.5	S7	12.2	25	15	19.35	15	12.2	100	140
		11	+0.5		13.7		16.5	20.85		13.7		
		12	0		13.7		18	21		13.7		
		13	0		15.2		19.5	22.5		15.2		
SSGS2-10 SSGS2-11 SSGS2-12 SSGS2-13	m2	10	+0.5	S7	16.2	30	20	25.8	20	16.2	120	170
		11	+0.5		18.2		22	27.8		18.2		
		12	0		18.2		24	28		18.2		
		13	0		20.2		26	30		20.2		
SSGS2.5-10 SSGS2.5-11 SSGS2.5-12 SSGS2.5-13	m2.5	10	+0.5	S7	20.2	35	25	32.25	25	20.2	135	195
		11	+0.5		22.7		27.5	34.75		22.7		
		12	0		22.7		30	35		22.7		
		13	0		25.2		32.5	37.5		25.2		
SSGS3-10 SSGS3-11 SSGS3-12 SSGS3-13	m3	10	+0.5	S7	24.2	40	30	38.7	30	24.2	150	220
		11	+0.5		27.2		33	41.7		27.2		
		12	0		27.2		36	42		27.2		
		13	0		30.2		39	45		30.2		

Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
Bending strength	Surface durability	Bending strength	Surface durability			
12.7 14.5 9.97 12.1	3.76 4.61 4.70 5.51	1.30 1.48 1.02 1.23	0.38 0.47 0.48 0.56	0.08~0.16	0.14 0.17 0.17 0.21	SSGS1.5-10 SSGS1.5-11 SSGS1.5-12 SSGS1.5-13
30.2 34.3 23.6 28.6	9.07 11.0 11.3 13.3	3.08 3.50 2.41 2.92	0.93 1.12 1.15 1.35		0.30 0.38 0.38 0.46	SSGS2-10 SSGS2-11 SSGS2-12 SSGS2-13
58.9 67.1 46.2 46.6	17.9 22.0 22.4 21.9	6.01 6.84 4.71 4.75	1.83 2.24 2.28 2.23		0.54 0.68 0.68 0.83	SSGS2.5-10 SSGS2.5-11 SSGS2.5-12 SSGS2.5-13
102 96.6 66.5 80.4	31.3 31.9 32.6 38.3	10.4 9.85 6.78 8.20	3.19 3.26 3.32 3.91		0.89 1.11 1.11 1.35	SSGS3-10 SSGS3-11 SSGS3-12 SSGS3-13

Center distance of stock spur gear meshing with profile shifted gear

The center distance of the stock gear ($x = 0$) that meshes with profile shifted gear ($x = +0.5$) of $m = 1$ is shown in the table at right. Please multiply by the module of the gear to be used.

Center distance where number of teeth is 12 to 30 (unit: mm)

Number of teeth ($x = 0$)	10	11
12	11.4410	11.9428
13	11.9428	12.4446
14	12.4446	12.9462
15	12.9462	13.4477
16	13.4477	13.9492
17	13.9492	14.4505
18	14.4505	14.9518
19	14.9518	15.4530
20	15.4530	15.9542
21	15.9542	16.4553
22	16.4553	16.9564
23	16.9564	17.4574
24	17.4574	17.9583
25	17.9583	18.4592
26	18.4592	18.9601
27	18.9601	19.4610
28	19.4610	19.9618
29	19.9618	20.4625
30	20.4625	20.9633

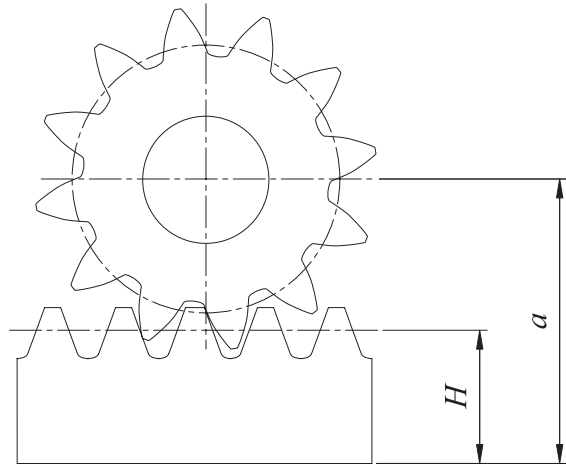
Center distance where number of teeth is 32 to 62 (unit: mm)

Number of teeth ($x = 0$)	10	11
32	21.4640	21.9647
34	22.4653	22.9660
35	22.9660	23.4666
36	23.4666	23.9671
38	24.4677	24.9683
40	25.4688	25.9693
42	26.4698	26.9703
44	27.4707	27.9712
45	27.9712	28.4716
46	28.4716	28.9721
48	29.4725	29.9729
50	30.4733	30.9736
52	31.4740	31.9744
54	32.4747	32.9750
55	32.9750	33.4754
56	33.4754	33.9757
58	34.4760	34.9763
60	35.4766	35.9769
62	36.4772	36.9774

Center distance where number of teeth is 64 to 200 (unit: mm)

Number of teeth ($x = 0$)	10	11
64	37.4777	37.9780
65	37.9780	38.4782
66	38.4782	38.9785
68	39.4787	39.9790
70	40.4792	40.9794
72	41.4796	41.9799
75	42.9803	43.4805
76	43.4805	43.9807
80	45.4813	45.9814
84	47.4820	47.9822
85	47.9822	48.4823
88	49.4826	49.9828
90	50.4830	50.9831
95	52.9837	53.4838
100	55.4844	55.9845
120	65.4866	65.9867
150	80.4890	80.9890
200	105.4915	105.9915

Mounting distance of a profile shifted gear and the meshing rack



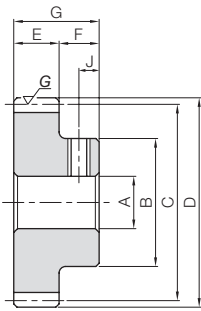
$$a = \frac{zm}{2} + H + xm$$

Where
 a : Mounting distance
 H : Pitch line height
 m : Module
 z : No. of teeth
 x : Profile shift coefficient



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C*
Heat treatment	—*
Tooth hardness	200 to 270HB
Surface treatment	Black oxide coated except for teeth

* Products with modules of 0.8 or under use S45C thermal refined equivalent materials and are not hardened.



S1T

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway
				A _{H7}	B	C	D	E	F	G	Width × Depth
SSG0.5-30A (Made to Order)	m0.5	30	S1T	5	13	15	16	5	7	12	—
SSG0.5-30B (Made to Order)				6							
SSG0.5-32A (Made to Order)		32		5	14	16	17				
SSG0.5-40B (Made to Order)		40		6	18	20	21				
SSG0.5-50B (Made to Order)		50		6	22	25	26				
SSG0.5-60A (Made to Order)		60		6	28	30	31				
SSG0.5-60B (Made to Order)				8							
SSG0.5-70B (Made to Order)		70		8	28	35	36				
SSG0.5-80A (Made to Order)		80		8	28	40	41				
SSG0.8-20A (Made to Order)	m0.8	20	S1T	5	13	16	17.6	8	8	16	—
SSG0.8-20B (Made to Order)				6							
SSG0.8-25A (Made to Order)		25		6	16	20	21.6				
SSG0.8-30A (Made to Order)		30		5	20	24	25.6				
SSG0.8-34A (Made to Order)		34		6	22	27.2	28.8				
SSG0.8-40B (Made to Order)		40		8	28	32	33.6				
SSG0.8-50A (Made to Order)		50		6	28	40	41.6				
SSG0.8-60A (Made to Order)		60		6	28	48	49.6				
SSG0.8-60B (Made to Order)				8							
SSG0.8-70A (Made to Order)		70		6	28	56	57.6				
SSG0.8-80A (Made to Order)		80		6	28	64	65.6				

[Precautions for Made to Order Products] Prices and lead times for Made to Order products require separate estimates. Contact your dealer.

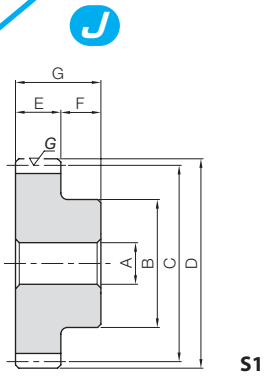
Socket head screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
Size	J	Bending strength	Surface durability	Bending strength	Surface durability			
M4	3.5	1.63	0.29	0.17	0.030	0~0.08	0.012	SSG0.5-30A (Made to Order)
							0.011	SSG0.5-30B (Made to Order)
		1.78	0.34	0.18	0.035		0.014	SSG0.5-32A (Made to Order)
		2.38	0.55	0.24	0.056		0.023	SSG0.5-40B (Made to Order)
		3.14	0.89	0.32	0.091		0.037	SSG0.5-50B (Made to Order)
M4	3.5	3.91	1.32	0.40	0.13	0~0.08	0.058	SSG0.5-60A (Made to Order)
M5							0.056	SSG0.5-60B (Made to Order)
M5		3.90	1.53	0.40	0.16		0.066	SSG0.5-70B (Made to Order)
M4		4.55	2.04	0.46	0.21		0.080	SSG0.5-80A (Made to Order)
M4	4	3.79	0.53	0.39	0.054	0~0.08	0.018	SSG0.8-20A (Made to Order)
							0.017	SSG0.8-20B (Made to Order)
		5.22	0.88	0.53	0.090		0.029	SSG0.8-25A (Made to Order)
M4		6.70	1.30	0.68	0.13		0.045	SSG0.8-30A (Made to Order)
M4		7.90	1.71	0.81	0.17		0.056	SSG0.8-34A (Made to Order)
M5		8.11	2.02	0.83	0.21		0.082	SSG0.8-40B (Made to Order)
M4		10.7	3.26	1.09	0.33		0.11	SSG0.8-50A (Made to Order)
M4		13.3	4.83	1.36	0.49		0.15	SSG0.8-60A (Made to Order)
M5							0.14	SSG0.8-60B (Made to Order)
M4		16.0	6.73	1.63	0.69		0.19	SSG0.8-70A (Made to Order)
M4		18.7	8.97	1.90	0.91		0.24	SSG0.8-80A (Made to Order)



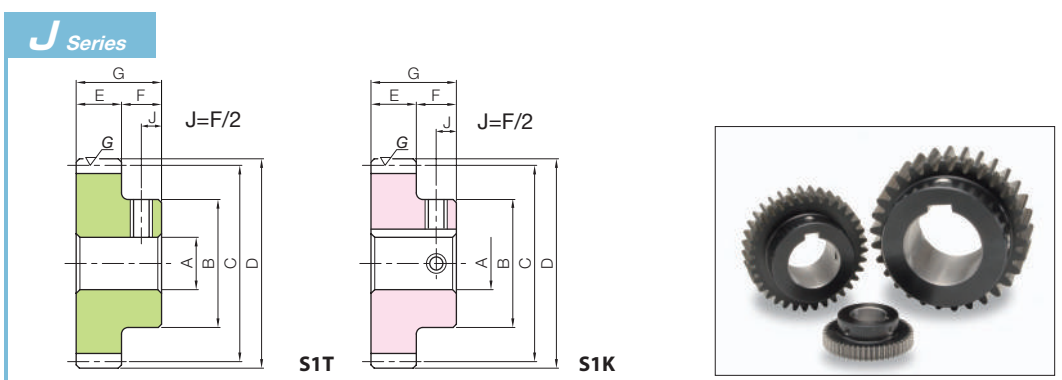


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)		
			A _{H7}	B	C	D	E	F	G	Bending strength	Surface durability	Bending strength	Surface durability				
SSG1-15	15	6	S1	12	15	17	8	10	18	2.96	1.03	0.30	0.11	0.08~0.16	0.016		
SSG1-16	16			13	16	18				3.28	1.19	0.33	0.12		0.019		
SSG1-17	17			14	17	19				3.60	1.36	0.37	0.14		0.022		
SSG1-18	18			15	18	20				3.93	1.54	0.40	0.16		0.026		
SSG1-19	19			16	19	21				4.26	1.73	0.43	0.18		0.030		
SSG1-20	20	8	S1	17	20	22	8	10	18	4.60	1.94	0.47	0.20	0.08~0.16	0.034		
SSG1-21	21			18	21	23				4.94	2.14	0.50	0.22		0.035		
SSG1-22	22			18	22	24				5.28	2.36	0.54	0.24		0.037		
SSG1-23	23			20	23	25				5.63	2.59	0.57	0.26		0.044		
SSG1-24	24			20	24	26				5.98	2.83	0.61	0.29		0.046		
SSG1-25	25			20	25	27				6.33	3.07	0.65	0.31		0.048		
SSG1-26	26			20	26	28				6.68	3.33	0.68	0.34		0.051		
SSG1-27	27			20	27	29				7.04	3.60	0.72	0.37		0.054		
SSG1-28	28			20	28	30				7.39	3.89	0.75	0.40		0.056		
SSG1-29	29			25	29	31				7.75	4.18	0.79	0.43		0.073		
SSG1-30	30	10	S1	25	30	32	8	10	18	8.11	4.48	0.83	0.46	0.08~0.16	0.072		
SSG1-32	32			25	32	34				7.37	4.27	0.75	0.43		0.078		
SSG1-34	34			25	34	36				7.98	4.84	0.81	0.49		0.084		
SSG1-35	35			25	35	37				8.28	5.14	0.84	0.52		0.088		
SSG1-36	36			25	36	38				8.59	5.45	0.88	0.56		0.091		
SSG1-38	38			30	38	40				9.21	6.10	0.94	0.62		0.12		
SSG1-40	40			30	40	42				9.83	6.79	1.00	0.69		0.12		
SSG1-42	42			30	42	44				10.5	7.51	1.07	0.77		0.13		
SSG1-44	44			30	44	46				11.1	8.28	1.13	0.84		0.14		
SSG1-45	45			30	45	47				11.4	8.67	1.16	0.88		0.14		
SSG1-48	48			30	48	50				12.3	9.92	1.26	1.01		0.16		
SSG1-50	50			35	50	52				13.0	10.8	1.32	1.10		0.18		
SSG1-55	55			35	55	57				14.6	13.2	1.48	1.34		0.21		
SSG1-56	56			35	56	58				14.9	13.7	1.52	1.40		0.21		
SSG1-60	60			40	60	62				16.2	15.8	1.65	1.61		0.26		
SSG1-64	64			12	S1	40				64	66	17.4	18.1		1.78	1.84	0.28
SSG1-70	70					40				70	72	19.4	21.8		1.97	2.22	0.32
SSG1-75	75					40				75	77	21.0	25.2		2.14	2.57	0.36
SSG1-80	80					50				80	82	22.6	28.8		2.30	2.94	0.44
SSG1-90	90					50				90	92	25.8	36.9		2.64	3.77	0.53
SSG1-100	100	15	S1	50	100	102	26.9	42.5	2.74	4.34	0.62						
SSG1-120	120			50	120	122	32.9	62.5	3.36	6.37	0.84						



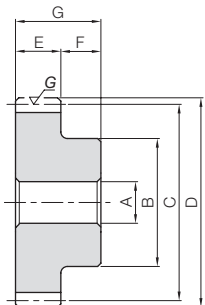
To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway J _{s9}		6	8	10	12	14	15	16	17	18	19	20	22	25	28	30	
Screw size		—	—	4×1.8	5×2.3	5×2.3	5×2.3	5×2.3	5×2.3	6×2.8	6×2.8	6×2.8	6×2.8	8×3.3	8×3.3	8×3.3	
Catalog Number		M4	M5	M4	M4	M4	M4	M4	M4	M5	M5	M5	M5	M6	M6	M6	
SSG1-15 J BORE	S1T																
SSG1-16 J BORE	S1T																
SSG1-17 J BORE	S1T	S1T															
SSG1-18 J BORE	S1T	S1T															
SSG1-19 J BORE	S1T	S1T															
SSG1-20 J BORE	S1T	S1T															
SSG1-21 J BORE		S1T	S1K														
SSG1-22 J BORE		S1T	S1K														
SSG1-23 J BORE		S1T	S1K	S1K													
SSG1-24 J BORE		S1T	S1K	S1K	S1K												
SSG1-25 J BORE		S1T	S1K	S1K	S1K												
SSG1-26 J BORE		S1T	S1K	S1K	S1K												
SSG1-27 J BORE		S1T	S1K	S1K	S1K												
SSG1-28 J BORE		S1T	S1K	S1K	S1K												
SSG1-29 J BORE		S1T	S1K	S1K	S1K	S1K	S1K										
SSG1-30 J BORE			S1K	S1K	S1K	S1K	S1K										
SSG1-32 J BORE			S1K	S1K	S1K	S1K	S1K										
SSG1-34 J BORE			S1K	S1K	S1K	S1K	S1K										
SSG1-35 J BORE			S1K	S1K	S1K	S1K	S1K										
SSG1-36 J BORE			S1K	S1K	S1K	S1K	S1K										
SSG1-38 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-40 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-42 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-44 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-45 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-48 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG1-50 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG1-55 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SSG1-56 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SSG1-60 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG1-64 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG1-70 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG1-75 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG1-80 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1-90 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1-100 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1-120 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K



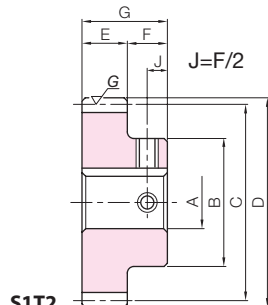
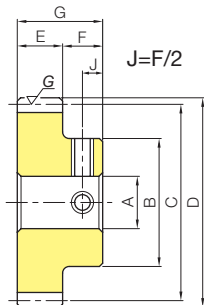
Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



S1

J Series



S1T2

S1K



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
			A _{H7}	B	C	D	E	F	G		Bending strength	Surface durability	Bending strength	Surface durability		
SSG1.5-14	14	S1	10	17	21	24	15	14	29		11.1	3.73	1.13	0.38	0.08~0.16	0.048
SSG1.5-15	15			18	22.5	25.5					12.5	4.35	1.27	0.44		0.057
SSG1.5-16	16			20	24	27					13.8	5.02	1.41	0.51		0.070
SSG1.5-17	17			21	25.5	28.5					15.2	5.74	1.55	0.58		0.080
SSG1.5-18	18			22	27	30					16.6	6.51	1.69	0.66		0.091
SSG1.5-19	19			23	28.5	31.5					18.0	7.33	1.83	0.75		0.10
SSG1.5-20	20			24	30	33					19.4	8.20	1.98	0.84		0.12
SSG1.5-21	21			25	31.5	34.5					20.8	9.12	2.12	0.93		0.13
SSG1.5-22	22			26	33	36					18.6	8.41	1.89	0.86		0.13
SSG1.5-23	23			27	34.5	37.5					19.8	9.27	2.02	0.95		0.15
SSG1.5-24	24	S1	12	28	36	39	15	14	29		21.0	10.2	2.14	1.04	0.08~0.16	0.16
SSG1.5-25	25			30	37.5	40.5					22.2	11.1	2.27	1.13		0.18
SSG1.5-26	26			32	39	42					23.5	12.1	2.39	1.23		0.20
SSG1.5-27	27			34	40.5	43.5					24.7	13.1	2.52	1.33		0.21
SSG1.5-28	28			36	42	45					26.0	14.1	2.65	1.44		0.23
SSG1.5-29	29			37	43.5	46.5					27.3	15.2	2.78	1.55		0.25
SSG1.5-30	30			38	45	48					28.5	16.3	2.91	1.66		0.27
SSG1.5-32	32			40	48	51					31.1	18.6	3.17	1.90		0.31
SSG1.5-34	34			42	51	54					33.6	21.1	3.43	2.15		0.35
SSG1.5-35	35			42	52.5	55.5					34.9	22.4	3.56	2.29		0.37
SSG1.5-36	36	S1	15	45	54	57	15	14	29		36.2	23.8	3.70	2.43	0.08~0.16	0.40
SSG1.5-38	38			45	57	60					38.8	26.6	3.96	2.71		0.44
SSG1.5-40	40			50	60	63					41.5	29.6	4.23	3.02		0.51
SSG1.5-42	42			50	63	66					44.1	32.8	4.50	3.35		0.54
SSG1.5-44	44			50	66	69					46.7	36.2	4.77	3.69		0.58
SSG1.5-45	45			50	67.5	70.5					48.1	37.9	4.90	3.86		0.58
SSG1.5-48	48			50	72	75					52.0	43.4	5.31	4.42		0.64
SSG1.5-50	50			60	75	78					54.7	47.2	5.58	4.82		0.77
SSG1.5-55	55			60	82.5	85.5					61.4	57.7	6.26	5.88		0.88
SSG1.5-56	56			60	84	87					62.8	59.9	6.40	6.11		0.91
SSG1.5-60	60	S1	18	60	90	93	15	14	29		68.1	69.2	6.95	7.06	0.08~0.16	0.99
SSG1.5-64	64			60	96	99					67.9	73.2	6.92	7.46		1.09
SSG1.5-70	70			60	105	108					75.4	88.4	7.69	9.01		1.26
SSG1.5-75	75			60	112.5	115.5					81.7	102	8.33	10.4		1.41
SSG1.5-80	80			70	120	123					88.0	117	8.97	12.0		1.68
SSG1.5-90	90			70	135	138					101	150	10.3	15.3		2.04
SSG1.5-100	100			70	150	153					113	187	11.6	19.1		2.43

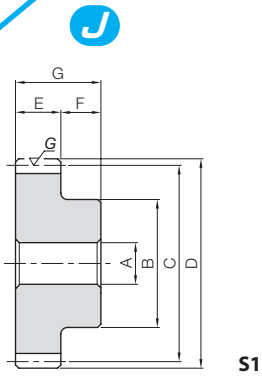
Bore H7	* The product shapes of J Series items are identified by background color.															
	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40
Keyway J _{s9}	4x1.8	4x1.8	5x2.3	5x2.3	5x2.3	5x2.3	6x2.8	6x2.8	6x2.8	6x2.8	8x3.3	8x3.3	8x3.3	10x3.3	10x3.3	12x3.3
Screw size	4x1.8	4x1.8	5x2.3	5x2.3	5x2.3	5x2.3	6x2.8	6x2.8	6x2.8	6x2.8	8x3.3	8x3.3	8x3.3	10x3.3	10x3.3	12x3.3
Catalog Number	M4				M5				M6				M8			
SSG1.5-14 J BORE	S1T2															
SSG1.5-15 J BORE	S1T2															
SSG1.5-16 J BORE	S1K															
SSG1.5-17 J BORE	S1K	S1K														
SSG1.5-18 J BORE	S1K	S1K														
SSG1.5-19 J BORE	S1K	S1K														
SSG1.5-20 J BORE	S1K	S1K	S1K													
SSG1.5-21 J BORE	S1K	S1K	S1K	S1K												
SSG1.5-22 J BORE		S1K	S1K	S1K												
SSG1.5-23 J BORE		S1K	S1K	S1K	S1K											
SSG1.5-24 J BORE		S1K	S1K	S1K	S1K											
SSG1.5-25 J BORE		S1K	S1K	S1K	S1K	S1K	S1K									
SSG1.5-26 J BORE		S1K	S1K	S1K	S1K	S1K	S1K									
SSG1.5-27 J BORE			S1K	S1K	S1K	S1K	S1K	S1K								
SSG1.5-28 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG1.5-29 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG1.5-30 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG1.5-32 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG1.5-34 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SSG1.5-35 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG1.5-36 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG1.5-38 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG1.5-40 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG1.5-42 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG1.5-44 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG1.5-45 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG1.5-48 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG1.5-50 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG1.5-55 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-56 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-60 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-64 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-70 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-75 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-80 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-90 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG1.5-100 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K





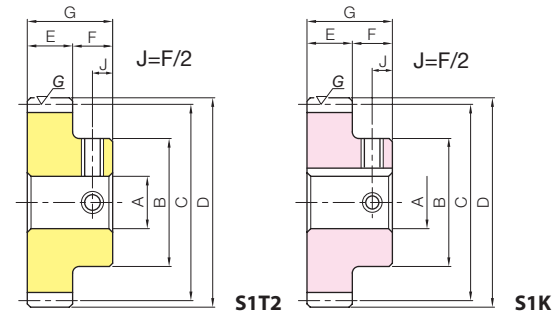
Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
			A _{H7}	B	C	D	E	F	G	Bending strength	Surface durability	Bending strength	Surface durability		
SSG2-14	14	S1	12	22	28	32	20	16	36	26.3	9.01	2.69	0.92	0.10~0.20	0.11
SSG2-15	15			24	30	34				29.6	10.5	3.01	1.07		0.14
SSG2-16	16			26	32	36				27.3	10.1	2.78	1.03		0.16
SSG2-17	17			28	34	38				30.0	11.6	3.06	1.18		0.19
SSG2-18	18			30	36	40				32.7	13.1	3.34	1.34		0.22
SSG2-19	19			31	38	42				35.5	14.8	3.62	1.51		0.24
SSG2-20	20		15	32	40	44				38.3	16.6	3.91	1.69		0.25
SSG2-21	21			34	42	46				41.1	18.4	4.20	1.88		0.28
SSG2-22	22			36	44	48				44.0	20.4	4.49	2.08		0.32
SSG2-23	23			37	46	50				46.9	22.5	4.78	2.30		0.35
SSG2-24	24			38	48	52				49.8	24.7	5.08	2.52		0.38
SSG2-25	25			40	50	54				52.7	27.0	5.38	2.75		0.42
SSG2-26	26		18	42	52	56				55.7	29.3	5.68	2.99		0.46
SSG2-27	27			44	54	58				58.6	31.7	5.98	3.23		0.50
SSG2-28	28			45	56	60				61.6	34.2	6.28	3.49		0.54
SSG2-29	29			48	58	62				64.6	36.8	6.59	3.75		0.59
SSG2-30	30			50	60	64				67.6	39.5	6.89	4.03		0.62
SSG2-32	32			50	64	68				73.7	45.2	7.51	4.61		0.68
SSG2-34	34		20	50	68	72				79.8	51.3	8.13	5.23		0.74
SSG2-35	35			50	70	74				82.8	54.5	8.45	5.56		0.78
SSG2-36	36	50		72	76	85.9	57.8	8.76	5.90	0.81					
SSG2-38	38	50		76	80	92.1	64.8	9.39	6.60	0.89					
SSG2-40	40	60		80	84	98.3	72.1	10.0	7.35	1.06					
SSG2-42	42	60		84	88	105	79.9	10.7	8.15	1.14					
SSG2-44	44	25	60	88	92	111	88.1	11.3	8.98	1.22					
SSG2-45	45		60	90	94	114	92.3	11.6	9.41	1.27					
SSG2-48	48		60	96	100	114	97.6	11.6	9.95	1.40					
SSG2-50	50		60	100	104	120	106	12.2	10.8	1.45					
SSG2-55	55		60	110	114	134	130	13.7	13.3	1.71					
SSG2-56	56		60	112	116	137	135	14.0	13.8	1.76					
SSG2-60	60	25	65	120	124	149	156	15.2	15.9	2.05					
SSG2-64	64		65	128	132	161	179	16.4	18.3	2.30					
SSG2-70	70		70	140	144	179	216	18.2	22.0	2.76					
SSG2-75	75		70	150	154	194	249	19.7	25.4	3.12					
SSG2-80	80		80	160	164	194	265	19.8	27.0	3.65					
SSG2-90	90		80	180	184	222	338	22.6	34.5	4.49					
SSG2-100	100			80	200	204				250	421	25.4	43.0		5.42

J Series



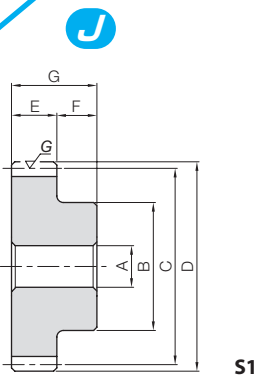
To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7		* The product shapes of J Series items are identified by background color.																		
Keyway Js9		12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45			
Screw size		4x1.8	5x2.3				6x2.8				8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number		M4					M5				M6			M8			M10			
SSG2-14 J BORE	S1T2																			
SSG2-15 J BORE	S1K																			
SSG2-16 J BORE	S1K	S1K																		
SSG2-17 J BORE	S1K	S1K	S1K	S1K																
SSG2-18 J BORE	S1K	S1K	S1K	S1K	S1K															
SSG2-19 J BORE	S1K	S1K	S1K	S1K	S1K	S1K														
SSG2-20 J BORE			S1K	S1K	S1K	S1K														
SSG2-21 J BORE			S1K	S1K	S1K	S1K	S1K	S1K												
SSG2-22 J BORE			S1K	S1K	S1K	S1K	S1K	S1K												
SSG2-23 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG2-24 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG2-25 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG2-26 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG2-27 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG2-28 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG2-29 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG2-30 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG2-32 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG2-34 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG2-35 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG2-36 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG2-38 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG2-40 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-42 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-44 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-45 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-48 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-50 J BORE											S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-55 J BORE											S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-56 J BORE											S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-60 J BORE											S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-64 J BORE											S1K	S1K	S1K	S1K	S1K	S1K				
SSG2-70 J BORE											S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG2-75 J BORE											S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG2-80 J BORE											S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2-90 J BORE											S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2-100 J BORE											S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	



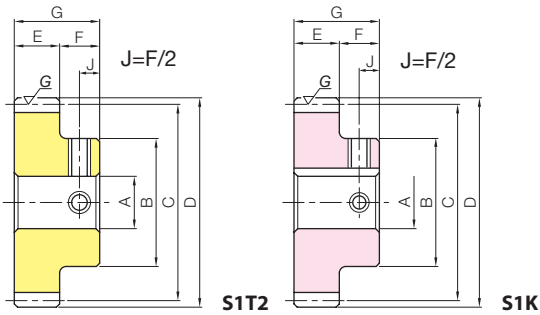
Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
			A _{H7}	B	C	D	E	F	G	Bending strength	Surface durability	Bending strength	Surface durability		
SSG2.5-14	14	S1	15	28	35	40	25	18	43	42.9	14.9	4.37	1.52	0.10~0.20	0.22
SSG2.5-15	15			30	37.5	42.5				48.1	17.4	4.91	1.77		0.26
SSG2.5-16	16			32	40	45				53.3	20.1	5.44	2.05		0.30
SSG2.5-17	17			35	42.5	47.5				58.6	23.0	5.97	2.34		0.35
SSG2.5-18	18			38	45	50				63.9	26.1	6.52	2.66		0.41
SSG2.5-19	19			39	47.5	52.5				69.4	29.4	7.07	3.00		0.46
SSG2.5-20	20		18	40	50	55				74.8	32.9	7.63	3.36		0.48
SSG2.5-21	21			42	52.5	57.5				80.4	36.7	8.20	3.74		0.53
SSG2.5-22	22			44	55	60				86.0	40.6	8.77	4.14		0.60
SSG2.5-23	23			46	57.5	62.5				91.6	44.8	9.34	4.57		0.66
SSG2.5-24	24			48	60	65				97.3	49.2	9.92	5.02		0.72
SSG2.5-25	25		20	50	62.5	67.5				103	53.8	10.5	5.48		0.77
SSG2.5-26	26			54	65	70				109	58.4	11.1	5.95		0.87
SSG2.5-27	27			56	67.5	72.5				115	63.2	11.7	6.44		0.94
SSG2.5-28	28			60	70	75				120	68.2	12.3	6.95		1.05
SSG2.5-29	29			60	72.5	77.5				126	73.3	12.9	7.48		1.10
SSG2.5-30	30			65	75	80				132	78.7	13.5	8.03		1.23
SSG2.5-32	32		25	70	80	85				144	90.1	14.7	9.19		1.42
SSG2.5-34	34			70	85	90				156	102	15.9	10.4		1.55
SSG2.5-35	35			70	87.5	92.5				162	109	16.5	11.1		1.62
SSG2.5-36	36			70	90	95				168	115	17.1	11.8		1.69
SSG2.5-38	38			70	95	100				180	129	18.3	13.2		1.83
SSG2.5-40	40		25	70	100	105				177	133	18.1	13.6		1.92
SSG2.5-42	42			75	105	110				188	147	19.2	15.0		2.16
SSG2.5-44	44			75	110	115				200	163	20.4	16.6		2.32
SSG2.5-45	45			75	112.5	117.5				205	170	20.9	17.4		2.41
SSG2.5-48	48		25	75	120	125				222	195	22.7	19.9		2.68
SSG2.5-50	50			80	125	130				234	213	23.8	21.7		2.95
SSG2.5-55	55	80		137.5	142.5	262	260	26.8	26.5	3.46					
SSG2.5-56	56	80		140	145	268	270	27.3	27.5	3.57					
SSG2.5-60	60	80		150	155	291	311	29.7	31.8	4.01					
SSG2.5-70	70	80		175	180	324	399	33.1	40.7	5.26					
SSG2.5-75	75	S1	20	90	187.5	192.5	351	461	35.8	47.0	6.15				
SSG2.5-80	80			90	200	205	378	527	38.6	53.7	6.90				

J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

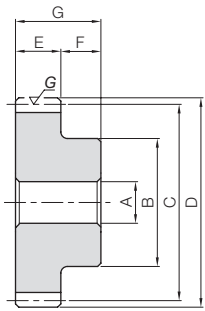
Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway Js9		15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Screw size		5×2.3			6×2.8				8×3.3			10×3.3		12×3.3	14×3.8		
Catalog Number		M4			M5				M6			M8		M10			
SSG2.5-14 J BORE	S1T2																
SSG2.5-15 J BORE	S1K	S1K															
SSG2.5-16 J BORE	S1K	S1K	S1K	S1K													
SSG2.5-17 J BORE	S1K	S1K	S1K	S1K	S1K	S1K											
SSG2.5-18 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG2.5-19 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG2.5-20 J BORE					S1K	S1K	S1K	S1K									
SSG2.5-21 J BORE					S1K	S1K	S1K	S1K	S1K								
SSG2.5-22 J BORE					S1K	S1K	S1K	S1K	S1K								
SSG2.5-23 J BORE					S1K	S1K	S1K	S1K	S1K								
SSG2.5-24 J BORE					S1K	S1K	S1K	S1K	S1K	S1K							
SSG2.5-25 J BORE							S1K	S1K	S1K	S1K	S1K						
SSG2.5-26 J BORE							S1K	S1K	S1K	S1K	S1K	S1K					
SSG2.5-27 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG2.5-28 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG2.5-29 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG2.5-30 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG2.5-32 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-34 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-35 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-36 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-38 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-40 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG2.5-42 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-44 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-45 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-48 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-50 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-55 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-56 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-60 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-70 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG2.5-75 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG2.5-80 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K





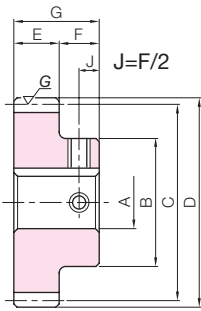
Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

* The precision grade of J Series products is equivalent to the value shown in the table.



S1

J Series



S1K



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Backlash (mm)	Weight (kg)
			A _{H7}	B							Bending strength	Surface durability		
SSG3-14	14	S1	16	34	42	48	30	20	50	74.1	26.1	7.55	2.66	0.39
SSG3-15	15			36	45	51								
SSG3-16	16			38	48	54								
SSG3-17	17			37	51	57								
SSG3-18	18			40	54	60								
SSG3-19	19			45	57	63								
SSG3-20	20			50	60	66								
SSG3-21	21			52	63	69								
SSG3-22	22			54	66	72								
SSG3-23	23			56	69	75								
SSG3-24	24	S1	20	58	72	78	30	20	50	168	86.4	17.1	8.81	1.25
SSG3-25	25			60	75	81								
SSG3-26	26			62	78	84								
SSG3-27	27			65	81	87								
SSG3-28	28			70	84	90								
SSG3-29	29			70	87	93								
SSG3-30	30			75	90	96								
SSG3-32	32			75	96	102								
SSG3-34	34			75	102	108								
SSG3-35	35			80	105	111								
SSG3-36	36	S1	25	80	108	114	30	20	50	268	188	27.3	19.1	2.75
SSG3-38	38			80	114	120								
SSG3-40	40			80	120	126								
SSG3-42	42			80	126	132								
SSG3-44	44			80	132	138								
SSG3-45	45			80	135	141								
SSG3-48	48			85	144	150								
SSG3-50	50			85	150	156								
SSG3-55	55			90	165	171								
SSG3-56	56			90	168	174								
SSG3-60	60	S1	30	100	180	186	30	20	50	467	508	47.6	51.8	6.95
SSG3-70	70			100	210	216								
SSG3-75	75			100	225	231								
SSG3-80	80			100	240	246								

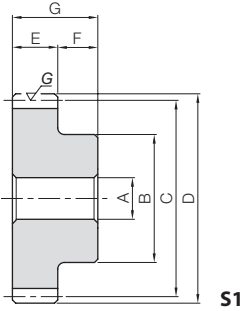
Bore H7	* The product shapes of J Series items are identified by background color.															
	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Keyway J _{s9}	5×2.3		6×2.8				8×3.3				10×3.3		12×3.3		14×3.8	
Screw size	M4		M5				M6				M8		M10			
Catalog Number	M4		M5				M6				M8		M10			
SSG3-14 J BORE	S1K	S1K														
SSG3-15 J BORE	S1K	S1K	S1K	S1K												
SSG3-16 J BORE	S1K	S1K	S1K	S1K	S1K	S1K										
SSG3-17 J BORE	S1K	S1K	S1K	S1K	S1K	S1K										
SSG3-18 J BORE	S1K	S1K	S1K	S1K	S1K	S1K										
SSG3-19 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG3-20 J BORE					S1K	S1K	S1K	S1K	S1K							
SSG3-21 J BORE					S1K	S1K	S1K	S1K	S1K							
SSG3-22 J BORE					S1K	S1K	S1K	S1K	S1K	S1K						
SSG3-23 J BORE					S1K	S1K	S1K	S1K	S1K	S1K						
SSG3-24 J BORE					S1K	S1K	S1K	S1K	S1K	S1K						
SSG3-25 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SSG3-26 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG3-27 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG3-28 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG3-29 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG3-30 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG3-32 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG3-34 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG3-35 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-36 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-38 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-40 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-42 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-44 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-45 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-48 J BORE							S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG3-50 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-55 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-56 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-60 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-70 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-75 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG3-80 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	



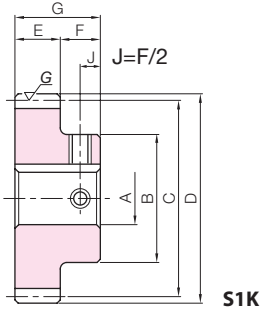


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth (excludes semi-custom products)

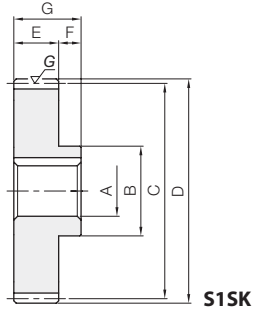
* The precision grade of J Series products is equivalent to the value shown in the table.



S1



S1K



S1SK



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore AH7	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
										Bending strength	Surface durability	Bending strength	Surface durability		
SSG4-14	14	20	S1	40	56	64	40	25	65	176	63.4	17.9	6.47	0.10~0.20	0.86
SSG4-15	15			45	60	68				197	74.1	20.1	7.55		1.04
SSG4-16	16			50	64	72				218	85.6	22.3	8.73		1.24
SSG4-18	18			60	72	80				262	111	26.7	11.4		1.67
SSG4-20	20			65	80	88				307	141	31.3	14.3		2.07
SSG4-22	22			70	88	96				352	174	35.9	17.7		2.50
SSG4-24	24			75	96	104				368	194	37.5	19.8		2.98
SSG4-25	25			80	100	108				389	213	39.7	21.7		3.29
SSG4-28	28			85	112	120				455	270	46.4	27.5		4.05
SSG4-30	30			90	120	128				499	313	50.9	31.9		4.64
SSG4-32	32	25	S1	90	128	136	40	25	65	544	358	55.5	36.5	0.10~0.20	5.04
SSG4-35	35			90	140	148				612	432	62.4	44.0		5.83
SSG4-36	36			90	144	152				634	458	64.7	46.7		6.11
SSG4-40	40			90	160	168				674	529	68.7	54.0		7.31
SSG4-42	42			90	168	176				717	586	73.1	59.7		7.96
SSG4-44	44			90	176	184				760	646	77.5	65.8		8.53
SSG4-45	45			90	180	188				781	677	79.6	69.0		8.88
SSG4-48	48			100	192	200				846	774	86.3	79.0		10.3
SSG4-50	50			100	200	208				889	842	90.7	85.9		11.0
SSG4-55	55			100	220	228				998	1030	102	105		13.1
SSG4-56	56	30	S1	110	224	232	40	25	65	1020	1060	104	109	0.10~0.20	13.9
SSG4-60	60			110	240	248				1110	1230	113	125		15.7
SSG4-62S	62			120	248	256				1240	1360	127	138		16.8
SSG4-64S	64			130	256	264				1290	1450	131	148		18.1
SSG4-65S	65			130	260	268				1310	1500	134	153		18.6
SSG4-66S	66			130	264	272				1340	1550	136	158		19.2
SSG4-68S	68			140	272	280				1380	1650	141	168		20.6
SSG4-70S	70			140	280	288				1430	1750	146	178		21.7
SSG4-80S	80			160	320	328				1550	2150	158	219		28.6
SSG4-90S	90			180	360	368				1770	2750	181	281		36.3
SSG4-100S	100	110	S1	200	400	408	40	25	65	2000	3440	204	351	0.10~0.20	45.0
SSG4-110S	110			220	440	448				2220	4190	226	427		54.6
SSG4-120S	120			240	480	488				2450	5010	249	511		65.1

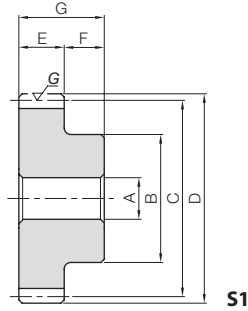
[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

Bore H7	* The product shapes of J Series items are identified by background color.																							
	20	22	25	28	30	32	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110		
Keyway Js9	6x2.8	8x3.3	10x3.3	12x3.3	14x3.8	16x4.3	18x4.4	20x4.9	22x5.4	25x5.4	28x6.4													
Screw size	M5	M6	M8	M10	M12	M16																		
Catalog Number	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-14 J BORE	S1K	S1K																						
SSG4-15 J BORE	S1K	S1K	S1K																					
SSG4-16 J BORE	S1K	S1K	S1K	S1K	S1K																			
SSG4-18 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K																	
SSG4-20 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K																
SSG4-22 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K															
SSG4-24 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K														
SSG4-25 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K													
SSG4-28 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K												
SSG4-30 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K											
SSG4-32 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
SSG4-35 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG4-36 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG4-40 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SSG4-42 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SSG4-44 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SSG4-45 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SSG4-48 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SSG4-50 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SSG4-55 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SSG4-56 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-60 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-62SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-64SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-65SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-66SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-68SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-70SJ BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SSG4-80SJ BORE					S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SSG4-90SJ BORE								S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SSG4-100SJ BORE										S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SSG4-110SJ BORE												S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SSG4-120SJ BORE														S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK

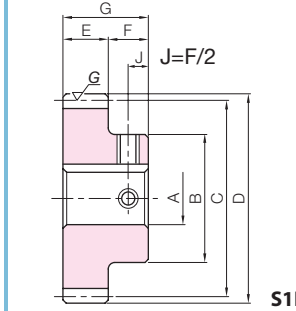


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth (excludes semi-custom products)

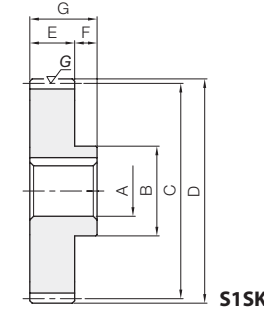
* The precision grade of J Series products is equivalent to the value shown in the table.



