



**NIPPON THOMPSON CO., LTD. (JAPAN)**

Head office : 19-13 Takanawa 2-chome Minato-ku  
Tokyo 108-8586, Japan  
Phone : +81 (0)3-3448-5850  
Fax : +81 (0)3-3447-7637  
E-mail : ntt@ikonet.co.jp  
URL : http://www.ikont.co.jp/eg/  
Plant : Gifu, Kamakura

**IKO INTERNATIONAL, INC. (U.S.A.)**

**East Coast Operation (Sales Head Office)**  
91 Walsh Drive  
Parsippany, NJ 07054  
U.S.A.  
Phone : +1 973-402-0254  
Toll Free : 1-800-922-0337  
Fax : +1 973-402-0441  
E-mail : eco@ikonet.co.jp

**Midwest Operation**  
500 East Thorndale Avenue, Suite K  
Wood Dale, IL 60191  
U.S.A.  
Phone : +1 630-766-6464  
Toll Free : 1-800-323-6694  
Fax : +1 630-766-6869  
E-mail : mwo@ikonet.co.jp

**Minnesota Sales Office**  
1500 McAndrews Road West, Suite 210  
Burnsville, MN 55337  
U.S.A.  
Phone : +1 952-892-8415  
Toll Free : 1-800-323-6694  
Fax : +1 952-892-1722  
E-mail : mwo@ikonet.co.jp

**West Coast Operation**  
9830 Norwalk Boulevard, Suite 198  
Santa Fe Springs, CA 90670  
U.S.A.  
Phone : +1 562-941-1019  
Toll Free : 1-800-252-3665  
Fax : +1 562-941-4027  
E-mail : wco@ikonet.co.jp

**Silicon Valley Sales Office**  
1500 Wyatt Drive, Suite 10  
Santa Clara, CA 95054  
U.S.A.  
Phone : +1 408-492-0240  
Toll Free : 1-800-252-3665  
Fax : +1 408-492-0245  
E-mail : wco@ikonet.co.jp

**Southeast Operation**  
2150 Boggs Road, Suite 100  
Duluth, GA 30096  
U.S.A.  
Phone : +1 770-418-1904  
Toll Free : 1-800-874-6445  
Fax : +1 770-418-9403  
E-mail : seo@ikonet.co.jp

**Southwest Operation**  
8105 N. Beltline Road, Suite 130  
Irving, TX 75063  
U.S.A.  
Phone : +1 972-929-1515  
Toll Free : 1-800-295-7886  
Fax : +1 972-915-0060  
E-mail : swo@ikonet.co.jp

**NIPPON THOMPSON EUROPE B.V. (EUROPE)**

**The Netherlands (Sales Head Office)**  
Sheffieldstraat 35-39  
3047 AN Rotterdam  
The Netherlands  
Phone : +31 (0)10-462 68 68  
Fax : +31 (0)10-462 60 99  
E-mail : nte@ikonet.co.jp

**Germany Branch**  
Mündelheimer Weg 56  
40472 Düsseldorf  
Germany  
Phone : +49 (0)211-41 40 61  
Fax : +49 (0)211-42 76 93  
E-mail : ntd@ikonet.co.jp

**Regensburg Sales Office**  
Im Gewerbepark D 30  
93059 Regensburg  
Germany  
Phone : +49 (0)941-20 60 70  
Fax : +49 (0)941-20 60 719  
E-mail : ntdr@iko-nt.de

**Neunkirchen Sales Office**  
Gruben Str. 95 c  
66540 Neunkirchen  
Germany  
Phone : +49 (0)6821-99 98 60  
Fax : +49 (0)6821-99 98 626  
E-mail : ntdn@iko-nt.de

**U.K. Branch**  
2 Vincent Avenue, Crownhill  
Milton Keynes, Bucks, MK8 0AB  
United Kingdom  
Phone : +44 (0)1908-566144  
Fax : +44 (0)1908-565458  
E-mail : sales@iko.co.uk

**Spain Branch**  
Autovia Madrid-Barcelona, Km. 43,700  
Polig. Ind. AIDA - Nove A-8, Ofic. 2-1ª  
19200 Azuqueca de Henares  
(Guadalajara) Spain  
Phone : +34 949-26 33 90  
Fax : +34 949-26 31 13  
E-mail : nts@ikonet.co.jp

**France Branch**  
Roissypole Le Dôme  
2 rue de La Haye  
BP 15950 Tremblay en France  
95733 Roissy C. D. G. Cedex  
France  
Phone : +33 (0)1-48 16 57 39  
Fax : +33 (0)1-48 16 57 46  
E-mail : contact@iko-france.com

See you again at  
**IKO Website**  
<http://www.ikont.co.jp/eg/>

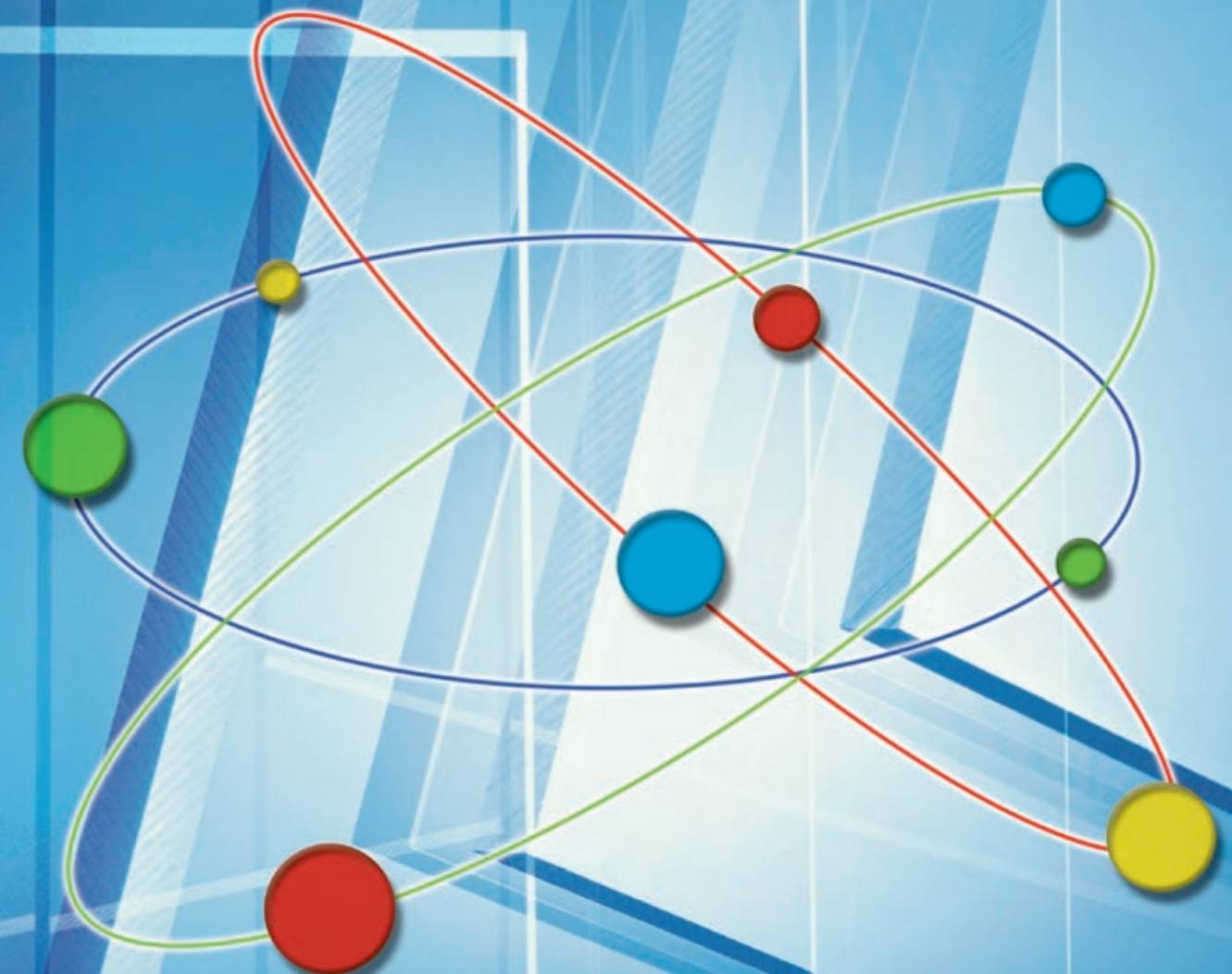
Recognizing that conservation of the global environment is the top-priority challenge for the world's population, Nippon Thompson will conduct its activities with consideration of the environment as a corporate social responsibility, reduce its negative impact on the environment, and help foster a rich global environment.

**ISO 9001 & 14001 Quality system  
registration certificate**



- The specifications and dimensions of products in this catalog are subject to change without prior notice.
- When these products are exported, the exporter should confirm a forwarding country and a use, and, in case of falling under the customer's requirements, take necessary procedures such as export permission application.
- Although all data in this catalog has been carefully compiled to make the information as complete as possible, NIPPON THOMPSON CO., LTD. shall not be liable for any damages whatsoever, direct or indirect, based upon any information in this catalog. NIPPON THOMPSON CO., LTD. makes no warranty, either express or implied, including the implied warranty of merchantability or fitness for a particular purpose.
- Reproduction and conversion without permission are prohibited.

# Alliance Partners Products



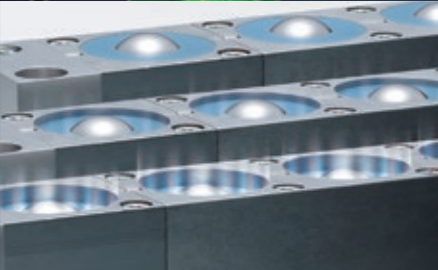


# IKO Alliance Partners Products

Alliance Partners Products are expressly selected by **IKO** from the industrial marketplace in Japan because of their originality, unique features, advanced technology and high standards.

**IKO** will strive to introduce such outstanding products from Japan along with **IKO** linear and bearing products to the worldwide marketplace through our global sales network.

## INDEX




Air Ball Lifter **01**  
Air Ball Lifter  
**ISR Series**  
Page 2




Cleanroom Type Ball Transfer **02**  
Cleanroom Ball Transfer  
**ISC, ISCS & IP Series**  
Page 4




Flexible Coupling **03**  
High Gain Rubber Type  
**XG2 Series**  
Page 6




Super Miniature Ball Screw **07**  
**BSP Series**  
Page 17




Spherical Rolling Joint **08**  
**SRJ Series**  
Page 18




Hybrid Flange Linearbush **09**  
**JFK Series**  
Page 19




Ball Screw **04**  
Deflector Type / K Series - Miniature - High Precision Type  
**Precision Ball Screw**  
Page 12