S1



S1K



S1SK



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)		
			A _{H7}	B	C	D	E	F	G	Bending strength	Surface durability	Bending strength	Surface durability				
SSG5-20	20	S1	25	82	100	110	50	25	75	553	259	56.4	26.5	0.10~0.22	3.83		
SSG5-25	25			105	125	135				760	426	77.5	43.4		6.23		
SSG5-30	30			120	150	160				975	623	99.4	63.5		8.87		
SSG5-32S	32	S1	30	120	160	170	50	25	75	1150	735	117	74.9	0.10~0.22	9.70		
SSG5-35S	35			130	175	185				1300	886	132	90.3		11.6		
SSG5-36S	36			130	180	190				1340	939	137	95.8		12.1		
SSG5-40S	40			140	200	210				1420	1080	145	110		14.9		
SSG5-42S	42			140	210	220				1510	1200	154	122		16.2		
SSG5-44S	44			150	220	230				1600	1320	163	135		18.0		
SSG5-45S	45			40	150	225				235	1640	1380	168		141	0.10~0.22	18.7
SSG5-48S	48				150	240				250	1780	1580	182		161		20.8
SSG5-50S	50				150	250				260	1870	1720	191		176		22.3
SSG5-55S	55				150	275				285	2100	2110	214		215		26.4
SSG5-56S	56				150	280				290	2150	2190	219		223		27.2
SSG5-60S	60				150	300				310	2330	2530	238		258		30.8
SSG5-62S	62		40	160	310	320				2420	2710	247	276		0.10~0.22	32.8	
SSG5-64S	64				160	320				330	2340	2690	238			274	34.8
SSG5-65S	65				160	325				335	2380	2780	243			283	35.8
SSG5-66S	66				170	330				340	2420	2870	247			292	37.3
SSG5-68S	68				170	340				350	2510	3050	256			311	39.4
SSG5-70S	70				180	350				360	2590	3250	265			331	42.0
SSG5-80S	80	200		400	410	3030	4300	309	438	54.8							
SSG5-90S	90					230	450	460	3460		5480	353	559	69.8			
SSG6-20	20	S1		25	100	120	132	60	28	88	955	457	97.4	46.6		0.10~0.22	6.71
SSG6-25	25			30	125	150	162				1310	747	134	76.2			10.5
SSG6-30	30		30	150	180	192	1560				1020	160	104	15.4			
SSG6-32S	32	S1	30	150	192	204	60	28	88	1840	1190	187	121	0.10~0.22	17.0		
SSG6-35S	35			160	210	222				2070	1440	211	146		20.2		
SSG6-36S	36			160	216	228				2140	1520	218	155		21.2		
SSG6-40S	40			170	240	252				2450	1900	250	194		25.8		
SSG6-42S	42			170	252	264				2610	2100	266	215		27.6		
SSG6-44S	44			170	264	276				2760	2320	282	237		29.9		
SSG6-45S	45			40	180	270				282	2840	2430	290		248	0.10~0.22	31.7
SSG6-48S	48				180	288				300	3080	2780	314		284		35.4
SSG6-50S	50				180	300				312	3230	3030	330		309		38.0
SSG6-55S	55				180	330				342	3370	3440	344		351		45.0
SSG6-56S	56				180	336				348	3440	3570	351		364		46.5
SSG6-60S	60				180	360				372	3740	4130	381		421		52.7
SSG6-62S	62		40	190	372	384				3890	4430	397	451		0.10~0.22	56.6	
SSG6-64S	64				384	396				4040	4730	412	483			59.9	
SSG6-65S	65				200	390				402	4110	4890	419			499	62.3
SSG6-66S	66				200	396				408	4190	5050	427			515	64.1
SSG6-68S	68				200	408				420	4330	5380	442			548	67.6
SSG6-70S	70				210	420				432	4480	5710	457			582	72.0
SSG6-80S	80	240			480	492	5230	7520	534	766	94.3						

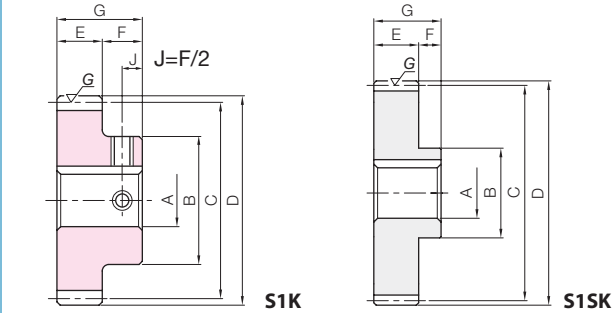
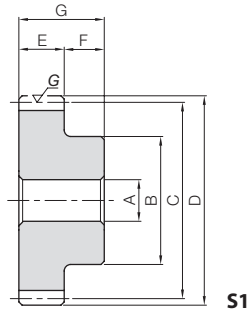
[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

[illegible]



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	—

* The precision grade of J Series products is equivalent to the value shown in the table.

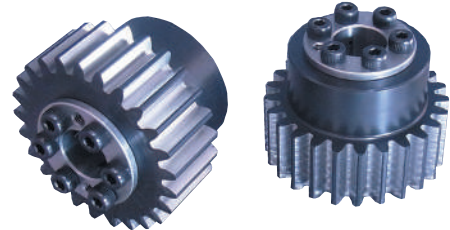


To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
			AH7	B	C	D	E	F	G	Bending strength	Surface durability	Bending strength	Surface durability		
SSG8-20S	20	S1	30	130	160	176	75	35	110	2300	1080	235	110	0.10~0.22	14.9
SSG8-25S	25			160	200	216				2920	1620	298	165		23.4
SSG8-30S	30			190	240	256				3750	2370	382	242		33.8
SSG8-32S	32		200	256	272	4080				2720	416	277	37.9		
SSG8-35S	35		210	280	296	4590				3280	468	335	44.7		
SSG8-36S	36		210	288	304	4760				3480	486	355	46.8		
SSG8-40S	40		220	320	336	5060				4030	516	411	56.7		
SSG8-42S	42		230	336	352	5380				4470	548	456	62.5		
SSG8-44S	44		230	352	368	5700				4930	581	502	67.6		
SSG8-45S	45		230	360	376	5860				5170	598	527	70.3		
SSG8-48S	48		240	384	400	6350				5920	647	603	79.5		
SSG8-50S	50		240	400	416	6670				6450	680	657	85.3		
SSG8-55S	55	240	440	456	7490	7850	764	801	101						
SSG8-56S	56	240	448	464	7650	8150	780	831	104						
SSG8-60S	60	240	480	496	8310	9390	848	958	118						
SSG10-20S	20	S1	40	160	200	220	90	40	130	3980	1920	406	196	0.10~0.22	27.2
SSG10-25S	25			200	250	270				5480	3100	559	317		43.3
SSG10-30S	30			240	300	320				7030	4550	717	464		62.1
SSG10-32S	32		250	320	340	7110				4840	725	493	70.2		
SSG10-35S	35		260	350	370	7990				5840	815	596	82.6		
SSG10-36S	36		270	360	380	8290				6200	845	632	87.9		
SSG10-40S	40		280	400	420	9480				7740	967	789	106		

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

Bore H7	* The product shapes of J Series items are identified by background color.																										
Keyway JS9	30	32	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	120	130	140	150	160	170	180		
Screw size	8x3.3	10x3.3	12x3.3	14x3.8	16x4.3	18x4.4	20x4.9			22x5.4			25x5.4			28x6.4			32x7.4			36x8.4			40x9.4		45x10.4
Catalog Number	M6	M8			M10			M12			M16					M20					—						
SSG8-20 SJ BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K													
SSG8-25 SJ BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG8-30 SJ BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SSG8-32 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK							
SSG8-35 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK							
SSG8-36 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK						
SSG8-40SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK					
SSG8-42 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK				
SSG8-44 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-45 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-48 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-50 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-55 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-56 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG8-60 SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG10-20 SJ BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K													
SSG10-25 SJ BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SSG10-30 SJ BORE				S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK				
SSG10-32 SJ BORE				S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG10-35 SJ BORE				S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG10-36 SJ BORE				S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SSG10-40 SJ BORE				S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

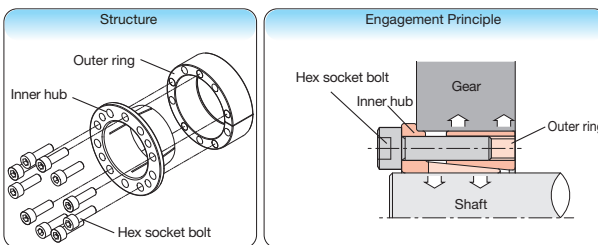
Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Structure and Engagement Principles

The structure consists of an outer ring and inner ring with split grooves in the tapered part, and hexagon socket head cap screws that convert the force into tightening strength.

In principle, the tightening strength of hexagon socket head cap screws spreads the outer and inner rings by taper engagement, and the gear and shaft become fastened by surface pressure.

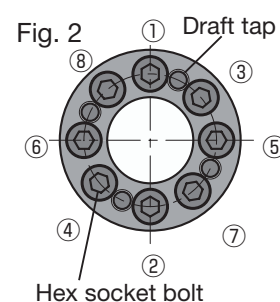
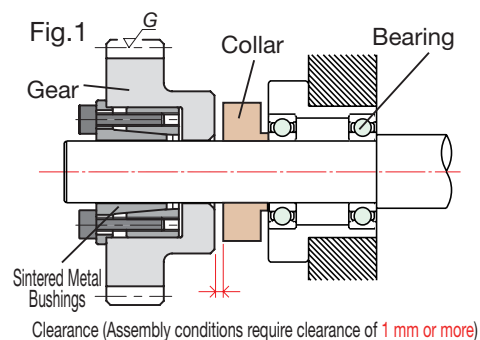


Catalog Number	No. of teeth	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Allowable torque (N·m)	Surface durability
SSG2-25	25	40	50	54	20	16	52.7	27.0
SSG2-26	26	42	52	56			55.7	29.3
SSG2-27	27	44	54	58			58.6	31.7
SSG2-28	28	45	56	60			61.6	34.2
SSG2-29	29	48	58	62			64.6	36.8
SSG2-30	30	50	60	64			67.6	39.5
SSG2-32	32	50	64	68			73.7	45.2
SSG2-34	34	50	68	72			79.8	51.3
SSG2-35	35	50	70	74			82.8	54.5
SSG2-36	36	50	72	76			85.9	57.8
SSG2-38	38	50	76	80	20	16	92.1	64.8
SSG2-40	40	60	80	84			98.3	72.1
SSG2-42	42	60	84	88			105	79.9
SSG2-44	44	60	88	92			111	88.1
SSG2-45	45	60	90	94			114	92.3
SSG2-48	48	60	96	100			114	97.6
SSG2-50	50	60	100	104			120	106
SSG2-55	55	60	110	114			134	130
SSG2-56	56	60	112	116			137	135
SSG2-60	60	65	120	124			149	156
SSG2-64	64	65	128	132			161	179
SSG2-70	70	70	140	144			179	216
SSG2-75	75	70	150	154			194	249
SSG2-80	80	80	160	164			194	265
SSG2-90	90	80	180	184			222	338
SSG2-100	100	80	200	204			250	421

* For the backlash of each product, please refer to the dimension table of the original product.

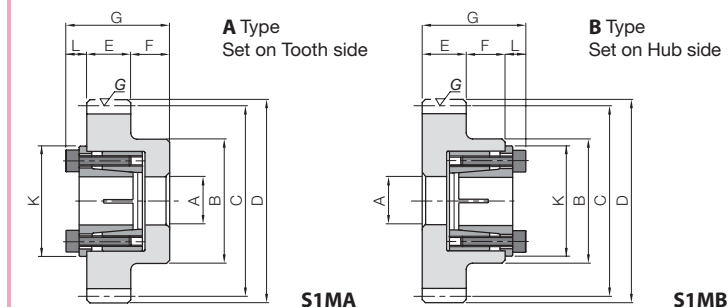
Mounting Method and Precautions

- Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.



Removal Method and Precautions

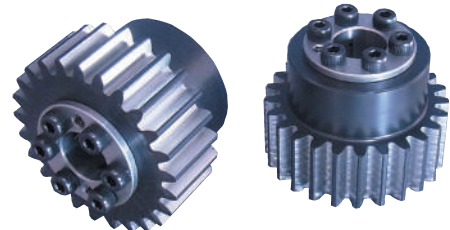
- Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



To order F Series products, please specify: **Catalog Number + F + BORE + Type.**

A Type Only
A/B Types

Bore A		* The product shapes of F Series items are identified by background color.														
Catalog Number		15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
SSG2-25 F Bore Type	S1MA/S1MB	S1MA	S1MA													
SSG2-26 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA											
SSG2-27 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA											
SSG2-28 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA											
SSG2-29 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB											
SSG2-30 F Bore Type				S1MA/S1MB	S1MA/S1MB											
SSG2-32 F Bore Type				S1MA/S1MB	S1MA/S1MB	S1MA										
SSG2-34 F Bore Type				S1MA/S1MB	S1MA/S1MB	S1MA										
SSG2-35 F Bore Type				S1MA/S1MB	S1MA/S1MB	S1MA										
SSG2-36 F Bore Type				S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA								
SSG2-38 F Bore Type				S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA								
SSG2-40 F Bore Type						S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA					
SSG2-42 F Bore Type						S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA					
SSG2-44 F Bore Type						S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA					
SSG2-45 F Bore Type						S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA					
SSG2-48 F Bore Type						S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA					
SSG2-50 F Bore Type								S1MA	S1MA	S1MA	S1MA					
SSG2-55 F Bore Type								S1MA	S1MA	S1MA	S1MA					
SSG2-56 F Bore Type								S1MA	S1MA	S1MA	S1MA					
SSG2-60 F Bore Type								S1MA	S1MA	S1MA	S1MA	S1MA				
SSG2-64 F Bore Type								S1MA	S1MA	S1MA	S1MA	S1MA				
SSG2-70 F Bore Type								S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA			
SSG2-75 F Bore Type								S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	
SSG2-80 F Bore Type								S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA
SSG2-90 F Bore Type								S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA
SSG2-100 F Bore Type								S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA
Bore A		15	16	17	18	19	20	22	25	28	30	32	35	40	45	50
Ref. slipping torque N·m	70	75	110	115	120	220	290	350	380	410	440	720	810	1200	1500	
Ref. thrust load kN	9.46	9.46	12.6	12.6	12.6	21.6	26	27.2	27	27	27	41.1	40.2	52.9	56.3	
Sintered Metal Bushings	L		6.5				8			8.5			10		10.5	
Total Length	G	31.5	33	33.5	34.5	35.5	42	44	47	50	52	54	62	67	72	77
Hex socket bolt	Qty	6					8				10		8	10	14	
	Size				M4×15					M5×18				M6×20		
	Tightening torque N·m				3.9					8.8				15.7		
Bushing weight (g)		66	75	75	80	81	144	165	188	195	208	219	325	380	435	485



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1999)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

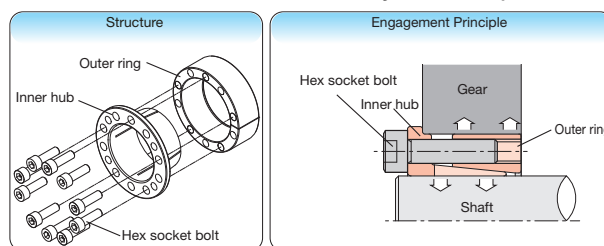
Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Structure and Engagement Principles

The structure consists of an outer ring and inner ring with split grooves in the tapered part, and hexagon socket head cap screws that convert the force into tightening strength.

In principle, the tightening strength of hexagon socket head cap screws spreads the outer and inner rings by taper engagement, and the gear and shaft become fastened by surface pressure.

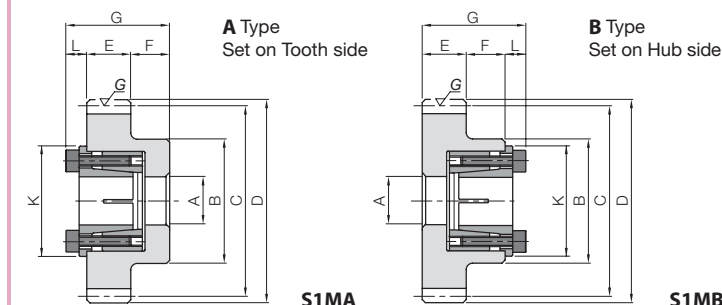
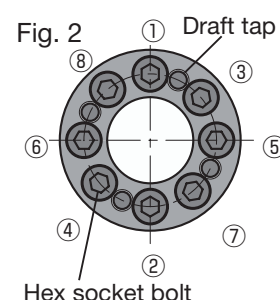
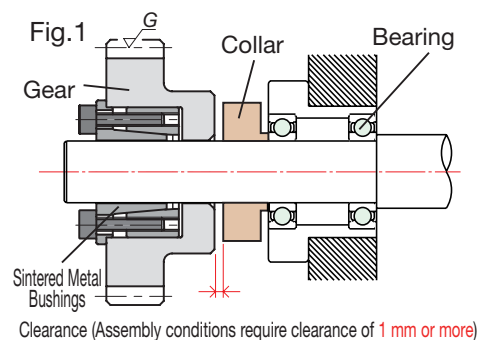


Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout.
Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening.
First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.

Removal Method and Precautions

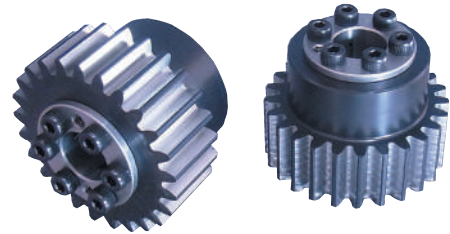
- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



To order F Series products, please specify: **Catalog Number + F + BORE + Type.**

A Type Only
A/B Types

Bore A		* The product shapes of F Series items are identified by background color.									
Catalog Number		20	22	25	28	30	32	35	40	45	50
SSG2.5-30 F Bore Type	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA						
SSG2.5-32 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB					
SSG2.5-34 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB				
SSG2.5-35 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB			
SSG2.5-36 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB			
SSG2.5-38 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA			
SSG2.5-40 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG2.5-42 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG2.5-44 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG2.5-45 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	
SSG2.5-48 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	
SSG2.5-50 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG2.5-55 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG2.5-56 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG2.5-60 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG2.5-70 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG2.5-75 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA
SSG2.5-80 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA
Bore A		20	22	25	28	30	32	35	40	45	50
Ref. slipping torque N·m		220	290	350	380	410	440	720	810	1200	1500
Ref. thrust load kN		21.6	26	27.2	27	27	27	41.1	40.2	52.9	56.3
Sintered Metal	L		8			8.5			10		10.5
Bushings	K	42	44	47	50	52	54	62	67	72	77
Total Length	G		51			51.5			53		53.5
Hex socket bolt	Qty		8			10		8	10		14
	Size		M5×18				M6×20				
	Tightening torque N·m		8.8				15.7				
Bushing weight (g)		144	165	188	195	208	219	325	380	435	485



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

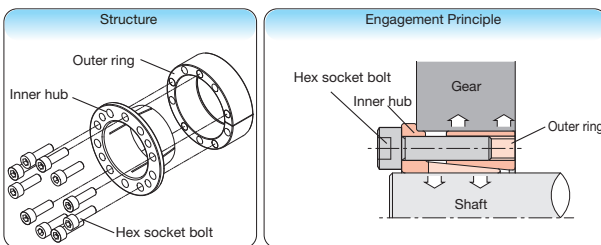
Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Structure and Engagement Principles

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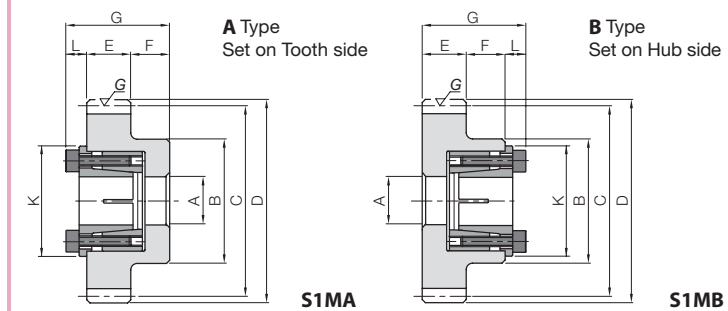
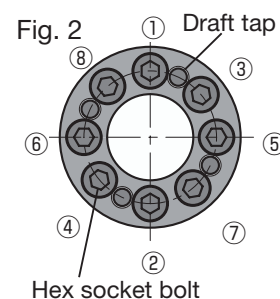
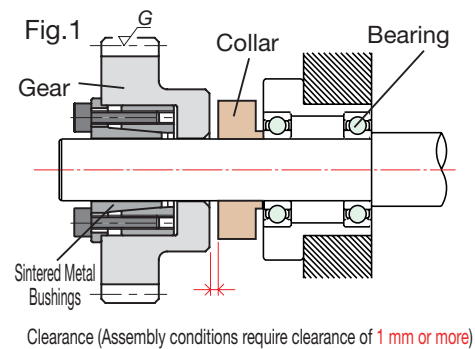


Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout.
Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
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- ④ Use a torque wrench to fasten bolts on opposite sides when tightening.
First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
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- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



To order F Series products, please specify: **Catalog Number + F + BORE + Type.**

A Type Only
A/B Types

Bore A		* The product shapes of F Series items are identified by background color.									
Catalog Number		20	22	25	28	30	32	35	40	45	50
SSG3-25 F Bore Type	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SSG3-26 F Bore Type	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SSG3-27 F Bore Type	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SSG3-28 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB				
SSG3-29 F Bore Type	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB				
SSG3-30 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB				
SSG3-32 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA			
SSG3-34 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG3-35 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG3-36 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA		
SSG3-38 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	
SSG3-40 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG3-42 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG3-44 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG3-45 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG3-48 F Bore Type			S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA
SSG3-50 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	S1MA	S1MA	
SSG3-55 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
SSG3-56 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
SSG3-60 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
SSG3-70 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
SSG3-75 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
SSG3-80 F Bore Type					S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA/S1MB	S1MA	S1MA	
Bore A		20	22	25	28	30	32	35	40	45	50
Ref. slipping torque N·m		220	290	350	380	410	440	720	810	1200	1500
Ref. thrust load kN		21.6	26	27.2	27	27	27	41.1	40.2	52.9	56.3
Sintered Metal	L	8		8.5		10		10.5		10.5	
Bushings	K	42	44	47	50	52	54	62	67	72	77
Total Length	G	58		58.5		60		60.5		60.5	
Hex socket bolt	Qty	8		10		8		10		14	
	Size	M5×18		M5×18		M6×20		M6×20		M6×20	
	Tightening torque N·m	8.8		8.8		15.7		15.7		15.7	
Bushing weight (g)		144	165	188	195	208	219	325	380	435	485



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1999)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of E Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435



Delivered with this marking.

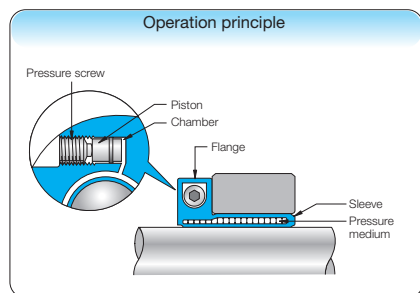
Please see Page 16 for more details.

Features of E Series

- Can be easily installed with one bolt (shortens work time)
- Concentricity 0.02mm
- Zero backlash between the gear and shaft
- No decrease in shaft strength due to fretting wear (worn or seized shaft)
- No need to machine keyways on the shaft, reducing the number of parts such as keyway materials and set screws
- Does not take up mounting space and easy to position and match the phase
- Finished by the manufacturer in 2 working days (excluding the day ordered)

Operation principle of ETP-E Plus

The pressure medium enclosed in the chamber is pressurized due to the tightening of the pressure screw and moves into the sleeve. The pressure of this pressure medium causes the sleeve to receive pressure from the inside, which causes the shaft side sleeve to contract, the hub side sleeve to expand, allowing the shaft and hub to be fastened via the sleeve.



Catalog Number	No. of teeth	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Allowable torque (N·m)	
						Bending strength	Surface durability
SSG1.5-22	22	26	33	36	15	18.6	8.41
SSG1.5-23	23	27	34.5	37.5		19.8	9.27
SSG1.5-24	24	28	36	39		21.0	10.2
SSG1.5-25	25	30	37.5	40.5		22.2	11.1
SSG1.5-26	26	32	39	42		23.5	12.1
SSG1.5-27	27	34	40.5	43.5		24.7	13.1
SSG1.5-28	28	36	42	45		26.0	14.1
SSG1.5-29	29	37	43.5	46.5		27.3	15.2
SSG1.5-30	30	38	45	48		28.5	16.3
SSG1.5-32	32	40	48	51		31.1	18.6
SSG1.5-34	34	42	51	54	15	33.6	21.1
SSG1.5-35	35	42	52.5	55.5		34.9	22.4
SSG1.5-36	36	45	54	57		36.2	23.8
SSG1.5-38	38	45	57	60		38.8	26.6
SSG1.5-40	40	50	60	63		41.5	29.6
SSG1.5-42	42	50	63	66		44.1	32.8
SSG1.5-44	44	50	66	69		46.7	36.2
SSG1.5-45	45	50	67.5	70.5		48.1	37.9
SSG1.5-48	48	50	72	75		52.0	43.4
SSG1.5-50	50	60	75	78		54.7	47.2
SSG1.5-55	55	60	82.5	85.5	15	61.4	57.7
SSG1.5-56	56	60	84	87		62.8	59.9
SSG1.5-60	60	60	90	93		68.1	69.2
SSG1.5-64	64	60	96	99		67.9	73.2
SSG1.5-70	70	60	105	108		75.4	88.4
SSG1.5-75	75	60	112.5	115.5		81.7	102
SSG1.5-80	80	70	120	123		88.0	117
SSG1.5-90	90	70	135	138		101	150
SSG1.5-100	100	70	150	153		113	187

* For the backlash of each product, please refer to the dimension table of the original product.

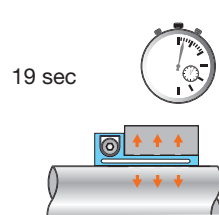
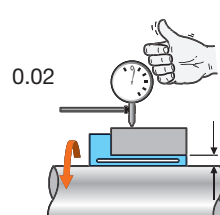
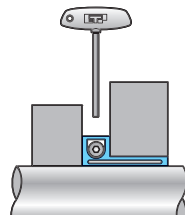
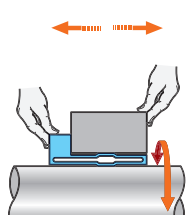
Effects of ETP-E Plus

Easy and accurate positioning

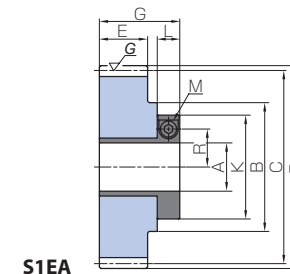
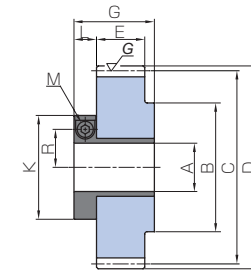
Helps save space

High concentricity

Secure and speedy installation



E Series



To order E Series products, please specify: **Catalog Number + E + BORE.**

Bore A	* The product shapes of E Series items are identified by background color.			
Catalog Number	15	19	20	22
SSG1.5-22 E Bore	S1EA/S1EB			
SSG1.5-23 E Bore	S1EA/S1EB			
SSG1.5-24 E Bore	S1EA/S1EB			
SSG1.5-25 E Bore	S1EA/S1EB			
SSG1.5-26 E Bore	S1EA/S1EB	S1EA/S1EB		
SSG1.5-27 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG1.5-28 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG1.5-29 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG1.5-30 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-32 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-34 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-35 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-36 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-38 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-40 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-42 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-44 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-45 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-48 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-50 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-55 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-56 E Bore	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-60 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-64 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-70 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-75 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-80 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-90 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG1.5-100 E Bore		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
Bore A	15	19	20	22
K	50	55	56	61
G	37	39	41	43
R	15.1	17.4	18	19.3
L	14			
Screw M	1-M10			
Recommended fastening torque of screw M (N·m)	7			
ETP allowable fastening torque (N·m)	46	85	110	130
ETP allowable thrust force N	5100	7300	9100	9600
ETP allowable radial load N	500	1000	1000	1200
Bushing weight (kg)	0.16	0.2	0.21	0.25

* Allowable torque is the value when the thrust force is 0, and allowable thrust force is when the torque is 0.

* Allowable torque and allowable thrust force are the values at 20°C.

* Tolerance of the target shaft diameter is h7 (g6, h6).



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of E Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435



Delivered with this marking.

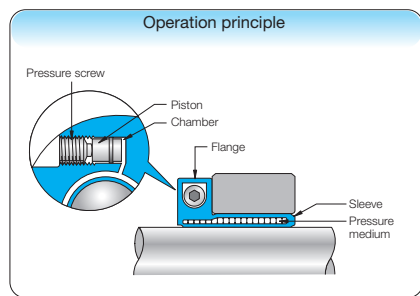
Please see Page 16 for more details.

Features of E Series

- Can be easily installed with one bolt (shortens work time)
- Concentricity 0.02mm
- Zero backlash between the gear and shaft
- No decrease in shaft strength due to fretting wear (worn or seized shaft)
- No need to machine keyways on the shaft, reducing the number of parts such as keyway materials and set screws
- Does not take up mounting space and easy to position and match the phase
- Finished by the manufacturer in 2 working days (excluding the day ordered)

Operation principle of ETP-E Plus

The pressure medium enclosed in the chamber is pressurized due to the tightening of the pressure screw and moves into the sleeve. The pressure of this pressure medium causes the sleeve to receive pressure from the inside, which causes the shaft side sleeve to contract, the hub side sleeve to expand, allowing the shaft and hub to be fastened via the sleeve.



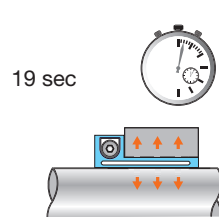
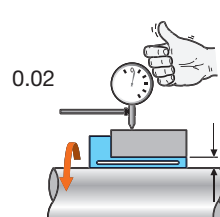
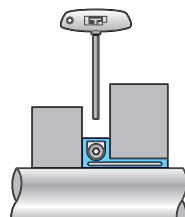
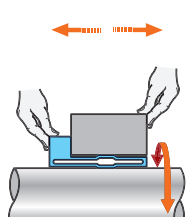
Effects of ETP-E Plus

Easy and accurate positioning

Helps save space

High concentricity

Secure and speedy installation



To order E Series products, please specify: **Catalog Number + E + BORE.**

Bore A	* The product shapes of E Series items are identified by background color.							
Catalog Number	15	19	20	22	24	25	28	30
SSG2-18 E BORE	S1EA/S1EB							
SSG2-19 E BORE	S1EA/S1EB							
SSG2-20 E BORE	S1EA/S1EB							
SSG2-21 E BORE	S1EA/S1EB	S1EA/S1EB						
SSG2-22 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB					
SSG2-23 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB					
SSG2-24 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB				
SSG2-25 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB			
SSG2-26 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB		
SSG2-27 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB		
SSG2-28 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG2-29 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG2-30 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-32 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-34 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-35 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-36 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-38 E BORE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-40 E BORE		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-42 E BORE		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-44 E BORE		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-45 E BORE		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-48 E BORE		S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-50 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-55 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-56 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-60 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-64 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-70 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-75 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-80 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-90 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2-100 E BORE				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
Bore A	15	19	20	22	24	25	28	30
K	50	55	56	61	63	63	70	71
G	37	39	41	43	44	46	48	50
R	15.1	17.4	18	19.3	20.3	20.8	22.6	23.6
L	14							
Screw M	1-M10							
Recommended fastening torque of screw M (N·m)	7							
ETP allowable fastening torque (N·m)	46	85	110	130	190	230	280	380
ETP allowable thrust force N	5100	7300	9100	9600	13000	15000	16000	21000
ETP allowable radial load N	500	1000	1000	1200	1400	1500	1800	2000
Bushing weight (kg)	0.16	0.2	0.21	0.25	0.26	0.27	0.33	0.35

* Allowable torque is the value when the thrust force is 0, and allowable thrust force is when the torque is 0.

* Allowable torque and allowable thrust force are the values at 20°C.

* Tolerance of the target shaft diameter is h7 (g6, h6).



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of E Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435



Delivered with this marking.

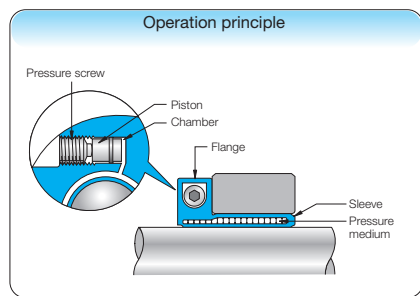
Please see Page 16 for more details.

Features of E Series

- Can be easily installed with one bolt (shortens work time)
- Concentricity 0.02mm
- Zero backlash between the gear and shaft
- No decrease in shaft strength due to fretting wear (worn or seized shaft)
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Operation principle of ETP-E Plus

The pressure medium enclosed in the chamber is pressurized due to the tightening of the pressure screw and moves into the sleeve. The pressure of this pressure medium causes the sleeve to receive pressure from the inside, which causes the shaft side sleeve to contract, the hub side sleeve to expand, allowing the shaft and hub to be fastened via the sleeve.



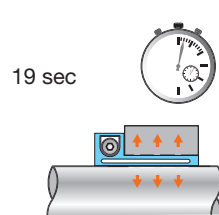
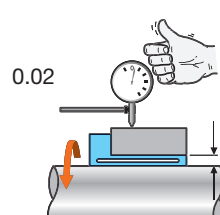
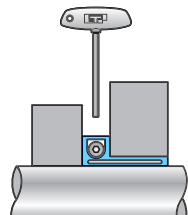
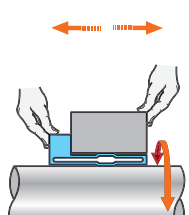
Effects of ETP-E Plus

Easy and accurate positioning

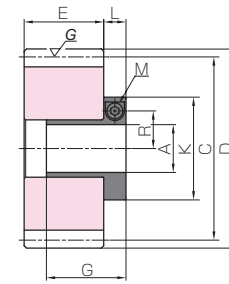
Helps save space

High concentricity

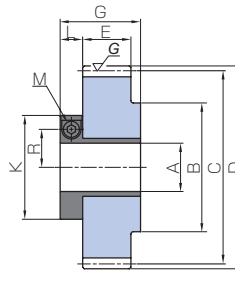
Secure and speedy installation



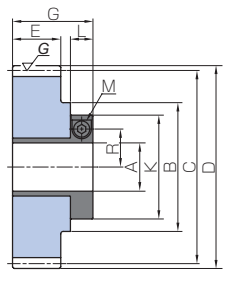
E Series



S5E



S1EA



S1EB

To order E Series products, please specify: **Catalog Number + E + BORE.**

Bore A		* The product shapes of E Series items are identified by background color.									
Catalog Number		15	19	20	22	24	25	28	30	32	35
SSG2.5-16 E Bore	* S5E										
SSG2.5-17 E Bore	S5E										
SSG2.5-18 E Bore	* S5E										
SSG2.5-19 E Bore	S5E	S5E	S1EA/S1EB								
SSG2.5-20 E Bore	* S5E	* S5E	S1EA/S1EB								
SSG2.5-21 E Bore	S5E	S5E	S1EA/S1EB	S1EA/S1EB							
SSG2.5-22 E Bore	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB					
SSG2.5-23 E Bore	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB				
SSG2.5-24 E Bore	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB			
SSG2.5-25 E Bore		* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB		
SSG2.5-26 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG2.5-27 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG2.5-28 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-29 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-30 E Bore		* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-32 E Bore		* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-34 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-35 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-36 E Bore		* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-38 E Bore		S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-40 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-42 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-44 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-45 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-48 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-50 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-55 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-56 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-60 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-70 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-75 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG2.5-80 E Bore				S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
Bore A		15	19	20	22	24	25	28	30	32	35
K	50	55	56	61	63	63	63	70	71	78	86
G	37	39	41	43	44	46	46	48	50	52	55
R	15.1	17.4	18	19.3	20.3	20.8	20.8	22.6	23.6	24.8	26.4
L	14										
Screw M	1-M10										
Recommended fastening torque of screw M (N·m)	7										
ETP allowable fastening torque (N·m)	46	85	110	130	190	230	280	380	440	640	
ETP allowable thrust force N	5100	7300	9100	9600	13000	15000	16000	21000	22000	30000	
ETP allowable radial load N	500	1000	1000	1200	1400	1500	1800	2000	2200	2500	
Bushing weight (kg)	0.16	0.2	0.21	0.25	0.26	0.27	0.33	0.35	0.41	0.47	

* Allowable torque is the value when the thrust force is 0, and allowable thrust force is when the torque is 0.

* Allowable torque and allowable thrust force are the values at 20°C.

* Tolerance of the target shaft diameter is h7 (g6, h6).

*** is an SSAG product that's given secondary operations.



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of E Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435



Delivered with this marking.

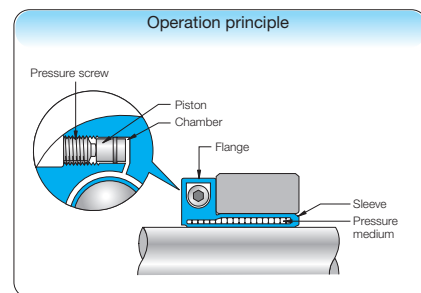
Please see Page 16 for more details.

Features of E Series

- Can be easily installed with one bolt (shortens work time)
- Concentricity 0.02mm
- Zero backlash between the gear and shaft
- No decrease in shaft strength due to fretting wear (worn or seized shaft)
- No need to machine keyways on the shaft, reducing the number of parts such as keyway materials and set screws
- Does not take up mounting space and easy to position and match the phase
- Finished by the manufacturer in 2 working days (excluding the day ordered)

Operation principle of ETP-E Plus

The pressure medium enclosed in the chamber is pressurized due to the tightening of the pressure screw and moves into the sleeve. The pressure of this pressure medium causes the sleeve to receive pressure from the inside, which causes the shaft side sleeve to contract, the hub side sleeve to expand, allowing the shaft and hub to be fastened via the sleeve.



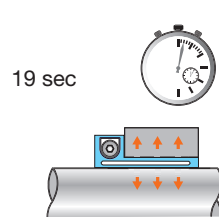
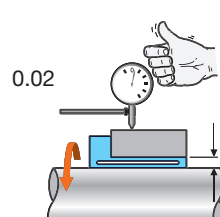
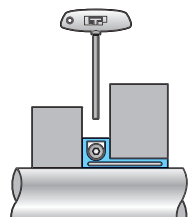
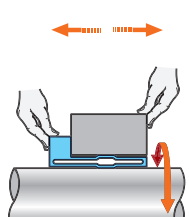
Effects of ETP-E Plus

Easy and accurate positioning

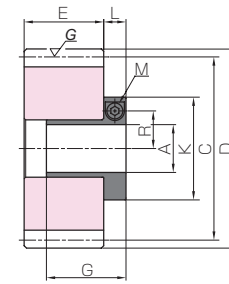
Helps save space

High concentricity

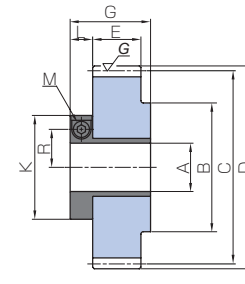
Secure and speedy installation



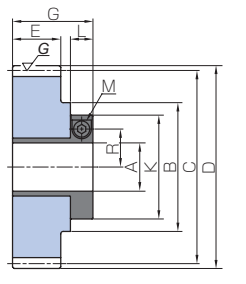
E Series



S5E



S1EA



S1EB

To order E Series products, please specify: **Catalog Number + E + BORE.**

Bore A		* The product shapes of E Series items are identified by background color.												
Catalog Number		15	19	20	22	24	25	28	30	32	35	38	40	42
SSG3-15 E BORE	* S5E													
SSG3-16 E BORE	* S5E													
SSG3-17 E BORE	S5E	S5E	S5E											
SSG3-18 E BORE	* S5E	* S5E	* S5E	* S5E										
SSG3-19 E BORE	S5E	S5E	S5E	S5E	S5E									
SSG3-20 E BORE		* S5E	* S5E	* S5E	* S5E	S1EA/S1EB								
SSG3-21 E BORE		S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB							
SSG3-22 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB					
SSG3-23 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB				
SSG3-24 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB				
SSG3-25 E BORE		* S5E	* S5E	* S5E	* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB			
SSG3-26 E BORE		S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB		
SSG3-27 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG3-28 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-29 E BORE		S5E	S5E	S5E	S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-30 E BORE					* S5E	* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-32 E BORE					* S5E	* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-34 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-35 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-36 E BORE					* S5E	* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-38 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-40 E BORE					* S5E	* S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-42 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-44 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-45 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-48 E BORE					S5E	S5E	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-50 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-55 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-56 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-60 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-70 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-75 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
SSG3-80 E BORE							S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB
Bore A		15	19	20	22	24	25	28	30	32	35	38	40	42
K		50	55	56	61	63	63	70	71	78	86	92.5	94	96.5
G		37	39	41	43	44	46	48	50	52	55	67	70	70
R		15.1	17.4	18	19.3	20.3	20.8	22.6	23.6	24.8	26.4	31	32	33.2
L		14										20		
Screw M		1-M10										1-M16		
Recommended fastening torque of screw M (N·m)		7										24		
ETP allowable fastening torque (N·m)		46	85	110	130	190	230	280	380	440	640	890	1100	1100
ETP allowable thrust force N		5100	7300	9100	9600	13000	15000	16000	21000	22000	30000	38000	45000	43000
ETP allowable radial load N		500	1000	1000	1200	1400	1500	1800	2000	2200	2500	2800	3000	3200
Bushing weight (kg)		0.16	0.2	0.21	0.25	0.26	0.27	0.33	0.35	0.41	0.47	0.83	0.88	0.95

* Allowable torque is the value when the thrust force is 0, and allowable thrust force is when the torque is 0.

* Allowable torque and allowable thrust force are the values at 20°C.

* Tolerance of the target shaft diameter is h7 (g6, h6).

** is an SSAG product that's given secondary operations.



Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The precision grade of E Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435



Delivered with this marking.

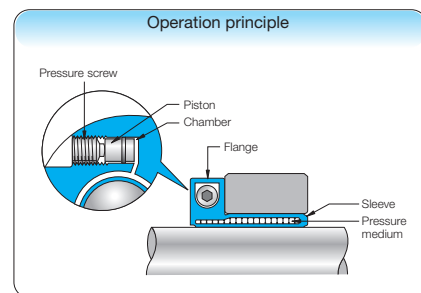
Please see Page 16 for more details.

Features of E Series

- Can be easily installed with one bolt (shortens work time)
- Concentricity 0.02mm
- Zero backlash between the gear and shaft
- No decrease in shaft strength due to fretting wear (worn or seized shaft)
- No need to machine keyways on the shaft, reducing the number of parts such as keyway materials and set screws
- Does not take up mounting space and easy to position and match the phase
- Finished by the manufacturer in 2 working days (excluding the day ordered)

Operation principle of ETP-E Plus

The pressure medium enclosed in the chamber is pressurized due to the tightening of the pressure screw and moves into the sleeve. The pressure of this pressure medium causes the sleeve to receive pressure from the inside, which causes the shaft side sleeve to contract, the hub side sleeve to expand, allowing the shaft and hub to be fastened via the sleeve.



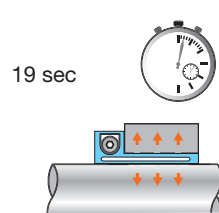
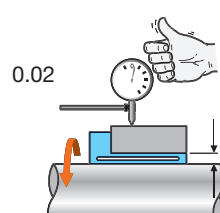
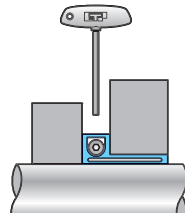
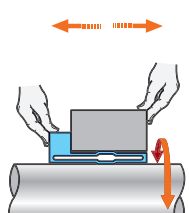
Effects of ETP-E Plus

Easy and accurate positioning

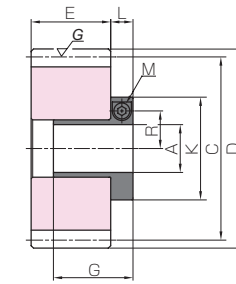
Helps save space

High concentricity

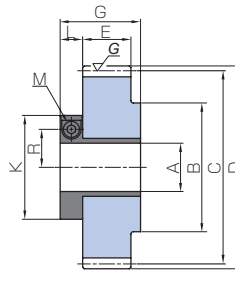
Secure and speedy installation



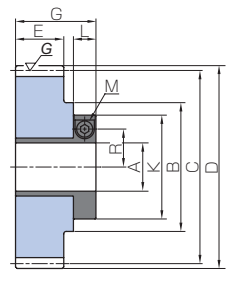
E Series



SSE



S1EA



S1EB

To order E Series products, please specify: **Catalog Number + E + BORE.**

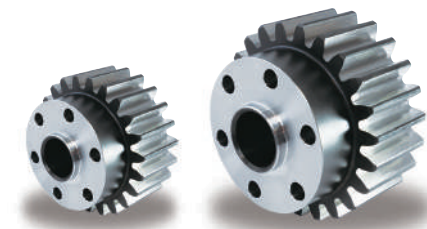
Bore A		* The product shapes of E Series items are identified by background color.																	
Catalog Number	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	70	80	
SSG4-15 E BORE	* SSE	* SSE																	
SSG4-16 E BORE	* SSE	* SSE	* SSE	* SSE															
SSG4-18 E BORE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE													
SSG4-20 E BORE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB											
SSG4-22 E BORE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB									
SSG4-24 E BORE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB							
SSG4-25 E BORE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB						
SSG4-28 E BORE	SSE	SSE	SSE	SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-30 E BORE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-32 E BORE		* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-35 E BORE		SSE	SSE	SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-36 E BORE		* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-40 E BORE		* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-42 E BORE		SSE	SSE	SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-44 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-45 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-48 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-50 E BORE					* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-55 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-56 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG4-60 E BORE					SSE	SSE	SSE	SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG5-20 E BORE					* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE								
SSG5-25 E BORE					* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG5-30 E BORE					* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	S1EA/S1EB	
SSG6-20 E BORE									* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE				
SSG6-25 E BORE									* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	
SSG6-30 E BORE									* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	* SSE	S1EA/S1EB	S1EA/S1EB	
Bore A	20	22	24	25	28	30	32	35	38	40	42	45	48	50	55	60	70	80	
K	56	61	63	63	70	71	78	86	92.5	94	96.5	101	104	106	116	123.5	150	160	
G	41	43	44	46	48	50	52	55	67	70	70	72	73	74	79	83	101	110	
R	18	19.3	20.3	20.8	22.6	23.6	24.8	26.4	31	32	33.2	34.8	36.8	37.5	40.5	43.3	50.8	56.3	
L	14								20								24		
Screw M	1-M10								1-M16								1-M20		
Recommended fastening torque of screw M (N·m)	7								24								40		
ETP allowable fastening torque (N·m)	110	130	190	230	280	380	440	640	890	1100	1100	1400	1700	1900	2400	3300	5600	8700	
ETP allowable thrust force N	9100	9600	13000	15000	16000	21000	22000	30000	38000	45000	43000	51000	57000	63000	71000	90000	130000	180000	
ETP allowable radial load N	1000	1200	1400	1500	1800	2000	2200	2500	2800	3000	3200	3500	4000	4500	5000	5300	6400	7500	
Bushing weight (kg)	0.21	0.25	0.26	0.27	0.33	0.35	0.41	0.47	0.83	0.88	0.95	1.03	1.09	1.18	1.46	1.79	2.93	3.58	

* Allowable torque is the value when the thrust force is 0, and allowable thrust force is when the torque is 0.