Inside Return Style Ball Screw **05**  
Compact Type  
**BSIR Series**  
Page 14



Ball Screw with OS unit **06**  
**BSF Series**  
Page 16



Utility Track Ball **10**  
**UTB Series**  
Page 20



Linear Ball Bush **11**  
**LM Series**  
Page 21



Slide Rail **12**  
Miniature Type Slide Rail  
**U1000 Series**  
Page 22



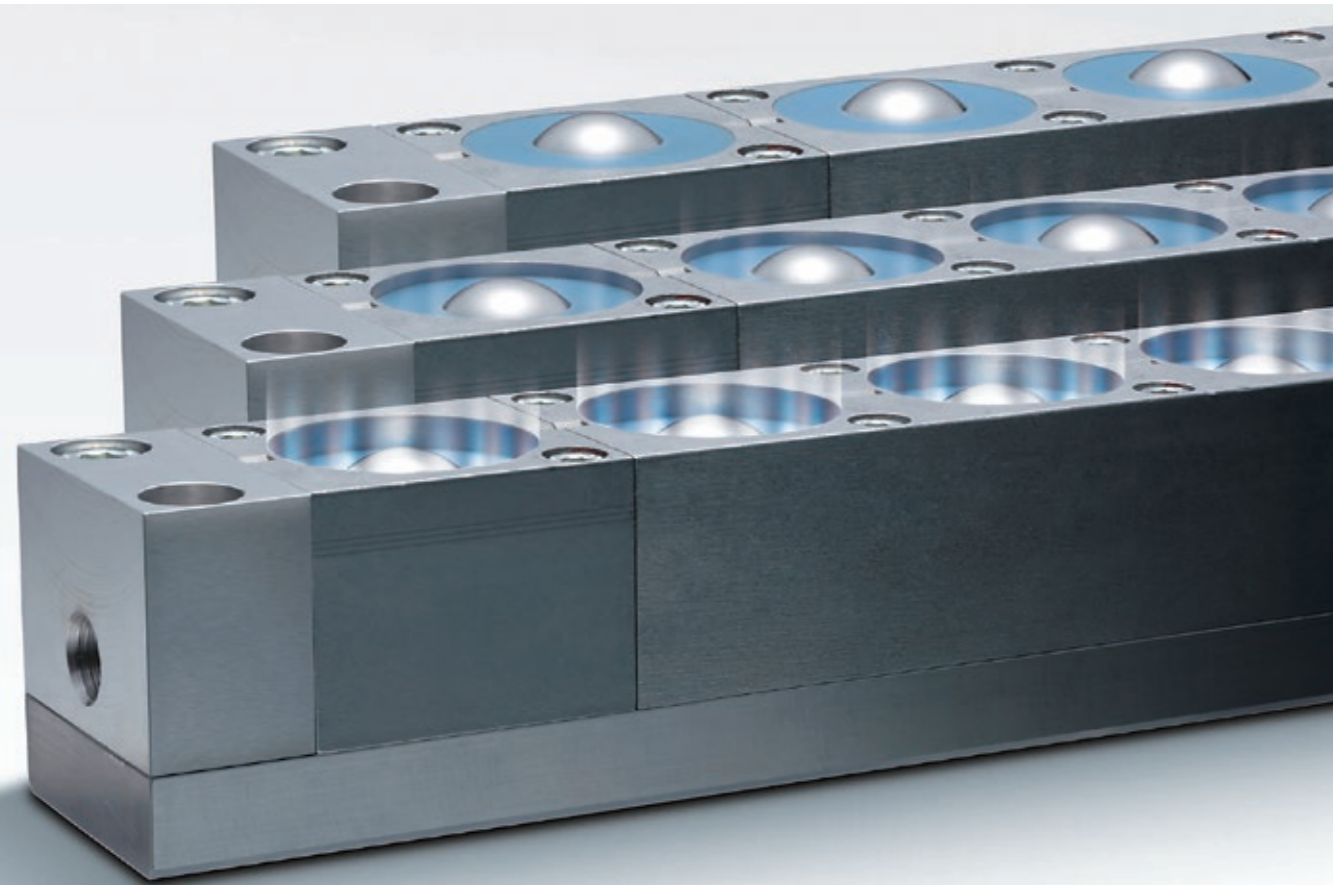


# Air Ball Lifter

## Air Ball Lifter

# ISR Series

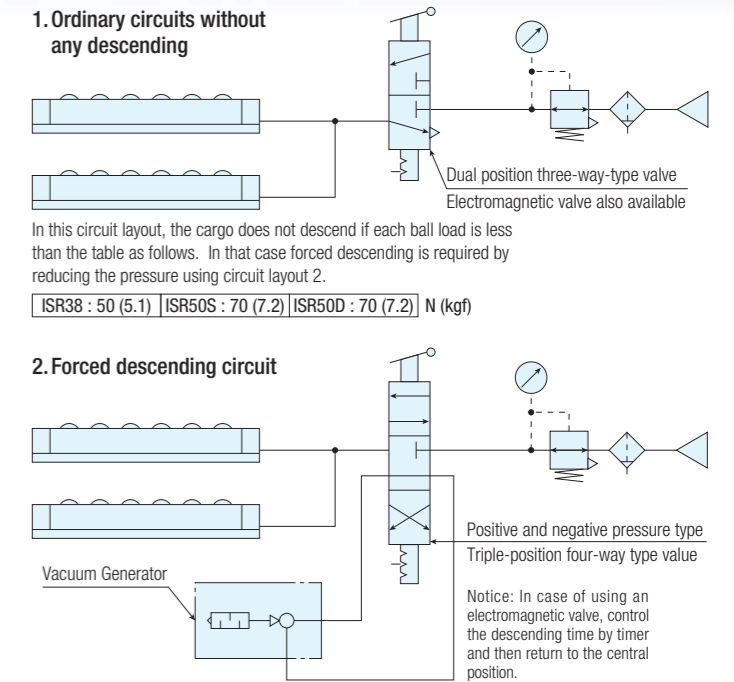
A combination of a high precision-machined ball transfer with an air cylinder. This unique device uses compressed air to lift a load/tool from the table surface position and rotate it in any 360 degree direction in a horizontal plane, an economical and labor saving unit.



### Specifications

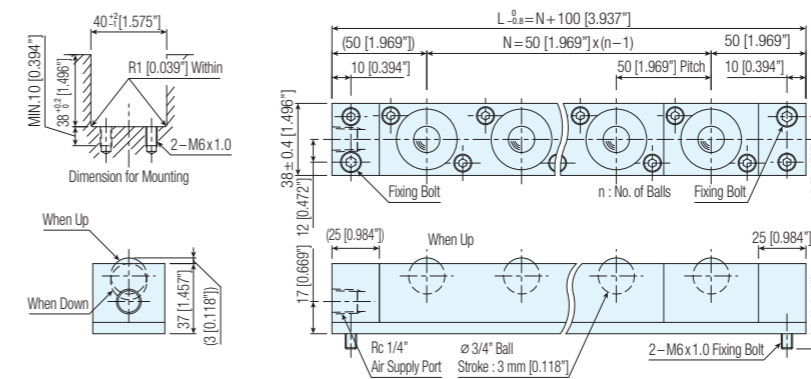
Max Air Pressure	0.9 MPa (9.18 kgf/cm <sup>2</sup> )
Working Pressure Range	0.05~0.6 MPa (0.51~6.12 kgf/cm <sup>2</sup> )
Operating Temperature Range	-5~80 °C
Using Fluid	Air and Inert Gas (No Filling Up)

### Recommended Circuit Drawing



*Customized ball transfers for specific applications and clean room is also available upon request, for more information please contact our sales.*

### Dimension / ISR-38 Type



Name	Material
Main Ball	SUJ2
Cover	Nylon
Body	A6063-T5
Plug	A6063-T5
Bar	SGD400-D

### What is Air Ball Lifter Initial Starting Coefficient of Friction?

Calculated lifting capability with combination of selected ball transfers in addition to precision machined enables starting coefficient of friction less than 2 percent even maximum load is applied. For instance when the smoothness of an article bottom in contact with a ball transfer is equivalent to SS400 steel, 200 kg load can be conveyed or rotated only by 4 kg force.

### How to Choose an Air Ball Lifter

There are three kinds of air ball lifters: 38 mm width for light load, 50 mm width for medium load and double piston type for heavy load. Besides ISR type, T slot type is also available.

### You can Choose The Length in 50 mm Units

Air Ball lifters are consist of independent cylinder blocks. You can create a long block of over 1 m by mechanically connecting two or more air ball lifters by adding 50 mm blocks. (you can connect as many as air ball lifters if there is no limitation in time for compressed air charge/discharge.

ISR Model	50 mm pitch
ISR-C Model	50 mm pitch
ISR-18T Model	80 mm pitch
ISR-22T Model	90 mm pitch
ISR-28T Model	120 mm pitch

Each Ball transfer has independent cylinder, please refer above for the pitch and length. You can connect as many if there is no limitation in time for compressed air charge/discharge. You can create a long block of over 1 m mechanically connecting two or more air ball lifters by adding 50 mm blocks.

Model	Overall Length of Ball Lifter L		No. of Balls N	Product Weight			Load Capacity on Each Unit								
							Supplied Air Pressure MPa (kgf/cm <sup>2</sup> )								
							0.4MPa (4.08 kgf/cm <sup>2</sup> )			0.5MPa (5.10 kgf/cm <sup>2</sup> )			0.6MPa (6.12 kgf/cm <sup>2</sup> )		
(mm)	(inch)	(kg)	(N)	(lbs)	(kgf)	(kN)	(lbf)	(kgf)	(kN)	(lbf)	(kgf)	(kN)	(lbf)		
ISR38-100-A	100	3.94	1	0.6	5.6	1.3	33	0.32	73	42	0.41	93	52	0.51	115
ISR38-150-A	150	5.91	2	0.9	8.4	1.9	66	0.65	146	84	0.82	185	104	1.02	229
ISR38-200-A	200	7.87	3	1.1	11.2	2.5	99	0.97	218	126	1.23	278	156	1.53	344
ISR38-250-A	250	9.84	4	1.4	14	3.1	132	1.29	291	168	1.65	370	208	2.04	459
ISR38-300-A	300	11.81	5	1.7	16.8	3.8	165	1.62	364	210	2.06	463	260	2.55	573
ISR38-350-A	350	13.78	6	2	19.6	4.4	198	1.94	437	252	2.47	556	312	3.06	688
ISR38-400-A	400	15.75	7	2.3	22.4	5	231	2.26	509	294	2.88	648	364	3.57	803
ISR38-450-A	450	17.72	8	2.6	25.2	5.7	264	2.59	582	336	3.29	741	416	4.08	917
ISR38-500-A	500	19.69	9	2.9	28	6.3	297	2.91	655	378	3.70	833	468	4.59	1032
ISR38-550-A	550	21.65	10	3.1	30.8	6.9	330	3.23	728	420	4.12	926	520	5.10	1146
ISR38-600-A	600	23.62	11	3.4	33.6	7.5	363	3.56	800	462	4.53	1019	572	5.61	1261
ISR38-650-A	650	25.59	12	3.7	36.4	8.2	393	3.88	866	504	4.94	1111	624	6.12	1376
ISR38-700-A	700	27.56	13	4	39.2	8.8	429	4.20	946	546	5.35	1204	676	6.62	1490
ISR38-750-A	750	29.53	14	4.3	42	9.4	462	4.53	1019	588	5.76	1296	728	7.13	1605
ISR38-800-A	800	31.5	15	4.6	44.8	10.1	495	4.85	1091	630	6.17	1389	780	7.64	1720
ISR38-850-A	850	33.46	16	4.8	47.6	10.7	528	5.17	1164	672	6.59	1482	832	8.15	1834
ISR38-900-A	900	35.43	17	5.1	50.4	11.3	561	5.50	1237	714	7.00	1574	884	8.66	1949
ISR38-950-A	950	37.4	18	5.4	53.2	11.9	594	5.82	1310	756	7.41	1667	936	9.17	2064
ISR38-1000-A	1000	39.37	19	5.7	56	12.6	627	6.14	1382	798	7.82	1759	988	9.68	2178





# Cleanroom Type Ball Transfer

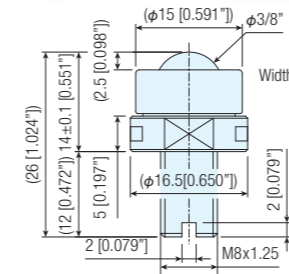
## Cleanroom Ball Transfer

# ISC, ISCS & IP Series

At present we have met the fundamental demand for clean room applications and to meet our customer specific requirements we developed a low-cost molded type with superior performance in addition to machine cut Ball Transfers.