* Allowable torque and allowable thrust force are the values at 20°C.

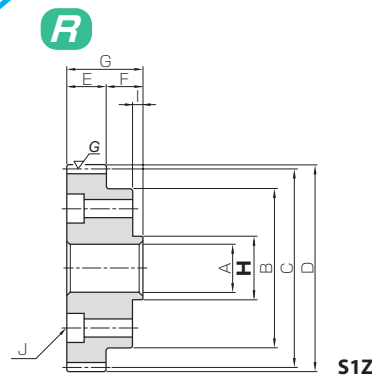
* Tolerance of the target shaft diameter is h7 (g6, h6).

*** is an SSAG product that's given secondary operations.

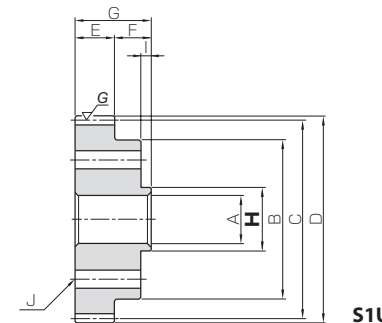


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

* The R Series is given secondary operations and has accuracy grades "equivalent" to the original products.



S1Z



S1U

Recommended mating rack

SRGF/SRGFD
Hardened Ground Racks

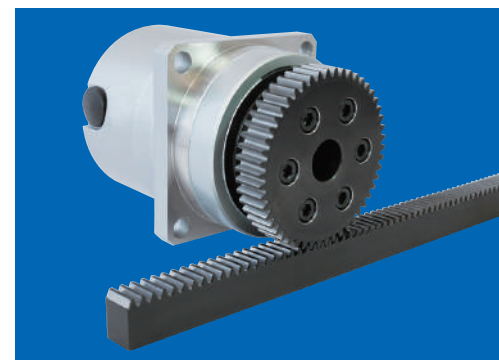
Please see Page 230 for more details.

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Mounting hub dia.	Mounting hub width
				A	B	C	D	E	F	G	H _{h7}	I
SSG1.5-50R24	m1.5	50	S1Z	18	60	75	78	15	14	29	24	4
SSG2-40R24	m2	40	S1Z	20	60	80	84	20	16	36	24	4
SSG2.5-27R24	m2.5	27	S1U	20	56	67.5	72.5	25	18	43	24	4
SSG2.5-28R24		28	S1Z		60	70	75					
SSG2.5-29R24		29			60	72.5	77.5					
SSG2.5-30R24		30			65	75	80					
SSG2.5-42R32		42	25	75	105	110	32					
SSG3-23R24	m3	23	S1U	20	56	69	75	30	20	50	24	4
SSG3-24R24		24	S1Z		58	72	78					
SSG3-25R24		25			60	75	81					
SSG3-26R24		26			62	78	84					
SSG3-30R32		30	S1Z	25	75	90	96				32	
SSG3-32R32		32			75	96	102					
SSG3-34R32		34			75	102	108					
SSG3-35R32		35			80	105	111					
SSG3-36R32		36			80	108	114					
SSG4-24R32	m4	24	S1Z	20	75	96	104	40	25	65	32	4
SSG4-25R32		25			80	100	108					
SSG5-20R32	m5	20	S1Z	25	82	100	110	50	25	75	32	4
SSG5-30R47		30			120	150	160					
SSG6-25R47	m6	25	S1Z	30	125	150	162	60	28	88	47	6
SSG6-30R60		30			150	180	192					

Mounting hole specification						Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
J						Bending strength	Surface durability	Bending strength	Surface durability			
Drilled hole dia.	Counterbore dia.	Counterbore depth	Quantity	P.C.D.	Included screws							
6.6	11	9	6	45	M6×20	54.7	47.2	5.58	4.82	0.08~0.16	0.63	SSG1.5-50R24
6.6	11	14	6	45	M6×25	98.3	72.1	10.0	7.35	0.10~0.20	0.89	SSG2-40R24
6.6	-	-	6	45	M6×45	115	63.2	11.7	6.44	0.10~0.20	0.82	SSG2.5-27R24
	11	19			M6×25	120	68.2	12.3	6.95		0.86	SSG2.5-28R24
					M6×25	126	73.3	12.9	7.48		0.91	SSG2.5-29R24
					M6×25	132	78.7	13.5	8.03		1.02	SSG2.5-30R24
9	14	17	60	M8×30	188	147	19.2	15.0		1.86	SSG2.5-42R32	
6.6	-	-	6	45	M6×50	158	78.7	16.1	8.02	0.10~0.20	1.01	SSG3-23R24
	11	24			M6×30	168	86.4	17.1	8.81		1.04	SSG3-24R24
					M6×30	178	94.5	18.1	9.64		1.14	SSG3-25R24
					M6×30	188	103	19.2	10.5		1.25	SSG3-26R24
9	14	22	60	M8×35	228	138	23.3	14.1	1.65	SSG3-30R32		
					229	146	23.4	14.9	1.86	SSG3-32R32		
					248	166	25.3	17.0	2.08	SSG3-34R32		
					258	177	26.3	18.0	2.27	SSG3-35R32		
9	14	32	6	60	M8×40	268	188	27.3	19.1	2.39	SSG3-36R32	
						368	194	37.5	19.8	2.55	SSG4-24R32	
9	14	42	6	60	M8×40	553	259	56.4	26.5	0.10~0.20	2.84	SSG4-25R32
9	14	42	14	100	M8×35	975	623	99.4	63.5	0.10~0.22	3.30	SSG5-20R32
9	14	52	14	100	M8×40	1310	747	134	76.2	0.10~0.22	7.52	SSG5-30R47
18	26	44	6	120	M16×60	1560	1020	160	104		8.95	SSG6-25R47
											13.1	SSG6-30R60

Features of R Series

- Products matching the mounting holes of the corresponding speed reducer series.
- They come with set bolts and can be used immediately.
- As flange mounting types, they have high rigidity and the gear does not bend.
- Ideal for the mating pinion of racks.



Rack and pinion for corresponding flange output speed reducers

Mounting hub dia. H (Common to all speed reducers)	Nidec Shimo VRG Series	Sumitomo Heavy Industries IB Series	Harmonic Drive Systems HPG Series	R Series Catalog Numbers		KHK recommended mating rack
24	C90	P120	20	SSG Module - No. of teeth	R24	KRGF Series SRGF Series SRF Series See Page 211
32	D120	P130	32		R32	
47	E170	-	50		R47	
60	-	-	65		R60	

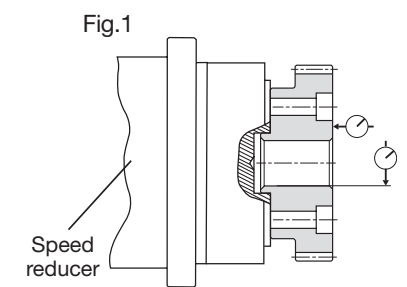
(R Series Catalog Numbers)

R series catalog numbers are composed as follows:

(Base SSG ground spur gear catalog number) + R + (mounting hub diameter)

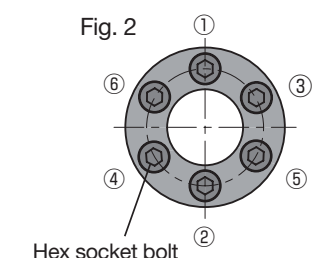
Mounting Method and Precautions

- Clean the gear mounting surface and flange surface of the speed reducer and make sure that there are no scratches or dents.
- Set the mounting hub of the gear in the hole at the rotational center of the flange, and temporarily tighten the hexagon socket head cap screws.
- Tighten the hexagon socket head cap screws on the diagonals while checking the runout of the gear reference face (Fig. 1). (Fig.2)



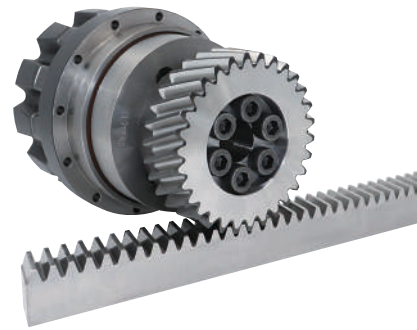
Removal Method and Precautions

- Turn off the power source (supply) and check that no load is applied to the gear.
- Loosen the hexagon socket head cap screws and make sure that the gear moves freely.
- Remove the hexagon socket head cap screws while making sure that there is no danger of falling, etc.

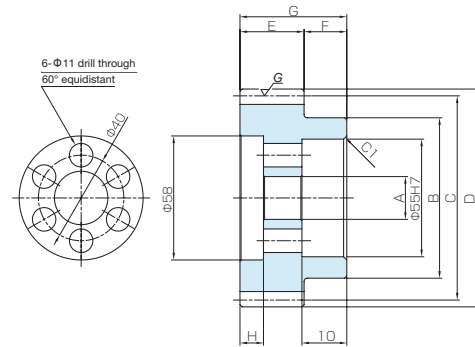


We recommend ideal pinions for speed reducers

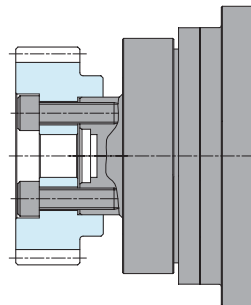
- CP type and helical type stock gears can be given secondary operations according to the customer's specifications at "KHK Quick-Mod Gears". See Page 24 for more details
- High-precision gears for reduction gears are also available with a short delivery time. Estimates are available upon the submission of production drawings.
- Feel free to contact us about selecting racks and pinions.



Speed reducer model number GH7 pinion

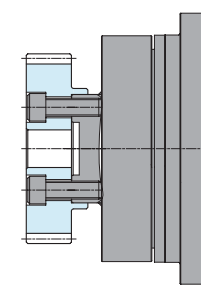
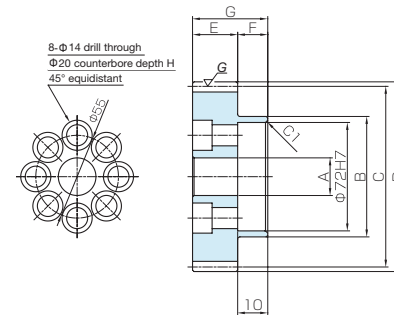


S1GH7



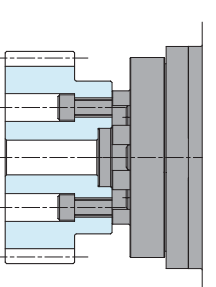
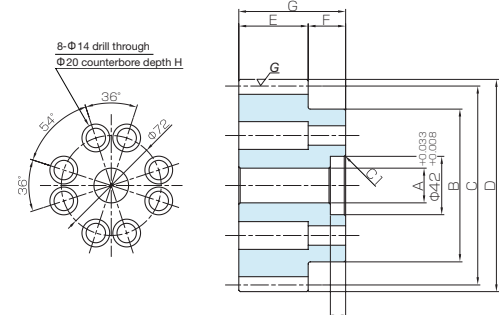
Speed reducer model number GH17 pinion

S1GH17



Speed reducer model number GH24 pinion

S1GH24



SSG Series

Common Specifications	
Precision grade	JIS N7 grade (JIS B 1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

SSCPG Series

Common Specifications	
Precision grade	JIS N7 grade (JIS B 1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

ZSTP Series

Common Specifications	
Precision grade	JIS B 1702-1:1998 N6 grade
Reference section of gear	Normal plane
Gear teeth	Standard full depth
Pressure angle	20°
Helix angle/direction	19° 31' 41" left helix
Material	SCM440
Heat treatment	Thermal refined, gear teeth induction hardened
Tooth hardness	HRC50 to 60
Surface treatment	Black oxide coated except for teeth and portions given secondary operation

Speed reducer model number	Catalog Number	Module/pitch	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
					AH7	B	C	D	E	F	G
GH7	SSG3-30RGH7	m3	30	S1GH7	25	75	90	96	30	20	50
	SSCPG10-30RGH7	CP10 (m3.1831)	30	S1GH7	20	75	95.49	101.86	30	20	50
	ZSTP3-30LRGH7	m3(CP10)	30	S1GH7	25	85	95.49	104	30	20	50

Speed reducer model number	Catalog Number	Module/pitch	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
					AH7	B	C	D	E	F	G
GH17	SSG3-40RGH17	m3	40	S1GH17	25	80	120	126	30	20	50
	SSCPG10-40RGH17	CP10 (m3.1831)	40	S1GH17	25	80	127.32	133.69	30	20	50
	ZSTP3-30LRGH17	m3(CP10)	30	S1GH17	25	85	95.49	104	30	20	50

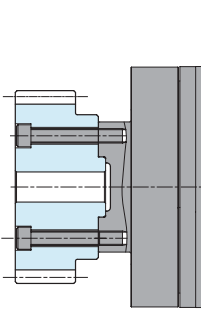
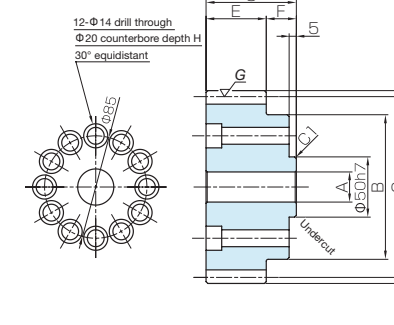
Speed reducer model number	Catalog Number	Module/pitch	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
					AH7	B	C	D	E	F	G
GH24	SSG4-30RGH24	m4	30	S1GH24	20	90	120	128	40	25	65
	SSCPG15-30RGH24	CP15 (m4.7746)	30	S1GH24	25	110	143.24	152.79	50	27	77
	ZSTP4-30LRGH24	m4(CP13.333)	30	S1GH24	25	110	127.32	138	40	25	65

Speed reducer model number	Catalog Number	Module/pitch	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
					AH7	B	C	D	E	F	G
GH40	SSG5-30RGH40	m5	30	S1GH40	25	120	150	160	50	25	75
	SSCPG15-30RGH40	CP15 (m4.7746)	30	S1GH40	25	110	143.24	152.79	50	27	77
	ZSTP5-24LRGH40	m5(CP16.667)	24	S1GH40	25	110	127.32	142	50	25	75

Speed reducer model number	Catalog Number	Module/pitch	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length
					AH7	B	C	D	E	F	G
GH100	SSG6-30RGH100	m6	30	S1GH100	30	150	180	192	60	28	88
	SSCPG20-30RGH100	CP20 (m6.3662)	30	S1GH100	30	150	190.99	203.72	60	30	90

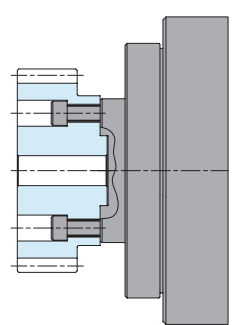
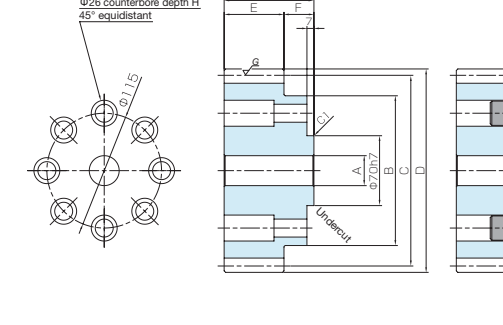
Speed reducer model number GH40 pinion

S1GH40



Speed reducer model number GH100 pinion

S1GH100



Counterbore depth	Included screws	Allowable torque (N·m)	Weight (kg)	Mating rack	Catalog Number	Speed reducer model number
H		Bending strength Surface durability				
11	M10×45	251 209	1.422	SRGF3-1000	SSG3-30RGH7	GH7
11	M10×45	283 240	1.635	SRGCPF10-1000	SSCPG10-30RGH7	
11	M10×45	551 676	1.808	ZST3-1000R	ZSTP3-30LRGH7	

Counterbore depth	Included screws	Allowable torque (N·m)	Weight (kg)	Mating rack	Catalog Number	Speed reducer model number
H		Bending strength Surface durability				
13	M12×45	358 407	2.281	SRGF3-1000	SSG3-40RGH17	GH17
13	M12×45	403 466	2.616	SRGCPF10-1000	SSCPG10-40RGH17	
13	M12×45	551 676	1.406	ZST3-1000R	ZSTP3-30LRGH17	

Counterbore depth	Included screws	Allowable torque (N·m)	Weight (kg)	Mating rack	Catalog Number	Speed reducer model number
H		Bending strength Surface durability				
29	M12×55	595 501	3.627	SRGF4-1000	SSG4-30RGH24	GH24
41	M12×55	978 821	6.808	SRGCPF15-1000	SSCPG15-30RGH24	
29	M12×55	986 972	4.615	ZST4-1000R	ZSTP4-30LRGH24	

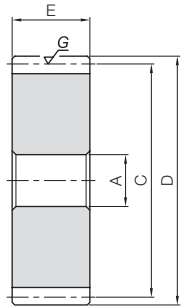
Counterbore depth	Included screws	Allowable torque (N·m)	Weight (kg)	Mating rack	Catalog Number	Speed reducer model number
H		Bending strength Surface durability				
13	M12×75	1070 916	7.230	SRGF5-1000	SSG5-30RGH40	GH40
15	M12×75	978 821	6.431	SRGCPF15-1000	SSCPG15-30RGH40	
13	M12×75	1980 1850	5.022	ZST5-1000R	ZSTP5-24LRGH40	

Counterbore depth	Included screws	Allowable torque (N·m)	Weight (kg)	Mating rack	Catalog Number	Speed reducer model number
H		Bending strength Surface durability				
33	M16×75	1850 1600	12.754	SRGF6-1000	SSG6-30RGH100	GH100
35	M16×75	2090 1850	14.462	SRGCPF20-1000	SSCPG20-30RGH100	

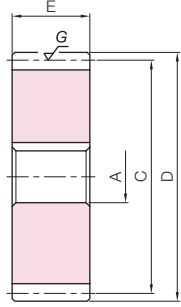


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

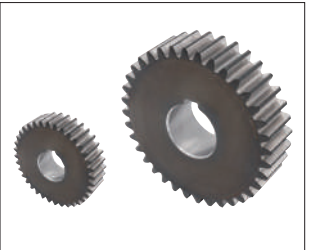
* The precision grade of J Series products is equivalent to the value shown in the table.



S5



S5K



To order J Series products, please specify: **Catalog No. + J + BORE.**

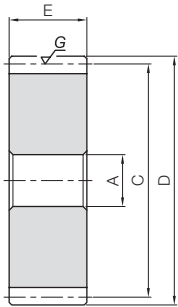
Catalog Number	Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
				A _{H7}	C	D	E	Bending strength	Surface durability	Bending strength	Surface durability		
SSAG1-25	m1	25	S5	8	25	27	10	7.92	3.82	0.81	0.39	0.08~0.16	0.035
SSAG1-30		30			30	32		10.2	5.57	1.04	0.57		0.052
SSAG1-32		32			32	34		9.22	5.30	0.94	0.54		0.059
SSAG1-36		36			36	38		10.7	6.77	1.10	0.69		0.074
SSAG1-40		40			40	42		12.3	8.42	1.25	0.86		0.092
SSAG1-50		50			50	52		16.2	13.4	1.65	1.36		0.15
SSAG1.5-16	m1.5	16	S5	10	24	27	15	13.8	5.02	1.41	0.51	0.08~0.16	0.044
SSAG1.5-18		18			27	30		16.6	6.51	1.69	0.66		0.058
SSAG1.5-20		20			30	33		19.4	8.20	1.98	0.84		0.074
SSAG1.5-25		25			37.5	40.5		22.2	11.1	2.27	1.13		0.12
SSAG1.5-30		30			45	48		28.5	16.3	2.91	1.66		0.17
SSAG1.5-32		32		15	48	51		31.1	18.6	3.17	1.90		0.19
SSAG1.5-36		36			54	57		36.2	23.8	3.70	2.43		0.25
SSAG1.5-40		40			60	63		41.5	29.6	4.23	3.02		0.31
SSAG1.5-50		50			75	78		54.7	47.2	5.58	4.82		0.50
SSAG2-15	m2	15	S5	10	30	34	20	29.6	10.5	3.01	1.07	0.10~0.20	0.099
SSAG2-16		16			32	36		27.3	10.1	2.78	1.03		0.11
SSAG2-18		18			36	40		32.7	13.1	3.34	1.34		0.15
SSAG2-20		20			40	44		38.3	16.6	3.91	1.69		0.17
SSAG2-25		25			50	54		52.7	27.0	5.38	2.75		0.28
SSAG2-30		30		15	60	64		67.6	39.5	6.89	4.03		0.42
SSAG2-32		32			64	68		73.7	45.2	7.51	4.61		0.47
SSAG2-36		36			72	76		85.9	57.8	8.76	5.90		0.60
SSAG2-40		40			80	84		98.3	72.1	10.0	7.35		0.75
SSAG2-50		50			100	104		120	106	12.2	10.8		1.19
SSAG2.5-15		15		15	37.5	42.5		48.1	17.4	4.91	1.77		0.18
SSAG2.5-16		16			40	45		53.3	20.1	5.44	2.05		0.21
SSAG2.5-18		18			45	50		63.9	26.1	6.52	2.66		0.28
SSAG2.5-20		20			50	55		74.8	32.9	7.63	3.36		0.35
SSAG2.5-25		25			62.5	67.5		103	53.8	10.5	5.48		0.54
SSAG2.5-30	m2.5	30		20	75	80	25	132	78.7	13.5	8.03		0.81
SSAG2.5-32		32			80	85		144	90.1	14.7	9.19		0.92
SSAG2.5-36		36			90	95		168	115	17.1	11.8		1.19
SSAG2.5-40		40			100	105		177	133	18.1	13.6		1.48
SSAG2.5-50		50			125	130		234	213	23.8	21.7		2.35

Bore H7		* The product shapes of J Series items are identified by background color.																			
Keyway Js9	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Screw size	3x1.4	4x1.8	5x2.3					6x2.8				8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number	—																				
SSAG1-25J BORE	S5K	S5K																			
SSAG1-30J BORE	S5K	S5K	S5K																		
SSAG1-32J BORE	S5K	S5K	S5K	S5K																	
SSAG1-36J BORE		S5K	S5K	S5K	S5K	S5K															
SSAG1-40J BORE		S5K	S5K	S5K	S5K	S5K	S5K	S5K													
SSAG1-50J BORE		S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSAG1.5-16J BORE		S5K																			
SSAG1.5-18J BORE		S5K																			
SSAG1.5-20J BORE		S5K	S5K																		
SSAG1.5-25J BORE		S5K	S5K	S5K	S5K	S5K															
SSAG1.5-30J BORE					S5K	S5K	S5K	S5K	S5K	S5K											
SSAG1.5-32J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSAG1.5-36J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSAG1.5-40J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSAG1.5-50J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG2-15J BORE		S5K	S5K																		
SSAG2-16J BORE		S5K	S5K																		
SSAG2-18J BORE		S5K	S5K	S5K	S5K																
SSAG2-20J BORE					S5K	S5K	S5K														
SSAG2-25J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSAG2-30J BORE					S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSAG2-32J BORE								S5K	S5K	S5K	S5K	S5K	S5K								
SSAG2-36J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K						
SSAG2-40J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG2-50J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSAG2.5-15J BORE					S5K																
SSAG2.5-16J BORE					S5K	S5K															
SSAG2.5-18J BORE					S5K	S5K	S5K	S5K	S5K												
SSAG2.5-20J BORE					S5K	S5K	S5K	S5K	S5K	S5K											
SSAG2.5-25J BORE										S5K	S5K	S5K	S5K								
SSAG2.5-30J BORE										S5K	S5K	S5K	S5K	S5K	S5K						
SSAG2.5-32J BORE										S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG2.5-36J BORE										S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSAG2.5-40J BORE										S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSAG2.5-50J BORE										S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		

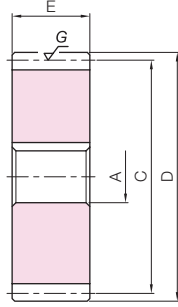


Specifications	
Precision grade	JIS grade N7 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	Gear teeth induction hardened
Tooth hardness	50 to 60HRC
Surface treatment	Black oxide coated except for teeth

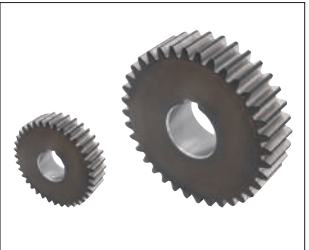
* The precision grade of J Series products is equivalent to the value shown in the table.



S5



S5K



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
				A _{H7}	C	D	E	Bending strength	Surface durability	Bending strength	Surface durability		
SSAG3-15	m3	15	S5	15	45	51	30	83.1	30.5	8.48	3.11	0.10~0.20	0.33
SSAG3-16		16			48	54		92.1	35.2	9.39	3.59		0.38
SSAG3-18		18			54	60		110	45.8	11.3	4.67		0.50
SSAG3-20		20			60	66		129	57.8	13.2	5.90		0.62
SSAG3-25		25			75	81		178	94.5	18.1	9.64		0.97
SSAG3-30		30	S5	20	90	96	30	228	138	23.3	14.1		1.42
SSAG3-32		32			96	102		229	146	23.4	14.9		1.59
SSAG3-36		36			108	114		268	188	27.3	19.1		2.04
SSAG3-40		40			120	126		306	234	31.2	23.9		2.55
SSAG3-50		50			150	156		404	374	41.2	38.1		4.05

Catalog Number	Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
				A _{H7}	C	D	E	Bending strength	Surface durability	Bending strength	Surface durability		
SSAG4-15	m4	15	S5	20	60	68	40	197	74.1	20.1	7.55	0.10~0.20	0.79
SSAG4-16		16			64	72		218	85.6	22.3	8.73		0.91
SSAG4-18		18			72	80		262	111	26.7	11.4		1.18
SSAG4-20		20			80	88		307	141	31.3	14.3		1.48
SSAG4-25		25			100	108		389	213	39.7	21.7		2.37
SSAG4-30		30	S5	25	120	128	40	499	313	50.9	31.9		3.45
SSAG4-32		32			128	136		544	358	55.5	36.5		3.89
SSAG4-36		36			144	152		634	458	64.7	46.7		4.96
SSAG4-40		40			160	168		674	529	68.7	54.0		6.16
SSAG4-50		50			200	208		889	842	90.7	85.9		9.71
SSAG5-20	m5	20	S5	25	100	110	50	553	259	56.4	26.5	0.10~0.22	2.89
SSAG5-25		25			125	135		760	426	77.5	43.4		4.62
SSAG5-30		30			150	160		975	623	99.4	63.5		6.74
SSAG6-20	m6	20	S5	25	120	132	60	955	457	97.4	46.6	0.10~0.22	5.10
SSAG6-25		25			150	162		1310	747	134	76.2		8.09
SSAG6-30		30			180	192		1560	1020	160	104		11.8

Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway Js9		15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Screw size		5×2.3			6×2.8				8×3.3			10×3.3		12×3.3	14×3.8		
Catalog Number		—															
SSAG3-15J BORE	S5K	S5K	S5K	S5K													
SSAG3-16J BORE	S5K	S5K	S5K	S5K	S5K	S5K											
SSAG3-18J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSAG3-20J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSAG3-25J BORE							S5K	S5K	S5K	S5K	S5K	S5K					
SSAG3-30J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSAG3-32J BORE									S5K	S5K	S5K	S5K	S5K	S5K			
SSAG3-36J BORE									S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SSAG3-40J BORE									S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SSAG3-50J BORE									S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	

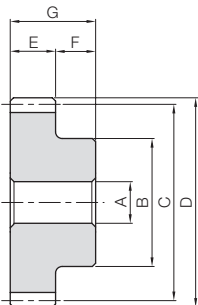
To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7		* The product shapes of J Series items are identified by background color.																
Keyway Js9		20	22	25	28	30	32	35	40	45	50	55	60	65	70	75	80	
Screw size		6x2.8		8x3.3			10x3.3		12x3.3	14x3.8		16x4.3	18x4.4		20x4.9		22x5.4	
Catalog Number		—																
SSAG4-15J BORE	S5K	S5K	S5K															
SSAG4-16J BORE	S5K	S5K	S5K															
SSAG4-18J BORE	S5K	S5K	S5K	S5K	S5K													
SSAG4-20J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSAG4-25J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSAG4-30J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSAG4-32J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSAG4-36J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG4-40J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSAG4-50J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SSAG5-20J BORE			S5K	S5K	S5K	S5K	S5K	S5K										
SSAG5-25J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSAG5-30J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG6-20J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSAG6-25J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSAG6-30J BORE			S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	SCM440
Heat treatment	Thermal refining only
Tooth hardness	225 to 352HB
Surface treatment	Black oxide coating
Shape	S1

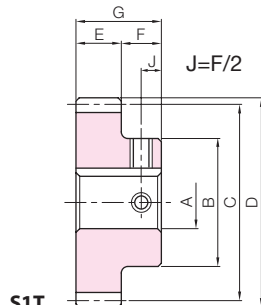
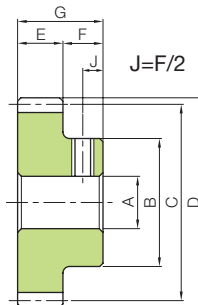
* The precision grade of J Series products is equivalent to the value shown in the table.



S1

To order Hardened Plus, please specify **Catalog No. + H**. Example: **KS1.5-20H**

Catalog Number		Module	No. of teeth	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque						Backlash (mm)	Weight (kg)	
				A _{H7}	B	C	D	E	F	G	Bending strength		Surface durability		Surface durability 				
											N·m	kgf·m	N·m	kgf·m	N·m	kgf·m			
KS1.5-20		m1.5	20	8	24	30	33	15	14	29	37.2	3.79	7.38	0.75	14.8	1.51	0.10~0.22	0.12	
KS1.5-25			25		30	37.5	40.5				50.2	5.12	12.6	1.29	25.0	2.55			0.20
KS1.5-30			30		38	45	48				63.4	6.47	19.7	2.01	38.5	3.93			
KS2-20		m2	20	12	32	40	44	20	16	36	88.1	8.98	18.1	1.84	35.6	3.63	0.12~0.26	0.27	
KS2-25			25		40	50	54				119	12.1	30.9	3.15	60.1	6.13			0.43
KS2-30			30		50	60	64				150	15.3	48.3	4.92	92.7	9.45			
KS2.5-20		m2.5	20	15	40	50	55	25	18	43	172	17.5	36.2	3.69	70.3	7.17	0.14~0.28	0.50	
KS2.5-25			25		50	62.5	67.5				232	23.7	62.0	6.32	119	12.1			0.82
KS2.5-30			30		65	75	80				294	29.9	96.7	9.86	183	18.7			
KS3-20		m3	20	20	50	60	66	30	20	50	297	30.3	63.8	6.51	123	12.5	0.14~0.32	0.90	
KS3-25			25		60	75	81				401	40.9	109	11.2	207	21.1			1.36
KS3-30			30		75	90	96				507	51.7	171	17.4	320	32.6			
KS4-20		m4	20	20	65	80	88	40	25	65	705	71.9	156	16.0	295	30.1	0.18~0.38	2.07	
KS4-25			25		80	100	108				951	97.0	268	27.4	500	51.0			3.29
KS4-30			30		90	120	128				1203	123	419	42.7	772	78.7			
KS5-20		m5	20	25	82	100	110	50	25	75	1377	140	314	32.0	584	59.6	0.20~0.44	3.90	
KS5-25			25		105	125	135				1858	189	538	54.9	989	101			6.23
KS5-30			30		120	150	160				2349	240	841	85.8	1530	156			



S1T

S1K



To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **KS1.5-20J8**

Bore H7	* The product shapes of J Series items are identified by background color.																											
	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	55	60	65	70	75				
Keyway Js9	—	4×1.8																										
Screw size	—	4×1.8																										
Catalog Number	M5																											
KS1.5-20J BORE	*S1T	S1K	S1K																									
KS1.5-25J BORE	*S1T	S1K	S1K	S1K	S1K	S1K	S1K																					
KS1.5-30J BORE		*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K																	
KS2-20 J BORE			*S1K	S1K	S1K	S1K	S1K																					
KS2-25 J BORE			*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K																	
KS2-30 J BORE			*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K														
KS2.5-20J BORE					*S1K	S1K	S1K	S1K	S1K	S1K	S1K																	
KS2.5-25J BORE					*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K														
KS2.5-30J BORE					*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K												
KS3-20 J BORE					*S1K	S1K	S1K	S1K	S1K	S1K	S1K																	
KS3-25 J BORE									*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K												
KS3-30 J BORE									*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
KS4-20 J BORE									*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K											
KS4-25 J BORE									*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
KS4-30 J BORE									*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
KS5-20 J BORE												*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
KS5-25 J BORE												*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
KS5-30 J BORE												*S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K

To order J Series Hardened Plus, please specify: **Catalog No. + H + J + BORE**. Example: **KS1.5-20HJ10**

*** is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.

KS- Hardened Spur Gear
recommended mating racks



KRF-H/KRFD-H Hardened Racks

Please see Page 232 for more details.

KS Thermal Refined Spur Gear
recommended mating racks



KRF/KRFD Thermal Refined Racks

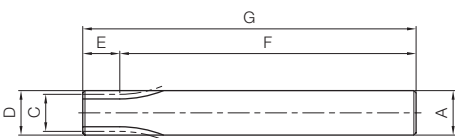
Please see Page 238 for more details.



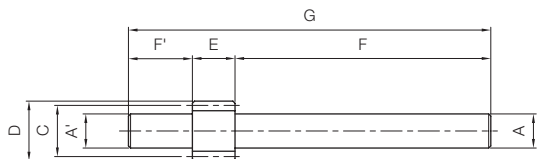


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—*
Tooth hardness	less than 194HB*
Surface treatment	Black oxide coating

* Products with modules of 1.5 use S45C thermal refined equivalent materials, so the surface hardness is 200~270 HB.



SA



SB

Catalog Number	Module	No. of teeth	Profile shift coefficient	Shape	Shaft diameter (L)		Pitch dia.	Outside dia.	Face width	Shaft diameter (R)		Total Length
					A'	F'				A	F	
SSS1-10 SSS1-11 SSS1-12 SSS1-13	m1	10	0	SA	—	—	10	12	12	12	78	90
		11					11	13		13		
		12					12	14		14		
		13					13	15		15		
SSS1.5-10 SSS1.5-11 SSS1.5-12 SSS1.5-13	m1.5	10	+0.5	SB	12.2	25	15	19.35	15	12.2	100	140
		11	+0.5		13.7		16.5	20.85		13.7		
		12	0		13.7		18	21		13.7		
		13	0		15.2		19.5	22.5		15.2		

Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
Bending strength	Surface durability	Bending strength	Surface durability			
1.62 2.04 2.52 3.05	0.063 0.077 0.092 0.11	0.16 0.21 0.26 0.31	0.0064 0.0078 0.0094 0.011	0.08~0.18	0.077 0.090 0.10 0.12	SSS1-10 SSS1-11 SSS1-12 SSS1-13
12.7 14.5 9.97 12.1	0.71 0.88 0.89 1.05	1.30 1.48 1.02 1.23	0.073 0.089 0.091 0.11		0.14 0.17 0.17 0.21	SSS1.5-10 SSS1.5-11 SSS1.5-12 SSS1.5-13

Center distance of stock spur gear meshing with profile shifted gear

The center distance of the stock gear ($x = 0$) that meshes with profile shifted gear ($x = +0.5$) of $m = 1$ is shown in the table at right. Please multiply by the module of the gear to be used.

Center distance where number of teeth is 12 to 30 (unit: mm)

Number of teeth ($x = 0$)	Number of teeth ($x = +0.5$)	
	10	11
12	11.4410	11.9428
13	11.9428	12.4446
14	12.4446	12.9462
15	12.9462	13.4477
16	13.4477	13.9492
17	13.9492	14.4505
18	14.4505	14.9518
19	14.9518	15.4530
20	15.4530	15.9542
21	15.9542	16.4553
22	16.4553	16.9564
23	16.9564	17.4574
24	17.4574	17.9583
25	17.9583	18.4592
26	18.4592	18.9601
27	18.9601	19.4610
28	19.4610	19.9618
29	19.9618	20.4625
30	20.4625	20.9633

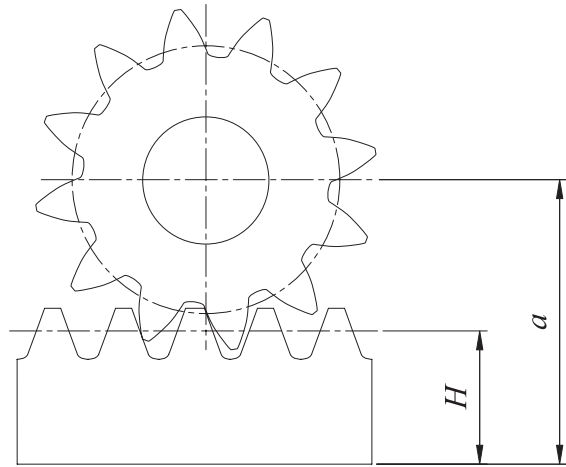
Center distance where number of teeth is 32 to 62 (unit: mm)

Number of teeth ($x = 0$)	Number of teeth ($x = +0.5$)	
	10	11
32	21.4640	21.9647
34	22.4653	22.9660
35	22.9660	23.4666
36	23.4666	23.9671
38	24.4677	24.9683
40	25.4688	25.9693
42	26.4698	26.9703
44	27.4707	27.9712
45	27.9712	28.4716
46	28.4716	28.9721
48	29.4725	29.9729
50	30.4733	30.9736
52	31.4740	31.9744
54	32.4747	32.9750
55	32.9750	33.4754
56	33.4754	33.9757
58	34.4760	34.9763
60	35.4766	35.9769
62	36.4772	36.9774

Center distance where number of teeth is 64 to 200 (unit: mm)

Number of teeth ($x = 0$)	Number of teeth ($x = +0.5$)	
	10	11
64	37.4777	37.9780
65	37.9780	38.4782
66	38.4782	38.9785
68	39.4787	39.9790
70	40.4792	40.9794
72	41.4796	41.9799
75	42.9803	43.4805
76	43.4805	43.9807
80	45.4813	45.9814
84	47.4820	47.9822
85	47.9822	48.4823
88	49.4826	49.9828
90	50.4830	50.9831
95	52.9837	53.4838
100	55.4844	55.9845
120	65.4866	65.9867
150	80.4890	80.9890
200	105.4915	105.9915

Mounting distance of a profile shifted gear and the meshing rack



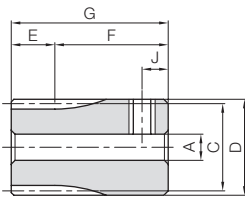
$$a = \frac{zm}{2} + H + xm$$

Where
 a : Mounting distance
 H : Pitch line height
 m : Module
 z : No. of teeth
 x : Profile shift coefficient

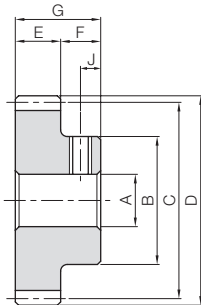




Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



S3T



S1T

* The precision grade of products with a module of less than 0.8 is equivalent to the value shown in the table.

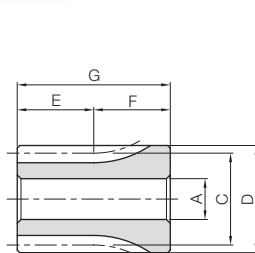
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway	
				A _{H7(H8)}	B	C	D	E	F	G	Width × Depth	
SS0.5-15A	m0.5	15	S3T	3 _{H8}	8.5	7.5	8.5	5	11	16	—	
SS0.5-18A		18		4 _{H8}	10	9	10					
SS0.5-20A		20		3 _{H8}	11	10	11					
SS0.5-20B				4 _{H8}	12	11	12					
SS0.5-22A		22		4 _{H8}	12	11	12					
SS0.5-24A		24		4 _{H8}	13	12	13					
SS0.5-24B				5 _{H8}								
SS0.5-25B		25	5 _{H8}	13.5	12.5	13.5						
SS0.5-28A		28	4 _{H8}	12	14	15						
SS0.5-30B		30	5	13	15	16						
SS0.5-50B		50	6	22	25	26						
SS0.5-54A		54	5	25	27	28						
SS0.5-60A		60	6	28	30	31						
SS0.5-80A		80	6	28	40	41						
SS0.5-80B				8								
SS0.5-96A			8	28	48	49						
SS0.5-120A			8	28	60	61						
	120											
SS0.8-15A	m0.8	15	S3T	5 _{H8}	13.6	12	13.6	8	14	22	—	
SS0.8-20A		20	S1T	5 _{H8}	13	16	17.6		8	16		
SS0.8-20B				6								
SS0.8-25A		25		5 _{H8}	16	20	21.6					
SS0.8-28A		28		6	18	22.4	24					
SS0.8-30A		30		5 _{H8}	20	24	25.6					
SS0.8-30C				8								
SS0.8-40A		40		6	28	32	33.6					
SS0.8-45A	45	6		28	36	37.6						

Socket head screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number	
Size	J	Bending strength	Surface durability	Bending strength	Surface durability				
M3	2.5	0.46	0.022	0.047	0.0022	0~0.10	0.0056	SS0.5-15A	
M3		0.61	0.032	0.063	0.0033		0.0076	SS0.5-18A	
M3		0.72	0.040	0.073	0.0041		0.010	SS0.5-20A	
M3							0.0095	SS0.5-20B	
M3		0.83	0.049	0.084	0.0050		0.012	SS0.5-22A	
M3	2.5 3	0.93	0.059	0.095	0.0060		0.014	SS0.5-24A	
M4							0.013	SS0.5-24B	
M4	3	0.99	0.064	0.10	0.0065		0.014	SS0.5-25B	
M3	3.5	1.16	0.081	0.12	0.0082		0.011	SS0.5-28A	
M4		1.27	0.093	0.13	0.0095		0.012	SS0.5-30B	
M4		2.43	0.27	0.25	0.027		0.037	SS0.5-50B	
M4		2.67	0.32	0.27	0.032		0.047	SS0.5-54A	
M4		3.03	0.39	0.31	0.040		0.058	SS0.5-60A	
M4		4.24	0.72	0.43	0.074		0.079	SS0.5-80A	
M5							0.077	SS0.5-80B	
M5		5.21	1.06	0.53	0.11		0.099	SS0.5-96A	
M5		6.68	1.70	0.68	0.17		0.14	SS0.5-120A	
M4	3.5	1.89	0.088	0.19	0.0090	0~0.10	0.019	SS0.8-15A	
M4	4	2.94	0.17	0.30	0.017		0.018	SS0.8-20A	
M4							0.017	SS0.8-20B	
M4		4.05	0.27	0.41	0.027		0.029	SS0.8-25A	
M4		4.73	0.34	0.48	0.035		0.037	SS0.8-28A	
M4		5.19	0.39	0.53	0.040		0.045	SS0.8-30A	
M5							0.041	SS0.8-30C	
M4		7.55	0.72	0.77	0.074		0.085	SS0.8-40A	
M4	8.75	0.93	0.89	0.095	0.098	SS0.8-45A			

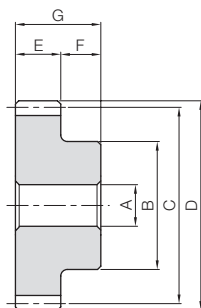




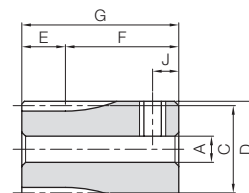
Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



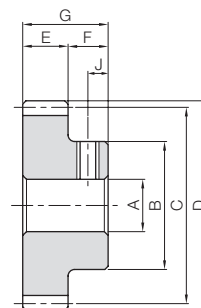
S3



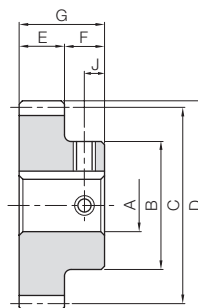
S1



S3T



S1T



S1K

H To order Hardened Plus, please specify **Catalog No. + H**. Example: **SS1-15H**

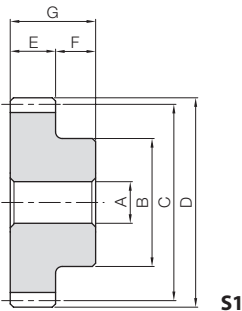
Catalog Number		Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway	Socket head screw	
					A _{H7}	B	C	D	E	F	G	Width × Depth	Size	J
SS1-15 SS1-15A SS1-15B	H	m1	15	S3	8	17	15	17	10	20	30	—	—	—
				S3T	5								M4	4
				S3T	6								M4	4
SS1-16 SS1-16B	H		16	S3	8	18	16	18					—	—
				S3T	6								M4	4
SS1-17	H		17	S3	8	19	17	19					—	—
SS1-18	H		18	S3	8	20	18	20					—	—
SS1-19	H		19	S3	8	21	19	21					—	—
SS1-20 SS1-20A SS1-20B SS1-20C	H		20	S1	8	16	20	22					—	—
				S1T	5								M4	5
				S1T	6								M4	5
				S1T	8								M5	5
SS1-21	H		21	S1	8	17	21	23					—	—
SS1-22	H		22	S1	8	18	22	24					—	—
SS1-23	H		23	S1	8	18	23	25					—	—
SS1-24 SS1-24A SS1-24C	H		24	S1	8	20	24	26		—	—			
				S1T	6					M4	5			
				S1K	10					M4	5			
SS1-25 SS1-25B SS1-25C	H		25	S1	8	20	25	27		—	—			
				S1T	8					M5	5			
				S1K	10					M4	5			
SS1-26	H		26	S1	8	22	26	28		—	—			
SS1-27	H		27	S1	8	22	27	29		—	—			
SS1-28	H		28	S1	8	22	28	30		—	—			
SS1-29	H		29	S1	8	24	29	31		—	—			
SS1-30 SS1-30A SS1-30B	H		30	S1	10	25	30	32	—	—				
				S1T	6				M4	5				
				S1T	8				M5	5				
SS1-32 SS1-32A	H		32	S1	10	26	32	34	—	—				
				S1T	8				M5	5				
SS1-34	H		34	S1	10	26	34	36	—	—				
SS1-35	H		35	S1	10	26	35	37	—	—				
SS1-36	H		36	S1	10	28	36	38	—	—				
SS1-38	H		38	S1	10	32	38	40	—	—				
SS1-40 SS1-40B	H		40	S1	10	35	40	42	—	—				
				S1K	10				M4	5				
SS1-42	H		42	S1	10	35	42	44	—	—				
SS1-44	H		44	S1	10	35	44	46	—	—				
SS1-45 SS1-45A SS1-45B	H		45	S1	10	35	45	47	—	—				
				S1T	8				M5	5				
				S1K	10				M4	5				
SS1-46	H		46	S1	10	35	46	48	—	—				
SS1-48	H		48	S1	10	35	48	50	—	—				

Allowable torque						Backlash (mm)	Weight (kg)	Catalog Number
Bending strength		Surface durability		Surface durability 				
N·m	kgf·m	N·m	kgf·m	N·m	kgf·m			
3.69	0.38	0.17	0.018	0.85	0.086	0.08~0.18	0.038 0.044 0.042	SS1-15 SS1-15A SS1-15B
4.09	0.42	0.2	0.021	0.98	0.10		0.044 0.049	SS1-16 SS1-16B
4.5	0.46	0.23	0.023	1.12	0.11		0.050	SS1-17
4.91	0.5	0.26	0.027	1.26	0.13		0.057	SS1-18
5.33	0.54	0.29	0.030	1.42	0.14		0.065	SS1-19
5.75	0.59	0.33	0.033	1.59	0.16		0.033 0.037 0.036 0.032	SS1-20 SS1-20A SS1-20B SS1-20C
6.17	0.63	0.36	0.037	1.77	0.18		0.037	SS1-21
6.6	0.67	0.4	0.041	1.95	0.20		0.042	SS1-22
7.03	0.72	0.45	0.045	2.15	0.22		0.045	SS1-23
7.47	0.76	0.49	0.050	2.36	0.24		0.052 0.055 0.046	SS1-24 SS1-24A SS1-24C
7.91	0.81	0.54	0.055	2.57	0.26		0.055 0.054 0.049	SS1-25 SS1-25B SS1-25C
8.35	0.85	0.58	0.059	2.79	0.28		0.064	SS1-26
8.79	0.9	0.63	0.064	3.01	0.31		0.067	SS1-27
9.24	0.94	0.68	0.070	3.25	0.33		0.070	SS1-28
9.69	0.99	0.73	0.075	3.49	0.36		0.079	SS1-29
10.1	1.03	0.79	0.081	3.74	0.38		0.082 0.089 0.085	SS1-30 SS1-30A SS1-30B
11.1	1.13	0.90	0.092	4.27	0.44		0.092 0.096	SS1-32 SS1-32A
12.0	1.22	1.03	0.10	4.83	0.49		0.10	SS1-34
12.4	1.27	1.09	0.11	5.13	0.52		0.10	SS1-35
12.9	1.31	1.16	0.12	5.44	0.55		0.12	SS1-36
13.8	1.41	1.30	0.13	6.08	0.62		0.14	SS1-38
14.7	1.50	1.45	0.15	6.76	0.69		0.16 0.16	SS1-40 SS1-40B
15.7	1.60	1.61	0.16	7.47	0.76		0.17	SS1-42
16.6	1.69	1.77	0.18	8.23	0.84		0.18	SS1-44
17.1	1.74	1.86	0.19	8.62	0.88		0.19 0.19 0.19	SS1-45 SS1-45A SS1-45B
17.6	1.79	1.95	0.20	9.02	0.92		0.19	SS1-46
18.5	1.89	2.13	0.22	9.84	1.00		0.21	SS1-48

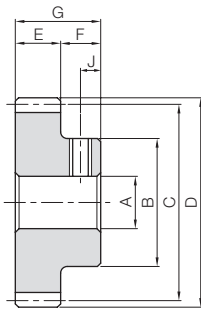




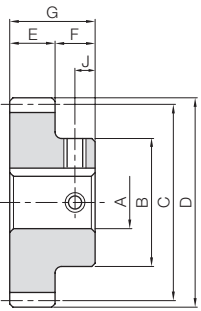
Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



S1



S1T



S1K

H To order Hardened Plus, please specify **Catalog No. + H**. **Example: SS1-50H**

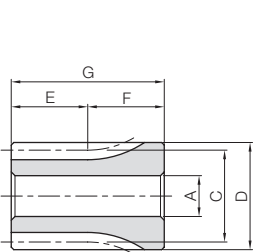
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway	Socket head screw	
				AH7	B	C	D	E	F	G	Width x Depth	Size	J
SS1-50	m1	50	S1	10	35	50	52	10	10	20	—	—	—
SS1-50A		50	S1T	8		50	52				—	M5	5
SS1-52		52	S1	10		52	54				—	—	—
SS1-54		54	S1	10		54	56				—	—	—
SS1-55		55	S1	10		55	57				—	—	—
SS1-56		56	S1	10		56	58				—	—	—
SS1-58		58	S1	10		58	60				—	—	—
SS1-60		60	S1	10	40	60	62				—	—	—
SS1-60C		60	S1K	15		60	62				5 x 2.3	M4	5
SS1-62		62	S1	10		62	64				—	—	—
SS1-64		64	S1	10		64	66				—	—	—
SS1-65		65	S1	10		65	67				—	—	—
SS1-66		66	S1	10		66	68				—	—	—
SS1-68		68	S1	10		68	70				—	—	—
SS1-70		70	S1	10		70	72				—	—	—
SS1-72		72	S1	10		72	74				—	—	—
SS1-75		75	S1	10		75	77				—	—	—
SS1-76		76	S1	10		76	78				—	—	—
SS1-80		80	S1	10	40	80	82				—	—	—
SS1-84		84	S1	10		84	86				—	—	—
SS1-85		85	S1	10		85	87				—	—	—
SS1-88		88	S1	10		88	90				—	—	—
SS1-90		90	S1	10		90	92				—	—	—
SS1-95		95	S1	10		95	97				—	—	—
SS1-96		96	S1	10		96	98				—	—	—
SS1-100		100	S1	10		100	102				—	—	—
SS1-110		110	S1	15	50	110	112				—	—	—
SS1-120		120	S1	15	50	120	122				—	—	—
SS1-150		150	S1	20	120	150	152				—	—	—
SS1-200		200	S1	20	160	200	202				—	—	—

Allowable torque						Backlash (mm)	Weight (kg)	Catalog Number
Bending strength		Surface durability		Surface durability 				
N·m	kgf·m	N·m	kgf·m	N·m	kgf·m			
19.5	1.98	2.32	0.24	10.7	1.09	0.08~0.18	0.22	SS1-50
							0.22	SS1-50A
20.4	2.08	2.52	0.26	11.6	1.18		0.23	SS1-52
21.4	2.18	2.73	0.28	12.5	1.28		0.24	SS1-54
21.8	2.23	2.83	0.29	13.0	1.33		0.25	SS1-55
22.3	2.28	2.94	0.30	13.5	1.38		0.26	SS1-56
23.3	2.37	3.17	0.32	14.5	1.48		0.27	SS1-58
24.2	2.47	3.40	0.35	15.6	1.59		0.29	SS1-60
							0.27	SS1-60C
25.2	2.57	3.64	0.37	16.7	1.70		0.32	SS1-62
26.2	2.67	3.89	0.40	17.8	1.81		0.34	SS1-64
26.6	2.72	4.02	0.41	18.4	1.87		0.35	SS1-65
27.1	2.77	4.15	0.42	18.9	1.93		0.35	SS1-66
28.1	2.86	4.42	0.45	20.1	2.05		0.37	SS1-68
29.1	2.96	4.70	0.48	21.4	2.18		0.39	SS1-70
30.0	3.06	4.98	0.51	22.6	2.31		0.41	SS1-72
31.5	3.21	5.43	0.55	24.6	2.51		0.43	SS1-75
32.0	3.26	5.59	0.57	25.3	2.58		0.44	SS1-76
33.9	3.46	6.23	0.63	28.1	2.87		0.48	SS1-80
35.8	3.66	6.90	0.7	31.1	3.17		0.52	SS1-84
36.3	3.71	7.08	0.72	31.8	3.25		0.53	SS1-85
37.8	3.85	7.62	0.78	34.2	3.48		0.56	SS1-88
38.8	3.95	7.98	0.81	35.8	3.65		0.59	SS1-90
41.2	4.20	8.95	0.91	40.0	4.08		0.64	SS1-95
41.7	4.25	9.15	0.93	40.8	4.16		0.65	SS1-96
43.7	4.45	9.97	1.02	44.4	4.53		0.70	SS1-100
48.6	4.95	12.2	1.24	53.9	5.50		0.87	SS1-110
53.5	5.45	14.7	1.50	64.4	6.57		1.01	SS1-120
68.2	6.96	23.6	2.41	102	10.4		2.23	SS1-150
71.5	7.29	33.6	3.42	144	14.7		4.00	SS1-200

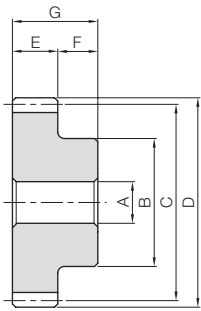




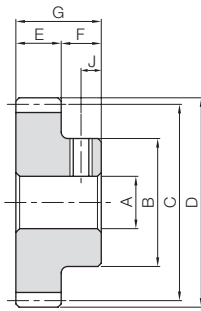
Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



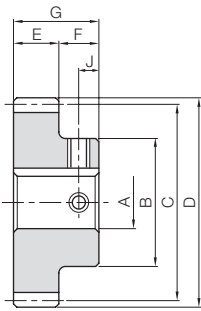
S3



S1



S1T



S1K

To order Hardened Plus, please specify **Catalog No. + H**. **Example: SS1.5-12H**

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway	Socket head screw	
				A _{H7}	B	C	D	E	F	G	Width × Depth	Size	J
SS1.5-12	m1.5	12	S3	8	21	18	21	15	15	30	—	—	—
SS1.5-13		13	S3	8	22.5	19.5	22.5				—	—	—
SS1.5-14		14	S1	8	16	21	24				—	—	—
SS1.5-14B			S1T	8	16	21	24				—	M5	5
SS1.5-15		15	S1	8	18	22.5	25.5				—	—	—
SS1.5-16		16	S1	8	20	24	27				—	—	—
SS1.5-16B			S1T	8	20	24	27				—	M5	5
SS1.5-17		17	S1	8	21	25.5	28.5				—	—	—
SS1.5-18		18	S1	8	22	27	30				—	—	—
SS1.5-19		19	S1	8	23	28.5	31.5				—	—	—
SS1.5-20		20	S1	8	24	30	33				—	—	—
SS1.5-21		21	S1	8	25	31.5	34.5				—	—	—
SS1.5-22		22	S1	8	26	33	36				—	—	—
SS1.5-23		23	S1	8	27	34.5	37.5				—	—	—
SS1.5-24		24	S1	8	28	36	39				—	—	—
SS1.5-25		25	S1	8	30	37.5	40.5				—	—	—
SS1.5-26		26	S1	10	32	39	42		10	25	—	—	—
SS1.5-26A			S1K	12	32	39	42				4 x 1.8	M4	5
SS1.5-27		27	S1	10	34	40.5	43.5				—	—	—
SS1.5-28		28	S1	10	36	42	45				—	—	—
SS1.5-28A			S1K	12	36	42	45				4 x 1.8	M4	5
SS1.5-29		29	S1	10	37	43.5	46.5				—	—	—
SS1.5-30		30	S1	10	38	45	48				—	—	—
SS1.5-30C			S1K	15	38	45	48				5 x 2.3	M4	5
SS1.5-32		32	S1	10	40	48	51				—	—	—
SS1.5-32B			S1K	12	40	48	51				4 x 1.8	M4	5
SS1.5-34		34	S1	10	40	51	54				—	—	—
SS1.5-35		35	S1	10	42	52.5	55.5				—	—	—
SS1.5-36		36	S1	10	45	54	57				—	—	—
SS1.5-38		38	S1	12	45	57	60				—	—	—
SS1.5-40		40	S1	12	45	60	63				—	—	—

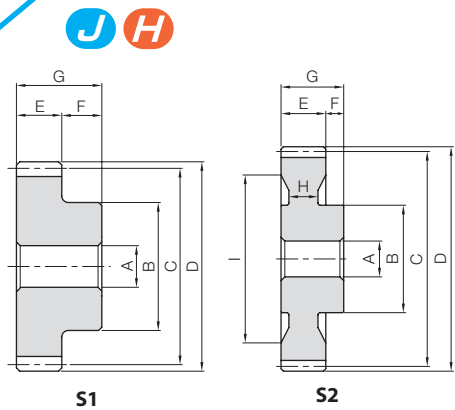
Allowable torque						Backlash (mm)	Weight (kg)	Catalog Number
Bending strength		Surface durability		Surface durability 				
N·m	kgf·m	N·m	kgf·m	N·m	kgf·m			
6.86	0.70	0.36	0.037	1.76	0.18	0.10~0.22	0.059	SS1.5-12
8.84	0.90	0.44	0.045	2.12	0.22		0.070	SS1.5-13
11.1	1.13	0.52	0.053	2.50	0.26		0.047 0.046	SS1.5-14 SS1.5-14B
12.5	1.27	0.60	0.062	2.91	0.30		0.057	SS1.5-15
13.8	1.41	0.70	0.071	3.36	0.34		0.068 0.067	SS1.5-16 SS1.5-16B
15.2	1.55	0.80	0.082	3.84	0.39		0.077	SS1.5-17
16.6	1.69	0.91	0.093	4.35	0.44		0.087	SS1.5-18
18.0	1.83	1.03	0.11	4.89	0.50		0.098	SS1.5-19
19.4	1.98	1.15	0.12	5.47	0.56		0.11	SS1.5-20
20.8	2.12	1.29	0.13	6.08	0.62		0.12	SS1.5-21
22.3	2.27	1.43	0.15	6.72	0.69		0.13	SS1.5-22
23.7	2.42	1.58	0.16	7.40	0.75		0.15	SS1.5-23
25.2	2.57	1.73	0.18	8.12	0.83		0.16	SS1.5-24
26.7	2.72	1.90	0.19	8.87	0.90		0.18	SS1.5-25
28.2	2.87	2.06	0.21	9.62	0.98		0.19 0.18	SS1.5-26 SS1.5-26A
29.7	3.03	2.23	0.23	10.4	1.06		0.21	SS1.5-27
31.2	3.18	2.41	0.25	11.2	1.14		0.23 0.22	SS1.5-28 SS1.5-28A
32.7	3.34	2.60	0.26	12.1	1.23		0.24	SS1.5-29
34.2	3.49	2.79	0.28	12.9	1.32		0.26 0.24	SS1.5-30 SS1.5-30C
37.3	3.80	3.19	0.33	14.8	1.51		0.30 0.28	SS1.5-32 SS1.5-32B
40.4	4.12	3.63	0.37	16.7	1.71		0.32	SS1.5-34
41.9	4.28	3.85	0.39	17.8	1.81		0.35	SS1.5-35
43.5	4.43	4.09	0.42	18.8	1.92		0.38	SS1.5-36
46.6	4.75	4.58	0.47	21.0	2.14		0.40	SS1.5-38
49.8	5.07	5.10	0.52	23.4	2.38		0.44	SS1.5-40



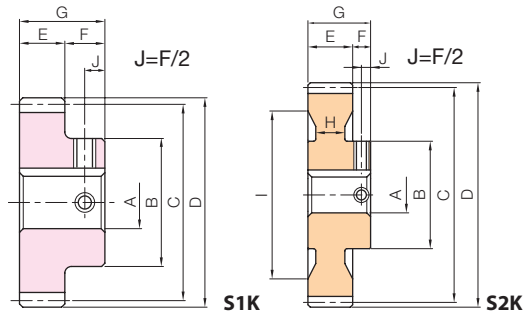


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating
Backlash	0.10 to 0.22

* The precision grade of J Series products is equivalent to the value shown in the table.



J Series



To order Hardened Plus, please specify **Catalog No. + H**. Example: **SS1.5-42H**

Catalog Number		No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)
				A _{H7}	B	C	D	E	F	G	(H)	(I)	Bending strength		Surface durability		Surface durability 		
													N·m	kgf·m	N·m	kgf·m	N·m	kgf·m	
SS1.5-42		42	S1	12	45	63	66	15	10	25	—	—	52.9	5.40	5.65	0.58	25.8	2.63	0.47
SS1.5-44		44				66	69						56.1	5.72	6.23	0.64	28.4	2.90	0.51
SS1.5-45		45				67.5	70.5						57.7	5.88	6.53	0.67	29.8	3.03	0.52
SS1.5-46		46				69	72						59.3	6.04	6.83	0.70	31.1	3.17	0.54
SS1.5-48		48				72	75						62.4	6.37	7.47	0.76	34.0	3.46	0.58
SS1.5-50		50				75	78						65.7	6.69	8.15	0.83	36.9	3.77	0.62
SS1.5-52		52		50	50	78	81						68.9	7.02	8.85	0.90	40.0	4.08	0.68
SS1.5-54		54				81	84						72.1	7.35	9.59	0.98	43.3	4.41	0.73
SS1.5-55		55				82.5	85.5						73.7	7.51	9.96	1.02	44.9	4.58	0.75
SS1.5-56		56				84	87						75.3	7.68	10.4	1.06	46.6	4.75	0.77
SS1.5-58		58				87	90						78.5	8.01	11.2	1.14	50.1	5.11	0.82
SS1.5-60		60				90	93						81.8	8.34	12.0	1.22	53.7	5.47	0.87
SS1.5-62		62	15	55	93	96	85.0	8.67	12.8	1.31	57.4	5.85	0.95						
SS1.5-64		64			96	99	88.3	9.00	13.7	1.40	61.3	6.25	1.00						
SS1.5-65		65			97.5	100.5	89.9	9.17	14.2	1.45	63.2	6.45	1.03						
SS1.5-66		66			99	102	91.5	9.33	14.6	1.49	65.2	6.65	1.06						
SS1.5-68		68			102	105	94.8	9.66	15.6	1.59	69.3	7.07	1.11						
SS1.5-70		70			105	108	98.0	10.0	16.6	1.69	73.6	7.50	1.17						
SS1.5-72		72	60	70	108	111	101	10.3	17.6	1.79	77.9	7.95	1.23						
SS1.5-75		75			112.5	115.5	106	10.8	19.2	1.95	84.7	8.64	1.36						
SS1.5-76		76			114	117	108	11.0	19.7	2.01	87.0	8.88	1.39						
SS1.5-80		80			120	123	114	11.7	22.0	2.24	96.7	9.86	1.52						
SS1.5-84		84			126	129	121	12.3	24.4	2.49	107	10.9	1.66						
SS1.5-85		85			127.5	130.5	123	12.5	25.1	2.56	109	11.2	1.69						
SS1.5-88		88	S2	20	132	135	128	13.0	27.0	2.75	117	12.0	1.80						
SS1.5-90		90			135	138	131	13.3	28.3	2.89	123	12.5	1.87						
SS1.5-95		95			142.5	145.5	139	14.2	31.8	3.24	137	14.0	2.07						
SS1.5-100		100			150	153	147	15.0	35.5	3.62	152	15.5	1.88						
SS1.5-120		120			180	183	180	18.4	52.3	5.33	221	22.5	2.74						
SS1.5-150		150			225	228	192	19.6	70.3	7.17	276	28.1	6.62						
SS1.5-200		200	S1	25	240	300	303	—	—	261	26.7	131	13.3	504	51.4	11.8			

To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **SS1.5-42J12**

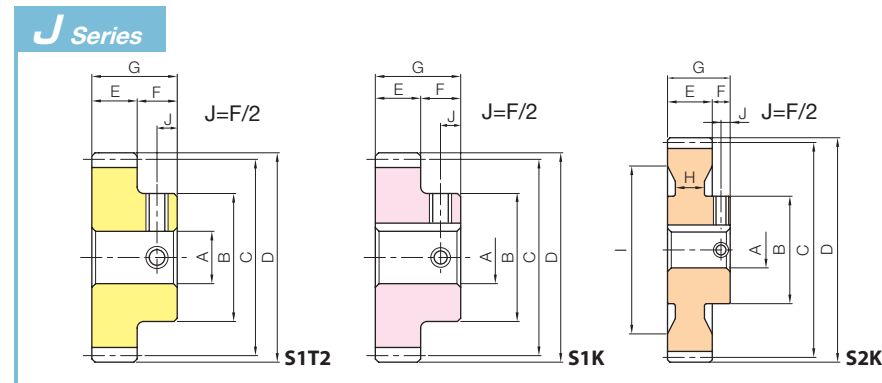
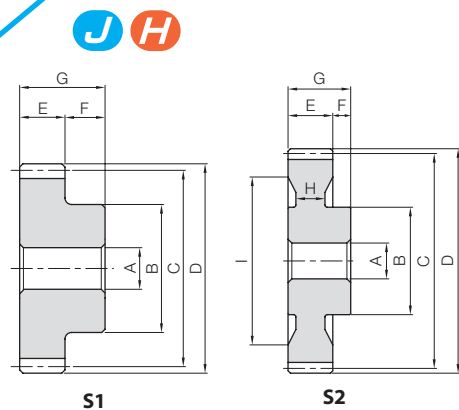
Catalog Number	Bore H7	* The product shapes of J Series items are identified by background color.															
		10		12		14		15		16		17		18		19	
		4×1.8		5×2.3		6×2.8		8×3.3		10×3.3		12×3.3		14×3.3		16×3.3	
SS1.5-42 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-44 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-45 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-46 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-48 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-50 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-52 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-54 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-55 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-56 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-58 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-60 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-62 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-64 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-65 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-66 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-68 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-70 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-72 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-75 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-76 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-80 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-84 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-85 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-88 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-90 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-95 J BORE				* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS1.5-100 J BORE				* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS1.5-120 J BORE				* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS1.5-150																	
SS1.5-200																	

*** is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating
Backlash	0.12 to 0.26

* The precision grade of J Series products is equivalent to the value shown in the table.



H To order Hardened Plus, please specify **Catalog No. + H**. Example: **SS2-12H**

Catalog Number		No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)		
													Bending strength		Surface durability		Surface durability 				
													N·m	kgf·m	N·m	kgf·m	N·m	kgf·m			
SS2-12		12	S1	10	18	24	28	20	10	30	—	—	16.3	1.66	0.88	0.090	4.24	0.43	0.073		
SS2-13		13			20	26	30						21.0	2.14	1.07	0.11	5.11	0.52	0.090		
SS2-14		14		20	28	32	26.3						2.69	1.26	0.13	6.02	0.61	0.10			
SS2-15		15		24	30	34	29.6						3.01	1.48	0.15	7.01	0.71	0.12			
SS2-16		16		26	32	36	32.7						3.34	1.71	0.17	8.08	0.82	0.14			
SS2-17		17		12	28	34	38						36.0	3.67	1.96	0.20	9.23	0.94	0.16		
SS2-18		18			30	36	40						39.3	4.01	2.23	0.23	10.5	1.07	0.19		
SS2-19		19			31	38	42						42.6	4.35	2.52	0.26	11.8	1.20	0.21		
SS2-20		20			32	40	44						46.0	4.69	2.83	0.29	13.2	1.34	0.23		
SS2-21		21			34	42	46						49.4	5.04	3.15	0.32	14.7	1.50	0.26		
SS2-22		22			12	36	44						48	52.8	5.39	3.50	0.36	16.2	1.66	0.29	
SS2-23		23				37	46						50	56.3	5.74	3.86	0.39	17.9	1.82	0.32	
SS2-24		24				38	48						52	59.8	6.09	4.24	0.43	19.6	2.00	0.35	
SS2-25		25				40	50						54	63.3	6.45	4.64	0.47	21.4	2.18	0.38	
SS2-26		26				42	52						56	66.8	6.81	5.04	0.51	23.2	2.37	0.42	
SS2-27		27				15	45						54	58	70.4	7.17	5.45	0.56	25.1	2.56	0.46
SS2-28		28					45						56	60	73.9	7.54	5.89	0.60	27.0	2.76	0.48
SS2-29		29					47						58	62	77.5	7.91	6.33	0.65	29.1	2.96	0.52
SS2-30		30					50						60	64	81.1	8.27	6.80	0.69	31.2	3.18	0.57
SS2-32		32					50						64	68	88.4	9.01	7.78	0.79	35.6	3.63	0.63
SS2-34		34			15		50						68	72	95.7	9.76	8.84	0.90	40.3	4.11	0.70
SS2-35		35					52						70	74	99.3	10.1	9.39	0.96	42.8	4.36	0.74
SS2-36		36					55						72	76	103	10.5	9.96	1.02	45.3	4.62	0.80
SS2-38		38		55			76						80	111	11.3	11.2	1.14	50.6	5.16	0.87	
SS2-40		40		55			80						84	118	12.0	12.5	1.27	56.2	5.73	0.93	
SS2-42		42		15		55	84						88	125	12.8	13.8	1.41	62.1	6.34	1.01	
SS2-44		44					88						92	133	13.6	15.2	1.55	68.3	6.97	1.10	
SS2-45		45					90						94	137	13.9	16.0	1.63	71.6	7.30	1.14	
SS2-46		46					92						96	140	14.3	16.7	1.71	74.9	7.63	1.19	
SS2-48		48					96						100	148	15.1	18.3	1.87	81.7	8.33	1.28	
SS2-50		50			15	55	100						104	156	15.9	19.9	2.03	88.8	9.05	1.38	
SS2-52		52					104						108	163	16.6	21.7	2.21	96.2	9.81	1.48	
SS2-54		54					108						112	171	17.4	23.4	2.39	104	10.6	1.58	
SS2-55		55					110						114	175	17.8	24.4	2.48	108	11.0	1.64	
SS2-56		56					112						116	179	18.2	25.3	2.58	112	11.4	1.69	
SS2-58		58		15		60	116						120	186	19.0	27.3	2.78	120	12.3	1.84	
SS2-60		60					120						124	194	19.8	29.3	2.99	129	13.1	1.96	
SS2-62		62					124						128	202	20.6	31.5	3.21	138	14.1	2.08	
SS2-64		64					128						132	209	21.3	33.7	3.44	147	15.0	2.20	
SS2-65		65					130						134	213	21.7	34.8	3.55	152	15.5	2.26	
SS2-66		66	15		60	132	136	217	22.1	36.0	3.67	157	16.0	2.33							
SS2-68		68				136	140	225	22.9	38.4	3.91	166	17.0	2.46							
SS2-70		70				140	144	232	23.7	40.8	4.16	177	18.0	2.60							
SS2-72		72				144	148	240	24.5	43.3	4.42	187	19.1	2.74							
SS2-75		75				150	154	252	25.7	47.3	4.82	203	20.7	2.92							
SS2-76		76		S2	20	60	152	156	256	26.1	48.6	4.96	209	21.3	3.00						
SS2-80		80				60	160	164	271	27.7	54.3	5.53	232	23.6	2.67						
SS2-84		84				70	168	172	287	29.2	60.2	6.14	256	26.1	3.09						
SS2-85		85				70	170	174	291	29.6	61.7	6.30	262	26.8	3.09						
SS2-88		88				70	176	180	302	30.8	66.5	6.78	282	28.7	3.29						
SS2-90		90	20		70	180	184	310	31.6	69.7	7.11	295	30.1	3.38							
SS2-95		95			70	190	194	330	33.6	78.2	7.97	329	33.6	3.69							
SS2-100		100			70	200	204	357	36.4	108	11.0	421	43.0	5.91							
SS2-120		120			90	240	244	455	46.4	174	17.7	672	68.5	14.5							
SS2-150		150			S1	25	240	300	304	—	—	—	—	—	—	—					

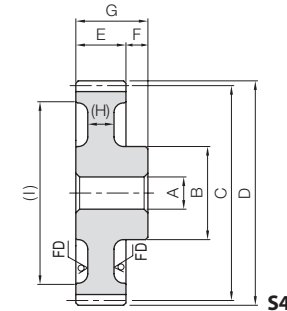
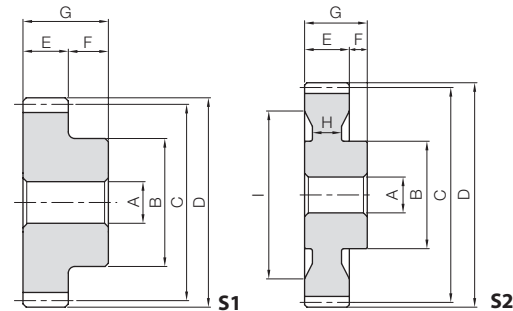
To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **SS2-12J10**

Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway J9		10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	
Screw size		4x1.8		5x2.3				6x2.8				8x3.3			10x3.3		
Catalog Number		M4						M5				M6			M8		
SS2-12 J BORE	* S1T2																
SS2-13 J BORE	* S1T2																
SS2-14 J BORE	* S1K																
SS2-15 J BORE		* S1K															
SS2-16 J BORE		* S1K	S1K														
SS2-17 J BORE		* S1K	S1K	S1K	S1K	S1K											
SS2-18 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K										
SS2-19 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS2-20 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS2-21 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SS2-22 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SS2-23 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS2-24 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS2-25 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS2-26 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2-27 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2-28 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2-29 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2-30 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS2-32 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS2-34 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS2-35 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS2-36 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-38 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-40 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-42 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-44 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-45 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-46 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-48 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-50 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-52 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-54 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-55 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-56 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-58 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-60 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-62 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-64 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-65 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-66 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-68 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-70 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-72 J BORE					* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-75 J BORE										* S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-76 J BORE										* S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS2-80 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-84 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-85 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-88 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-90 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-95 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-100 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS2-120 J BORE										* S2K	S2K	S2K	S2K	S2K	S2K	S2K	

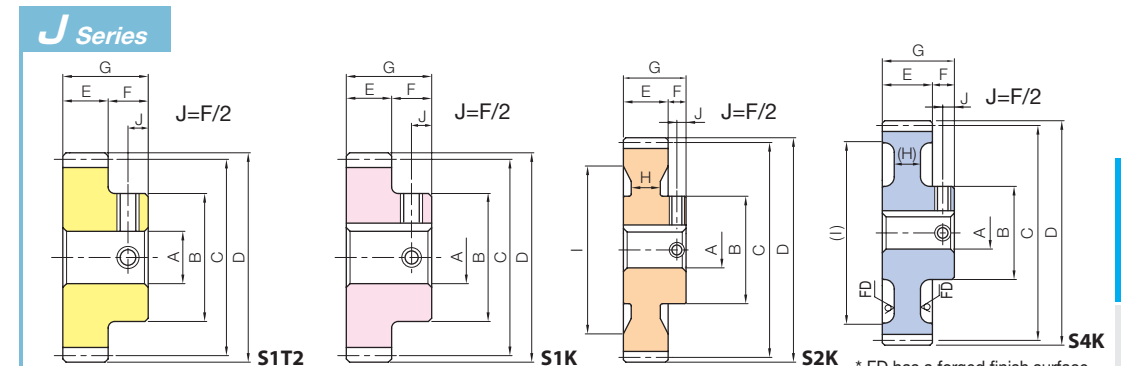


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating
Backlash	0.14 to 0.28

* The precision grade of J Series products is equivalent to the value shown in the table.



* FD has a forged finish surface



* FD has a forged finish surface.

 To order Hardened Plus, please specify **Catalog No. + H.** **Example: SS2.5-12H**

Catalog Number		No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)	
													Bending strength		Surface durability		Surface durability H			
													N·m	kgf·m	N·m	kgf·m	N·m	kgf·m		
SS2.5-12	H	12	S1	12	23	30	35	25	12	37	—	—	31.8	3.24	1.77	0.18	8.37	0.85	0.15	
SS2.5-13	H	13			25	32.5	37.5						40.9	4.17	2.14	0.22	10.1	1.03	0.18	
SS2.5-14	H	14		25	35	40	51.5						5.25	2.53	0.26	11.9	1.21	0.20		
SS2.5-15	H	15		30	37.5	42.5	57.7						5.89	2.96	0.30	13.9	1.41	0.23		
SS2.5-16	H	16			40	45	64.0						6.52	3.43	0.35	16.0	1.63	0.27		
SS2.5-17	H	17		35	42.5	47.5	70.3						7.17	3.93	0.40	18.3	1.86	0.32		
SS2.5-18	H	18			38	45	50						76.7	7.82	4.47	0.46	20.7	2.11	0.37	
SS2.5-19	H	19		39	47.5	52.5	83.2						8.49	5.05	0.51	23.3	2.38	0.41		
SS2.5-20	H	20			40	50	55						89.8	9.16	5.66	0.58	26.1	2.66	0.45	
SS2.5-21	H	21		42	52.5	57.5	96.4						9.83	6.30	0.64	29.0	2.96	0.50		
SS2.5-22	H	22		15	60	55	60						103	10.5	6.99	0.71	32.1	3.28	0.56	
SS2.5-23	H	23				46	57.5						62.5	110	11.2	7.71	0.79	35.4	3.61	0.61
SS2.5-24	H	24				48	60						65	117	11.9	8.47	0.86	38.8	3.95	0.67
SS2.5-25	H	25				50	62.5						67.5	124	12.6	9.26	0.94	42.3	4.32	0.74
SS2.5-26	H	26				55	65						70	130	13.3	10.1	1.03	45.9	4.68	0.82
SS2.5-27	H	27				60	67.5						72.5	137	14.0	10.9	1.11	49.6	5.06	0.92
SS2.5-28	H	28					70						75	144	14.7	11.7	1.20	53.4	5.45	0.97
SS2.5-29	H	29				62	72.5						77.5	151	15.4	12.6	1.29	57.4	5.86	1.04
SS2.5-30	H	30		65	75		80						159	16.2	13.6	1.39	61.6	6.28	1.13	
SS2.5-32	H	32		70	80	85	173						17.6	15.6	1.59	70.3	7.17	1.30		
SS2.5-34	H	34		70	85	90	187						19.1	17.7	1.80	79.6	8.11	1.42		
SS2.5-35	H	35				87.5	92.5						194	19.8	18.8	1.92	84.4	8.61	1.49	
SS2.5-36	H	36				90	95						201	20.5	20.0	2.04	89.5	9.12	1.56	
SS2.5-38	H	38				95	100						216	22.0	22.4	2.28	99.9	10.2	1.66	
SS2.5-40	H	40				100	105						230	23.5	24.9	2.54	111	11.3	1.81	
SS2.5-42	H	42		70	105	110	245						25.0	27.6	2.82	123	12.5	1.97		
SS2.5-44	H	44				110	115						260	26.5	30.5	3.11	135	13.8	2.14	
SS2.5-45	H	45				112.5	117.5						267	27.2	31.9	3.26	141	14.4	2.22	
SS2.5-46	H	46				115	120						274	28.0	33.5	3.41	148	15.1	2.31	
SS2.5-48	H	48				120	125						289	29.5	36.7	3.74	161	16.4	2.49	
SS2.5-50	H	50				125	130						304	31.0	40.0	4.08	175	17.9	2.68	
SS2.5-52	H	52		130	135		319						32.5	43.5	4.44	190	19.3	2.88		
SS2.5-54	H	54	70	135	334	34.0	47.2	4.81	205	20.9	3.08									
SS2.5-55	H	55		137.5	142.5	341	34.8	49.1	5.01	213	21.7	3.19								
SS2.5-56	H	56	140	145	349	35.6	51.0	5.20	221	22.5	3.29									
SS2.5-58	H	58	70	145	364	37.1	55.0	5.61	237	24.2	3.51									
SS2.5-60	H	60		150	155	379	38.6	59.1	6.03	254	25.9	2.80								
SS2.5-62	H	62			80	155	160	394	40.1	63.4	6.46	272	27.7	3.54						
SS2.5-64	H	64		80	160	165	409	41.7	67.8	6.92	290	29.6	3.76							
SS2.5-65	H	65		80	162.5	167.5	416	42.4	70.1	7.15	299	30.5	3.84							
SS2.5-66	H	66	70	165	424	43.2	72.4	7.39	309	31.5	3.87									
SS2.5-68	H	68		170	175	439	44.7	77.2	7.87	328	33.4	4.13								
SS2.5-70	H	70			175	180	446	45.4	82.1	8.37	348	35.5	4.30							
SS2.5-72	H	72		180	185	459	46.9	87.1	8.89	368	37.6	4.49								
SS2.5-75	H	75		187.5	192.5	492	50.1	95.0	9.69	400	40.8	4.77								
SS2.5-76	H	76	80	190	195	499	50.9	97.7	9.97	411	41.9	4.90								
SS2.5-80	H	80		80	200	205	441	45.0	90.9	9.27	359	36.7	4.42							
SS2.5-90	H	90	30	90	225	230	(202)	505	51.5	117	12.0	460	46.9	5.64						
SS2.5-100	H	100		90	250	255	(227)	569	58.0	147	15.0	573	58.5	6.78						
SS2.5-120	H	120		100	300	305	(277)	696	71.0	218	22.2	840	85.7	9.38						

To order J Series products, please specify: **Catalog No. + J + BORE.** Example: SS2.5-12J12

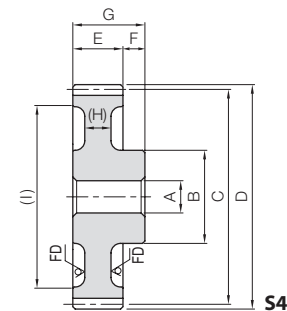
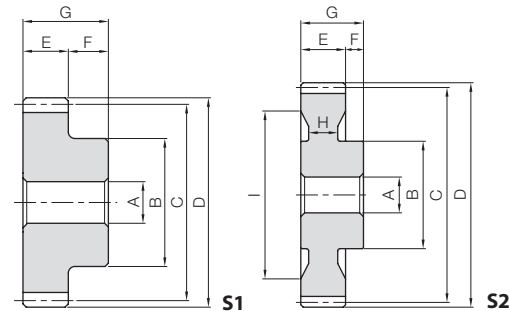
Bore H7		* The product shapes of J Series items are identified by background color.																
Keyway Js9	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40			
Screw size	4×1.8	5×2.3				6×2.8				8×3.3			10×3.3		12×3.3			
Catalog Number	M4					M5				M6			M8					
SS2.5-12 J BORE	* S1T2									To order J Series Hardened Plus products, please specify: Catalog No. + H + J + BORE. Example: SS2.5-14HJ14								
SS2.5-13 J BORE	* S1K																	
SS2.5-14 J BORE	* S1K	S1K																
SS2.5-15 J BORE			* S1K	S1K														
SS2.5-16 J BORE			* S1K	S1K	S1K	S1K												
SS2.5-17 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K										
SS2.5-18 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS2.5-19 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS2.5-20 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS2.5-21 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS2.5-22 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS2.5-23 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS2.5-24 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SS2.5-25 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS2.5-26 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS2.5-27 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2.5-28 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2.5-29 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2.5-30 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS2.5-32 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-34 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-35 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-36 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-38 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-40 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-42 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-44 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-45 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-46 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-48 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-50 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-52 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-54 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-55 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-56 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-58 J BORE								* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS2.5-60 J BORE										* S4K	S4K	S4K	S4K	S4K	S4K			
SS2.5-62 J BORE																		
SS2.5-64 J BORE																		
SS2.5-65 J BORE																		
SS2.5-66 J BORE																		
SS2.5-68 J BORE																		
SS2.5-70 J BORE																		
SS2.5-72 J BORE																		
SS2.5-75 J BORE																		
SS2.5-76 J BORE																		
SS2.5-80 J BORE																		
SS2.5-90 J BORE													* S4K	S4K	S4K			
SS2.5-100 J BORE													* S4K	S4K	S4K			
SS2.5-120 J BORE													* S4K	S4K	S4K			

"*" is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.

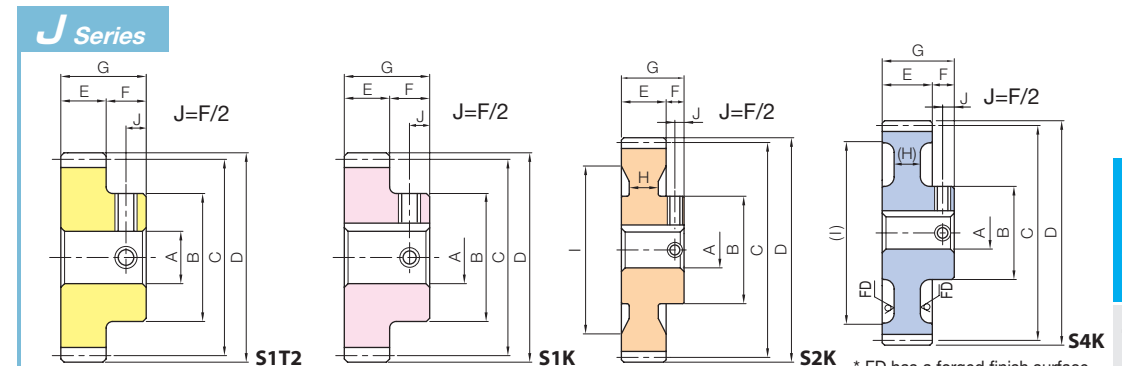


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating
Backlash	0.14 to 0.32

* The precision grade of J Series products is equivalent to the value shown in the table.



* FD has a forged finish surface.



FD has a forged finish surface.