### Dimension / ISC(S)-10 Type



### ISCS - 10 V1 S - J

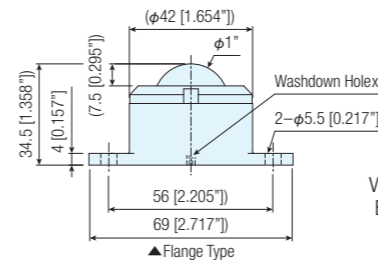
- Injection Mold Type
- Main Ball Size
- Main Ball Material
- Small Balls Material
- Body Material



ISC: Machining Type  
ISCS: Injection Mold Type

Main Ball	Vespel® SP
Small Balls	Stainless Type
Body	POM
Cap	POM

### Dimension / IP-25 Type



### IP - 25 J W

- Main Ball Size
- Main Ball Material
- W: POM (White) Flange
- B: POM (Black) Flange



Main Ball	POM
Body / Cap / Small Balls	POM

*Customized ball transfers for specific applications and clean room is also available upon request, for more information please contact our sales.*

### Features

DuPont Vespel and variety of other Engineering plastics for glass handling, food industries, cleanrooms, high temp over 200C also Custom made ball transfers for specific applications also available upon request, please contact our sales.

### Advantages

1. Friction resistance 1/10 compare to conventional Pin alignment.
2. Ball transfer alignment and positioning enables, less friction, long life, stability, compare to Pin which wear soon.
3. With low friction reduce lines, cracks and flaws on glass substrate; improve yields at loader/unloader and other applications.
4. Frequent replacement is not needed which occurs from abrasion or wear.



### What is Ball Transfer?

Ball Transfer Units are used as a part of conveyor or material handling system to enable light and heavy loads to be moved or transferred smoothly in 360 direction. Also ball units are used for loading/feeding machines, pneumatic stamping die changing air ball lifters, moving articles/materials, as an alternative to a castor, or in a form of linear operation, they have become an integral component in all industries and provide an important and essential service and solution.







# Flexible Coupling

We have developed the capability to produce the highest quality products, even a single item at a time, for delivery to our customers anywhere and anytime.

## High Gain Rubber Type

# XG2 Series



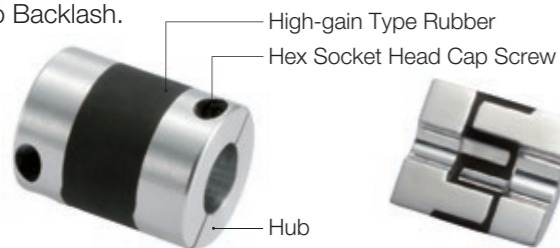
### Lineup

Offers a wide variety of usages, from high-performance servomotor applications to general-purpose usage.

Product Code	XGT2-C	XGT-CS	XGT
Shape			
High-gain Type Rubber Material	FKM	HNBR	HNBR
Performance	◎	○	○
Attachment	Clamp	Clamp	Set Screw
Price	△	○	◎

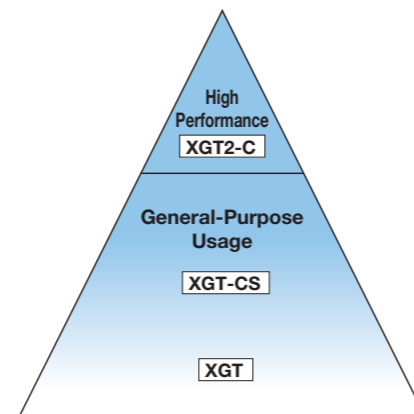
### Structure

- Integrated combination of aluminum hub and high gain type rubber.
- Zero Backlash.



### Characteristics

- High gain servomotor reduces stabilization time.
- Suppressing speed unevenness during Stepping Motor Operation.
- They have excellent vibration absorption.
- Actuator drive noise reducible.
- High Torque.



### Selection

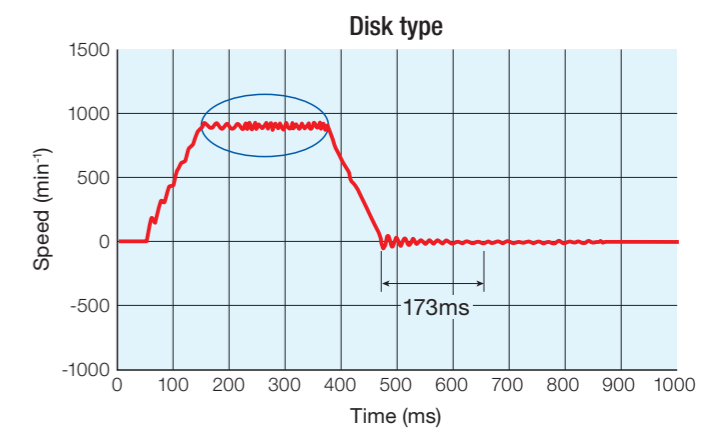
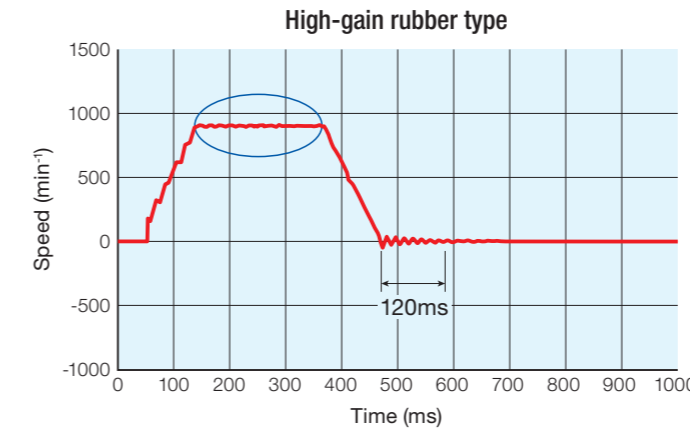
#### Measurement of stabilization time, positioning accuracy and overshoot

Gain *		XG2 Series	XG Series	Disk Type
25	Stabilization Time (ms)	12	12	12
	Overshoot (μm)	0.4	0.9	0.6
27	Stabilization Time (ms)	8	8	Occurrence of Hunting
	Overshoot (μm)	0.6	1	
32	Stabilization Time (ms)	3	Occurrence of Hunting	Occurrence of Hunting
	Overshoot (μm)	1.7		

\* Values (1-32) are after adjustment of all gains including Position Control Gain and Speed Control Gain

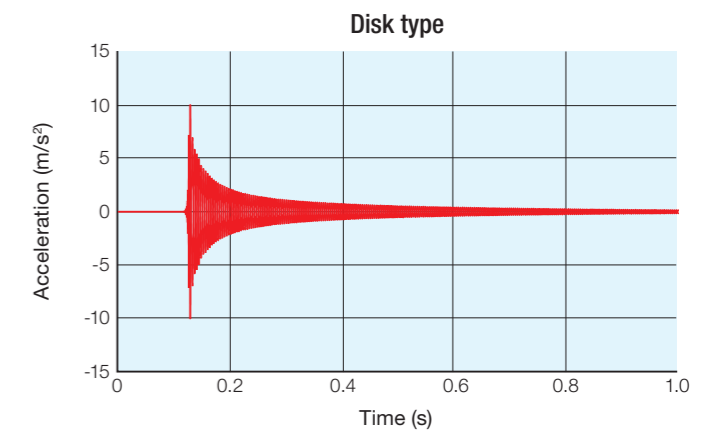
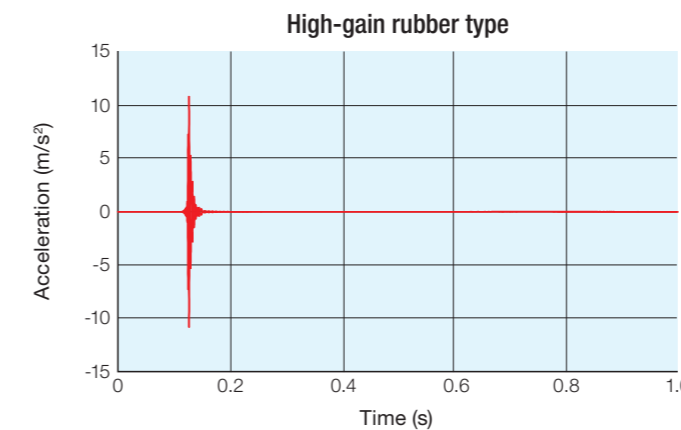
### Speed Unevenness Suppression

Speed and torque unevenness arising from misalignment will be suppressed.



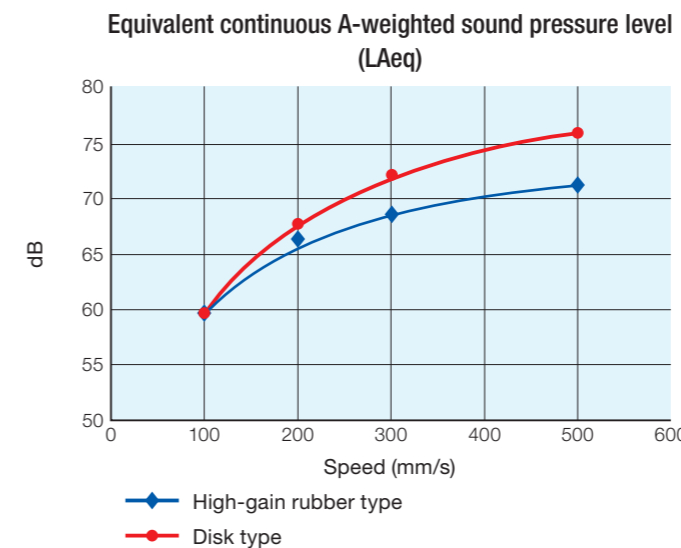
### Vibration Suppression

High damping ratio will enable quick absorption of vibrations.



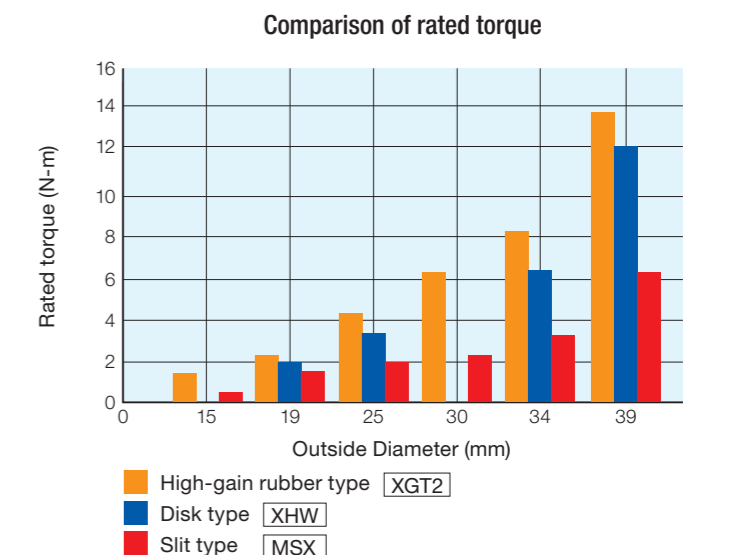
### Quietness

Actuator drive noise can be reduced.



### High Torque

High torque use is possible compared with disk-type and slit-type.

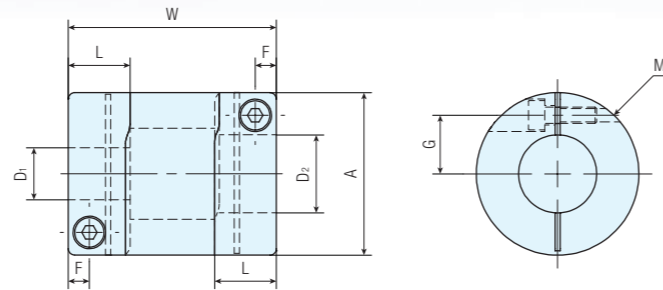


Various Dimensions / Clamping Type

Standard Type

**XGT2**

XGT2-C



Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter D <sub>1</sub> -D <sub>2</sub>										
								3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6	6-7	6-8
XGT2-15C	15	6.5	23	2.15	5	M1.6	0.25	3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6	6-7	6-8
XGT2-19C	19	7.7	26	2.65	6.5	M2	0.5	4-5 6.35-8	4-8 8-8	5-5	5-6	5-7	5-8	6-6	6-6.35	6-7	6-8	
XGT2-25C	25	9.5	32	3.25	9	M2.5	1	5-6 8-10	5-8 8-11	6-6 8-12	6-8 10-10	6-10 10-12	6-11 12-12	6-12	6.35-8	6.35-10	8-8	
XGT2-30C	30	11	36	4	11	M3	1.5	8-8 10-15	8-10 11-12	8-11 12-12	8-12 12-14	8-14 12-15	8-15 14-14	10-10 14-15	10-11 15-15	10-12	10-14	
XGT2-34C	34	12	38	4	12.25	M3	1.5	8-8 10-15	8-10 11-11	8-11 11-12	8-12 12-12	8-14 12-14	8-15 12-15	10-10 14-14	10-11 14-15	10-12 15-15	10-14 16-16	
XGT2-39C	39	15.5	48	4.5	14.5	M4	2.5	10-10 12-20	10-12 14-14	10-14 14-15	10-15 14-16	10-16 15-15	12-12 15-16	12-14 15-19	12-15 16-16	12-16 17-17	12-19 20-20	
XGT2-44C	44	15	48	4.75	16	M4	2.5	12-12 15-19	12-14 15-20	12-16 16-16	12-19 16-19	14-14 17-17	14-15 19-20	14-16 20-20	14-19	15-15	15-16	
XGT2-56C	56	19.5	60	5.5	20	M5	7	15-15	15-19	15-20	15-25	19-20	19-24	20-20	20-25	24-25	25-25	

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft.