 To order Hardened Plus, please specify **Catalog No. + H.** **Example: SS3-12H**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)	
												Bending strength		Surface durability		Surface durability H			
												N·m	kgf·m	N·m	kgf·m	N·m	kgf·m		
SS3-12	H	12	S1	15	28	36	42	30	15	45	—	—	54.9	5.59	3.12	0.32	14.6	1.49	0.25
SS3-13	H	13			30	39	45						70.7	7.21	3.77	0.38	17.6	1.80	0.30
SS3-14	H	14			32	42	48						88.9	9.07	4.47	0.46	20.8	2.12	0.36
SS3-15	H	15			36	45	51						99.7	10.2	5.23	0.53	24.2	2.47	0.43
SS3-16	H	16			38	48	54						111	11.3	6.05	0.62	28.0	2.85	0.50
SS3-17	H	17			39	51	57						122	12.4	6.93	0.71	31.9	3.26	0.56
SS3-18	H	18			40	54	60						133	13.5	7.87	0.80	36.2	3.69	0.62
SS3-19	H	19			45	57	63						144	14.7	8.88	0.91	40.8	4.16	0.73
SS3-20	H	20			50	60	66						155	15.8	9.95	1.02	45.6	4.65	0.83
SS3-21	H	21			52	63	69						167	17.0	11.1	1.13	50.7	5.17	0.92
SS3-22	H	22			54	66	72						178	18.2	12.3	1.25	56.1	5.72	1.01
SS3-23	H	23			56	69	75						190	19.4	13.6	1.38	61.7	6.29	1.11
SS3-24	H	24			58	72	78						202	20.6	14.9	1.52	67.7	6.90	1.21
SS3-25	H	25			60	75	81						214	21.8	16.3	1.66	73.9	7.53	1.26
SS3-26	H	26			65	78	84						226	23.0	17.7	1.81	80.1	8.16	1.41
SS3-27	H	27	20	20	65	81	87	237	24.2	19.2	1.96	86.5	8.82	1.49					
SS3-28	H	28			70	84	90	250	25.4	20.7	2.11	93.2	9.50	1.65					
SS3-29	H	29			70	87	93	262	26.7	22.3	2.27	100	10.2	1.74					
SS3-30	H	30			75	90	96	274	27.9	24.0	2.44	107	10.9	1.91					
SS3-32	H	32			75	96	102	298	30.4	27.4	2.80	123	12.5	2.11					
SS3-34	H	34			80	102	108	323	32.9	31.2	3.18	139	14.1	2.41					
SS3-35	H	35				105	111	335	34.2	33.1	3.38	147	15.0	2.52					
SS3-36	H	36				108	114	348	35.5	35.2	3.59	156	15.9	2.64					
SS3-38	H	38				114	120	373	38.0	39.4	4.02	174	17.8	2.82					
SS3-40	H	40				120	126	398	40.6	44.0	4.49	193	19.1	3.08					
SS3-42	H	42			80	126	132	423	43.2	48.9	4.98	214	21.8	3.35					
SS3-44	H	44				132	138	449	45.7	54.0	5.50	235	24.0	3.64					
SS3-45	H	45				135	141	461	47.0	56.6	5.78	246	25.1	3.79					
SS3-46	H	46				138	144	474	48.3	59.4	6.05	257	26.2	3.94					
SS3-48	H	48				144	150	500	50.9	65.0	6.63	281	28.6	4.25					
SS3-50	H	50	S4	25	150	156	(10)	(123)	525	53.6	70.9	7.23	305	31.1	3.72				
SS3-52	H	52	S2		156	162	126	551	56.2	77.1	7.86	330	33.7	4.38					
SS3-54	H	54			162	168	132	577	58.8	83.6	8.52	357	36.4	4.61					
SS3-55	H	55			165	171	131	590	60.1	86.9	8.86	370	37.8	4.81					
SS3-56	H	56			168	174	134	602	61.4	90.3	9.21	384	39.2	4.94					
SS3-58	H	58			S4	174	180	144	628	64.1	97.3	9.92	413	42.1	5.10				
SS3-60	H	60	180			186	(10)	(153)	654	66.7	105	10.7	442	45.1	4.60				
SS3-62	H	62	186			192	150	680	69.4	112	11.4	473	48.2	5.76					
SS3-64	H	64	192			198	158	588	60.0	99.9	10.2	396	40.4	5.99					
SS3-65	H	65	195			201	161	599	61.1	103	10.5	409	41.7	6.13					
SS3-66	H	66	S2		198	204	160	610	62.2	107	10.9	422	43.1	6.67					
SS3-68	H	68			204	210	170	632	64.4	114	11.6	450	45.8	6.86					
SS3-70	H	70			210	216	176	654	66.6	121	12.4	478	48.7	7.15					
SS3-72	H	72			216	222	182	675	68.9	129	13.1	507	51.7	7.46					
SS3-75	H	75			225	231	190	708	72.2	141	14.3	552	56.3	7.95					
SS3-76	H	76	S4	90	228	234	190	719	73.3	145	14.8	567	57.9	8.20					
SS3-80	H	80		90	240	246	(10)	(213)	763	77.8	162	16.5	632	64.4	6.92				
SS3-90	H	90		S2	100	270	276	16	240	872	89.0	208	21.2	809	82.4	10.6			
SS3-100	H	100		S4	100	300	306	(10)	(273)	983	100	261	26.6	1010	103	10.8			
SS3-120	H	120			130	360	366	(333)	1200	123	386	39.4	1480	151	15.7				

To order J Series products, please specify: **Catalog No. + J + BORE.** Example: SS3-12J15

Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway Jsb		15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Screw size		5x2.3			6x2.8				8x3.3			10x3.3		12x3.3		14x3.8	
Catalog Number		M4			M5				M6			M8			M10		
SS3-12 J BORE	* S1T2																
SS3-13 J BORE	* S1T2																
SS3-14 J BORE	* S1K	S1K	S1K	S1K													
SS3-15 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K											
SS3-16 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS3-17 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS3-18 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS3-19 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS3-20 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS3-21 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS3-22 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS3-23 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS3-24 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K											
SS3-25 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS3-26 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS3-27 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS3-28 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS3-29 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS3-30 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-32 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-34 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-35 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-36 J BORE							* S1K	S1K		S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-38 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-40 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-42 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-44 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-45 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-46 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-48 J BORE									* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS3-50 J BORE									* S4K	S4K	S4K	S4K	S4K	S4K	S4K	S4K	
SS3-52 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-54 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-55 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-56 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-58 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-60 J BORE									* S4K	S4K	S4K	S4K	S4K	S4K	S4K	S4K	
SS3-62 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-64 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-65 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-66 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-68 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-70 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-72 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-75 J BORE									* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	
SS3-76 J BORE									* S2K	S2K		S2K	S2K	S2K	S2K	S2K	
SS3-80 J BORE											* S4K	S4K	S4K	S4K	S4K	S4K	
SS3-90 J BORE											* S2K	S2K	S2K	S2K	S2K	S2K	
SS3-100 J BORE											* S4K	S4K	S4K	S4K	S4K	S4K	
SS3-120 J BORE											* S4K	S4K	S4K	S4K	S4K	S4K	



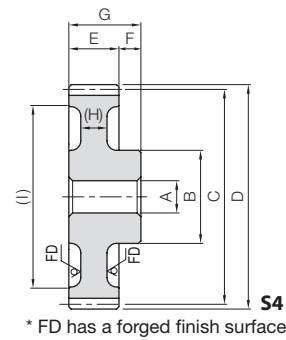
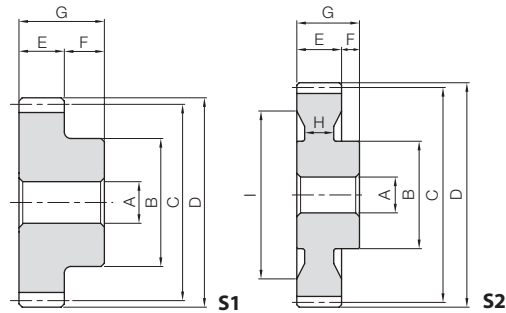
To order J Series Hardened Plus products, please specify: Catalog No. + H + J + BORE.
Example: SS3-14HJ16

"**" is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.



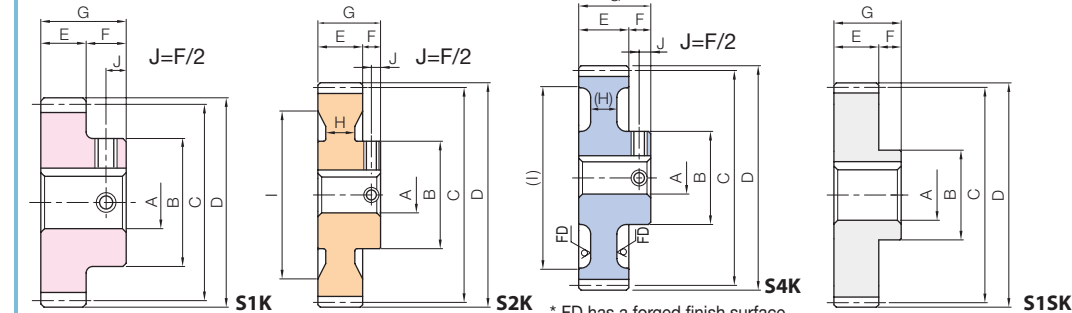
Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated (excludes semi-custom products)
Backlash	0.18 to 0.38

* The precision grade of J Series products is equivalent to the value shown in the table.



* FD has a forged finish surface.

J Series



* FD has a forged finish surface.

To order Hardened Plus, please specify **Catalog No. + H**. Example: **SS4-12H**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)	
												Bending strength		Surface durability		Surface durability H			
												N·m	kgf·m	N·m	kgf·m	N·m	kgf·m		
SS4-12	H	12	S1	AH7	35	48	56	20	60	—	—	130	13.3	7.62	0.78	35.3	3.59	0.57	
SS4-13	H	13			38	52	60					168	17.1	9.22	0.94	42.5	4.33	0.70	
SS4-14	H	14			40	56	64					211	21.5	10.9	1.11	50.1	5.11	0.82	
SS4-15	H	15			45	60	68					236	24.1	12.8	1.30	58.4	5.96	0.99	
SS4-16	H	16			50	64	72					262	26.7	14.7	1.50	67.3	6.87	1.17	
SS4-17	H	17			53	68	76					288	29.4	16.9	1.72	76.9	7.85	1.34	
SS4-18	H	18			55	72	80					314	32.0	19.2	1.96	87.2	8.89	1.50	
SS4-19	H	19			60	76	84					341	34.8	21.7	2.21	98.1	10.0	1.72	
SS4-20	H	20			65	80	88					368	37.5	24.3	2.48	110	11.2	1.95	
SS4-21	H	21			69	84	92					395	40.3	27.1	2.76	122	12.4	2.18	
SS4-22	H	22			73	88	96					423	43.1	30.1	3.06	135	13.8	2.42	
SS4-23	H	23			77	92	100					450	45.9	33.2	3.38	148	15.1	2.67	
SS4-24	H	24		80	96	104	478	48.8	36.4	3.72	163	16.6	2.91						
SS4-25	H	25		84	100	108	506	51.6	39.9	4.07	178	18.1	3.19						
SS4-26	H	26		87	104	112	534	54.5	43.3	4.42	192	19.6	3.45						
SS4-27	H	27		90	108	116	563	57.4	46.9	4.78	208	21.2	3.73						
SS4-28	H	28		95	112	120	591	60.3	50.6	5.16	224	22.8	4.06						
SS4-29	H	29		95	116	124	620	63.2	54.5	5.56	241	24.5	4.28						
SS4-30	H	30		100	120	128	649	66.2	58.7	5.98	258	26.3	4.64						
SS4-32	H	32		100	128	136	707	72.1	67.4	6.87	294	30.0	4.86						
SS4-34	H	34	22		136	144	40					766	78.1	76.7	7.82	333	33.9	5.38	
SS4-35	H	35			140	148						795	81.1	81.6	8.32	353	36.0	5.65	
SS4-36	H	36			144	152						825	84.1	86.7	8.84	374	38.1	5.93	
SS4-38	H	38			152	160						884	90.1	97.3	9.92	418	42.6	6.52	
SS4-40	H	40			160	168						943	96.2	109	11.1	464	47.3	7.08	
SS4-42	H	42	25	100	168	176						1000	102	120	12.3	512	52.2	7.73	
SS4-44	H	44			176	184						1060	108	133	13.6	563	57.4	8.41	
SS4-45	H	45			180	188						1090	112	139	14.2	590	60.1	8.76	
SS4-46	H	46			184	192						1120	115	146	14.9	617	62.9	9.12	
SS4-48	H	48			192	200						987	101	133	13.6	528	53.9	9.12	
SS4-50	H	50	S2	30		200	208	16	56	26	150	158	1040	106	146	14.8	575	58.6	9.60
SS4-52	H	52				208	216					165	1090	111	158	16.1	624	63.7	10.2
SS4-54	H	54				216	224					175	1140	116	172	17.5	676	68.9	10.8
SS4-55	H	55				220	228					178	1160	119	179	18.2	702	71.6	11.1
SS4-56	H	56				224	232					182	1190	121	186	18.9	729	74.3	11.5
SS4-58	H	58			232	240	190		1240	127	200	20.4	785	80.0	12.5				
SS4-60	H	60			240	248	198		1290	132	215	22	842	85.9	13.2				
SS4-62	H	62			248	256	210		1340	137	231	23.6	902	92.0	13.1				
SS4-64	H	64			256	264	214		1390	142	248	25.2	964	98.3	13.4				
SS4-65	H	65			260	268	218		1420	145	256	26.1	996	102	13.7				
SS4-66	H	66	S4		120	264	272	16		(12)	220	1450	148	265	27	1030	105	14.7	
SS4-68	H	68				272	280				225	1500	153	282	28.8	1090	112	15.5	
SS4-70	H	70				280	288				(248)	1550	158	300	30.6	1160	119	13.6	
SS4-80	H	80				320	328				(288)	1810	184	400	40.8	1540	157	16.3	
SS4-90S		90				S1	40				180	360	368	40	16	56	—	—	1910
SS4-100S		100	200	400	408			2150	219	586	59.7	—	—						42.9
SS4-110S		110	220	440	448			2390	244	720	73.4	—	—						52.0
SS4-120S		120	240	480	488			2630	269	869	88.6	—	—						62.0

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

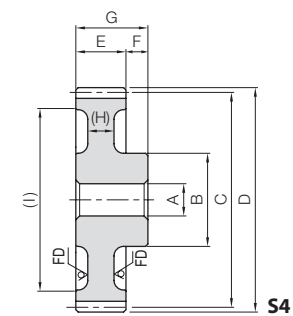
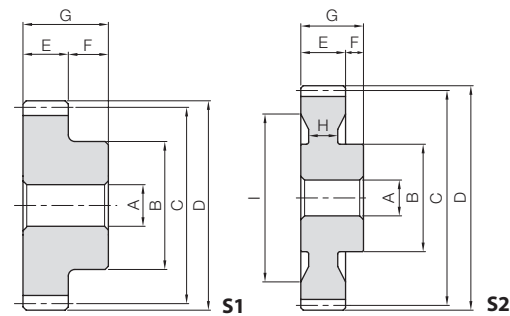
To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **SS4-14J20**

Bore H7		* The product shapes of J Series items are identified by background color.											
Keyway Js9	20	22	25	28	30	32	35	40	45	50	55	60	65
Screw size	6x2.8		8x3.3			10x3.3		12x3.3	14x3.8		16x4.3	18x4.4	
Catalog Number	M5		M6			M8			M10		M12		
SS4-12													
SS4-13													
SS4-14 J BORE	* S1K	S1K											
SS4-15 J BORE	* S1K	S1K	S1K										
SS4-16 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K							
SS4-17 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K							
SS4-18 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS4-19 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SS4-20 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS4-21 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS4-22 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS4-23 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS4-24 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS4-25 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS4-26 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS4-27 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS4-28 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS4-29 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS4-30 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-32 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-34 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-35 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-36 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-38 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-40 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-42 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-44 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-45 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-46 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K
SS4-48 J BORE			* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-50 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-52 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-54 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-55 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-56 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-58 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-60 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-62 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-64 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-65 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-66 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-68 J BORE						* S2K	S2K	S2K	S2K	S2K	S2K	S2K	S2K
SS4-70 J BORE						* S4K	S4K	S4K	S4K	S4K	S4K	S4K	S4K
SS4-80 J BORE						* S4K	S4K	S4K	S4K	S4K	S4K	S4K	S4K
SS4-90SJ BORE								S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS4-100SJ BORE								S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS4-110SJ BORE								S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS4-120SJ BORE								S1SK	S1SK	S1SK	S1SK	S1SK	S1SK

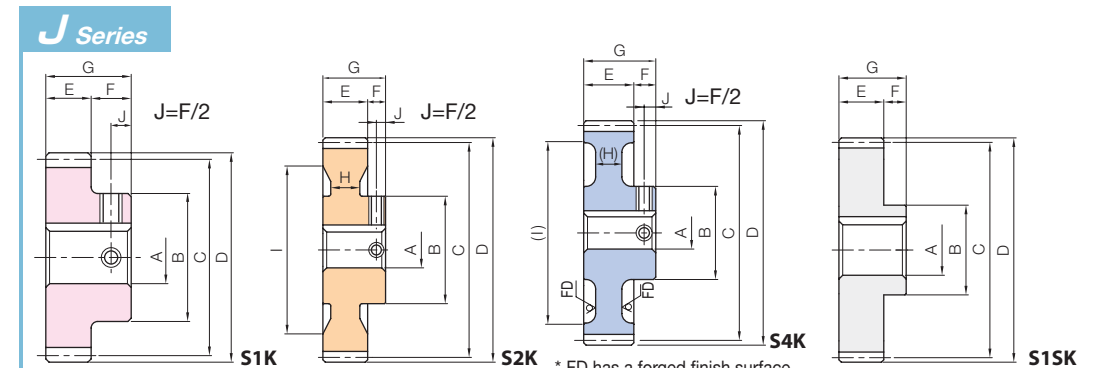


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated (excludes semi-custom products)
Backlash	0.20 to 0.44

* The precision grade of J Series products is equivalent to the value shown in the table.



* FD has a forged finish surface



* FD has a forged finish surface.

 To order Hardened Plus, please specify **Catalog No. + H.** **Example: SS5-12H**

Catalog Number		No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)						
													Bending strength		Surface durability		Surface durability								
													N-m	kgf·m	N-m	kgf·m	N-m	kgf·m							
SS5-12		12	S1	22	46	60	70	50	25	75			254	25.9	15.2	1.55	69.7	7.11	1.21						
SS5-13		13			50	65	75						327	33.4	18.4	1.88	84.0	8.57	1.46						
SS5-14		14			52	70	80						412	42.0	21.8	2.22	99.1	10.1	1.70						
SS5-15		15			60	75	85						462	47.1	25.5	2.60	115	11.8	2.07						
SS5-16		16			65	80	90						512	52.2	29.5	3.01	133	13.6	2.40						
SS5-17		17			68	85	95						562	57.3	33.8	3.45	152	15.5	2.72						
SS5-18		18			70	90	100						614	62.6	38.4	3.92	172	17.6	3.03						
SS5-19		19			76	95	105						666	67.9	43.4	4.42	194	19.8	3.45						
SS5-20		20			82	100	110						718	73.3	48.6	4.96	217	22.1	3.90						
SS5-21		21		90	105	115	772	78.7	54.2	5.53	241	24.5	4.36												
SS5-22		22	S1	25	95	110	120	50			—	—	825	84.1	60.1	6.13	266	27.1	4.83						
SS5-23		23			100	115	125						879	89.7	66.3	6.77	293	29.9	5.33						
SS5-24		24			100	120	130						934	95.2	73.0	7.45	321	32.7	5.69						
SS5-25		25			105	125	135						989	101	80.0	8.16	350	35.7	6.23						
SS5-26		26			110	130	140						1040	106	87.1	8.88	379	38.7	6.79						
SS5-27		27			110	135	145						1100	112	94.4	9.62	410	41.8	7.19						
SS5-28		28			110	140	150						1160	118	102	10.4	441	45.0	7.62						
SS5-29		29			115	145	155						1210	124	110	11.2	474	48.4	8.23						
SS5-30		30			120	150	160						1270	129	118	12.1	508	51.8	8.87						
SS5-32		32		120	160	170	1380	141	136	13.8	580	59.1	9.36												
SS5-34		34	S2	30	120	170	180	50					1500	153	154	15.7	656	66.9	10.4						
SS5-35		35			120	175	185						1550	158	164	16.7	696	71.0	10.9						
SS5-36		36			120	180	190						1610	164	174	17.8	737	75.1	11.5						
SS5-38		38			120	190	200						1730	176	195	19.9	823	83.9	12.6						
SS5-40		40			120	200	210							36	160	1540	157	182	18.5	719	73.3	13.2			
SS5-42		42			120	210	220							36	170	1630	167	202	20.6	796	81.2	14.2			
SS5-44		44			120	220	230							36	175	1730	177	223	22.8	878	89.5	15.4			
SS5-45		45			120	225	235							36	185	1780	182	234	23.9	920	93.8	15.8			
SS5-46		46			120	230	240							30	185	1830	187	246	25.1	963	98.2	16.2			
SS5-48		48	120	240	250		30	200	1930	197	269	27.5	1050	107	17.0										
SS5-50		50	S4	S2	120	250	260	50			(16)	(212)	2030	207	294	30.0	1150	117	15.0						
SS5-52		52	130		260	270	30						220	2130	217	320	32.6	1250	127	19.8					
SS5-54		54	130		270	280	30						230	2220	227	347	35.4	1350	137	20.9					
SS5-55		55	130		275	285	30						235	2270	232	361	36.8	1400	143	21.5					
SS5-56		56	130		280	290	30						240	2320	237	375	38.3	1450	148	22.0					
SS5-58		58	130		290	300	30						240	2420	247	405	41.3	1570	160	23.8					
SS5-60		60	130		300	310	30						250	2520	257	435	44.4	1680	171	25.1					
SS5-62S		62	S1		40	160	310						320	50					2420	247	423	43.1			32.2
SS5-64S		64				160	320						330						2520	257	453	46.2			34.2
SS5-65S		65		160		325	335	2560	261	468	47.7								35.2						
SS5-66S		66		170		330	340	2610	266	484	49.3								36.6						
SS5-68S		68		170		340	350	2700	275	516	52.6								38.7						
SS5-70S		70	S1	40	180	350	360	50	21	71	—	—	2790	285	549	56.0	—	—	41.3						
SS5-80S		80			200	400	410						3260	333	732	74.7					53.8				
SS5-90S		90			230	450	460						3730	380	944	96.3					68.6				
SS5-100S		100			250	500	510						4200	428	1190	121					84.5				
SS5-110S		110			280	550	560						4670	476	1460	149					103				
SS5-120S		120			300	600	610						4780	487	1640	167					122				

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

To order J Series products, please specify: **Catalog No. + J + BORE.** Example: SS5-13J22

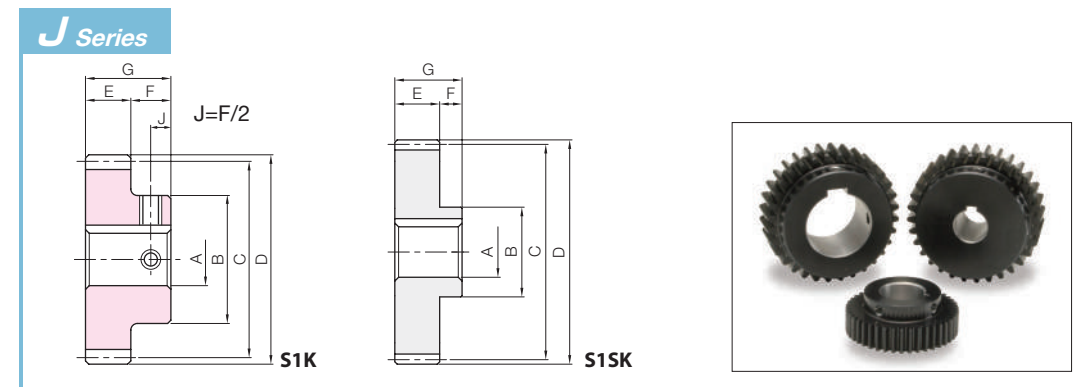
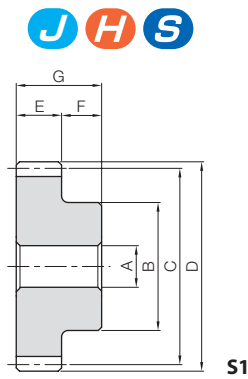
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"*" is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated (excludes semi-custom products)
Backlash	0.22 to 0.48

* The precision grade of J Series products is equivalent to the value shown in the table.



 To order Hardened Plus, please specify **Catalog No. + H.** **Example: SS6-12H**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque						Weight (kg)	
												Bending strength		Surface durability		Surface durability			
												N-m	kgf·m	N-m	kgf·m	N-m	kgf·m		
SS6-12		12	S1	25	55	72	84	60	28	88	—	—	439	44.8	26.8	2.73	122	12.4	2.10
SS6-13		13			58	78	90						566	57.7	32.4	3.31	147	14.9	2.49
SS6-14		14			60	84	96						711	72.5	38.4	3.92	173	17.6	2.89
SS6-15		15			70	90	102						798	81.4	44.9	4.58	201	20.5	3.50
SS6-16		16			75	96	108						884	90.2	52.0	5.30	232	23.7	4.04
SS6-17		17			78	102	114						972	99.1	59.6	6.07	265	27.0	4.56
SS6-18		18		80	108	120	1060		108	67.7			6.90	300	30.6	5.08			
SS6-19		19		90	114	126	1150		117	76.4			7.79	338	34.4	5.87			
SS6-20		20		100	120	132	1240		127	85.9			8.75	377	38.5	6.71			
SS6-21		21		105	126	138	1330		136	95.9			9.78	419	42.7	7.35			
SS6-22		22		28	110	110	132		144	1430			145	107	10.9	463	47.3	8.11	
SS6-23		23				115	138		150	1520			155	118	12.0	510	52.0	8.90	
SS6-24		24				120	144		156	1610			165	129	13.2	559	57.0	9.73	
SS6-25		25				125	150		162	1710			174	142	14.5	610	62.2	10.6	
SS6-26		26				130	156		168	1800			184	154	15.7	661	67.4	11.5	
SS6-27		27				135	162		174	1900			194	167	17.0	713	72.7	12.4	
SS6-28		28		140	168	180	2000		204	181			18.4	768	78.3	13.4			
SS6-30		30		30	150	150	180		192	2190			223	209	21.3	884	90.2	15.4	
SS6-32		32				150	192		204	1990			203	200	20.4	792	80.8	16.4	
SS6-34		34				150	204		216	2150			220	228	23.2	899	91.7	18.1	
SS6-35		35				150	210		222	2240			228	242	24.7	955	97.4	19.0	
SS6-36		36	150			216	228	2320	237	258	26.3	1010	103	20.0					
SS6-38		38	150			228	240	2490	254	289	29.5	1130	116	22.0					
SS6-40		40	40	150	150	240	252	2650	271	323	33.0	1260	129	24.0					
SS6-42		42			150	252	264	2820	288	359	36.6	1400	143	25.9					
SS6-44		44			150	264	276	2990	305	397	40.5	1540	157	28.2					
SS6-45		45			180	270	282	3080	314	416	42.5	1620	165	30.7					
SS6-46		46			180	276	288	3160	322	436	44.5	1690	173	32.0					
SS6-48		48			180	288	300	3330	340	478	48.8	1850	189	34.5					
SS6-50		50	180	300	312	3500	357	522	53.2	2020	206	37.1							
SS6-52S		52	S1	40	180	312	324	60	23	83	—	—	3390	346	515	52.5	—	—	39.8
SS6-54S		54			180	324	336						3550	362	558	56.9			42.6
SS6-55S		55			180	330	342						3630	370	581	59.2			44.1
SS6-56S		56			180	336	348						3710	378	603	61.5			45.5
SS6-58S		58			180	348	360						3870	394	651	66.4			48.6
SS6-60S		60			180	360	372						4030	411	700	71.4			51.7
SS6-62S		62		190	372	384	4190		427	751			76.6	55.5					
SS6-64S		64		190	384	396	4350		443	804			82.0	58.9					
SS6-65S		65		200	390	402	4430		451	832			84.8	61.1					
SS6-66S		66		200	396	408	4510		460	860			87.7	62.9					
SS6-68S		68		200	408	420	4670		476	917			93.5	66.4					
SS6-70S		70		210	420	432	4830		492	976			99.5	70.7					
SS6-80S		80		240	480	492	5630		575	1300			133	92.6					
SS6-90S		90		270	540	552	6440		657	1680			172	117					
SS6-100S		100		300	600	612	6740		687	1970			200	145					

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

To order J Series products, please specify: **Catalog No. + J + BORE.** Example: SS6-12J25

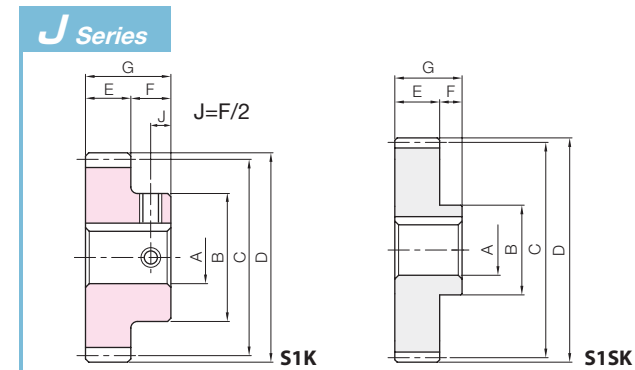
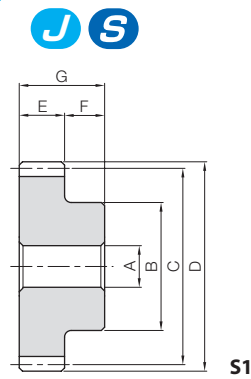
Bore H7		* The product shapes of J Series items are identified by background color.														
Keyway Jsb9		25	28	30	32	35	40	45	50	55	60	65	70	75	80	85
Screw size		8x3.3			10x3.3		12x3.3	14x3.8		16x4.3	18x4.4		20x4.9		22x5.4	
Catalog Number		M6			M8			M10		M12			M16			
SS6-12 J BORE	* S1K															
SS6-13 J BORE	* S1K	S1K	S1K	S1K												
SS6-14 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K										
SS6-15 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SS6-16 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SS6-17 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SS6-18 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SS6-19 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS6-20 J BORE	* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS6-21 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS6-22 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SS6-23 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SS6-24 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SS6-25 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-26 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-27 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-28 J BORE		* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-30 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-32 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-34 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-35 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-36 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-38 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-40 J BORE			* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-42 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-44 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-45 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-46 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-48 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-50 J BORE							* S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SS6-52SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-54SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-55SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-56SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-58SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-60SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-62SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-64SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-65SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-66SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-68SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-70SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-80SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-90SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS6-100SJ BORE							S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	

"*" is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated (excludes semi-custom products)

* The precision grade of J Series products is equivalent to the value shown in the table.

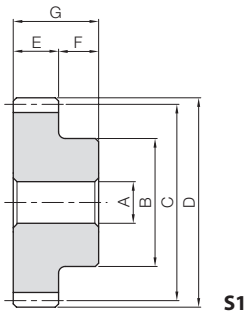


To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore A _{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Web thickness H	Web O.D. I	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)		
												Bending strength	Surface durability	Bending strength	Surface durability				
SS8-12	12	S1	28	75	96	112	75	35	110	—	—	975	62.6	99.5	6.39	0.28~0.58	4.94		
SS8-13	13			80	104	120						1260	75.2	128	7.66		5.85		
SS8-14	14			85	112	128						1580	88.9	161	9.06		6.83		
SS8-15	15			90	120	136						1770	104	181	10.6		7.87		
SS8-16	16			100	128	144						1970	121	200	12.3		9.20		
SS8-17	17		30	105	136	152						2160	139	220	14.1		0.28~0.58	10.4	
SS8-18	18			110	144	160						2360	158	240	16.1			11.7	
SS8-19	19			120	152	168						2560	178	261	18.2			13.3	
SS8-20	20			130	160	176						2760	200	281	20.4			15.0	
SS8-21	21			140	168	184						2960	223	302	22.8			16.7	
SS8-22	22	30	150	176	192	3170	248	323	25.3	0.28~0.58	18.6								
SS8-23	23		155	184	200	3380	273	344	27.9		20.2								
SS8-24	24		160	192	208	2990	250	305	25.5		22.0								
SS8-25	25		170	200	216	3160	273	323	27.8		24.1								
SS8-26	26		170	208	224	3340	297	341	30.3		25.6								
SS8-27	27		170	216	232	3520	322	359	32.8		27.2								
SS8-28	28		180	224	240	3700	348	377	35.5		29.6								
SS8-30	30		180	240	256	4060	404	414	41.2		33.0								
SS8-32S	32		S1	40	200	256	272	75	35		110	—	—	4080	421	416	42.9	0.28~0.58	37.9
SS8-34S	34				210	272	288							4420	479	451	48.9		42.6
SS8-35S	35	210			280	296	4590			510				468	52.0	44.7			
SS8-36S	36	210			288	304	4760			542				486	55.3	46.8			
SS8-38S	38	220			304	320	5100			608				520	62.0	52.1			
SS8-40S	40	220			320	336	5450			679				555	69.3	56.7			
SS8-42S	42	230			336	352	5790			754				591	76.9	62.5			
SS8-44S	44	230			352	368	6140			834				626	85.0	67.6			
SS8-45S	45	230			360	376	6310			875				644	89.2	70.3			
SS8-46S	46	240			368	384	6490			917				662	93.6	74.0			
SS8-48S	48	S1	40	240	384	400	75	35	110	—	—	6840	1010	697	103	0.28~0.58	79.5		
SS8-50S	50			240	400	416						7190	1100	733	112		85.3		
SS8-52S	52			240	416	432						7540	1200	769	122		91.4		
SS8-54S	54			240	432	448						7890	1300	805	132		97.6		
SS8-55S	55			240	440	456						8070	1350	823	138		101		
SS8-56S	56			240	448	464						8240	1400	841	143		104		
SS8-58S	58			240	464	480						8600	1510	877	154		111		
SS8-59S	59			240	472	488						8770	1570	895	160		114		
SS8-60S	60	240	480	496	8950	1630	913	166	118										

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.

[illegible]



S1

Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated (excludes semi-custom products)

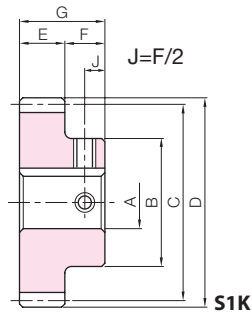
* The precision grade of J Series products is equivalent to the value shown in the table.



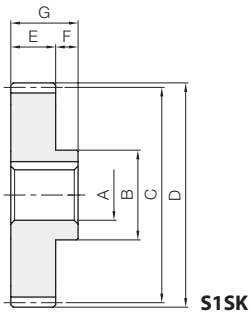
Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque (N·m)		Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A _{H7}	B								Bending strength	Surface durability	Bending strength	Surface durability	
SS10-15	15	S1	30	115	150	170	90	40	130	—	—	3330	203	339	20.7	15.0
SS10-20	20		30	165	200	220						4310	323	440	33.0	28.2
SS10-25	25		40	200	250	270						5930	529	605	54.0	43.3

Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Web thickness	Web O.D.	Allowable torque (N·m)		Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A _{H7}	B								Bending strength	Surface durability	Bending strength	Surface durability	
SS10-26S	26	S1	50	210	260	280	90	40	130	—	—	5790	522	590	53.3	46.4
SS10-27S	27			220	270	290						6100	566	622	57.7	50.4
SS10-28S	28			220	280	300						6400	612	653	62.4	53.4
SS10-29S	29			230	290	310						6720	660	685	67.3	57.7
SS10-30S	30			240	300	320						7030	710	717	72.4	62.1
SS10-32S	32			250	320	340						7660	815	781	83.1	70.2
SS10-34S	34			260	340	360						8290	929	845	94.7	78.8
SS10-35S	35			260	350	370						8610	988	878	101	82.6
SS10-36S	36			270	360	380						8930	1050	910	107	87.9
SS10-38S	38			270	380	400						9570	1180	976	120	96.1
SS10-40S	40			280	400	420						10200	1320	1040	134	106
SS10-42S	42			290	420	440						10900	1460	1110	149	117
SS10-44S	44			290	440	460						11500	1620	1170	165	126
SS10-45S	45			290	450	470						11800	1700	1210	173	131
SS10-46S	46			290	460	480						12200	1780	1240	182	136
SS10-48S	48			300	480	500						12800	1950	1310	199	148
SS10-50S	50			300	500	520						13500	2140	1370	218	159

[Precautions for Semi-custom Products] Please see Pages 38~40 for more details.



J=F/2



S1SK



To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7	* The product shapes of J Series items are identified by background color.																		
Keyway J _{s9}	30	32	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	
Screw size	8×3.3	10×3.3	12×3.3	14×3.8	16×4.3	18×4.4	20×4.9	22×5.4	25×5.4	28×6.4									
Catalog Number	M6	M8		M10		M12		M16				M20							
SS10-15 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K											
SS10-20 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SS10-25 J BORE				S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K

Bore H7	* The product shapes of J Series items are identified by background color.																							
Keyway J _{s9}	50	55	60	65	70	75	80	85	90	95	100	105	110	120	130	140	150	160	170	180	190	200		
Catalog Number	14×3.8	16×4.3	18×4.4		20×4.9		22×5.4		25×5.4		28×6.4		32×7.4		36×8.4		40×9.4		45×10.4					
SS10-26SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK											
SS10-27SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK										
SS10-28SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK									
SS10-29SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK								
SS10-30SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK							
SS10-32SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK						
SS10-34SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK					
SS10-35SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK				
SS10-36SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK			
SS10-38SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK		
SS10-40SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	
SS10-42SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS10-44SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS10-45SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS10-46SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS10-48SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK
SS10-50SJ BORE	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK	S1SK





Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

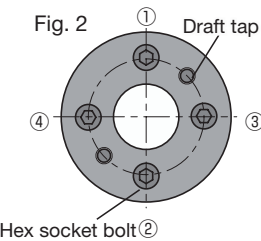
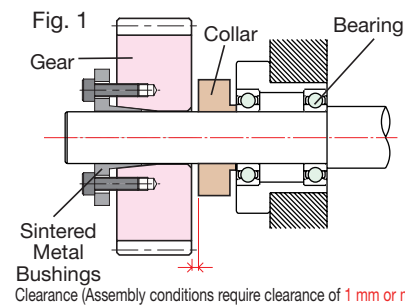
* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.



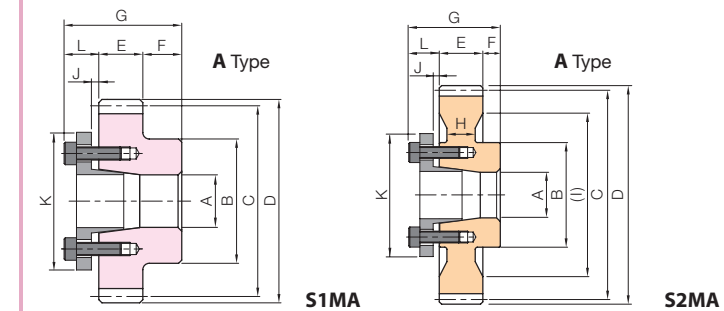
Catalog Number	No. of teeth	Hub dia.		Pitch dia.	Outside dia.	Face width	Hub width	Web thickness	Web O.D.	Allowable torque (N·m)	
		B	C							Bending strength	Surface durability
SS1.5-26	26	32	39	42						28.2	2.06
SS1.5-27	27	34	40.5	43.5						29.7	2.23
SS1.5-28	28	36	42	45						31.2	2.41
SS1.5-29	29	37	43.5	46.5						32.7	2.60
SS1.5-30	30	38	45	48						34.2	2.79
SS1.5-32	32	40	48	51						37.3	3.19
SS1.5-34	34	40	51	54						40.4	3.63
SS1.5-35	35	42	52.5	55.5						41.9	3.85
SS1.5-36	36	45	54	57						43.5	4.09
SS1.5-38	38	45	57	60						46.6	4.58
SS1.5-40	40	45	60	63						49.8	5.10
SS1.5-42	42	45	63	66						52.9	5.40
SS1.5-44	44	45	66	69						56.1	5.72
SS1.5-45	45	45	67.5	70.5						57.7	5.88
SS1.5-46	46	45	69	72						59.3	6.04
SS1.5-48	48	45	72	75						62.4	6.37
SS1.5-50	50	45	75	78						65.7	6.69
SS1.5-52	52	50	78	81						68.9	7.02
SS1.5-54	54	50	81	84						72.1	7.35
SS1.5-55	55	50	82.5	85.5						73.7	7.51
SS1.5-56	56	50	84	87						75.3	7.68
SS1.5-58	58	50	87	90						78.5	8.01
SS1.5-60	60	50	90	93						81.8	8.34
SS1.5-62	62	55	93	96						85.0	8.67
SS1.5-64	64	55	96	99						88.3	9.00
SS1.5-65	65	55	97.5	100.5						89.9	9.17
SS1.5-66	66	55	99	102						91.5	9.33
SS1.5-68	68	55	102	105						94.8	9.66
SS1.5-70	70	55	105	108						98.0	10.0
SS1.5-72	72	55	108	111						101	10.3
SS1.5-75	75	60	112.5	115.5						106	10.8
SS1.5-76	76	60	114	117						108	11.0
SS1.5-80	80	60	120	123						114	11.7
SS1.5-84	84	60	126	129						121	12.3
SS1.5-85	85	60	127.5	130.5						123	12.5
SS1.5-88	88	60	132	135						128	13.0
SS1.5-90	90	60	135	138						131	13.3
SS1.5-95	95	60	142.5	145.5						139	14.2
SS1.5-100	100	60	150	153						147	15.0
SS1.5-120	120	70	180	183						180	18.4
SS1.5-150	150	180	225	228						192	19.6

* For the backlash of each product, please refer to the dimension table of the original product.

Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.

F Series



To order F Series products, please specify: **Catalog Number + F + BORE + A.**

Bore A		* The product shapes of F Series items are identified by background color.															
Catalog Number		10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	
SS1.5-26 F Bore A	S1MA																
SS1.5-27 F Bore A	S1MA																
SS1.5-28 F Bore A	S1MA	S1MA															
SS1.5-29 F Bore A	S1MA	S1MA															
SS1.5-30 F Bore A	S1MA	S1MA															
SS1.5-32 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA												
SS1.5-34 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA										
SS1.5-35 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS1.5-36 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-38 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-40 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-42 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-44 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-45 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-46 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-48 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-50 F Bore A		S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-52 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-54 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-55 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-56 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-58 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-60 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS1.5-62 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-64 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-65 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-66 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-68 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-70 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-72 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS1.5-75 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-76 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-80 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-84 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-85 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-88 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-90 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-95 F Bore A				S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA				
SS1.5-100 F Bore A				S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA				
SS1.5-120 F Bore A				S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS1.5-150 F Bore A										S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
Bore A		10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	
Ref. slipping torque N·m		18	23	37	39	42	45	48	49	97	110	124	141	149	163	173	
Ref. thrust load kN		3.59	3.76	5.21	5.1	5.17	5.23	5.28	5.12	9.68	9.98	9.90	10.0	9.89	10.1	9.88	
Sintered Metal Bushings	L	10		12						14							
	K	29	31	36	37	38	39	40	42	46	47	51	53	56	58	61	
Clearance	J	2		3							39						
Total Length	G	35		37						39							
Hex socket bolt	Qty	3									4						
	Size	M4×12		M4×15						M5×18							
	Tightening torque N·m	3.9									7.8						
Bushing weight (g)		20	22	38	40	41	43	45	49	71	71	81	84	93	97	106	



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

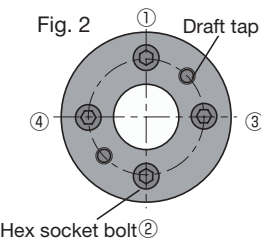
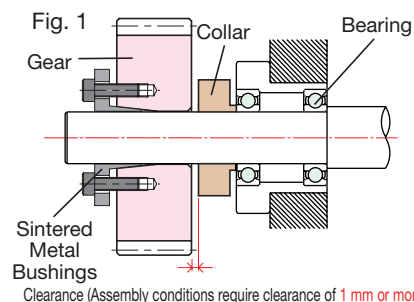
* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.



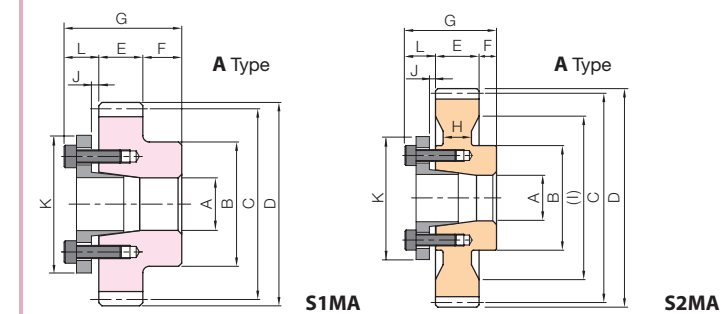
Catalog Number	No. of teeth	Hub dia.		Pitch dia.	Outside dia.	Face width	Hub width	Web thickness	Web O.D.	Allowable torque (N·m)	
		B	C							Bending strength	Surface durability
SS2-23	23	37	46	50						56.3	3.86
SS2-24	24	38	48	52						59.8	4.24
SS2-25	25	40	50	54						63.3	4.64
SS2-26	26	42	52	56						66.8	5.04
SS2-27	27	45	54	58						70.4	5.45
SS2-28	28	45	56	60						73.9	5.89
SS2-29	29	47	58	62						77.5	6.33
SS2-30	30	50	60	64						81.1	6.80
SS2-32	32	50	64	68						88.4	7.78
SS2-34	34	50	68	72						95.7	8.84
SS2-35	35	52	70	74						99.3	9.39
SS2-36	36	55	72	76						103	9.96
SS2-38	38	55	76	80						111	11.2
SS2-40	40	55	80	84						118	12.5
SS2-42	42	55	84	88						125	13.8
SS2-44	44	55	88	92						133	15.2
SS2-45	45	55	90	94						137	16.0
SS2-46	46	55	92	96						140	16.7
SS2-48	48	55	96	100						148	18.3
SS2-50	50	55	100	104						156	19.9
SS2-52	52	55	104	108						163	21.7
SS2-54	54	55	108	112						171	23.4
SS2-55	55	55	110	114						175	24.4
SS2-56	56	55	112	116						179	25.3
SS2-58	58	60	116	120						186	27.3
SS2-60	60	60	120	124						194	29.3
SS2-62	62	60	124	128						202	31.5
SS2-64	64	60	128	132						209	33.7
SS2-65	65	60	130	134						213	34.8
SS2-66	66	60	132	136						217	36.0
SS2-68	68	60	136	140						225	38.4
SS2-70	70	60	140	144						232	40.8
SS2-72	72	60	144	148						240	43.3
SS2-75	75	60	150	154						252	47.3
SS2-76	76	60	152	156						256	48.6
SS2-80	80	60	160	164						271	54.3
SS2-84	84	70	168	172						287	60.2
SS2-85	85	70	170	174						291	61.7
SS2-88	88	70	176	180						302	66.5
SS2-90	90	70	180	184						310	69.7
SS2-95	95	70	190	194						330	78.2
SS2-100	100	70	200	204						291	72.7
SS2-120	120	90	240	244						357	108

* For the backlash of each product, please refer to the dimension table of the original product.

Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.

F Series



To order F Series products, please specify: **Catalog Number + F + BORE + A.**

Bore A		* The product shapes of F Series items are identified by background color.															
Catalog Number		12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	
SS2-23 F Bore A	S1MA																
SS2-24 F Bore A	S1MA																
SS2-25 F Bore A	S1MA	S1MA															
SS2-26 F Bore A	S1MA	S1MA	S1MA	S1MA													
SS2-27 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA											
SS2-28 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA										
SS2-29 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2-30 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA								
SS2-32 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS2-34 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA						
SS2-35 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA						
SS2-36 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA					
SS2-38 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2-40 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-42 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-44 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-45 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-46 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-48 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-50 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-52 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-54 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-55 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-56 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-58 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-60 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-62 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-64 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-65 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-66 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-68 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-70 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-72 F Bore A			S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA
SS2-75 F Bore A																	
SS2-76 F Bore A																	
SS2-80 F Bore A																	
SS2-84 F Bore A																	
SS2-85 F Bore A																	
SS2-88 F Bore A																	
SS2-90 F Bore A																	
SS2-95 F Bore A																	
SS2-100 F Bore A																	
SS2-120 F Bore A																	
Bore A		12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	
Ref. slipping torque N·m		23	37	39	42	45	48	49	97	110	124	141	149	163	173	725	
Ref. thrust load kN		3.76	5.21	5.10	5.17	5.23	5.28	5.12	9.68	9.98	9.90	10.0	9.89	10.1	9.88	12.3	
Sintered Metal Bushings	L	10				12						14				19	
Clearance	J	2								3							
Total Length	G	40			42						44					49	
Hex socket bolt	Qty	3								4						6	
	Size	M4×12				M4×15						M5×18				M6×25	
	Tightening torque N·m					3.9						7.8				13.7	
Bushing weight (g)		22	38	40	41	43	45	49	71	71	81	84	93	97	106	237	



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

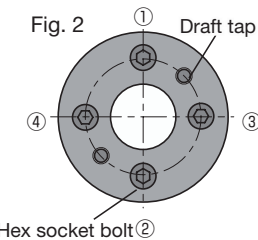
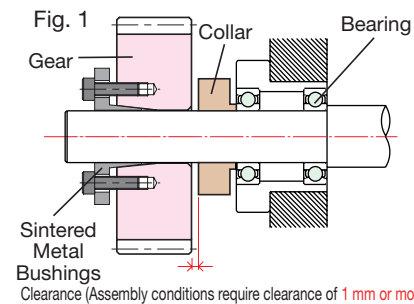
- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.

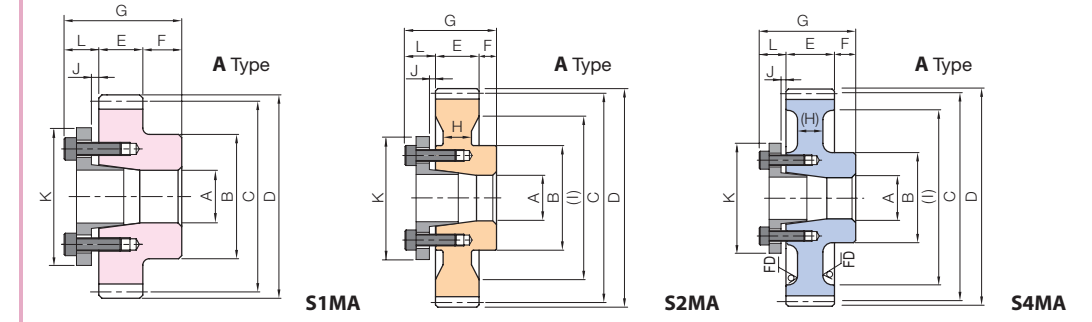
Catalog Number	No. of teeth	Hub dia.		Pitch dia.	Outside dia.	Face width	Hub width	Web thickness	Web O.D.		Allowable torque (N·m)	Surface durability
		B	C						(H)	(I)		
SS2.5-22	22	44	55	60							103	6.99
SS2.5-23	23	46	57.5	62.5							110	7.71
SS2.5-24	24	48	60	65							117	8.47
SS2.5-25	25	50	62.5	67.5							124	9.26
SS2.5-26	26	55	65	70							130	10.1
SS2.5-27	27	60	67.5	72.5							137	10.9
SS2.5-28	28	60	70	75							144	11.7
SS2.5-29	29	62	72.5	77.5							151	12.6
SS2.5-30	30	65	75	80							159	13.6
SS2.5-32	32	70	80	85							173	15.6
SS2.5-34	34	70	85	90							187	17.7
SS2.5-35	35	70	87.5	92.5							194	18.8
SS2.5-36	36	70	90	95							201	20.0
SS2.5-38	38	70	95	100							216	22.4
SS2.5-40	40	70	100	105							230	24.9
SS2.5-42	42	70	105	110							245	27.6
SS2.5-44	44	70	110	115							260	30.5
SS2.5-45	45	70	112.5	117.5							267	31.9
SS2.5-46	46	70	115	120							274	33.5
SS2.5-48	48	70	120	125							289	36.7
SS2.5-50	50	70	125	130							304	40.0
SS2.5-52	52	70	130	135							319	43.5
SS2.5-54	54	70	135	140							334	47.2
SS2.5-55	55	70	137.5	142.5							341	49.1
SS2.5-56	56	70	140	145							349	51.0
SS2.5-58	58	70	145	150							364	55.0
SS2.5-60	60	70	150	155					(10)	(127)	379	59.1
SS2.5-62	62	80	155	160							394	63.4
SS2.5-64	64	80	160	165							409	67.8
SS2.5-65	65	80	162.5	167.5							416	70.1
SS2.5-66	66	80	165	170							424	72.4
SS2.5-68	68	80	170	175							439	77.2
SS2.5-70	70	80	175	180					15		454	82.1
SS2.5-72	72	80	180	185							469	87.1
SS2.5-75	75	80	187.5	192.5							492	95.0
SS2.5-76	76	80	190	195							499	97.7
SS2.5-80	80	80	200	205					(10)	(177)	441	90.9
SS2.5-90	90	90	225	230						(202)	505	117

* For the backlash of each product, please refer to the dimension table of the original product.



Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



To order F Series products, please specify: **Catalog Number + F + BORE + A.**

Bore A		* The product shapes of F Series items are identified by background color.												
Catalog Number		15	16	17	18	19	20	22	25	28	30	32	35	40
SS2.5-22 F Bore A	S1MA	S1MA												
SS2.5-23 F Bore A	S1MA	S1MA	S1MA	S1MA										
SS2.5-24 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2.5-25 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2.5-26 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2.5-27 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2.5-28 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA									
SS2.5-29 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA							
SS2.5-30 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA						
SS2.5-32 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-34 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-35 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-36 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-38 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-40 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-42 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-44 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-45 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-46 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-48 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-50 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-52 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-54 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-55 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-56 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-58 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS2.5-60 F Bore A									S4MA	S4MA	S4MA	S4MA	S4MA	
SS2.5-62 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-64 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-65 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-66 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-68 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-70 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-72 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-75 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-76 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA
SS2.5-80 F Bore A									S4MA	S4MA	S4MA	S4MA	S4MA	S4MA
SS2.5-90 F Bore A											S4MA	S4MA	S4MA	S4MA
Bore A		15	16	17	18	19	20	22	25	28	30	32	35	40
Ref. slipping torque N·m		39	42	45	48	49	97	110	124	141	149	163	173	725
Ref. thrust load kN		5.10	5.17	5.23	5.28	5.12	9.68	9.98	9.90	10.0	9.89	10.1	9.88	12.3
Sintered Metal	L													19
Bushings	K	37	38	39	40	42	46	47	51	53	56	58	61	71
Clearance	J								3					
Total Length	G								49					56
With hex socket Bolt	Qty									4				6
	Size								M4×15					M6×25
	Tightening torque N·m								3.9					13.7
Bushing weight (g)		40	41	43	45	49	71	71	81	84	93	97	106	237



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

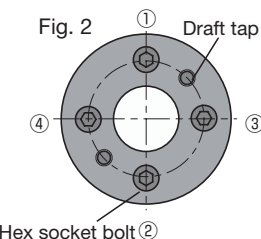
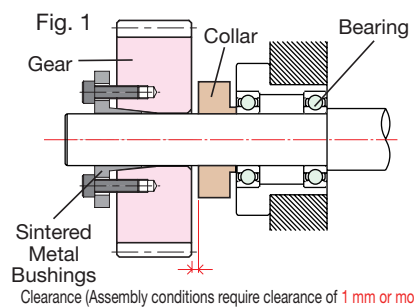
- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.

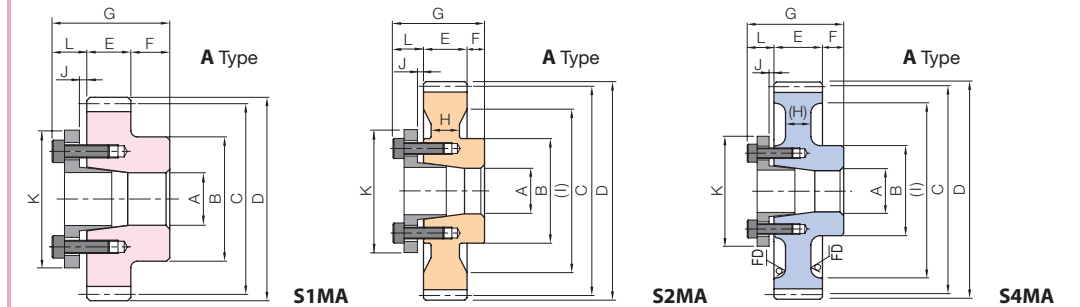
Catalog Number	No. of teeth	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Web thickness	Web O.D.	Allowable torque (N·m)	
		B	C	D	E	F	(H)	(I)		
SS3-19	19	45	57	63					144	8.88
SS3-20	20	50	60	66					155	9.95
SS3-21	21	52	63	69					167	11.1
SS3-22	22	54	66	72					178	12.3
SS3-23	23	56	69	75					190	13.6
SS3-24	24	58	72	78					202	14.9
SS3-25	25	60	75	81					214	16.3
SS3-26	26	65	78	84					226	17.7
SS3-27	27	65	81	87					237	19.2
SS3-28	28	70	84	90					250	20.7
SS3-29	29	70	87	93					262	22.3
SS3-30	30	75	90	96					274	24.0
SS3-32	32	75	96	102					298	27.4
SS3-34	34	80	102	108					323	31.2
SS3-35	35	80	105	111					335	33.1
SS3-36	36	80	108	114					348	35.2
SS3-38	38	80	114	120					373	39.4
SS3-40	40	80	120	126					398	44.0
SS3-42	42	80	126	132					423	48.9
SS3-44	44	80	132	138					449	54.0
SS3-45	45	80	135	141					461	56.6
SS3-46	46	80	138	144					474	59.4
SS3-48	48	80	144	150					500	65.0
SS3-50	50	80	150	156					525	70.9
SS3-52	52	80	156	162					551	77.1
SS3-54	54	80	162	168					577	83.6
SS3-55	55	80	165	171					590	86.9
SS3-56	56	80	168	174					602	90.3
SS3-58	58	80	174	180					628	97.3
SS3-60	60	80	180	186					654	105
SS3-62	62	80	186	192					680	112
SS3-64	64	80	192	198					680	112
SS3-65	65	80	195	201					680	112
SS3-66	66	90	198	204					680	112
SS3-68	68	90	204	210					680	112
SS3-70	70	90	210	216					680	112
SS3-72	72	90	216	222					680	112
SS3-75	75	90	225	231					680	112
SS3-76	76	90	228	234					680	112
SS3-80	80	90	240	246					680	112

* For the backlash of each product, please refer to the dimension table of the original product.



Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



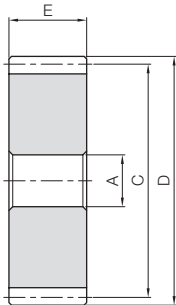
To order F Series products, please specify: **Catalog Number + F + BORE + A.**

Bore A		* The product shapes of F Series items are identified by background color.													
Catalog Number		15	16	17	18	19	20	22	25	28	30	32	35	40	
SS3-19 F Bore A	S1MA														
SS3-20 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA										
SS3-21 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS3-22 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS3-23 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS3-24 F Bore A	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA									
SS3-25 F Bore A							S1MA	S1MA							
SS3-26 F Bore A							S1MA	S1MA	S1MA						
SS3-27 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA				
SS3-28 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA		
SS3-29 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA		
SS3-30 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA		
SS3-32 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA		
SS3-34 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-35 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-36 F Bore A							S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-38 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-40 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-42 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-44 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-45 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-46 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-48 F Bore A									S1MA	S1MA	S1MA	S1MA	S1MA	S1MA	
SS3-50 F Bore A									S4MA	S4MA	S4MA	S4MA	S4MA	S4MA	
SS3-52 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-54 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-55 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-56 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-58 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-60 F Bore A									S4MA	S4MA	S4MA	S4MA	S4MA	S4MA	
SS3-62 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-64 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-65 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-66 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-68 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-70 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-72 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-75 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-76 F Bore A									S2MA	S2MA	S2MA	S2MA	S2MA	S2MA	
SS3-80 F Bore A											S4MA	S4MA	S4MA	S4MA	
Bore A		15	16	17	18	19	20	22	25	28	30	32	35	40	
Ref. slipping torque N·m		39	42	45	48	49	97	110	124	141	149	163	173	725	
Ref. thrust load kN		5.10	5.17	5.23	5.28	5.12	9.68	9.98	9.90	10.0	9.89	10.1	9.88	12.3	
Sintered Metal Bushings	L	12					14					19			
	K	37	38	39	40	42	46	47	51	53	56	58	61	71	
Clearance	J	3													
Total Length	G	57					59					64			
With hex socket Bolt	Qty	4													6
	Size	M4×15					M5×18					M6×25			
	Tightening torque N·m	3.9					7.8					13.7			
Bushing weight (g)		40	41	43	45	49	71	71	81	84	93	97	106	237	



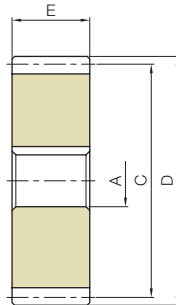
Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

* The precision grade of J Series products is equivalent to the value shown in the table.



S5

J Series



S5K



To order Hardened Plus, please specify **Catalog No. + H**. Example: **SSA1-20H**

Catalog Number		Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque						Backlash (mm)	Weight (kg)
									Bending strength		Surface durability		Surface durability 			
					A _{H7}	C	D	E	N·m	kgf·m	N·m	kgf·m	N·m	kgf·m		
SSA1-20		m1	20	S5	8	20	22	10	5.75	0.59	0.33	0.033	1.59	0.16	0.08~0.18	0.021
SSA1-24			24			26	7.47		0.76	0.49	0.050	2.36	0.24	0.032		
SSA1-25			25			27	7.91		0.81	0.54	0.055	2.57	0.26	0.035		
SSA1-28			28			30	9.24		0.94	0.68	0.070	3.25	0.33	0.044		
SSA1-30			30			32	10.1		1.03	0.79	0.081	3.74	0.38	0.052		
SSA1-32			32			34	11.1		1.13	0.90	0.092	4.27	0.44	0.059		
SSA1-35			35		37	12.4	1.27	1.09	0.11	5.13	0.52	0.072				
SSA1-36			36		38	12.9	1.31	1.16	0.12	5.44	0.55	0.076				
SSA1-40			40		42	14.7	1.50	1.45	0.15	6.76	0.69	0.095				
SSA1-45			45		47	17.1	1.74	1.86	0.19	8.62	0.88	0.12				
SSA1-48			48		50	18.5	1.89	2.13	0.22	9.84	1.00	0.14				
SSA1-50			50		52	19.5	1.98	2.32	0.24	10.7	1.09	0.15				
SSA1-55		55	57	21.8	2.23	2.83	0.29	13.0	1.33	0.18						
SSA1-56		56	58	22.3	2.28	2.94	0.30	13.5	1.38	0.19						
SSA1-60		60	62	24.2	2.47	3.40	0.35	15.6	1.59	0.22						
SSA1-70		70	72	29.1	2.96	4.70	0.48	21.4	2.18	0.30						
SSA1-80		80	82	33.9	3.46	6.23	0.63	28.1	2.87	0.39						
SSA1-100		100	102	43.7	4.45	9.97	1.02	44.4	4.53	0.61						
SSA1-120		120	122	53.5	5.45	14.7	1.50	64.4	6.57	0.88						
SSA1.5-20		m1.5	20	S5	10	30	33	15	19.4	1.98	1.15	0.12	5.47	0.56	0.10~0.22	0.074
SSA1.5-24			24			36	25.2		2.57	1.73	0.18	8.12	0.83	0.11		
SSA1.5-25			25			37.5	40.5		26.7	2.72	1.90	0.19	8.87	0.90		0.12
SSA1.5-28			28			42	45		31.2	3.18	2.41	0.25	11.2	1.14		0.15
SSA1.5-30			30			45	48		34.2	3.49	2.79	0.28	12.9	1.32		0.18
SSA1.5-32			32			48	51		37.3	3.80	3.19	0.33	14.8	1.51		0.20
SSA1.5-35			35		52.5	55.5	41.9	4.28	3.85	0.39	17.8	1.81	0.25			
SSA1.5-36			36		54	57	43.5	4.43	4.09	0.42	18.8	1.92	0.26			
SSA1.5-40			40		60	63	49.8	5.07	5.10	0.52	23.4	2.38	0.31			
SSA1.5-45			45		67.5	70.5	57.7	5.88	6.53	0.67	29.8	3.03	0.40			
SSA1.5-48			48		72	75	62.4	6.37	7.47	0.76	34.0	3.46	0.46			
SSA1.5-50			50		75	78	65.7	6.69	8.15	0.83	36.9	3.77	0.50			
SSA1.5-55		55	82.5	85.5	73.7	7.51	9.96	1.02	44.9	4.58	0.61					
SSA1.5-56		56	84	87	75.3	7.68	10.4	1.06	46.6	4.75	0.63					
SSA1.5-60		60	90	93	81.8	8.34	12.0	1.22	53.7	5.47	0.73					
SSA1.5-70		70	105	108	98.0	10.0	16.6	1.69	73.6	7.50	1.00					
SSA1.5-80		80	120	123	114	11.7	22.0	2.24	96.7	9.86	1.31					
SSA1.5-100		100	150	153	147	15.0	35.5	3.62	152	15.5	2.06					

To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **SSA1-20J8**

Bore H7		* The product shapes of J Series items are identified by background color.																			
Keyway J9	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Screw size	3x1.4	4x1.8	5x2.3					6x2.8				8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number	—																				
SSA1-20 J BORE	* S5K																				
SSA1-24 J BORE	* S5K	S5K																			
SSA1-25 J BORE	* S5K	S5K																			
SSA1-28 J BORE	* S5K	S5K	S5K																		
SSA1-30 J BORE	* S5K	S5K	S5K																		
SSA1-32 J BORE	* S5K	S5K	S5K	S5K																	
SSA1-35 J BORE	* S5K	S5K	S5K	S5K	S5K	S5K															
SSA1-36 J BORE	* S5K	S5K	S5K	S5K	S5K	S5K	S5K														
SSA1-40 J BORE	* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K													
SSA1-45 J BORE	* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K											
SSA1-48 J BORE	* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSA1-50 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSA1-55 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSA1-56 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSA1-60 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSA1-70 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSA1-80 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSA1-100 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSA1-120 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSA1.5-20 J BORE		* S5K	S5K																		
SSA1.5-24 J BORE		* S5K	S5K	S5K	S5K	S5K															
SSA1.5-25 J BORE		* S5K	S5K	S5K	S5K	S5K															
SSA1.5-28 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K												
SSA1.5-30 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K											
SSA1.5-32 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSA1.5-35 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSA1.5-36 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSA1.5-40 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSA1.5-45 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSA1.5-48 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K						
SSA1.5-50 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSA1.5-55 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSA1.5-56 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSA1.5-60 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSA1.5-70 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSA1.5-80 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSA1.5-100 J BORE					* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				

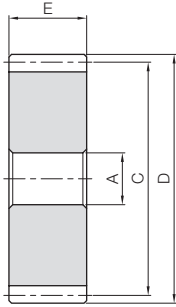
To order J Series Hardened Plus products, please specify: Catalog No. + H + J + BORE.
Example: **SSA1-24HJ10**

*** is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.

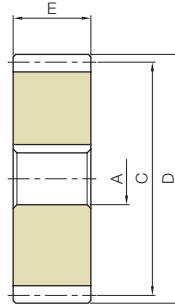


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

* The precision grade of J Series products is equivalent to the value shown in the table.



S5



S5K



To order Hardened Plus, please specify **Catalog No. + H**. Example: **SSA2-15H**

Catalog Number		Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque						Backlash (mm)	Weight (kg)	
									Bending strength		Surface durability		Surface durability 				
									A _{H7}	C	D	E	N·m	kgf·m			N·m
SSA2-15		m2	15	S5	10	30	34	20	29.6	3.01	1.48	0.15	7.01	0.71	0.12~0.26	0.099	
SSA2-18			18			36	40		39.3	4.01	2.23	0.23	10.5	1.07		0.15	
SSA2-20			20			40	44		46.0	4.69	2.83	0.29	13.2	1.34		0.18	
SSA2-24			24			12	48		52	59.8	6.09	4.24	0.43	19.6		2.00	0.27
SSA2-25			25				50		54	63.3	6.45	4.64	0.47	21.4		2.18	0.29
SSA2-28			28	15	56	60	73.9	7.54	5.89	0.60	27.0	2.76	0.36				
SSA2-30			30		60	64	81.1	8.27	6.80	0.69	31.2	3.18	0.42				
SSA2-32			32		64	68	88.4	9.01	7.78	0.79	35.6	3.63	0.48				
SSA2-35			35		70	74	99.3	10.1	9.39	0.96	42.8	4.36	0.58				
SSA2-36			36		72	76	103	10.5	9.96	1.02	45.3	4.62	0.61				
SSA2-40			40	18	80	84	118	12.0	12.5	1.27	56.2	5.73	0.75				
SSA2-45			45		90	94	137	13.9	16.0	1.63	71.6	7.30	0.96				
SSA2-48			48		96	100	148	15.1	18.3	1.87	81.7	8.33	1.10				
SSA2-50			50		100	104	156	15.9	19.9	2.03	88.8	9.05	1.19				
SSA2-55			55		110	114	175	17.8	24.4	2.48	108	11.0	1.45				
SSA2-56			56	20	112	116	179	18.2	25.3	2.58	112	11.4	1.51				
SSA2-60			60		120	124	194	19.8	29.3	2.99	129	13.1	1.74				
SSA2-70			70		140	144	232	23.7	40.8	4.16	177	18.0	2.38				
SSA2-80			80		160	164	271	27.7	54.3	5.53	232	23.6	3.12				
SSA2-100			100		200	204	291	29.7	72.7	7.42	288	29.3	4.89				
SSA2.5-15		m2.5	15	S5	12	37.5	42.5	25	57.7	5.89	2.96	0.30	13.9	1.41	0.14~0.28	0.19	
SSA2.5-18			18			45	50		76.7	7.82	4.47	0.46	20.7	2.11		0.29	
SSA2.5-20			20			50	55		89.8	9.16	5.66	0.58	26.1	2.66		0.35	
SSA2.5-24			24			15	60		65	117	11.9	8.47	0.86	38.8		3.95	0.52
SSA2.5-25			25				62.5		67.5	124	12.6	9.26	0.94	42.3		4.32	0.57
SSA2.5-28			28	18	70	75	144	14.7	11.7	1.20	53.4	5.45	0.71				
SSA2.5-30			30		75	80	159	16.2	13.6	1.39	61.6	6.28	0.82				
SSA2.5-32			32		80	85	173	17.6	15.6	1.59	70.3	7.17	0.94				
SSA2.5-35			35		87.5	92.5	194	19.8	18.8	1.92	84.4	8.61	1.13				
SSA2.5-36			36		90	95	201	20.5	20.0	2.04	89.5	9.12	1.20				
SSA2.5-40			40	22	100	105	230	23.5	24.9	2.54	111	11.3	1.47				
SSA2.5-45			45		112.5	117.5	267	27.2	31.9	3.26	141	14.4	1.88				
SSA2.5-48			48		120	125	289	29.5	36.7	3.74	161	16.4	2.14				
SSA2.5-50			50		125	130	304	31.0	40.0	4.08	175	17.9	2.33				
SSA2.5-55			55		137.5	142.5	341	34.8	49.1	5.01	213	21.7	2.84				
SSA2.5-56			56	20	140	145	349	35.6	51.0	5.20	221	22.5	2.95				
SSA2.5-60			60		150	155	379	38.6	59.1	6.03	254	25.9	3.39				
SSA2.5-70			70		175	180	454	46.3	82.1	8.37	348	35.5	4.65				
SSA2.5-80			80		200	205	441	45.0	90.9	9.27	359	36.7	6.09				

To order J Series products, please specify: **Catalog No. + J + BORE**. Example: **SSA2-15J10**

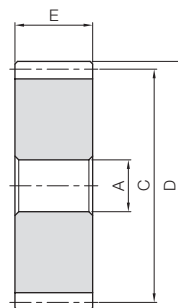
Bore H7	* The product shapes of J Series items are identified by background color.																			
	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Keyway Js9	4x1.8	5x2.3	6x2.8	8x3.3	10x3.3	12x3.3	14x3.8													
Screw size	4x1.8	5x2.3	6x2.8	8x3.3	10x3.3	12x3.3	14x3.8													
Catalog Number	—																			
SSA2-15 J BORE	* S5K	S5K																		
SSA2-18 J BORE	* S5K	S5K	S5K	S5K																
SSA2-20 J BORE		* S5K	S5K	S5K	S5K	S5K														
SSA2-24 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K												
SSA2-25 J BORE		* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K											
SSA2-28 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K									
SSA2-30 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K								
SSA2-32 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K							
SSA2-35 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K						
SSA2-36 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSA2-40 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSA2-45 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSA2-48 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSA2-50 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SSA2-55 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2-56 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2-60 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2-70 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2-80 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2-100 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-15J BORE		* S5K	S5K	S5K																
SSA2.5-18J BORE		* S5K	S5K	S5K	S5K	S5K	S5K													
SSA2.5-20 J BORE				* S5K	S5K	S5K	S5K	S5K												
SSA2.5-24 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K											
SSA2.5-25 J BORE				* S5K	S5K	S5K	S5K	S5K	S5K	S5K										
SSA2.5-28 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K					
SSA2.5-30 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SSA2.5-32 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SSA2.5-35 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SSA2.5-36 J BORE							* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SSA2.5-40 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-45 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-48 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-50 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-55 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-56 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-60 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-70 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
SSA2.5-80 J BORE										* S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K

*** is a product with the original bore diameter, so Hardened Plus is not available. See Page 22 for more details on Hardened Plus.

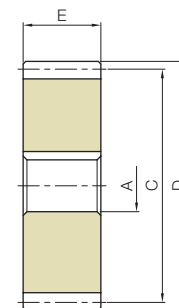


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

* The precision grade of J Series products is equivalent to the value shown in the table.



S5



S5K



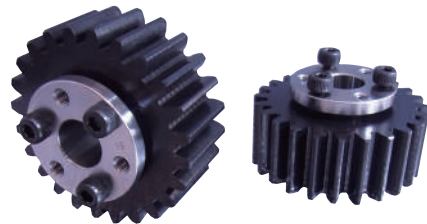
 To order Hardened Plus, please specify **Catalog No. + H.**

Example: SSA3-15H

Catalog Number		Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque						Backlash (mm)	Weight (kg)
					A _{H7}	C	D	E	Bending strength		Surface durability		Surface durability 			
									N·m	kgf·m	N·m	kgf·m	N·m	kgf·m		
SSA3-15		m3	15	S5	12	45	51	30	99.7	10.2	5.22	0.53	24.2	2.47	0.14~0.32	0.35
SSA3-18			18			54	60		133	13.5	7.87	0.80	36.2	3.69		0.51
SSA3-20			20		60	66	155		15.8	9.95	1.02	45.6	4.65	0.62		
SSA3-24			24		72	78	202		20.6	14.9	1.52	67.7	6.90	0.92		
SSA3-25			25	75	81	214	21.8	16.3	1.66	73.9	7.53	1.00				
SSA3-28			28	20	20	84	90	250	25.4	20.7	2.11	93.2	9.50	1.23		
SSA3-30			30			90	96	274	27.9	24.0	2.44	107	10.9	1.4		
SSA3-32			32			96	102	298	30.4	27.4	2.80	123	12.5	1.63		
SSA3-35			35			105	111	335	34.2	33.1	3.38	147	15.0	1.97		
SSA3-36			36	108	114	348	35.5	35.2	3.59	156	15.9	2.08				
SSA3-40			40	25	25	120	126	398	40.6	44.0	4.49	193	19.1	2.55		
SSA3-45			45			135	141	461	47.0	56.6	5.78	246	25.1	3.26		
SSA3-48			48			144	150	500	50.9	65.0	6.63	281	28.6	3.72		
SSA3-50			50			150	156	525	53.6	70.9	7.23	305	31.1	4.05		
SSA3-55			55	165	171	590	60.1	86.9	8.86	370	37.8	4.92				
SSA3-56			56	25	25	168	174	602	61.4	90.3	9.21	384	39.2	5.10		
SSA3-60		60	180			186	654	66.7	105	10.7	442	45.1	5.88			
SSA3-70		70	210			216	654	66.6	121	12.4	478	48.7	8.04			
SSA3-80		80	240			246	763	77.8	162	16.5	632	64.4	10.5			
SSA4-15		m4	15	S5	20	60	68	40	236	24.1	12.8	1.30	58.4	5.96	0.18~0.38	0.79
SSA4-18			18			72	80		314	32.0	19.2	1.96	87.2	8.89		1.18
SSA4-20			20			80	88		368	37.5	24.3	2.48	110	11.2		1.48
SSA4-24			24			96	104		478	48.8	36.4	3.72	163	16.6		2.17
SSA4-25			25	100	108	506	51.6	39.9	4.07	178	18.1	2.37				
SSA4-28			28	25	25	112	120	591	60.3	50.6	5.16	224	22.8	2.94		
SSA4-30			30			120	128	649	66.2	58.7	5.98	258	26.3	3.40		
SSA4-32			32			128	136	707	72.1	67.4	6.87	294	30.0	3.89		
SSA4-35			35			140	148	795	81.1	81.6	8.32	353	36.0	4.68		
SSA4-36			36	144	152	825	84.1	86.7	8.84	374	38.1	4.96				
SSA4-40			40	30	30	160	168	943	96.2	109	11.1	464	47.3	6.09		
SSA4-45			45			180	188	1090	112	139	14.2	590	60.1	7.77		
SSA4-48			48			192	200	987	101	133	13.6	528	53.9	8.87		
SSA4-50			50			200	208	1040	106	146	14.8	575	58.6	9.64		
SSA4-55			55	220	228	1160	119	179	18.2	702	71.6	11.7				
SSA4-56			56	25	25	224	232	1190	121	186	18.9	729	74.3	12.2		
SSA4-60		60	240			248	1290	132	215	22.0	842	85.9	14.0			
SSA5-15		m5	15	S5	20	75	85	50	462	47.1	25.5	2.60	115	11.8	0.20~0.44	1.61
SSA5-18			18			90	100		614	62.6	38.4	3.92	172	17.6		2.37
SSA5-20			20		22	100	110		718	73.3	48.6	4.96	217	22.1		2.93
SSA5-24			24			120	130		934	95.2	73.0	7.45	321	32.7		4.29
SSA5-25			25	125	135	989	101	80.0	8.16	350	35.7	4.67				
SSA5-28			28	25	25	140	150	1160	118	102	10.4	441	45.0	5.85		
SSA5-30			30			150	160	1270	129	118	12.1	508	51.8	6.74		
SSA5-32			32			160	170	1380	141	136	13.8	580	59.1	7.70		
SSA5-35			35			175	185	1550	158	164	16.7	696	71.0	9.25		
SSA5-36			36	180	190	1610	164	174	17.8	737	75.1	9.80				
SSA5-40			40	30	30	200	210	1540	157	182	18.5	719	73.3	12.1		
SSA5-45			45			225	235	1780	182	234	23.9	920	93.8	15.3		
SSA5-48			48			240	250	1930	197	269	27.5	1050	107	17.5		
SSA5-50			50			250	260	2030	207	294	30.0	1150	117	19.0		

To order J Series products, please specify: **Catalog No. + J + BORE.** Example: SSA3-15J12

[illegible]



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

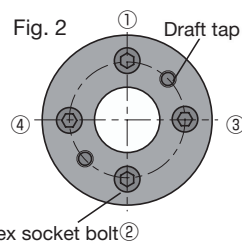
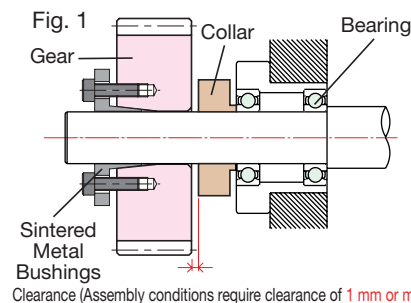
* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.

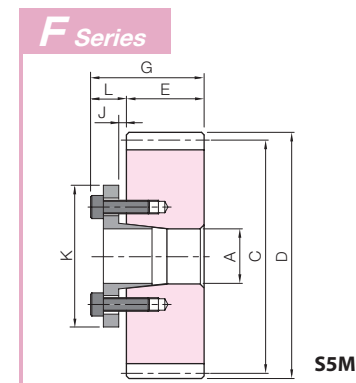


Catalog Number	Module	No. of teeth	Pitch dia.		Outside dia.	Face width	Allowable torque (N·m)	
			C	D		E	Bending strength	Surface durability
SSA2-24	m2	24	48	52	20	118	59.8	4.24
SSA2-25		25	50	54			63.3	4.64
SSA2-28		28	56	60			73.9	5.89
SSA2-30		30	60	64			81.1	6.80
SSA2-32		32	64	68			88.4	7.78
SSA2-35		35	70	74			99.3	9.39
SSA2-36		36	72	76			103	9.96
SSA2-40		40	80	84			118	12.5
SSA2-45		45	90	94			137	16.0
SSA2-48		48	96	100			148	18.3
SSA2-50	m2.5	50	100	104	25	230	156	19.9
SSA2-55		55	110	114			175	24.4
SSA2-56		56	112	116			179	25.3
SSA2-60		60	120	124			194	29.3
SSA2-70		70	140	144			232	40.8
SSA2-80		80	160	164			271	54.3
SSA2-100		100	200	204			291	72.7
SSA2.5-24		24	60	65			117	8.47
SSA2.5-25		25	62.5	67.5			124	9.26
SSA2.5-28		28	70	75			144	11.7
SSA2.5-30	m2.5	30	75	80	25	267	159	13.6
SSA2.5-32		32	80	85			173	15.6
SSA2.5-35		35	87.5	92.5			194	18.8
SSA2.5-36		36	90	95			201	20.0
SSA2.5-40		40	100	105			230	24.9
SSA2.5-45		45	112.5	117.5			267	31.9
SSA2.5-48		48	120	125			289	36.7
SSA2.5-50		50	125	130			304	40.0
SSA2.5-55		55	137.5	142.5			341	49.1
SSA2.5-56		56	140	145			349	51.0
SSA2.5-60	m2.5	60	150	155	25	441	379	59.1
SSA2.5-70		70	175	180			454	82.1
SSA2.5-80		80	200	205			441	90.9

* For the backlash of each product, please refer to the dimension table of the original product.

Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



To order F Series products, please specify: **Catalog Number + F + BORE.**

Bore A		* The product shapes of F Series items are identified by background color.													
Catalog Number		12	14	15	16	17	18	19	20	22	25	28	30	32	35
SSA2-24 F Bore	S5M														
SSA2-25 F Bore	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M							
SSA2-28 F Bore			S5M	S5M	S5M	S5M	S5M	S5M							
SSA2-30 F Bore			S5M	S5M	S5M	S5M	S5M	S5M							
SSA2-32 F Bore			S5M	S5M	S5M	S5M	S5M	S5M							
SSA2-35 F Bore			S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M				
SSA2-36 F Bore			S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M			
SSA2-40 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-45 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-48 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-50 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-55 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-56 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-60 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-70 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-80 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2-100 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-24 F Bore			S5M	S5M	S5M	S5M	S5M	S5M							
SSA2.5-25 F Bore			S5M	S5M	S5M	S5M	S5M	S5M							
SSA2.5-28 F Bore							S5M	S5M							
SSA2.5-30 F Bore							S5M	S5M	S5M	S5M	S5M				
SSA2.5-32 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-35 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-36 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-40 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-45 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-48 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-50 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-55 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-56 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-60 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-70 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
SSA2.5-80 F Bore										S5M	S5M	S5M	S5M	S5M	S5M
Bore A		12	14	15	16	17	18	19	20	22	25	28	30	32	35
Ref. slipping torque N·m		23	37	39	42	45	48	49	97	110	124	141	149	163	173
Ref. thrust load kN		3.76	5.21	5.1	5.17	5.23	5.28	5.12	9.68	9.98	9.9	10	9.89	10.1	9.88
Sintered Metal Bushings	L	10				12						14			
	K	31	36	37	38	39	40	42	46	47	51	53	56	58	61
Clearance	J	2							3						
Total Length	G	m2	30			32						34			
	m2.5	35				37						39			
Hex socket bolt	Qty	3							4						
	Size	M4×12				M4×15						M5×18			
	Tightening torque N·m					3.9						7.8			
Bushing weight (g)		22	38	40	41	43	45	49	71	71	81	84	93	97	106



Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coated except for portions given secondary operation

* The precision grade of F Series products is equivalent to the value shown in the table.
* Bushing material: S45C, screw material: SCM435

Features of F Series

- No rattling of shaft and gear when fastening
- Freely positionable mounting for easy meshing of teeth
- Easily mounted and removed for repeated use
- The bushing slips when overloaded to reduce damage to the gears.

Mounting Method and Precautions

- ① Shaft diameter recommended tolerance is h7. The limit is h8, but we recommend h6 when minimizing runout. Use 1.6a as reference for the surface roughness of the shaft diameter.
- ② Wipe away any debris, dirt or oil on the shaft surface and hole of the fastened section with thinner or the like, and lightly apply hydraulic oil #68. Do not apply molybdenum-based oil or oil with additives, as this may cause reduced fastening torque or slippage.
- ③ Pass completely through the shaft while pressing the bushing flange against the gear before tightening. Removal will not be possible, so be sure to leave a clearance of 1mm or more on the gear rear surface side. (Fig.1)
- ④ Use a torque wrench to fasten bolts on opposite sides when tightening. First tighten at 1/4 of the regulated torque, then at 1/2 of the regulated torque, before finally tightening up to the regulated torque. Do not tighten without passing through the shaft, or fasten the bolts after insertion on the draft tap side. (Fig.2)
- ⑤ If the shaft has a keyway, the fastened section contact area is reduced and the transmission rate is decreased by 15 to 20%.

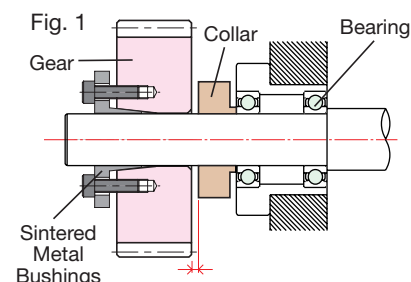


Fig. 1
Clearance (Assembly conditions require clearance of 1 mm or more)

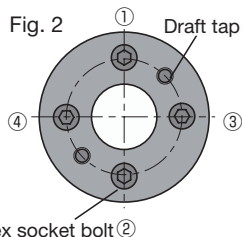


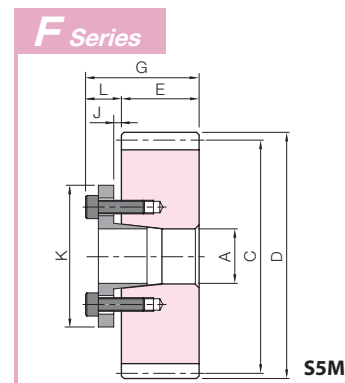
Fig. 2
Hex socket bolt ②

Catalog Number	Module	No. of teeth	Pitch dia.	Outside dia.	Face width	Allowable torque (N·m)	
			C	D	E	Bending strength	Surface durability
SSA3-20	m3	20	60	66	30	155	9.95
SSA3-24		24	72	78		202	14.9
SSA3-25		25	75	81		214	16.3
SSA3-28		28	84	90		250	20.7
SSA3-30		30	90	96		274	24.0
SSA3-32		32	96	102		298	27.4
SSA3-35		35	105	111		335	33.1
SSA3-36		36	108	114		348	35.2
SSA3-40		40	120	126		398	44.0
SSA3-45		45	135	141		461	56.6
SSA3-48		48	144	150		500	65.0
SSA3-50		50	150	156		525	70.9
SSA3-55		55	165	171		590	86.9
SSA3-56		56	168	174		602	90.3
SSA3-60		60	180	186		654	105
SSA3-70		70	210	216		654	121
SSA3-80		80	240	246		763	162

* For the backlash of each product, please refer to the dimension table of the original product.

Removal Method and Precautions

- ① Turn off the power source (supply), check that no load is applied to the gear, and confirm that there is no danger due to falling, etc.
- ② Insert removed bolts into all draft taps, and gradually and evenly tighten each bolt in diagonal order until removal is complete.
- ③ The washer and thread surfaces will be roughened, compromising tightening strength, if the bolts are reused. Consequently, we recommend using new bolts of the same size.



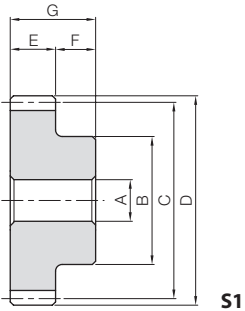
To order F Series products, please specify: **Catalog Number + F + BORE.**

Bore A		* The product shapes of F Series items are identified by background color.													
Catalog Number		15	16	17	18	19	20	22	25	28	30	32	35	40	
SSA3-20 F Bore		S5M	S5M	S5M	S5M										
SSA3-24 F Bore		S5M	S5M	S5M	S5M	S5M									
SSA3-25 F Bore		S5M	S5M	S5M	S5M	S5M	S5M	S5M							
SSA3-28 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M		
SSA3-30 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M		
SSA3-32 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M		
SSA3-35 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-36 F Bore							S5M	S5M	S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-40 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-45 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-48 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-50 F Bore									S5M	S5M	S5M	S5M	S5M		
SSA3-55 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-56 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-60 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-70 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
SSA3-80 F Bore									S5M	S5M	S5M	S5M	S5M	S5M	
Bore A		15	16	17	18	19	20	22	25	28	30	32	35	40	
Ref. slipping torque N·m		39	42	45	48	49	97	110	124	141	149	163	173	725	
Ref. thrust load kN		5.10	5.17	5.23	5.28	5.12	9.68	9.98	9.90	10.0	9.89	10.1	9.88	12.3	
Sintered Metal Bushings	L	12						14						19	
	K	37	38	39	40	42	46	47	51	53	56	58	61	71	
Clearance	J	3													
Total Length	G	42					44								49
Hex socket bolt	Qty	4													6
	Size	M4×15					M5×18								M6×25
	Tightening torque N·m	3.9					7.8								13.7
Bushing weight (g)		40	41	43	45	49	71	71	81	84	93	97	106	237	

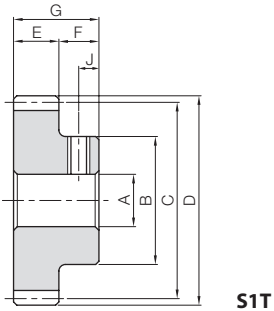


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating

* The precision grade of products with a module of less than 0.8 is equivalent to the value shown in the table.