Performance

Part Number	Max. Bore Diameter (mm)	Rated* <sup>1</sup> Torque (N·m)	Max.* <sup>1</sup> Torque (N·m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment* <sup>2</sup> of Inertia (kg·m <sup>2</sup> )	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass* <sup>2</sup> (g)
XGT2-15C	6	1.1	2.2	42000	2.6×10 <sup>-7</sup>	110	0.15	1.5	±0.2	9
XGT2-19C	8	2.1	4.2	33000	7.6×10 <sup>-7</sup>	240	0.15	1.5	±0.2	15
XGT2-25C	12	4	8	25000	2.7×10 <sup>-6</sup>	390	0.15	1.5	±0.2	29
XGT2-30C	15	6.3	12.6	21000	6.3×10 <sup>-6</sup>	590	0.2	1.5	±0.3	45
XGT2-34C	16	8	16	18000	1.2×10 <sup>-5</sup>	890	0.2	1.5	±0.3	66
XGT2-39C	20	13.5	27	16000	2.5×10 <sup>-5</sup>	1100	0.2	1.5	±0.3	105
XGT2-44C	22	18	36	14000	4.1×10 <sup>-5</sup>	1300	0.2	1.5	±0.3	134
XGT2-56C	28	35	70	11000	1.4×10 <sup>-4</sup>	2500	0.2	1.5	±0.3	270

\*<sup>1</sup> Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of XGT2-C is -10°C to 120°C.

\*<sup>2</sup> These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

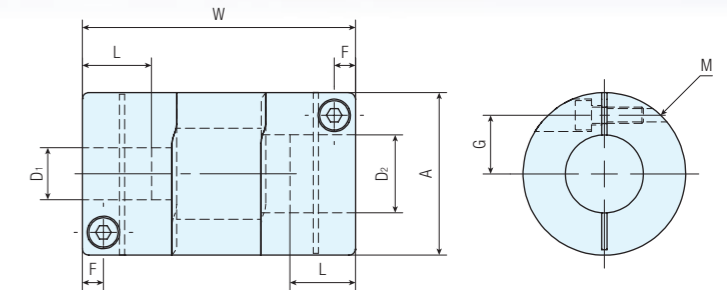
Ambient Temperature	Temperature Correction Factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

Clamping Type

Long Type

**XGL2**

XGL2-C



Part Number	A	L	W	F	G	M	Screw Tightening Torque (N·m)	Standard Bore Diameter D <sub>1</sub> -D <sub>2</sub>												
								3-5	5-5	5-6	5-7	5-8	6-6	6-6.35	6-8	6.35-8	8-8			
XGL2-15C	15	6.5	30	2.15	5	M1.6	0.25	3-5	5-5	5-6										
XGL2-19C	19	7.7	34	2.65	6.5	M2	0.5	4-5	5-5	5-6	5-7	5-8	6-6	6-6.35	6-8	6.35-8	8-8			
XGL2-25C	25	9.5	42	3.25	9	M2.5	1	5-8	6-8	6-10	6.35-8	8-8	8-10	8-11	8-12	10-10	10-12			
XGL2-30C	30	11	42	4	11	M3	1.5	8-8	8-10	8-11	8-12	8-14	8-15	10-10	10-11	10-14	11-12	12-14		
XGL2-34C	34	12	44	4	12.25	M3	1.5	8-8	8-10	8-12	8-14	10-11	10-14	11-12	12-14	14-15				
XGL2-39C	39	15.5	55	4.5	14.5	M4	2.5	10-10	10-12	10-14	12-14	14-15	15-19							

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft.

Performance

Part Number	Max. Bore Diameter (mm)	Rated* <sup>1</sup> Torque (N·m)	Max.* <sup>1</sup> Torque (N·m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment* <sup>2</sup> of Inertia (kg·m <sup>2</sup> )	Static Torsional Stiffness (N·m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass* <sup>2</sup> (g)
XGL2-15C	6	1.1	2.2	42000	3.6×10 <sup>-7</sup>	82	0.15	1.5	±0.2	11
XGL2-19C	8	2.1	4.2	33000	1.0×10 <sup>-6</sup>	210	0.15	1.5	±0.2	20
XGL2-25C	12	4	8	25000	3.8×10 <sup>-6</sup>	300	0.15	1.5	±0.2	40
XGL2-30C	15	6.3	12.6	21000	7.6×10 <sup>-6</sup>	540	0.2	1.5	±0.3	56
XGL2-34C	16	8	16	18000	1.4×10 <sup>-5</sup>	640	0.2	1.5	±0.3	78
XGL2-39C	20	13.5	27	16000	2.9×10 <sup>-5</sup>	950	0.2	1.5	±0.3	122

\*<sup>1</sup> Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of XGL2-C is -10°C to 120°C.

\*<sup>2</sup> These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

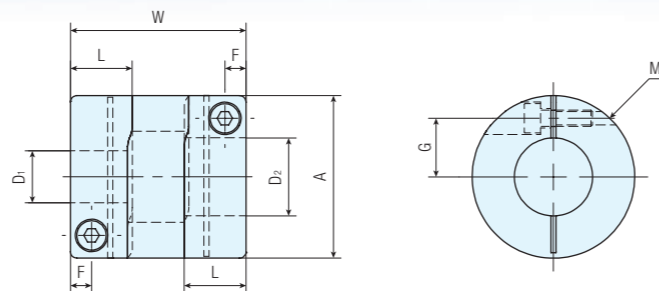
Ambient Temperature	Temperature Correction Factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

Various Dimensions / Clamping Type

Short Type

**XGS2**

XGS2-C



Part Number	A	L	W	F	G	M	Screw Tightening Torque (N-m)	Standard Bore Diameter D1-D2									
								3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6	
XGS2-15C	15	6.5	18	2.15	5	M1.6	0.25	3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6	
XGS2-19C	19	7.7	20	2.65	6.5	M2	0.5	4-5 8-8	5-5	5-6	5-7	5-8	6-6	6-6.35	6-7	6-8	6.35-8
XGS2-25C	25	9.5	27	3.25	9	M2.5	1	5-6 8-10	5-8 8-11	6-6 8-12	6-8 10-10	6-10 10-12	6-11 12-12	6-12	6.35-8	6.35-10	8-8
XGS2-30C	30	11	30	4	11	M3	1.5	8-8 10-15	8-10 11-12	8-11 12-12	8-12 12-14	8-14 12-15	8-15 14-14	10-10 14-15	10-11 15-15	10-12	10-14
XGS2-34C	34	12	35	4	12.25	M3	1.5	8-8 10-15	8-10 11-11	8-11 11-12	8-12 12-12	8-14 12-14	8-15 12-15	10-10 14-14	10-11 14-15	10-12 15-15	10-14 16-16
XGS2-39C	39	15.5	40	4.5	14.5	M4	2.5	10-10 12-20	10-12 14-14	10-14 14-15	10-15 14-16	10-16 15-15	12-12 15-19	12-14 15-19	12-15 16-15	12-16 17-17	12-19 20-20

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 Torque (N-m)	Max.*1 Torque (N-m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment*2 of Inertia (kg-m <sup>2</sup> )	Static Torsional Stiffness (N-m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGS2-15C	6	0.5	1	42000	2.1×10 <sup>-7</sup>	64	0.15	1.5	±0.2	7
XGS2-19C	8	0.8	1.6	33000	5.9×10 <sup>-7</sup>	170	0.15	1.5	±0.2	12
XGS2-25C	12	2.3	4.6	25000	2.4×10 <sup>-6</sup>	290	0.15	1.5	±0.2	24
XGS2-30C	15	3.3	6.6	21000	5.2×10 <sup>-6</sup>	430	0.2	1.5	±0.3	38
XGS2-34C	16	5.5	11	18000	1.1×10 <sup>-5</sup>	800	0.2	1.5	±0.3	61
XGS2-39C	20	7	14	16000	2.1×10 <sup>-5</sup>	930	0.2	1.5	±0.3	90

\*1 Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of XGS2-C is -10°C to 120°C.