S1



S1T

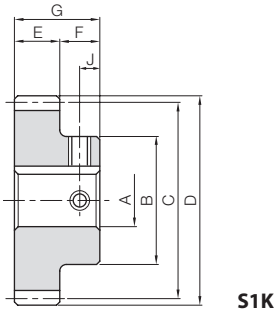
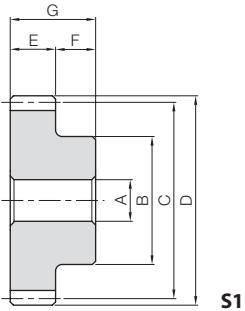
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway
				A _{H7}	B	C	D	E	F	G	Width × Depth
SSY0.8-20	m0.8	20	S1	5	13.5	16	17.6	4	8	12	—
SSY0.8-25		25	S1	5	17	20	21.6				
SSY0.8-30		30	S1	5	20	24	25.6				
SSY0.8-40		40	S1	5	25	32	33.6				
SSY0.8-40A			S1T	6							
SSY0.8-50		50	S1	5	25	40	41.6				
SSY0.8-50A		S1T	6								
SSY1-12	m1	12	S1	5	9	12	14	6	8	14	—
SSY1-12A		14	S1	5	11	14	16				
SSY1-14			S1T								
SSY1-14A		15	S1	6	12	15	17				
SSY1-15			S1T								
SSY1-15A		16	S1	6	13	16	18				
SSY1-16			S1T								
SSY1-16A		18	S1	6	14	18	20				
SSY1-18			S1T								
SSY1-18A		20	S1	6	16	20	22				
SSY1-20			S1T								
SSY1-20A		24	S1	6	16	24	26				
SSY1-20B			S1T								
SSY1-24		25	S1	6	16	25	27				
SSY1-24A			S1T								
SSY1-25		28	S1	6	16	28	30				
SSY1-28	S1T										
SSY1-28A	30	S1	6	25	30	32					
SSY1-30		S1T									
SSY1-30A	32	S1	6	25	32	34					
SSY1-30B		S1T									
SSY1-32	35	S1	6	25	35	37					
SSY1-35		S1T									
SSY1-35A	36	S1	6	25	36	38					
SSY1-36		S1T									
SSY1-40	40	S1	8	28	40	42					
SSY1-40A		S1T									
SSY1-45	45	S1	8	28	45	47					
SSY1-48	48	S1	8	28	48	50					
SSY1-48A		S1T									

Socket head screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
Size	J	Bending strength	Surface durability	Bending strength	Surface durability			
—	—	1.47	0.085	0.15	0.0087	0~0.10	0.013	SSY0.8-20
—	—	2.03	0.134	0.21	0.014		0.022	SSY0.8-25
—	—	2.60	0.197	0.27	0.020		0.032	SSY0.8-30
—	—	3.77	0.362	0.39	0.037		0.054	SSY0.8-40
M4	4	4.98	0.580	0.51	0.059		0.068	SSY0.8-50
—	—	1.22	0.069	0.12	0.0070	0.08~0.18	0.0072	SSY1-12
M4	4	1.98	0.096	0.20	0.010		0.011	SSY1-12A
—	—	2.22	0.11	0.23	0.011		0.012	SSY1-14
M4	4	2.46	0.13	0.25	0.013		0.015	SSY1-14A
—	—	2.95	0.16	0.30	0.017		0.019	SSY1-15
M4	4	3.45	0.20	0.35	0.021		0.024	SSY1-15A
—	—	4.48	0.30	0.46	0.030		0.031	SSY1-16
M4	4	4.74	0.32	0.48	0.033		0.033	SSY1-16A
—	—	5.55	0.41	0.57	0.042		0.039	SSY1-18
M4	4	6.08	0.47	0.62	0.048		0.061	SSY1-18A
—	—	6.63	0.54	0.68	0.055		0.061	SSY1-20
M4	4	7.45	0.66	0.76	0.067		0.060	SSY1-20A
—	—	7.73	0.70	0.79	0.071		0.057	SSY1-20B
—	—	8.84	0.87	0.90	0.089		0.066	SSY1-24
M5	4	10.3	1.12	1.05	0.11		0.073	SSY1-24A
—	—	11.1	1.28	1.13	0.13		0.069	SSY1-25
M5	4						0.076	SSY1-28
							0.092	SSY1-28A
							0.091	SSY1-30
							0.11	SSY1-30A
							0.12	SSY1-30B
							0.12	SSY1-32
							0.073	SSY1-35
							0.069	SSY1-35A
							0.076	SSY1-36
							0.092	SSY1-40
							0.091	SSY1-40A
							0.11	SSY1-45
							0.12	SSY1-48
							0.12	SSY1-48A





Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



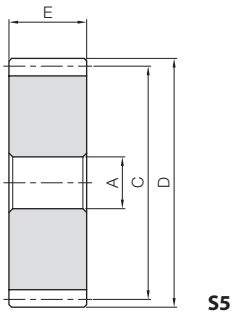
Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway
				A _{H7}	B	C	D	E	F	G	Width x Depth
SSY1-50	m1	50	S1	8	28	50	52	6	8	14	—
SSY1-55		55	S1	8	28	55	57				—
SSY1-56		56	S1	8	28	56	58				—
SSY1-60		60	S1	8	35	60	62				—
SSY1-60A			S1K	10							4 x 1.8
SSY1-64		64	S1	8	35	64	66				—
SSY1-65		65	S1	8	35	65	67				—
SSY1-70		70	S1	8	35	70	72				—
SSY1-72		72	S1	8	35	72	74				—
SSY1-75		75	S1	8	35	75	77				—
SSY1-80		80	S1	10	40	80	82				—
SSY1-85		85	S1	10	40	85	87				—
SSY1-90		90	S1	10	40	90	92				—
SSY1-95		95	S1	10	40	95	97				—
SSY1-96		96	S1	10	40	96	98				—
SSY1-100		100	S1	10	50	100	102				—
SSY1-110		110	S1	10	50	110	112				—
SSY1-120		120	S1	10	50	120	122				—
SSY1-120A			S1K	12							4 x 1.8

Socket head screw		Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)	Catalog Number
Size	J	Bending strength	Surface durability	Bending strength	Surface durability			
—	—	11.7	1.39	1.19	0.14	0.08~0.18	0.13	SSY1-50
—	—	13.1	1.70	1.34	0.17		0.15	SSY1-55
—	—	13.4	1.77	1.37	0.18		0.15	SSY1-56
—	—	14.5	2.04	1.48	0.21		0.19	SSY1-60
M4	4	15.7	2.34	1.60	0.24		0.18	SSY1-60A
—	—	16.0	2.41	1.63	0.25		0.21	SSY1-64
—	—	17.4	2.82	1.78	0.29		0.21	SSY1-65
—	—	18.0	2.99	1.84	0.30		0.24	SSY1-70
—	—	18.9	3.26	1.93	0.33		0.25	SSY1-72
—	—	20.3	3.74	2.07	0.38		0.26	SSY1-75
—	—	21.8	4.25	2.22	0.43		0.31	SSY1-80
—	—	23.3	4.79	2.37	0.49		0.34	SSY1-85
—	—	24.7	5.37	2.52	0.55		0.37	SSY1-90
—	—	25.0	5.49	2.55	0.56		0.40	SSY1-95
—	—	26.2	5.98	2.67	0.61		0.41	SSY1-96
—	—	29.1	7.31	2.97	0.75		0.48	SSY1-100
—	—	32.1	8.80	3.27	0.90		0.56	SSY1-110
M4	4	—	—	—	—		0.65	SSY1-120
—	—	—	—	—	—		0.58	SSY1-120A





Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)
Surface treatment	Black oxide coating



SS

Catalog Number	Module	No. of teeth	Shape	Bore	Pitch dia.	Outside dia.	Face width	Allowable torque (N·m)		Allowable torque (kgf·m)	
				A _{H7}	C	D	E	Bending strength	Surface durability	Bending strength	Surface durability
SSAY1-20 SSAY1-24 SSAY1-25 SSAY1-28 SSAY1-30	m1	20 24 25 28 30	S5	6	20 24 25 28 30	22 26 27 30 32	6	3.45 4.48 4.74 5.55 6.08	0.20 0.30 0.32 0.41 0.47	0.35 0.46 0.48 0.57 0.62	0.021 0.030 0.033 0.042 0.048
SSAY1-32 SSAY1-35 SSAY1-36 SSAY1-40 SSAY1-45		32 35 36 40 45			32 35 36 40 45	34 37 38 42 47		6.63 7.45 7.73 8.84 10.3	0.54 0.66 0.70 0.87 1.12	0.68 0.76 0.79 0.90 1.05	0.055 0.067 0.071 0.089 0.11
SSAY1-48 SSAY1-50 SSAY1-55 SSAY1-56 SSAY1-60		48 50 55 56 60		6 8 8 8 8	48 50 55 56 60	50 52 57 58 62		11.1 11.7 13.1 13.4 14.5	1.28 1.39 1.70 1.77 2.04	1.13 1.19 1.34 1.37 1.48	0.13 0.14 0.17 0.18 0.21
SSAY1-70 SSAY1-80 SSAY1-100		70 80 100		8 10 10	70 80 100	72 82 102		17.4 20.3 26.2	2.82 3.74 5.98	1.78 2.07 2.67	0.29 0.38 0.61

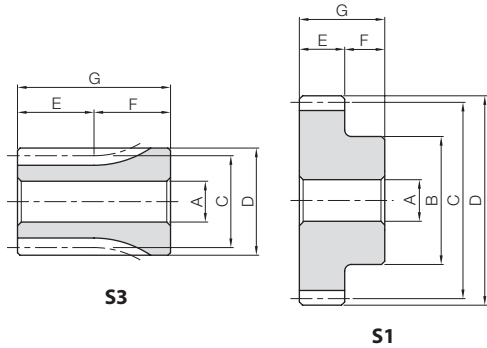
Backlash (mm)	Weight (kg)	Catalog Number
0.08~0.18	0.013 0.020 0.022 0.028 0.032	SSAY1-20 SSAY1-24 SSAY1-25 SSAY1-28 SSAY1-30
	0.037 0.044 0.047 0.058 0.074	SSAY1-32 SSAY1-35 SSAY1-36 SSAY1-40 SSAY1-45
	0.084 0.090 0.11 0.11 0.13	SSAY1-48 SSAY1-50 SSAY1-55 SSAY1-56 SSAY1-60
	0.18 0.23 0.37	SSAY1-70 SSAY1-80 SSAY1-100



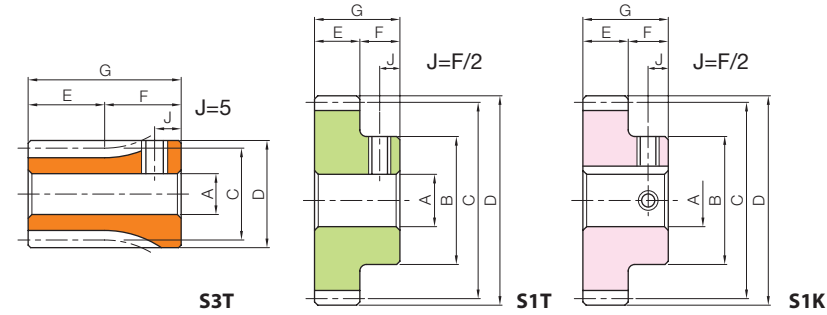


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	SUS303
Heat treatment	—
Tooth hardness	(less than 187HB)

* The precision grade of J Series products is equivalent to the value shown in the table.



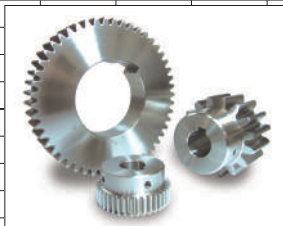
J Series

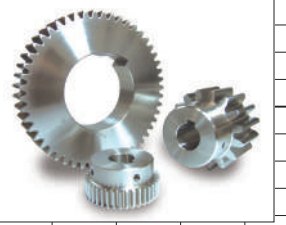


To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore A _{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
										Bending strength	Surface durability	Bending strength	Surface durability		
SUS1-15	15	S3	8	17	15	17	20	30	30	2.04	0.12	0.21	0.013	0.08~0.18	0.038
SUS1-16	16			18	16	18				2.26	0.14	0.23	0.015		0.044
SUS1-18	18			20	18	20				2.71	0.18	0.28	0.019		0.058
SUS1-20	20			16	20	22				3.18	0.23	0.32	0.024		0.033
SUS1-22	22			18	22	24				3.65	0.29	0.37	0.029		0.042
SUS1-24	24	S1	10	20	24	26	10	20	20	4.13	0.35	0.42	0.036		0.053
SUS1-25	25			20	25	27				4.37	0.38	0.45	0.039		0.056
SUS1-28	28			23	28	30				5.11	0.48	0.52	0.049		0.074
SUS1-30	30			25	30	32				5.60	0.56	0.57	0.057		0.087
SUS1-32	32			26	32	34				6.11	0.64	0.62	0.066		0.098
SUS1-35	35			26	35	37				6.87	0.78	0.70	0.079		0.11
SUS1-36	36			28	36	38				7.12	0.82	0.73	0.084		0.12
SUS1-40	40			35	40	42				8.15	1.03	0.83	0.11		0.16
SUS1-42	42			35	42	44				8.66	1.14	0.88	0.12		0.17
SUS1-45	45			35	45	47				9.44	1.32	0.96	0.13		0.19
SUS1-48	48	S1	10	35	48	50				10.2	1.51	1.04	0.15		0.21
SUS1-50	50			35	50	52				10.8	1.65	1.10	0.17		0.22
SUS1-55	55			40	55	57				12.1	2.01	1.23	0.21		0.28
SUS1-56	56			40	56	58				12.3	2.09	1.26	0.21		0.28
SUS1-60	60			40	60	62				13.4	2.42	1.37	0.25		0.31
SUS1-64	64			45	64	66				14.5	2.77	1.47	0.28		0.37
SUS1-70	70			50	70	72				16.1	3.34	1.64	0.34		0.45
SUS1-75	75			55	75	77				17.4	3.86	1.77	0.39		0.53
SUS1-80	80			60	80	82				18.7	4.42	1.91	0.45		0.61
SUS1-90	90			60	90	92				21.4	5.67	2.19	0.58		0.72
SUS1-100	100	S1	12	60	100	102				24.1	7.08	2.46	0.72		0.83
SUS1-120	120			60	120	122				29.6	10.4	3.01	1.06		1.10

Bore H7	* The product shapes of J Series items are identified by background color.																	
	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35		
Keyway J _{s9}	8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35		
Screw size	-	4×1.8	4×1.8	5×2.3	5×2.3	5×2.3	5×2.3	6×2.8	6×2.8	6×2.8	6×2.8	8×3.3	8×3.3	8×3.3	10×3.3	10×3.3		
Catalog Number	M5	M4	M4	M5	M5	M5	M5	M6	M6	M6	M6	M6	M6	M6	M8	M8		
SUS1-15 J BORE	S3T																	
SUS1-16 J BORE	S3T																	
SUS1-18 J BORE	S3T																	
SUS1-20 J BORE	S1T																	
SUS1-22 J BORE	S1T																	
SUS1-24 J BORE	S1T																	
SUS1-25 J BORE	S1T																	
SUS1-28 J BORE	S1T	S1K	S1K															
SUS1-30 J BORE	S1T	S1K	S1K															
SUS1-32 J BORE	S1T	S1K	S1K	S1K														
SUS1-35 J BORE	S1T	S1K	S1K	S1K														
SUS1-36 J BORE	S1T	S1K	S1K	S1K	S1K	S1K												
SUS1-40 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS1-42 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS1-45 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS1-48 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS1-50 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS1-55 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SUS1-56 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SUS1-60 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SUS1-64 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SUS1-70 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SUS1-75 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SUS1-80 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SUS1-90 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SUS1-100 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SUS1-120 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		





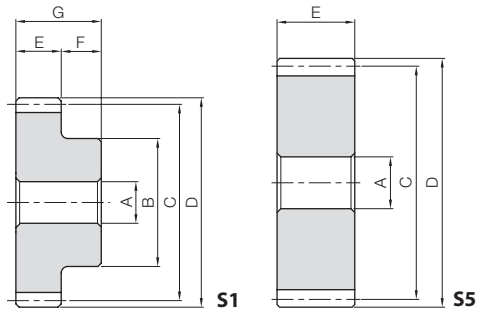


Stainless Steel Spur Gears

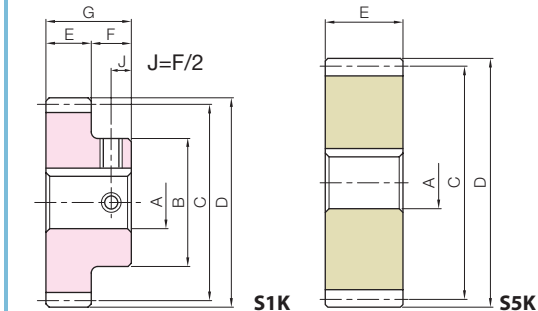


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	SUS303
Heat treatment	—
Tooth hardness	(less than 187HB)

* The precision grade of J Series products is equivalent to the value shown in the table.



J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

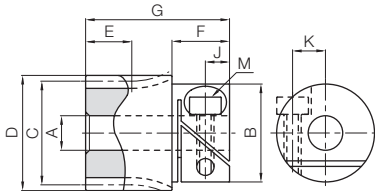
Catalog Number	No. of teeth	Shape	Bore AH7	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m)		Allowable torque (kgf·m)		Backlash (mm)	Weight (kg)
										Bending strength	Surface durability	Bending strength	Surface durability		
SUS2.5-15	15	S1	15	30	37.5	42.5	18	43	—	31.9	2.11	3.25	0.21	0.14~0.28	0.26
SUS2.5-16	16			32	40	45				35.3	2.44	3.60	0.25		0.30
SUS2.5-18	18			38	45	50				42.4	3.18	4.32	0.32		0.42
SUS2.5-20	20			40	50	55				49.6	4.02	5.06	0.41		0.51
SUS2.5-22	22			44	55	60				57.0	4.96	5.81	0.51		0.63
SUS2.5-24	24	S5	20	48	60	65	25	—	—	64.5	6.01	6.58	0.61	0.14~0.32	0.76
SUS2.5-25	25			50	62.5	67.5				68.3	6.58	6.96	0.67		0.83
SUS2.5-28	28			60	70	75				79.8	8.34	8.14	0.85		1.11
SUS2.5-30	30			65	75	80				87.6	9.65	8.93	0.98		1.29
SUSA2.5-32	32			—	80	85				95.4	11.1	9.73	1.13		0.96
SUSA2.5-35	35				87.5	92.5				107	13.4	10.9	1.36		1.16
SUSA2.5-36	36				90	95				111	14.2	11.3	1.45		1.23
SUSA2.5-40	40				100	105				127	17.7	13.0	1.81		1.49
SUSA2.5-42	42				105	110				135	19.6	13.8	2.00		1.65
SUSA2.5-45	45			—	112.5	117.5				148	22.7	15.0	2.31		1.91
SUSA2.5-48	48				120	125				160	26.1	16.3	2.66		2.18
SUSA2.5-50	50				125	130				168	28.4	17.1	2.90		2.37
SUSA2.5-55	55				137.5	142.5				189	34.9	19.2	3.56		2.88
SUSA2.5-56	56				140	145				193	36.2	19.6	3.70		2.99
SUSA2.5-60	60			—	150	155				209	42.0	21.3	4.28		3.44
SUSA2.5-64	64				160	165				226	48.2	23.0	4.91		3.92
SUS3-15	15	S1	15	36	45	51	20	50	—	55.1	3.71	5.62	0.38	0.14~0.32	0.47
SUS3-16	16			38	48	54				61.1	4.29	6.23	0.44		0.54
SUS3-18	18			40	54	60				73.3	5.59	7.47	0.57		0.67
SUS3-20	20			50	60	66				85.8	7.07	8.74	0.72		0.91
SUS3-22	22			54	66	72				98.5	8.73	10.0	0.89		1.11
SUS3-24	24	S5	20	58	72	78				111	10.6	11.4	1.08	0.18~0.38	1.32
SUS3-25	25			60	75	81				118	11.6	12.0	1.18		1.37
SUS3-28	28			70	84	90				138	14.7	14.1	1.50		1.80
SUS3-30	30			75	90	96				151	17.0	15.4	1.74		2.09
SUSA3-32	32			—	96	102				165	19.5	16.8	1.99		1.65
SUSA3-35	35				105	111				185	23.6	18.9	2.40		1.99
SUSA3-36	36				108	114				192	25.0	19.6	2.55		2.10
SUSA3-40	40				120	126				220	31.3	22.4	3.19		2.57
SUSA3-42	42	S5	25	126	132	132	—	—	—	234	34.7	23.9	3.54		2.85
SUSA3-45	45			135	141	141				255	40.2	26.0	4.10		3.29
SUSA3-48	48			144	150	150				276	46.2	28.2	4.71		3.76
SUSA3-50	50			150	156	156				290	50.4	29.6	5.14		4.09
SUSA3-55	55			165	171	171				326	61.7	33.2	6.30		4.97
SUSA3-56	56	S1	20	168	174	174	40	25	65	333	64.1	33.9	6.54	0.18~0.38	5.16
SUSA3-60	60			180	186	186				362	74.3	36.9	7.58		5.94
SUS4-15	15			45	60	68				131	9.06	13.3	0.92		1.05
SUS4-20	20	S5	30	65	80	88				203	17.3	20.7	1.76		2.09
SUS4-25	25			84	100	108				280	28.3	28.5	2.89		3.43
SUS4-30	30			100	120	128				359	41.7	36.6	4.25		4.98
SUSA4-40	40	S5	30	160	168	168	—	—	—	521	77.1	53.2	7.86	0.18~0.38	6.15
SUSA4-50	50			200	208	208				573	103	58.5	10.5		9.74

Bore H7		* The product shapes of J Series items are identified by background color.														
Keyway JS9	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50	
Screw size	5x2.3			6x2.8				8x3.3			10x3.3		12x3.3	14x3.8		
Catalog Number	M4			M5				M6			M8			M10		
SUS2.5-15 J BORE	S1K	S1K														
SUS2.5-16 J BORE	S1K	S1K	S1K													
SUS2.5-18 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SUS2.5-20 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SUS2.5-22 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
SUS2.5-24 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
SUS2.5-25 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SUS2.5-28 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SUS2.5-30 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SUSA2.5-32 J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
SUSA2.5-35 J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SUSA2.5-36 J BORE	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
SUSA2.5-40 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SUSA2.5-42 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SUSA2.5-45 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-48 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-50 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-55 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-56 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-60 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA2.5-64 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUS3-15 J BORE	S1K	S1K	S1K	S1K	S1K											
SUS3-16 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SUS3-18 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
SUS3-20 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
SUS3-22 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SUS3-24 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
SUS3-25 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K				
SUS3-28 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
SUS3-30 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
SUSA3-32 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-35 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
SUSA3-36 J BORE						S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-40 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-42 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-45 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-48 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-50 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-55 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-56 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUSA3-60 J BORE								S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
SUS4-15 J BORE						S1K	S1K	S1K								
SUS4-20 J BORE						S1K	S1K	S1K	S1K	S1K	S1K					
SUS4-25 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SUS4-30 J BORE						S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
SUSA4-40 J BORE										S5K	S5K	S5K	S5K	S5K	S5K	
SUSA4-50 J BORE										S5K	S5K	S5K	S5K	S5K	S5K	

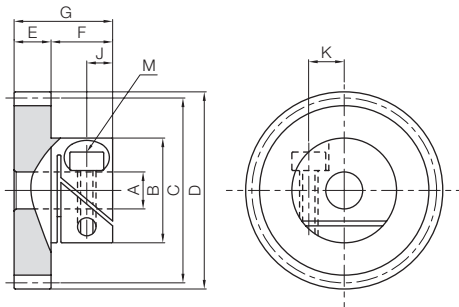


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	SUS303
Heat treatment	—
Tooth hardness	(less than 187HB)

* The gear grade listed is the value before clamping.
The precision grade of products with a module of 0.5 or less is equivalent to the value shown in the table.



S3



S1

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Hex socket screw																											
				A _{H7}	B	C	D	E	F	G	M	J	K																									
SUSF0.5-16	m0.5	16	S3	4	14	8	9	7	8	22	M2.5	3.3	4.4																									
SUSF0.5-24		24		12		13	5							10	15	M3	4.5	5.7																				
SUSF0.5-28		28	5	14		15		17.5	18.5	25	26																											
SUSF0.5-30		30		15		16						22.5	23.5						30	31																		
SUSF0.5-32		32	S1	6	17	35		36	40	41	14										19	M4	5.3	7.7														
SUSF0.5-35		35					8					19	25	26	30	31	35	36	40	41					14	19	M4	5.3	7.7									
SUSF0.5-45		45																												10	24	40	41	14	19	M4	5.3	7.7
SUSF0.5-50		50																																				
SUSF0.5-60		60	10	24	40	41		14	19	M4	5.3										7.7																	
SUSF0.5-70		70					10					24	40	41	14	19	M4	5.3	7.7																			
SUSF0.5-80	80	10																		24		40	41	14	19	M4	5.3	7.7										
SUSF1-14	14																												S3	6	17	14	16	8	10	16	M3	4.5
SUSF1-15	15		6	17	14	16		8	10	16	M3										4.5																	
SUSF1-16	16						6					17	14	16	8	10	16	M3	4.5																			
SUSF1-18	18	6																		17		14	16	8	10	16	M3	4.5										
SUSF1-20	20																												6	17	14	16	8	10	16	M3	4.5	5.7
SUSF1-24	24		S1	8	19	35		36	40	41	14										19																	
SUSF1-25	25						8					19	35	36	40	41	14	19	M4																			
SUSF1-28	28	8																		19		35	36	40	41	14	19	M4										
SUSF1-30	30																												8	19	35	36	40	41	14	19	M4	5.3
SUSF1-32	32		8	19	35	36		40	41	14	19										M4																	
SUSF1-35	35						10					24	40	41	14	19	M4	5.3	7.7																			
SUSF1-36	36	10																		24		40	41	14	19	M4	5.3	7.7										
SUSF1-40	40																												10	24	40	41	14	19	M4	5.3	7.7	
SUSF1-45	45		10	24	40	41		14	19	M4	5.3										7.7																	
SUSF1-48	48						10					24	40	41	14	19	M4	5.3	7.7																			
SUSF1-50	50	10																		24		40	41	14	19	M4	5.3	7.7										
SUSF1-60	60																												10	24	40	41	14	19	M4	5.3	7.7	
SUSF1-64	64		10	24	40	41		14	19	M4	5.3										7.7																	
SUSF1-70	70						10					24	40	41	14	19	M4	5.3	7.7																			
SUSF1-100	100	10																		24		40	41	14	19	M4	5.3	7.7										

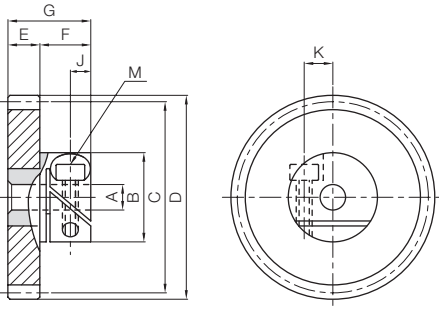
Allowable torque (N·m)		Allowable torque (kgf·m)		Ref. slipping torque	Standard screw tightening torque (N·m)	Backlash (mm)	Weight (g)	Catalog Number
Bending strength	Surface durability	Bending strength	Surface durability					
0.40	0.023	0.040	0.0023	0.62	0.45	0~0.10	13.9	SUSF0.5-16
0.72	0.056	0.074	0.0057	0.62	0.45		20.0	SUSF0.5-24
0.89	0.079	0.091	0.0080				16.0	SUSF0.5-28
0.98	0.091	0.10	0.0093				16.9	SUSF0.5-30
0.76	0.075	0.078	0.0077				22.6	SUSF0.5-32
0.86	0.088	0.088	0.009	1.79	0.80		24.2	SUSF0.5-35
1.18	0.15	0.12	0.015				30.4	SUSF0.5-45
1.34	0.19	0.14	0.019				34.1	SUSF0.5-50
1.67	0.28	0.17	0.029	2.22	0.80		44.5	SUSF0.5-60
2.01	0.39	0.20	0.040				54.7	SUSF0.5-70
2.34	0.51	0.24	0.052			88.2	SUSF0.5-80	
1.46	0.088	0.15	0.0090	1.79	0.80	0~0.10	33.3	SUSF1-14
1.63	0.10	0.17	0.010				36.2	SUSF1-15
1.81	0.12	0.18	0.012				39.3	SUSF1-16
2.17	0.15	0.22	0.015				26.5	SUSF1-18
1.91	0.14	0.19	0.015				29.4	SUSF1-20
2.48	0.21	0.25	0.021	2.22	0.80		35.9	SUSF1-24
2.62	0.23	0.27	0.023				37.8	SUSF1-25
3.06	0.29	0.31	0.030				43.7	SUSF1-28
3.36	0.34	0.34	0.034				49.7	SUSF1-30
3.66	0.39	0.37	0.039				54.4	SUSF1-32
4.12	0.47	0.42	0.047	4.50	2.00	61.9	SUSF1-35	
4.27	0.49	0.44	0.050			64.5	SUSF1-36	
4.89	0.62	0.50	0.063			75.9	SUSF1-40	
5.66	0.79	0.58	0.081			91.8	SUSF1-45	
6.14	0.91	0.63	0.093			102	SUSF1-48	
6.45	0.99	0.66	0.10	4.50	2.00	131	SUSF1-50	
8.03	1.45	0.82	0.15			172	SUSF1-60	
8.67	1.66	0.88	0.17			191	SUSF1-64	
9.63	2.00	0.98	0.20			221	SUSF1-70	
14.5	4.25	1.48	0.43			411	SUSF1-100	





Specifications	
Precision grade	JIS grade N10 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	Polyacetal (Hub: SUS303)
Heat Treatment	—
Tooth hardness	(110 to 120HRR)

* The gear grade listed is the value before clamping.
The precision grade of products with a module of 0.5 or less is equivalent to the value shown in the table.

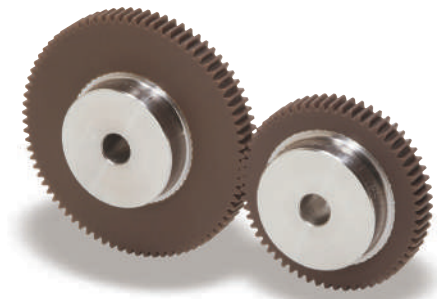


S1

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Hex socket screw		
				A _{H7}	B	C	D	E	F	G	M	J	K
DSF0.5-36	m0.5	36	S1	5	14	18	19	5	8.5	13.5	M2.5	3.3	4.4
DSF0.5-40		40				20	21						
DSF0.5-48		48				24	25						
DSF0.5-50		50				25	26						
DSF0.5-60		60				30	31						
DSF0.5-80		80		8	19	40	41	10	15	15	M3	4.5	6
DSF0.5-120		120				60	61						
DSF1-20	m1	20	S1	5	14	20	22	8.5	14.5	14.5	M2.5	3.3	4.4
DSF1-24		24				24	26						
DSF1-25		25				25	27						
DSF1-28		28				28	30						
DSF1-30		30				30	32						
DSF1-32		32		8	19	32	34	10	16	16	M3	4.5	6
DSF1-35		35				35	37						
DSF1-36		36				36	38						
DSF1-40		40				40	42						
DSF1-45		45				45	47						
DSF1-48		48		8	19	48	50	10	16	16	M3	4.5	6
DSF1-50		50				50	52						
DSF1-60		60				60	62						
DSF1-64		64				64	66						
DSF1-80		80				80	82						
DSF1-90		90		8	19	90	92	10	16	16	M3	4.5	6
DSF1-100		100				100	102						

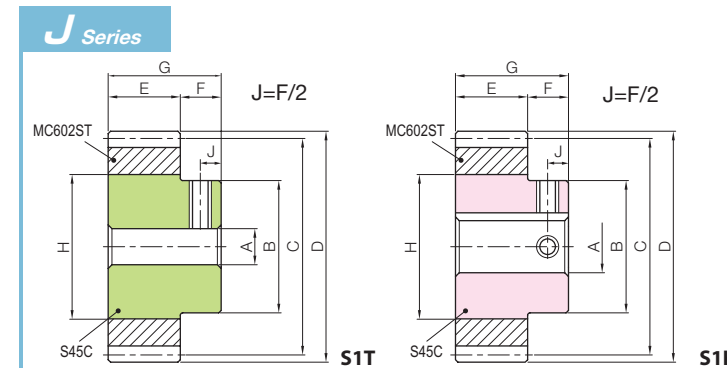
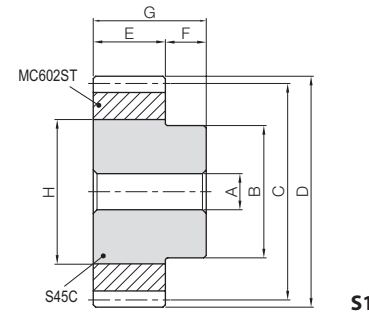
Allowable torque (N·m)	Allowable torque (kgf·m)	Ref. slipping torque	Standard screw tightening torque (N·m)	Backlash (mm)	Weight (g)	Catalog Number
Bending strength	Bending strength					
0.49	0.050	0.62	0.45	0~0.10	11.7	DSF0.5-36
0.55	0.057				12.1	DSF0.5-40
0.69	0.071				13.1	DSF0.5-48
0.73	0.075				13.4	DSF0.5-50
0.90	0.092				14.9	DSF0.5-60
1.25	0.13	2.22	0.80	0~0.10	18.8	DSF0.5-80
1.93	0.20				40.1	DSF0.5-120
0.96	0.098	0.62	0.45	0~0.10	12.7	DSF1-20
1.22	0.12				13.9	DSF1-24
1.28	0.13				14.2	DSF1-25
1.48	0.15				15.3	DSF1-28
1.61	0.16				26.5	DSF1-30
1.75	0.18	2.22	0.80	0~0.10	27.3	DSF1-32
1.96	0.20				28.7	DSF1-35
2.04	0.21				29.1	DSF1-36
2.33	0.24				31.2	DSF1-40
2.69	0.27				34.0	DSF1-45
2.92	0.30	2.22	0.80	0~0.10	35.8	DSF1-48
3.07	0.31				37.1	DSF1-50
3.78	0.39				44.5	DSF1-60
4.07	0.41				47.7	DSF1-64
5.23	0.53				63.1	DSF1-80
5.95	0.61	2.22	0.80	0~0.10	74.4	DSF1-90
6.68	0.68				87.0	DSF1-100





Specifications	
Precision grade	JIS grade N9 (JIS B1702-1:1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC602ST with S45C core
Heat Treatment	—
Tooth hardness	(115 to 120HRR)

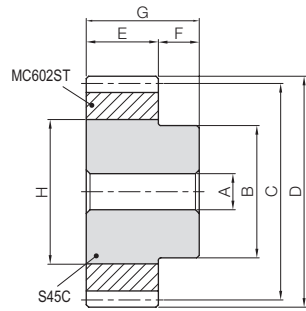
* The precision grade of J Series products is equivalent to the value shown in the table.



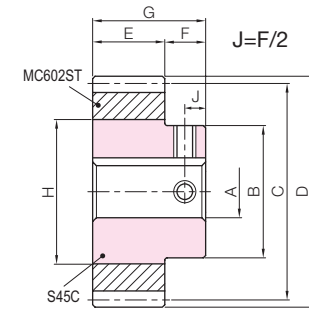
To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Core O.D.	Allowable torque (N-m)	Allowable torque (kgf-m)	Backlash (mm)	Weight (kg)	
			A _{H7}	B	C	D	E	F	G	H	Bending strength	Bending strength			
NSU1-30	30	S1	8	20	30	32	10	10	20	20	1.23	0.13	0~0.34	0.046	
NSU1-32	32			22	32	34				22	1.34	0.14		0.057	
NSU1-35	35			25	35	37				25	1.50	0.15		0.075	
NSU1-36	36			25	36	38				25	1.56	0.16		0.076	
NSU1-40	40			25	40	42				28	1.78	0.18		0.082	
NSU1-45	45		10		30	45				47	34	2.06	0.21	0.12	
NSU1-48	48				30	48				50	34	2.23	0.23	0.13	
NSU1-50	50				30	50				52	34	2.35	0.24	0.13	
NSU1-60	60				40	60				62	45	2.93	0.30	0.23	
NSU1-70	70				40	70				72	45	3.46	0.35	0.24	
NSU1-80	80			40	80	82	45	4.00	0.41	0~0.36	0.25				
NSU1-90	90				90	92	55	4.56	0.46		0.32				
NSU1-100	100				100	102	65	5.12	0.52		0.40				
NSU1.5-28	28	S1	10	30	42	45	15	12	27	30	3.82	0.39	0~0.38	0.15	
NSU1.5-30	30				45	48				30	4.15	0.42		0.15	
NSU1.5-32	32				33	48				51	33	4.51		0.46	0.18
NSU1.5-35	35					52.5				55.5	36	5.07		0.52	0.20
NSU1.5-36	36				54	57				36	5.26	0.54		0.21	
NSU1.5-40	40		40	60	63	45				6.00	0.61	0~0.40	0.31		
NSU1.5-45	45				67.5	70.5				45	6.94		0.71	0.33	
NSU1.5-48	48				72	75				45	7.53		0.77	0.33	
NSU1.5-50	50				75	78				45	7.92		0.81	0.33	
NSU1.5-56	56				84	87				55	9.09		0.93	0.50	
NSU1.5-60	60		12	50	90	93				55	9.89	1.01	0.51		
NSU1.5-70	70				105	108				70	11.7	1.19	0.70		
NSU1.5-80	80				120	123				85	13.5	1.38	0~0.42	1.01	
NSU1.5-90	90				135	138				100	15.4	1.57		1.29	
NSU2-20	20	S1	10	22	40	44	20	14	34	22	5.89	0.60	0~0.42	0.10	
NSU2-22	22				44	48				30	6.66	0.68		0.19	
NSU2-24	24				30	48				52	30	7.43		0.76	0.19
NSU2-25	25					50				54	30	7.85		0.80	0.20
NSU2-28	28					56				60	35	9.05		0.92	0.27
NSU2-30	30		12	40	60	64				35	9.84	1.00	0~0.44	0.28	
NSU2-32	32				64	68				40	10.7	1.09		0.35	
NSU2-35	35				70	74				45	12.0	1.22		0.41	
NSU2-36	36				72	76				45	12.5	1.27		0.42	
NSU2-40	40				80	84				60	14.2	1.45		0.71	
NSU2-44	44		15	55	88	92				60	16.0	1.63	0~0.46	0.74	
NSU2-45	45				90	94				60	16.5	1.68		0.74	
NSU2-48	48				96	100				65	17.8	1.82		0.88	
NSU2-50	50				100	104				65	18.8	1.92		0.90	
NSU2-56	56				112	116				65	21.5	2.20		0.95	
NSU2-60	60					120				124	85	23.5	2.39	0~0.46	1.29
NSU2-70	70					140				144	105	27.7	2.82		1.79
NSU2-80	80					160				164	125	32.0	3.27		2.38

[illegible]



S1



S1K



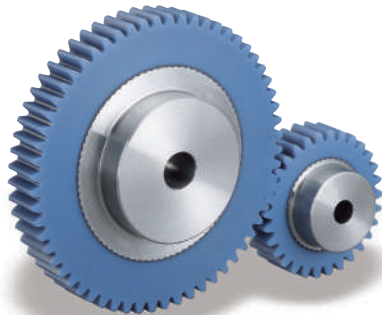
Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC602ST with S45C core
Heat Treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade of J Series products is equivalent to the value shown in the table.

Catalog Number	No. of teeth	Shape	Bore A _{H7}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Core O.D. H	Allowable torque (N·m) Bending strength	Allowable torque (kgf·m) Bending strength	Backlash (mm)	Weight (kg)	
NSU2.5-18	18	S1	12	25	45	50	25	15	40	25	9.93	1.01	0~0.44	0.15	
NSU2.5-20	20			28	50	55				28	11.5	1.17		0.20	
NSU2.5-22	22			35	55	60				35	13.0	1.33	0~0.46	0.31	
NSU2.5-24	24			35	60	65				35	14.5	1.48		0.32	
NSU2.5-25	25			35	62.5	67.5				35	15.3	1.56	0.33		
NSU2.5-28	28			40	70	75				40	17.7	1.80	0~0.48	0.44	
NSU2.5-30	30		45	75	80	50				19.2	1.96	0.61			
NSU2.5-32	32		45	80	85	50				20.9	2.13	0.63			
NSU2.5-35	35		55	87.5	92.5	60				23.5	2.39	0.90			
NSU2.5-36	36		55	90	95	60				24.3	2.48	0.91			
NSU2.5-40	40		15	20	65	100				105	70	27.8		2.83	0~0.46
NSU2.5-44	44				65	110				115	75	31.3	3.19	1.36	
NSU2.5-45	45	65			112.5	117.5	75	32.1	3.28	1.37					
NSU2.5-48	48	65			120	125	85	34.8	3.55	1.62					
NSU2.5-50	50	65			125	130	95	36.7	3.74	1.89					
NSU2.5-56	56	65			140	145	105	42.1	4.29	2.24					
NSU2.5-60	60	20	20	70	150	155	115	45.8	4.67	0~0.48	2.62				
NSU2.5-70	70			70	175	180	140	54.1	5.51		3.64				
NSU3-20	20	S1	12	33	60	66	30	17	47	33	19.9	2.03	0~0.54	0.35	
NSU3-22	22			38	66	72				38	22.5	2.29		0.46	
NSU3-24	24			43	72	78				43	25.1	2.56		0.59	
NSU3-25	25			45	75	81				45	26.5	2.70		0.65	
NSU3-28	28			50	84	90				50	30.5	3.11		0.79	
NSU3-30	30		15	20	55	90				96	60	33.2	3.39	0~0.56	1.05
NSU3-32	32				60	96				102	65	36.1	3.68		1.24
NSU3-34	34				60	102				108	65	39.0	3.98		1.27
NSU3-35	35				60	105				111	75	40.5	4.13		1.51
NSU3-36	36				60	108				114	80	42.1	4.29		1.65
NSU3-40	40		20	70	70	120				126	85	48.0	4.90	0~0.56	1.94
NSU3-44	44				70	132				138	95	54.0	5.51		2.31
NSU3-45	45				70	135				141	105	55.5	5.66		2.65
NSU3-48	48				70	144				150	105	60.2	6.14		2.72
NSU3-50	50					150				156	105	63.4	6.46		2.77
NSU3-56	56					168				174	130	72.7	7.42		3.85
NSU3-60	60	20			70	180	186	145	79.1	8.07	0~0.56	4.62			
NSU3-68	68					204	210	165	90.6	9.23		5.85			
NSU3-70	70					210	216	175	93.4	9.53		6.45			

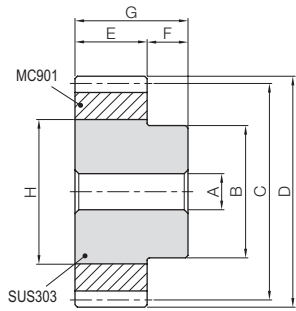
To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H7		* The product shapes of J Series items are identified by background color.															
Keyway J _{s9}		12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	
Screw size		4×1.8	5×2.3				6×2.8				8×3.3			10×3.3		12×3.3	
Catalog Number		M4					M5				M6			M8			
NSU2.5-18 J BORE	S1K																
NSU2.5-20 J BORE	S1K	S1K	S1K														
NSU2.5-22 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
NSU2.5-24 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
NSU2.5-25 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
NSU2.5-28 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
NSU2.5-30 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
NSU2.5-32 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
NSU2.5-35 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
NSU2.5-36 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
NSU2.5-40 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-44 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-45 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-48 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-50 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-56 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU2.5-60 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU2.5-70 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-20 J BORE	S1K	S1K	S1K	S1K	S1K												
NSU3-22 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
NSU3-24 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
NSU3-25 J BORE	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
NSU3-28 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
NSU3-30 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
NSU3-32 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU3-34 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU3-35 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU3-36 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
NSU3-40 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-44 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-45 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-48 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-50 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-56 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-60 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-68 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	
NSU3-70 J BORE									S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	



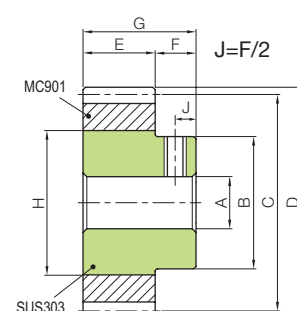
Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901 with SUS303 core
Heat Treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade of J Series products is equivalent to the value shown in the table.