\*2 These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

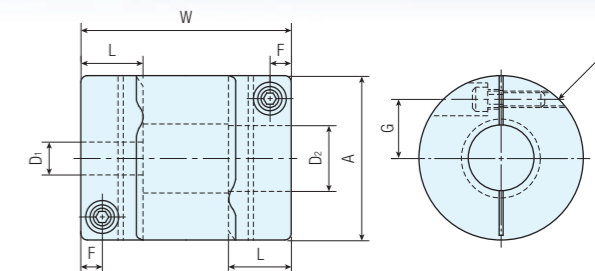
Ambient Temperature	Temperature Correction Factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55

/ Single Clamping Type

Standard Type

**XGT-CS**

XGT-CS



Part Number	A	L	W	F	G	M	Screw Tightening Torque (N-m)	Standard Bore Diameter D1-D2										
								3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6		
XGT-15CS	15	6.5	23	2.15	5	M1.6	0.25	3-5	3-6	4-4	4-5	4-6	4.5-5	5-5	5-6	6-6		
XGT-19CS	19	7.7	26	2.65	6.5	M2	0.5	4-5 6.35-8	4-8 8-8	5-5	5-6	5-7	5-8	6-6	6-6.35	6-7	6-8	
XGT-25CS	25	9.5	32	3.25	9	M2.5	1	5-6 8-10	5-8 8-11	6-6 8-12	6-8 10-10	6-10 10-12	6-11 12-12	6-12	6.35-8	6.35-10	8-8	
XGT-27CS	27	9.5	32	3.25	10	M2.5	1	5-6 8-10	5-8 8-11	5-14 8-12	6-6 8-14	6-8 10-10	6-10 10-12	6-11 10-14	6-12 12-12	6-14 12-14	8-8 14-14	
XGT-30CS	30	11	36	4	11	M3	1.5	8-8 10-15	8-10 11-12	8-11 12-12	8-12 12-14	8-14 12-15	8-15 14-14	10-10 14-15	10-11 15-15	10-12 12-14	10-14 16-16	
XGT-34CS	34	12	38	4	12.25	M3	1.5	8-8 10-15	8-10 11-11	8-11 11-12	8-12 12-12	8-14 12-14	8-15 12-15	10-10 14-14	10-11 14-15	10-12 15-15	10-14 16-16	
XGT-39CS	39	15.5	48	4.5	14.5	M4	2.5	10-10 12-20	10-12 14-14	10-14 14-15	10-15 14-16	10-16 15-15	12-12 15-16	12-14 15-19	12-15 16-16	12-16 17-17	12-19 20-20	
XGT-44CS	44	15	48	4.75	16	M4	2.5	12-12 15-19	12-14 15-20	12-16 16-16	12-19 16-19	14-14 17-17	14-15 19-20	14-16 20-20	14-19	15-15	15-16	
XGT-56CS	56	19.5	60	5.5	20	M5	7	15-15	15-19	15-20	15-20	15-25	19-20	19-24	20-20	20-25	24-25	25-25

- All products are provided with hex socket head cap screw.
- Recommended dimensional allowances of applicable shaft diameter are h6 and h7.
- In case of mounting on D-cut shaft, be careful about the position of the D-cut surface of the shaft.

Performance

Part Number	Max. Bore Diameter (mm)	Rated*1 Torque (N-m)	Max.*1 Torque (N-m)	Max. Rotational Frequency (min <sup>-1</sup> )	Moment*2 of Inertia (kg-m <sup>2</sup> )	Static Torsional Stiffness (N-m/rad)	Max. Lateral Misalignment (mm)	Max. Angular Misalignment (°)	Max. Axial Misalignment (mm)	Mass*2 (g)
XGT-15CS	6	1.1	2.2	42000	2.3×10 <sup>-7</sup>	43	0.15	1.5	±0.2	8
XGT-19CS	8	2.1	4.2	33000	6.9×10 <sup>-7</sup>	88	0.15	1.5	±0.2	14
XGT-25CS	12	4	8	25000	2.5×10 <sup>-6</sup>	140	0.15	1.5	±0.2	27
XGT-27CS	14	4	8	23000	3.4×10 <sup>-6</sup>	140	0.15	1.5	±0.2	30
XGT-30CS	15	6.3	12.6	21000	6.0×10 <sup>-6</sup>	220	0.2	1.5	±0.3	44
XGT-34CS	16	8	16	18000	1.0×10 <sup>-5</sup>	390	0.2	1.5	±0.3	61
XGT-39CS	20	13.5	27	16000	2.3×10 <sup>-5</sup>	520	0.2	1.5	±0.3	98
XGT-44CS	22	18	36	14000	3.7×10 <sup>-5</sup>	640	0.2	1.5	±0.3	124
XGT-56CS	28	35	70	11000	1.2×10 <sup>-4</sup>	1500	0.2	1.5	±0.3	252

\*1 Correction of rated torque and max. torque due to load fluctuation is not required. However, if ambient temperature exceeds 30°C, be sure to correct the rated torque and max. torque with temperature correction factor shown in the following table. The allowable operating temperature of XGT-CS is -20°C to 80°C.

\*2 These are values with max. bore diameter.

Ambient Temperature / Temperature Correction Factor

Ambient Temperature	Temperature Correction Factor
-10°C to 30°C	1.00
30°C to 40°C	0.80
40°C to 60°C	0.70
60°C to 120°C	0.55





# Ball Screw

Deflector Type / K Series – Miniature • High Precision Type

# Precision Ball Screw

We are proud of our quality, quality control system and believe that our products can make difference from the other brands especially in high precision & miniature category.



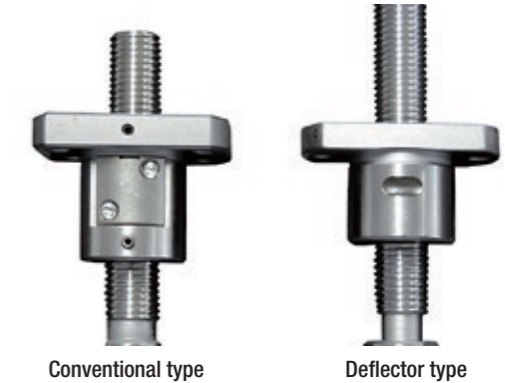
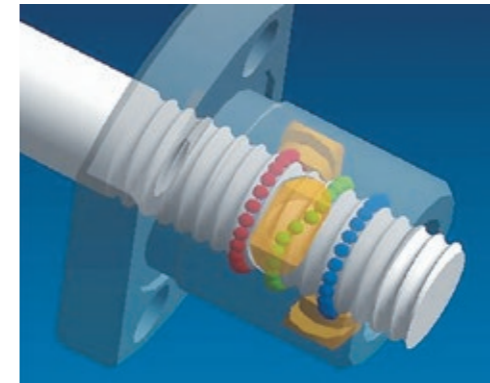
## Performance

**Superior ball circulation structure in good rotation balance**

Smooth rotation realized with the best design of deflector shape.