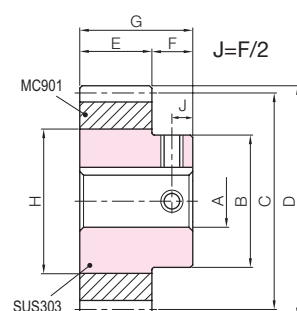


S1

J Series



S1T



S1K

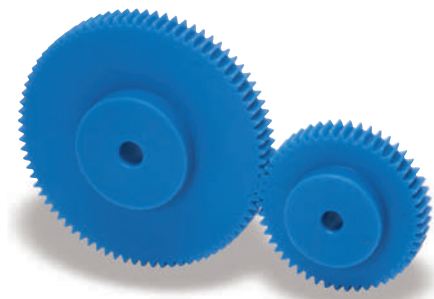


To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Core O.D.	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A _{H7}	B	C	D	E	F	G	H	Bending strength	Bending strength		
PU1-30	30	S1	8	20	30	32	10	10	20	20	1.03	0.10	0~0.34	0.046
PU1-35	35		10	25	35	37				25	1.25	0.13		0.075
PU1-40	40			25	40	42				28	1.48	0.15		0.083
PU1-50	50			30	50	52				34	1.96	0.20	0~0.36	0.13
PU1-60	60			40	60	62				45	2.41	0.25		0.23
PU1-80	80			40	80	82				45	3.34	0.34		0.25
PU1.5-30	30	S1	10	30	45	48	15	12	27	30	3.46	0.35	0~0.38	0.15
PU1.5-35	35		10	33	52.5	55.5				36	4.22	0.43	0~0.40	0.21
PU1.5-40	40			40	60	63				45	5.00	0.51		0.31
PU1.5-50	50			40	75	78				45	6.60	0.67		0.33
PU1.5-60	60		12	50	90	93				55	8.14	0.83	0~0.42	0.51
PU1.5-80	80			60	120	123				85	11.3	1.15		1.02
PU2-20	20	S1	10	22	40	44	20	14	34	22	4.91	0.50	0~0.42	0.10
PU2-25	25		10	30	50	54				30	6.54	0.67	0~0.44	0.20
PU2-30	30			35	60	64				35	8.20	0.84		0.28
PU2-35	35			40	70	74				45	10.0	1.02		0.41
PU2-40	40		15	55	80	84				60	11.9	1.21	0~0.46	0.72
PU2-50	50			60	100	104				65	15.7	1.60		0.90
PU2-60	60			60	120	124				85	19.3	1.97		1.30

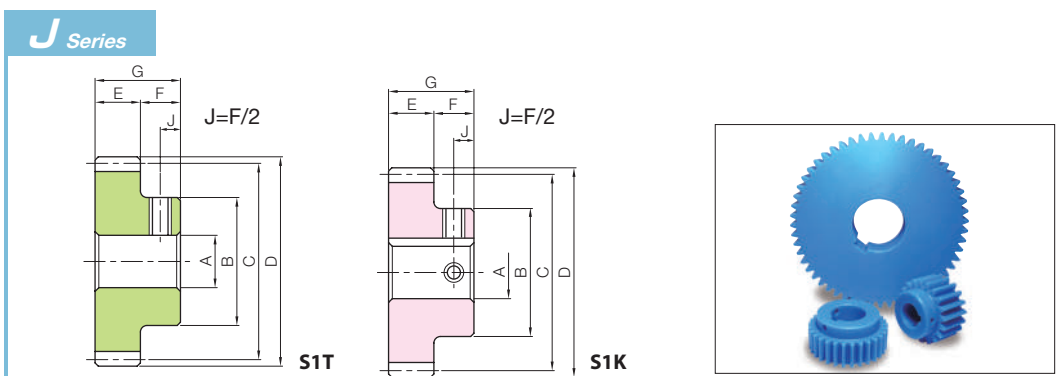
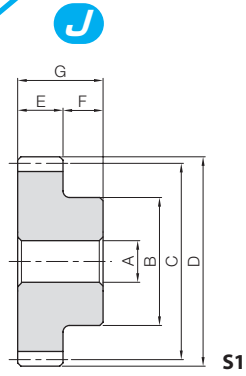
Bore H7		* The product shapes of J Series items are identified by background color.																	
Keyway Js9		8	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35		
Screw size		—	4×1.8		5×2.3				6×2.8				8×3.3			10×3.3			
Catalog Number		M5	M4						M5				M6			M8			
PU1-30 J BORE	S1T																		
PU1-35 J BORE	S1T	S1K	S1K																
PU1-40 J BORE		S1K	S1K																
PU1-50 J BORE		S1K	S1K	S1K	S1K	S1K	S1K												
PU1-60 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PU1-80 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PU1.5-30 J BORE		S1K	S1K	S1K	S1K	S1K	S1K												
PU1.5-35 J BORE		S1K	S1K	S1K	S1K	S1K	S1K												
PU1.5-40 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PU1.5-50 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PU1.5-60 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PU1.5-80 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PU2-20 J BORE		S1K																	
PU2-25 J BORE		S1K	S1K	S1K	S1K	S1K	S1K												
PU2-30 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
PU2-35 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PU2-40 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PU2-50 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PU2-60 J BORE					S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		





Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade is equivalent to the value shown in the table.

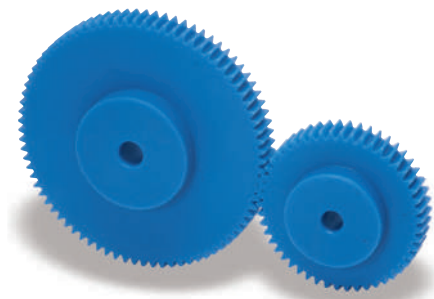


Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A	B									
PS1-15	15	6	S1	12	15	17	10	10	20	0.41	0.042	0~0.32	0.0027
PS1-16	16			12	16	18				0.45	0.046		0.0030
PS1-18	18			14	18	20				0.53	0.054		0.0041
PS1-20	20			16	20	22				0.61	0.063		0.0053
PS1-22	22			18	22	24				0.69	0.071		0.0062
PS1-24	24	8	S1	20	24	26	10	10	20	0.77	0.079	0~0.34	0.0077
PS1-25	25			20	25	27				0.82	0.083		0.0082
PS1-26	26			20	26	28				0.86	0.088		0.0086
PS1-28	28			22	28	30				0.94	0.096		0.010
PS1-30	30			25	30	32				1.03	0.10		0.013
PS1-32	32	10	S1	26	32	34	10	10	20	1.11	0.11	0~0.36	0.014
PS1-35	35			26	35	37				1.25	0.13		0.016
PS1-36	36			28	36	38				1.30	0.13		0.018
PS1-40	40			35	40	42				1.48	0.15		0.024
PS1-45	45			35	45	47				1.71	0.17		0.028
PS1-48	48	10	S1	35	48	50	10	10	20	1.86	0.19	0~0.36	0.030
PS1-50	50				50	52				1.96	0.20		0.032
PS1-55	55				55	57				2.18	0.22		0.037
PS1-60	60				60	62				2.41	0.25		0.042
PS1-65	65				65	67				2.64	0.27		0.048
PS1-70	70	10	S1	40	70	72	10	10	20	2.87	0.29	0~0.36	0.057
PS1-75	75				75	77				3.11	0.32		0.064
PS1-80	80				80	82				3.34	0.34		0.071
PS1-85	85				85	87				3.57	0.36		0.079
PS1-90	90				90	92				3.80	0.39		0.087
PS1-95	95	10	S1	40	95	97	10	10	20	4.03	0.41	0~0.36	0.095
PS1-100	100				100	102				4.27	0.44		0.10

To order J Series products, please specify: **Catalog No. + J + BORE.**

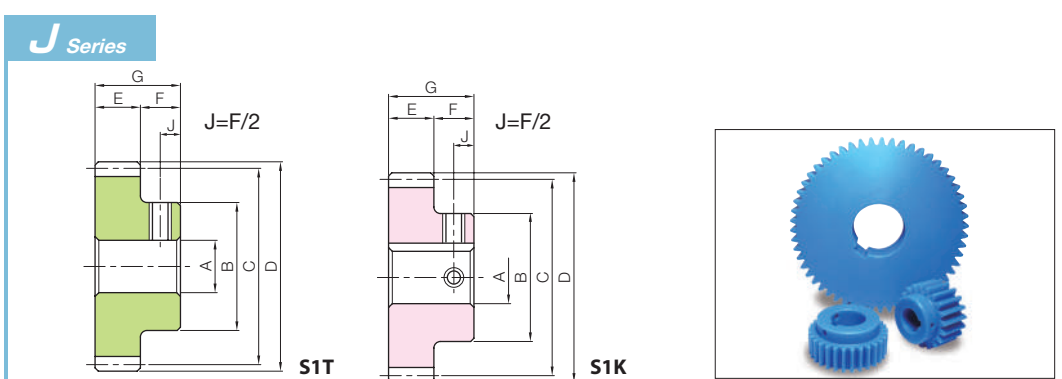
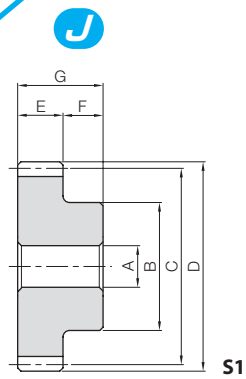
Bore H8		* The product shapes of J Series items are identified by background color.															
Keyway Js9	6	8	10	12	14	15	16	17	18	19	20	22	25	28	30		
Screw size	—		4x1.8		5x2.3				6x2.8				8x3.3				
Catalog Number	M4	M5	M4						M5				M6				
PS1-15 J BORE	S1T																
PS1-16 J BORE	S1T																
PS1-18 J BORE	S1T																
PS1-20 J BORE	S1T																
PS1-22 J BORE		S1T															
PS1-24 J BORE		S1T															
PS1-25 J BORE		S1T															
PS1-26 J BORE		S1T															
PS1-28 J BORE		S1T	S1K														
PS1-30 J BORE		S1T	S1K	S1K													
PS1-32 J BORE		S1T	S1K	S1K													
PS1-35 J BORE		S1T	S1K	S1K													
PS1-36 J BORE		S1T	S1K	S1K	S1K	S1K											
PS1-40 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-45 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-48 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-50 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-55 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-60 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-65 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS1-70 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-75 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-80 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-85 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-90 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-95 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1-100 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					

* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade is equivalent to the value shown in the table.



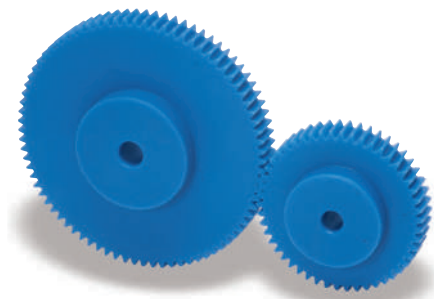
Catalog Number	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)		Backlash (mm)	Weight (kg)
			A _{H8}	B	C	D	E	F	G	Bending strength	Bending strength		
PS1.5-15	15	S1	8	18	22.5	25.5	15	10	25	1.39	0.14	0~0.38	0.0084
PS1.5-16	16			20	24	27				1.53	0.16		0.010
PS1.5-18	18			22	27	30				1.79	0.18		0.013
PS1.5-20	20			24	30	33				2.07	0.21		0.016
PS1.5-22	22			26	33	36				2.34	0.24		0.020
PS1.5-24	24			28	36	39				2.61	0.27	0~0.40	0.023
PS1.5-25	25			30	37.5	40.5				2.76	0.28		0.026
PS1.5-26	26			32	39	42				2.91	0.3		0.029
PS1.5-28	28			36	42	45				3.18	0.32		0.034
PS1.5-30	30			38	45	48				3.46	0.35		0.039
PS1.5-32	32	S1	10	40	48	51	15	10	25	3.76	0.38	0~0.40	0.045
PS1.5-35	35			42	52.5	55.5				4.22	0.43		0.052
PS1.5-36	36			45	54	57				4.38	0.45		0.057
PS1.5-40	40			45	60	63				5.00	0.51	0~0.42	0.065
PS1.5-45	45			45	67.5	70.5				5.79	0.59		0.078
PS1.5-48	48			45	72	75				6.27	0.64		0.087
PS1.5-50	50			45	75	78				6.60	0.67		0.093
PS1.5-55	55			45	82.5	85.5				7.36	0.75		0.11
PS1.5-60	60			50	90	93				8.14	0.83		0.13
PS1.5-65	65			50	97.5	100.5				8.91	0.91		0.15
PS1.5-70	70	S1	12	50	105	108	15	10	25	9.69	0.99	0~0.42	0.17
PS1.5-75	75			50	112.5	115.5				10.5	1.07		0.19
PS1.5-80	80			55	120	123				11.3	1.15		0.22
PS1.5-85	85			55	127.5	130.5				12.0	1.23		0.25
PS1.5-90	90			55	135	138				12.8	1.31		0.27
PS1.5-95	95			60	142.5	145.5				13.6	1.39	0~0.42	0.31
PS1.5-100	100			60	150	153				14.4	1.47		0.34

To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H8		* The product shapes of J Series items are identified by background color.														
Keyway Js9	8	10	12	14	15	16	17	18	19	20	22	25	28	30		
Screw size	—	4×1.8		5×2.3				6×2.8				8×3.3				
Catalog Number	M5	M4						M5				M6				
PS1.5-15 J BORE	S1T															
PS1.5-16 J BORE	S1T															
PS1.5-18 J BORE	S1T	S1K														
PS1.5-20 J BORE	S1T	S1K	S1K													
PS1.5-22 J BORE	S1T	S1K	S1K													
PS1.5-24 J BORE	S1T	S1K	S1K	S1K	S1K											
PS1.5-25 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K									
PS1.5-26 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K									
PS1.5-28 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
PS1.5-30 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1.5-32 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS1.5-35 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS1.5-36 J BORE	S1T	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS1.5-40 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-45 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS1.5-48 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-50 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS1.5-55 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS1.5-60 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-65 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-70 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-75 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K			
PS1.5-80 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PS1.5-85 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PS1.5-90 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PS1.5-95 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		
PS1.5-100 J BORE			S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K		

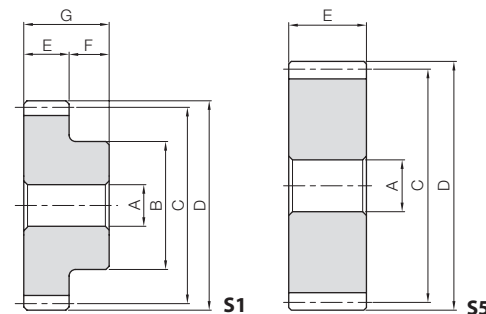
* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.



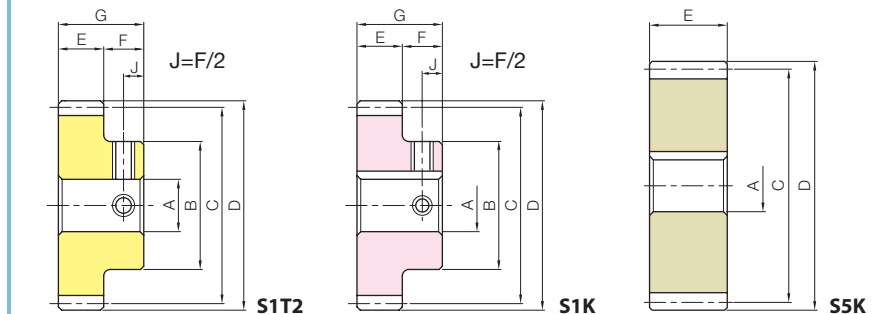


Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade is equivalent to the value shown in the table.



J Series



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore A _{H8}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m) Bending strength	Allowable torque (kgf·m) Bending strength	Backlash (mm)	Weight (kg)
PS2-12	12	S1	10	18	24	28	10	30		2.25	0.23	0~0.42	0.011
PS2-13	13			20	26	30				2.59	0.26		0.013
PS2-14	14			20	28	32				2.96	0.30		0.015
PS2-15	15			24	30	34				3.29	0.34		0.019
PS2-16	16			26	32	36				3.63	0.37		0.022
PS2-18	18			30	36	40				4.24	0.43		0.029
PS2-20	20	S5	12	32	40	44	20	30		4.91	0.50	0~0.44	0.036
PS2-22	22			35	44	48				5.55	0.57		0.044
PS2-24	24			38	48	52				6.19	0.63		0.052
PS2-25	25			40	50	54				6.54	0.67		0.057
PS2-26	26			42	52	56				6.90	0.70		0.063
PS2-28	28			45	56	60				7.54	0.77		0.073
PS2-30	30	S5	15	50	60	64	20	30		8.20	0.84	0~0.46	0.086
PSA2-32	32			64	68	72				8.91	0.91		0.072
PSA2-35	35			70	74	78				10.0	1.02		0.087
PSA2-36	36			72	76	80				10.4	1.06		0.092
PSA2-40	40			80	84	90				11.9	1.21		0.11
PSA2-45	45			90	94	100				13.7	1.40		0.14
PSA2-48	48	S5	15	96	100	104	20	30		14.9	1.52	0~0.46	0.17
PSA2-50	50			100	104	110				15.7	1.60		0.18
PSA2-55	55			110	114	120				17.5	1.78		0.22
PSA2-60	60			120	124	130				19.3	1.97		0.26
PSA2-65	65			130	134	140				21.1	2.15		0.30
PSA2-70	70			140	144	150				23.0	2.34		0.35
PSA2-75	75	S5	15	150	154	160	20	30		24.9	2.54	0~0.46	0.41
PSA2-80	80			160	164	170				26.7	2.72		0.46
PSA2-85	85			170	174	180				28.5	2.91		0.52
PSA2-90	90			180	184	190				30.4	3.10		0.59
PSA2-95	95			190	194	200				32.3	3.29		0.65
PSA2-100	100			200	204					34.2	3.48		0.72

* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

Stainless Steel Hubs for PSA Now Available !
Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.



Knockdown style

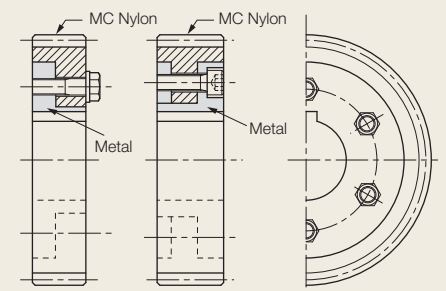
Please see Page 180 for more details.

How to attach gears to shafts

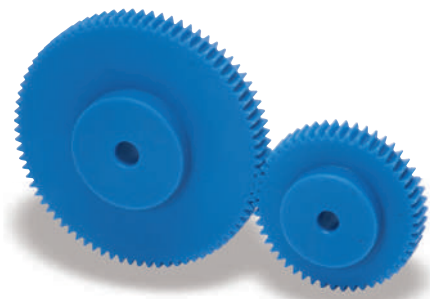
To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

For fastening steel hubs into plastic gears with bolts, see right for various methods.

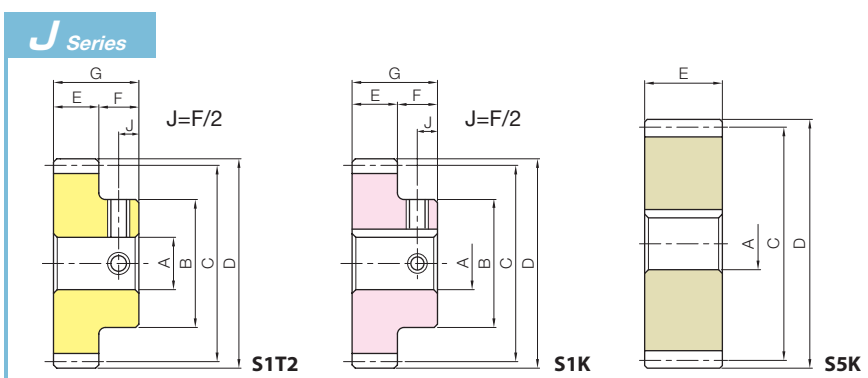
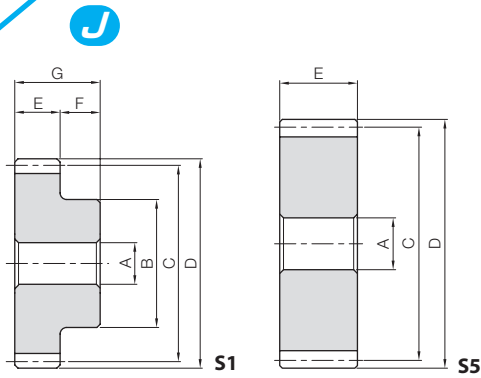


Fastening with a steel hub bolt



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

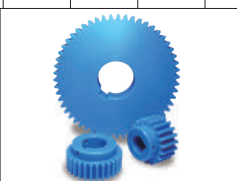
* The precision grade is equivalent to the value shown in the table.



Catalog Number	No. of teeth	Shape	Bore A _{H8}	Hub dia. B	Pitch dia. C	Outside dia. D	Face width E	Hub width F	Total length G	Allowable torque (N·m) Bending strength	Allowable torque (kgf·m) Bending strength	Backlash (mm)	Weight (kg)
PS2.5-12	12	S1	10	23	30	35	12	37	25	4.39	0.45	0~0.44	0.023
PS2.5-13	13			25	32.5	37.5				5.06	0.52		0.028
PS2.5-14	14			25	35	40				5.77	0.59		0.031
PS2.5-15	15			30	37.5	42.5				6.42	0.65		0.037
PS2.5-16	16			32	40	45				7.09	0.72		0.043
PS2.5-18	18		12	38	45	50				8.28	0.84	0~0.46	0.057
PS2.5-20	20			40	50	55				9.59	0.98		0.070
PS2.5-22	22			44	55	60				10.8	1.11		0.085
PS2.5-24	24			48	60	65				12.1	1.23		0.10
PS2.5-25	25			50	62.5	67.5				12.8	1.30		0.11
PS2.5-26	26	S5	15	55	65	70	—	—	—	13.5	1.37	0~0.48	0.12
PS2.5-28	28			60	70	75				14.7	1.50		0.15
PS2.5-30	30			65	75	80				16.0	1.63		0.17
PSA2.5-32	32			—	80	85				17.4	1.77		0.14
PSA2.5-35	35			—	87.5	92.5				19.5	1.99		0.17
PSA2.5-36	36		—	—	90	95				20.3	2.07	0~0.48	0.18
PSA2.5-40	40			—	100	105				23.2	2.36		0.22
PSA2.5-45	45			—	112.5	117.5				26.8	2.73		0.28
PSA2.5-48	48			—	120	125				29.0	2.96		0.32
PSA2.5-50	50			—	125	130				30.6	3.12		0.35
PSA2.5-55	55			—	137.5	142.5				34.1	3.48		0.43
PSA2.5-60	60			—	150	155				37.7	3.84		0.51

To order J Series products, please specify: **Catalog No. + J + BORE.**

Bore H8	* The product shapes of J Series items are identified by background color.																			
	10	12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Keyway J9	4x1.8	5x2.3	6x2.8	8x3.3	10x3.3	12x3.3	14x3.8													
Screw size																				
Catalog Number	M4					M5					M6					M8				
PS2.5-12 J BORE	S1T2																			
PS2.5-13 J BORE	S1K																			
PS2.5-14 J BORE	S1K	S1K																		
PS2.5-15 J BORE		S1K	S1K																	
PS2.5-16 J BORE		S1K	S1K	S1K	S1K															
PS2.5-18 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K											
PS2.5-20 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K										
PS2.5-22 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K									
PS2.5-24 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PS2.5-25 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS2.5-26 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
PS2.5-28 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS2.5-30 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PSA2.5-32 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
PSA2.5-35 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
PSA2.5-36 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA2.5-40 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	
PSA2.5-45 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
PSA2.5-48 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
PSA2.5-50 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
PSA2.5-55 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K
PSA2.5-60 J BORE				S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K



* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance and resin conforming to the Plastic Implementation Measure (PIM). A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

Stainless Steel Hubs for PSA Now Available !

Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.

Knockdown style

Please see Page 180 for more details.

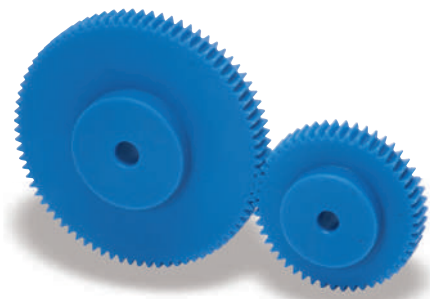
How to attach gears to shafts

To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

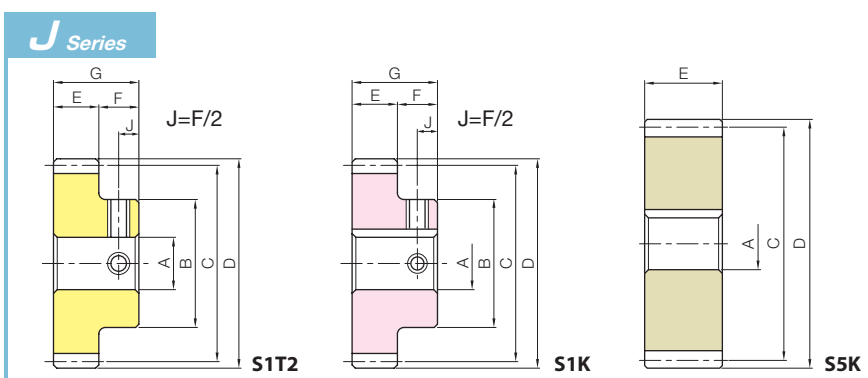
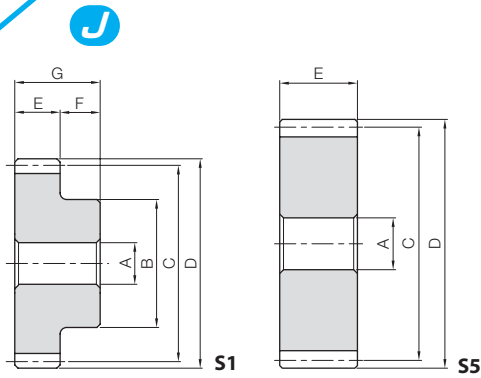
For fastening steel hubs into plastic gears with bolts, see right for various methods.

Fastening with a steel hub bolt



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	MC901
Heat treatment	—
Tooth hardness	(115 to 120HRR)

* The precision grade is equivalent to the value shown in the table.



To order J Series products, please specify: **Catalog No. + J + BORE.**

Catalog Number	No. of teeth	Shape	Bore		Pitch dia.	Outside dia.	Face width	Hub width	Total length	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)
			A _{H8}	B									
PS3-12	12	S1	12	28	36	42	15	45	—	7.58	0.77	0~0.52	0.040
PS3-13	13			30	39	45				8.74	0.89		0.048
PS3-14	14			32	42	48				9.97	1.02		0.056
PS3-15	15			36	45	51				11.1	1.13		0.065
PS3-16	16			38	48	54				12.3	1.25		0.075
PS3-18	18	S1	14	40	54	60	30	45	—	14.3	1.46	0~0.54	0.094
PS3-20	20			50	60	66				16.6	1.69		0.12
PS3-22	22			54	66	72				18.7	1.91		0.15
PS3-24	24			58	72	78				20.9	2.13		0.18
PS3-25	25			60	75	81				22.1	2.25		0.19
PS3-26	26	S5	18	65	78	84	—	—	—	23.3	2.37	0~0.56	0.22
PS3-28	28			70	84	90				25.5	2.60		0.25
PS3-30	30			75	90	96				27.7	2.82		0.29
PSA3-32	32			96	102	102				30.1	3.07		0.24
PSA3-35	35			105	111	111				33.8	3.44		0.29
PSA3-36	36	S5	18	108	114	114	—	—	—	35.1	3.57	0~0.56	0.31
PSA3-40	40			120	126	126				40.0	4.08		0.38
PSA3-45	45			135	141	141				46.3	4.72		0.49
PSA3-48	48			144	150	150				50.2	5.12		0.56
PSA3-50	50			150	156	156				52.8	5.39		0.61
PSA3-55	55	S5	18	165	171	171	—	—	—	58.9	6.01	0~0.56	0.74
PSA3-60	60			180	186	186				65.1	6.64		0.88

Bore H8		* The product shapes of J Series items are identified by background color.																		
Keyway Js9		12	14	15	16	17	18	19	20	22	25	28	30	32	35	40	45	50		
Screw size		4x1.8	5x2.3				6x2.8				8x3.3			10x3.3		12x3.3	14x3.8			
Catalog Number		M4					M5					M6			M8		—			
PS3-12 J BORE	S1T2																			
PS3-13 J BORE	S1K																			
PS3-14 J BORE	S1K	S1K																		
PS3-15 J BORE		S1K	S1K	S1K	S1K															
PS3-16 J BORE		S1K	S1K	S1K	S1K	S1K	S1K													
PS3-18 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K											
PS3-20 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K								
PS3-22 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K							
PS3-24 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K						
PS3-25 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS3-26 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K					
PS3-28 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PS3-30 J BORE		S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K	S1K				
PSA3-32 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K				
PSA3-35 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K			
PSA3-36 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-40 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-45 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-48 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-50 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-55 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		
PSA3-60 J BORE							S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K	S5K		

* In regard to MC Nylon gears, other materials are available for plastic gears, including Ultra High Molecular Weight Polyethylene (U-PE), which has excellent abrasion resistance Poly Ether Ether Ketone (PEEK) also has quality properties. A single piece order is acceptable and will be produced as a custom-made gear. Please see Page 26 for more details on quotations and orders.

Stainless Steel Hubs for PSA Now Available !

Standardized sectional stainless steel hubs. They create a secure method for fastening to the shaft.

Knockdown style

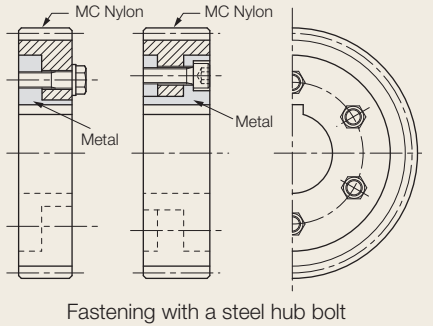
Please see Page 180 for more details.

How to attach gears to shafts

To attach gears to shafts, in case of light loads, methods include using keys, taper pins, spring pins, and press fitting after mounting the setscrews. Since loosening tends to occur in the conditions below, plastic gears are better fastened by using a steel hub.

1. When the circumferential temperature is high
2. For large diameter gears
3. If forward-reverse motion impacts keys

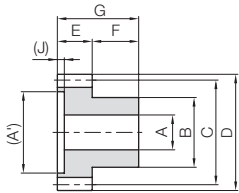
For fastening steel hubs into plastic gears with bolts, see right for various methods.



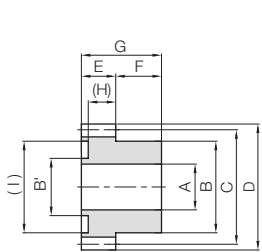


Specifications	
Precision grade	JIS grade N12 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	Duracon (R) (M90-44) **
Heat treatment	—
Tooth hardness	(110 to 120HRR)

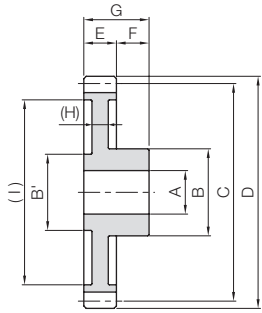
* The precision grade of these products is equivalent to the value shown in the table.
** "Duracon (R)" is a registered trademark of Polyplastics Co., Ltd. in Japan as well as other countries.



S8



S8B



S9

Catalog Number	Module	No. of teeth	Shape	Bore 1	Bore 2	Hub dia. 1	Hub dia. 2	Pitch dia.	Outside dia.	Face width	Hub width
				A	(A')	B	B'	C	D	E	F
DS0.5-12	m0.5	12	S8	2	(4)	4.5	—	6	7	3	4
DS0.5-15		15	S8	3	(5.5)	4.5	—	7.5	8.5		
DS0.5-16		16	S8		(6)	6	—	8	9		
DS0.5-20		20	S8B	4	—	8	5	10	11		
DS0.5-24		24	S9		—	8	5	12	13		
DS0.5-40		40 48 50 56 60	S9	5	—	12	8	20	21	5	
DS0.5-48						12	8	24	25		
DS0.5-50				12		8	25	26			
DS0.5-56				14		10	28	29			
DS0.5-60				14		10	30	31			
DS0.5-70		70 80	6	14		10	35	36			
DS0.5-80				14		10	40	41			
DS0.8-12	m0.8	12 15 16 20 24	S9	3	—	6	4	9.6	11.2	4	5
DS0.8-15				4		6	4.5	12	13.6		
DS0.8-16						8	6	12.8	14.4		
DS0.8-20						10	8	16	17.6		
DS0.8-24				5		10	8	19.2	20.8		
DS0.8-30		30 45 50 56	6	12	10	24	25.6	6			
DS0.8-45				12	10	36	37.6				
DS0.8-50				14.5	11.7	40	41.6				
DS0.8-56				14.5	11.7	44.8	46.4				

Total length	Web thickness	Web O.D.	Hole depth	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (g)	Catalog Number
G	(H)	(I)	(J)	Bending strength	Bending strength			
7	—	—	(0.6)	0.063	0.0064	0~0.30	0.17	DS0.5-12 DS0.5-15 DS0.5-16 DS0.5-20 DS0.5-24
	—	—	(0.6)	0.092	0.0094		0.23	
	—	—	(0.6)	0.10	0.010		0.28	
	(2.4)	(8)	—	0.14	0.014		0.47	
	(1.8)	(9.5)	—	0.17	0.018		0.58	
8	(1.8)	(16.5)	—	0.33	0.034		1.53	DS0.5-40 DS0.5-48 DS0.5-50 DS0.5-56 DS0.5-60
		(21)		0.42	0.043		1.91	
		(21.5)		0.44	0.045		2.02	
		(24.5)		0.50	0.051		2.77	
		(26.5)		0.54	0.055		3.02	
9	(2)	(31.5)	—	0.64	0.066		3.71	DS0.5-70 DS0.5-80
		(36.5)		0.75	0.076		4.51	
		(6.7)		0.22	0.022		0.48	
		(8.8)		0.31	0.032		0.64	
		(9.2)		0.35	0.035		0.84	
10	(2)	(12.7)	—	0.47	0.048	0~0.48	1.26	DS0.8-12 DS0.8-15 DS0.8-16 DS0.8-20 DS0.8-24
		(15)		0.59	0.060		1.59	
		(19.5)		0.79	0.080		2.37	
		(31)		1.31	0.13		4.18	
		(35)		1.50	0.15		5.60	
10	(2)	(39.5)	—	1.70	0.17		6.55	DS0.8-50 DS0.8-56



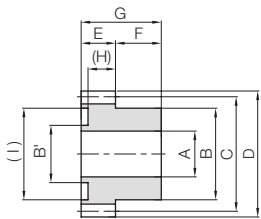


Injection Molded Spur Gears

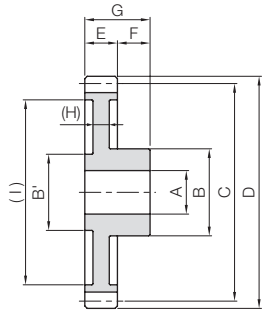


Specifications	
Precision grade	JIS grade N12 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	Duracon (R) (M90-44) **
Heat treatment	—
Tooth hardness	(110 to 120HRR)

* The precision grade of these products is equivalent to the value shown in the table.
** "Duracon (R)" is a registered trademark of Polyplastics Co., Ltd. in Japan as well as other countries.



S8B



S9

Catalog Number	Module	No. of teeth	Shape	Bore 1	Bore 2	Hub dia. 1	Hub dia. 2	Pitch dia.	Outside dia.	Face width	Hub width
				A	(A')	B	B'	C	D	E	F
DS1-12	m1	12	S8B	4	—	8	6	12	14	6	6
DS1-16		16	5			10	8	16	18		
DS1-18		18		10		8	18	20			
DS1-20		20		11.7		9	20	22			
DS1-24		24		11.7		9	24	26			
DS1-28		28	S9	6		11.7	9	28	30		
DS1-30		30				14	12	30	32		
DS1-32		32		8		14	12	32	34		
DS1-35		35				14	12	35	37		
DS1-36		36				14	12	36	38		
DS1-40		40		8		8	16	14	40	42	8
DS1-48		48	16				14	48	50		
DS1-50		50	16				14	50	52		
DS1-60		60	18				15.6	60	62		
DS1-64		64	18				15.6	64	66		
DS1-70		70	18				15.6	70	72		
DS1-80	80			18	15.6	80	82				

Total Length	Web thickness	Web O.D.	Hole depth	Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (g)	Catalog Number
G	(H)	(I)	(J)	Bending strength	Bending strength			
12	(5.5)	(8.5)	—	0.44	0.045	0~0.60	1.10	DS1-12
		(11.5)		0.71	0.073		1.87	DS1-16
		(13.5)		0.83	0.085		2.15	DS1-18
		(15)		0.96	0.098		2.85	DS1-20
		(17)		1.22	0.12		3.81	DS1-24
		(23)		1.48	0.15		4.39	DS1-28
		(24)		1.61	0.16		5.46	DS1-30
		(26.5)		1.75	0.18		5.86	DS1-32
		(29)		1.96	0.20		6.73	DS1-35
		(30)		2.04	0.21		7.01	DS1-36
14	(3)	(34)		2.33	0.24		8.39	DS1-40
		(40)		2.92	0.30		12.0	DS1-48
		(42.5)		3.07	0.31		12.6	DS1-50
		(52.5)		3.78	0.39		17.6	DS1-60
		(56.5)		4.07	0.41		19.4	DS1-64
		(62.5)		4.50	0.46		22.4	DS1-70
		(72.5)		5.23	0.53		27.9	DS1-80

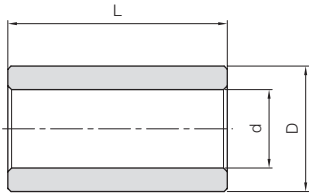


Sintered Metal Bushings

Sintered Metal Bushings



When using the injection molded spur gear with an idler gear (bearing metal press fitting) and diameter smaller than the inside diameter of the molded gear, please press fit the following standard bushing.



T8

Catalog Number	Inner dia.	Outside dia.	Length	Gear example
	d ^{+0.02} / ₀	D ^{+0.02} / _{-0.01}	L ⁰ / _{-0.3}	
BB30507	3	5	7	DS0.5
BB30608	3	6	8	DS0.5, DS0.8
BB40609	4	6	9	DS0.8
BB40612	4	6	12	DS1
BB50812	5	8	12	DS1
BB50814	5	8	14	DS1

Material: Oil-free copper alloy



■ Dimensional tolerance of molded item (unit: mm)

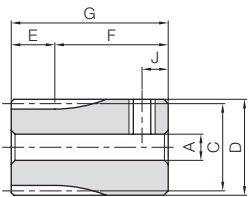
Dimensional classification	Grade	Rough grade
3 or less		±0.20
4 to 6		±0.25
7 to 10		±0.30
11 to 18		±0.35
19 to 30		±0.40
Over 30		±0.50



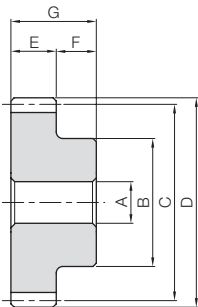


Specifications	
Precision grade	JIS grade N8 (JIS B1702-1: 1998)*
Gear teeth	Standard full depth
Pressure angle	20°
Material	Free cutting brass (C3604)
Heat Treatment	—
Tooth hardness	(80HV or more)

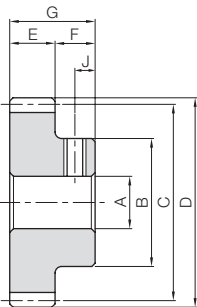
* The precision grade of products with a module of less than 0.8 is equivalent to the value shown in the table.



S3T



S1



S1T

Catalog Number	Module	No. of teeth	Shape	Bore	Hub dia.	Pitch dia.	Outside dia.	Face width	Hub width	Total length	Keyway
				A _{H7}	B	C	D	E	F	G	Width × Depth
BSS0.5-15A	m0.5	15	S3T	3	8.5	7.5	8.5	3	11	14	—
BSS0.5-16A		16			9	8	9				
BSS0.5-20		20	S1	4	8.5	10	11		7 11	10 14	
BSS0.5-20A			S3T	3	11						
BSS0.5-22A		22	S1T	3	9	11	12		7	10	
BSS0.5-24B				4	10	12	13				
BSS0.5-25		25	S1	4	11	12.5	13.5				
BSS0.5-30		30	S1	4	13	15	16				
BSS0.5-30A			S1T	3	12						
BSS0.5-30B			S1T	4	12						
BSS0.5-30C			S1T	5	12						
BSS0.5-38A		38	S1T	4	16	19	20				
BSS0.5-40		40	S1	4	17	20	21				
BSS0.5-50A		50	S1T	4	22	25	26				
BSS0.8-20	m0.8	20	S1	5	13.5	16	17.6	4	8	12	—
BSS0.8-24B		24			16	19.2	20.8				
BSS0.8-25		25			17	20	21.6				
BSS0.8-30		30	S1	5	20	24	25.6				
BSS0.8-30A			S1T	4							
BSS0.8-40		40	S1	5	20	32	33.6				
BSS1-16B	m1	16	S1T	5	12	16	18	6	8	14	—
BSS1-18B		18		6	15	18	20				
BSS1-20C		20		6	16	20	22				
BSS1-30B		30	S1T	6	25	30	32				
BSS1-40A		40	S1T	6	28	40	42				

Socket head screw		Allowable torque (N·m)	Allowable torque (kgf·m)	Backlash (mm)	Weight (kg)	Catalog Number
Size	J	Bending strength	Bending strength			
M3	2.5	0.058	0.0059	0~0.10	0.0054	BSS0.5-15A
		0.065	0.0066		0.0062	BSS0.5-16A
—	—	0.091	0.0093		0.0043	BSS0.5-20
					0.0098	BSS0.5-20A
M3	3.5	0.10	0.011		0.0054	BSS0.5-22A
		0.12	0.012		0.0063	BSS0.5-24B
—	—	0.12	0.013		0.0077	BSS0.5-25
					0.011	BSS0.5-30
M3	3.5	0.16	0.016		0.010	BSS0.5-30A
					0.0099	BSS0.5-30B
M3	3.5				0.0092	BSS0.5-30C
					0.018	BSS0.5-38A
—	—	0.22	0.022	0~0.10	0.020	BSS0.5-40
		0.23	0.024		0.033	BSS0.5-50A
M3	3.5	0.31	0.031		0.014	BSS0.8-20
		0.31	0.032		0.021	BSS0.8-24B
M4	4	0.40	0.041		0.024	BSS0.8-25
		0.43	0.043		0.034	BSS0.8-30
—	—	0.55	0.056		0.035	BSS0.8-30A
					0.046	BSS0.8-40
M4	4	0.79	0.081	0.08~0.18	0.015	BSS1-16B
		0.52	0.053		0.021	BSS1-18B
M4	4	0.62	0.063		0.026	BSS1-20C
		0.73	0.074		0.065	BSS1-30B
M4	4	1.28	0.13		0.10	BSS1-40A
		1.86	0.19			



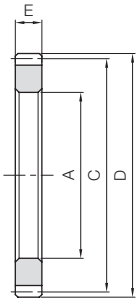


Steel Ring Gears (Spur Gears)

Steel Ring Gears (Spur Gears)



Specifications	
Precision grade	JIS grade N9 (JIS B1702-1: 1998)
Gear teeth	Standard full depth
Pressure angle	20°
Material	S45C
Heat treatment	—
Tooth hardness	(less than 194HB)



S5

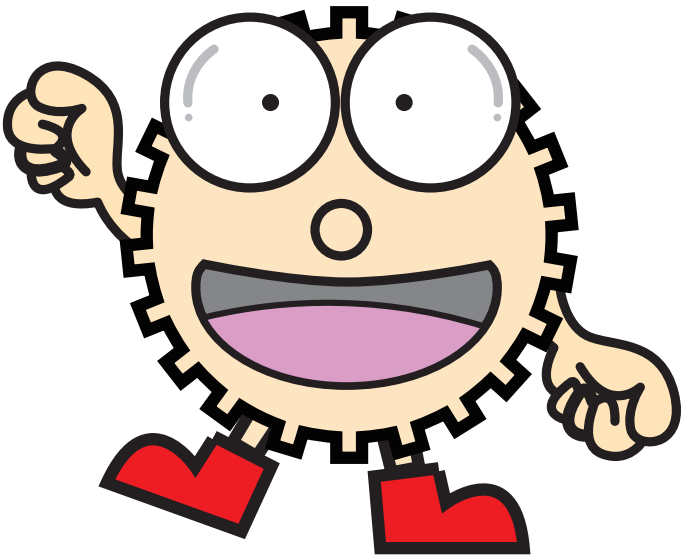
Catalog Number	Module	No. of teeth	Shape	Bore				Allowable torque (N·m)				Allowable torque (kgf·m)	
				A _{H8}	C	D	E	Bending strength	Surface durability	Bending strength	Surface durability		
SSR2-120 SSR2-200	m2	120 200	S5	194 354	240 400	244 404	20	366 630	44.0 84.2	37.4 64.3	4.49 8.59		
SSR2.5-120 SSR2.5-200	m2.5	120 200	S5	245 445	300 500	305 505	25	715 1230	88.5 169	72.9 126	9.02 17.2		
SSR3-120 SSR3-160	m3	120 160	S5	296 416	360 480	366 486	30	1240 1680	157 226	126 171	16.0 23.0		

Backlash (mm)	Weight (kg)	Catalog Number
0.12~0.26	2.46 4.28	SSR2-120 SSR2-200
0.14~0.28	4.62 8.01	SSR2.5-120 SSR2.5-200
0.14~0.32	7.77 10.6	SSR3-120 SSR3-160



Helical Gears

KHG Ground Helical Gears	SH Helical Gears
Material: SCM440 m1~3 Page 194	Material: S45C m2, 3 Page 202



Catalog Number of KHK Stock Gears

The Catalog Number for KHK stock gears is based on the simple formula listed below. Please order KHK gears by specifying the Catalog Numbers.

(Example) Helical Gears

K H G 1 - 20 R

- Direction of Helix (Right)
- No. of Teeth (20)
- Module (1)
- Other Products (Ground Gears)
- Type (Helical Gears)
- Material (SCM440)

Material	
S	S45C
K	SCM440

Type	
H	Helical Gears

Other Information	
G	Ground Gears