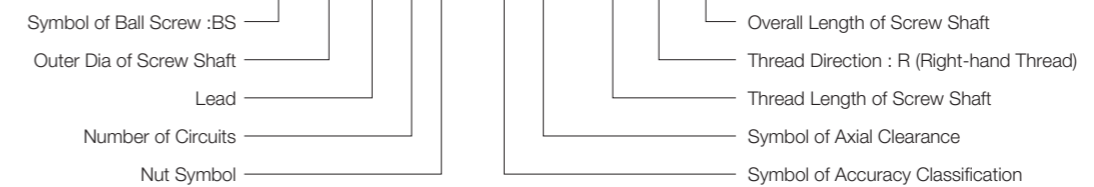
**Simple nut form with compact design**

Contribute to downsize the equipment.



## Notation

**BS 14 04 K S - C5 Z - 148 R 230**



### Axial Clearance Adjustable

Conventional Acme screws do not roll smoothly when the axial clearance is small. Our Ball Screws, however, can roll smoothly even when the axial clearance is reduced. In addition, Our Ball Screws can eliminate the axial clearance by preloading with over size ball and also resulting in increased rigidity.

### Long Life and Low Wear

Due to rolling contact, very little wear occurs over the life of the ball screws, assuring high precision performance for long period of time.

### High Precision

All Our Ball Screws are ground, assembled and inspected under a strict temperature control.

### High Transmission Efficiency

Our Ball Screws have an extremely high transmission efficiency of over 90%, as compared with the conventional Acme screws, and the required torque reduced to only one-third or less. This allows the effective conversion of linear motion to rotary motion.

### Precision Fine Feed Possible

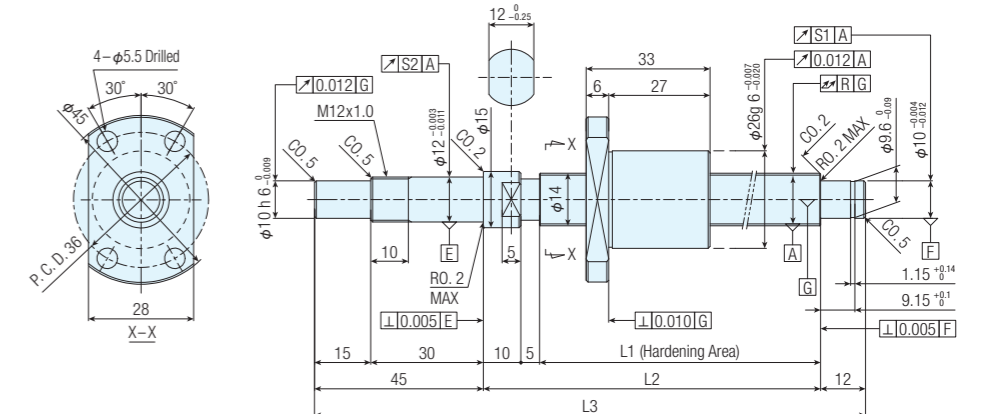
Reduced starting torque due to the rolling contact permits precision fine feed.

### Drastic Quality Control System

We have promptly obtained a qualification for ISO9001 and established a drastic quality control system to manufacture quality products that can satisfy customers needs to the full.

## Dimension / BS1404KS-C5Z-148R230

Specification of Ball Screw	
Screw O.D.	14
Lead	4
Thread Direction	Right
Accuracy Grade	C5Z C5T
Axial Clearance	0 0.005 or less
Circulation Method	Deflector
Steel Ball Dia/BCD	2.3812/14.65
Screw Root Dia	12.2
Number of Turns & Circuits	1x3
Dynamic Lated Load Ca (N)	4800
Static Lated Load C0a (N)	9200
Preload Torque (N·cm)	1~4.5 -1
Spacer Ball	Non
Stiffness (N/μm)	255 154



Part Number	Stroke	Thread Length			Total Runout R	Runout of Supporting Section			Lead Accuracy	
		L1	L2	L3		S1	S2	Tolerance on Specified Travel	Travel Variation	
BS1404KS-C5Z-L1 R L3 BS1404KS-C5T-L1 R L3	50	98	113	170	0.030	0.015	0.019	0.018	0.018	
	100	148	163	220	0.035	0.014	0.018	0.020	0.018	
	150	198	213	270	0.035	0.014	0.017	0.020	0.018	
	200	248	263	320	0.045	0.014	0.017	0.023	0.018	
	300	348	363	420	0.050	0.014	0.016	0.025	0.020	

Stiffness in non-preloaded type is a theoretical value obtained from elastic deformation between the thread groove and steel ball when an axial load is applied, assuming that the preload is 30% of basic rated dynamic load (Ca).  
Stiffness in preloaded type is a theoretical value obtained from elastic deformation between the thread groove and steel ball when an axial load is applied, assuming that the preload is 5% of basic rated dynamic load (Ca).  
It is recommended to use 80% of each values given in Table above.





# Inside Return Style Ball Screw

Compact Type

# BSIR Series

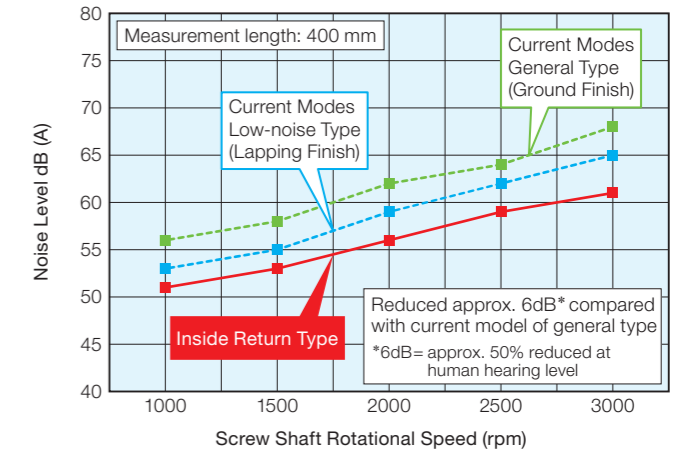
Precision machine parts are manufactured by applying our precision processing technology, an expert in precision measurement. These products have an active role in various machine tools, semiconductor production equipments and aircraft and contribute to a wide range of industry.



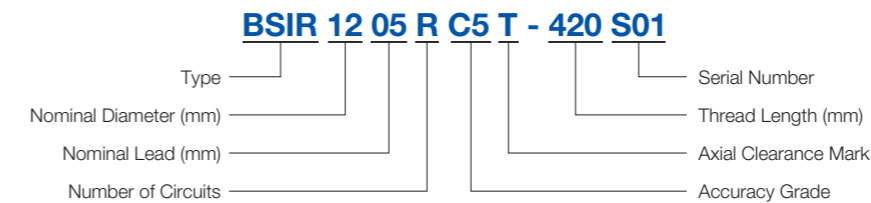
## Comparison of Noise

- Can reduce noise level by approximately 6dB when compared to our current models.
- Well-suited for use in environmental friendly machines.

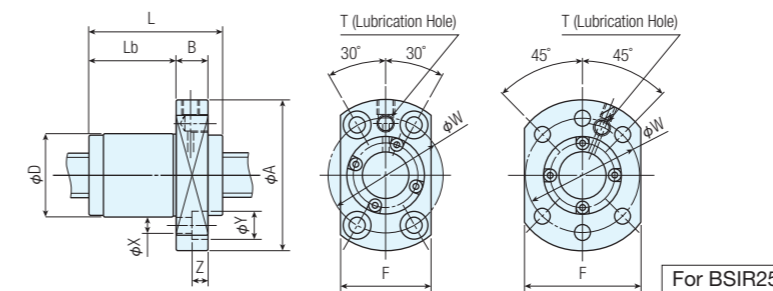
Rotation of screw thread axis – Noise level (φ15x10)



## Notation



## Dimension

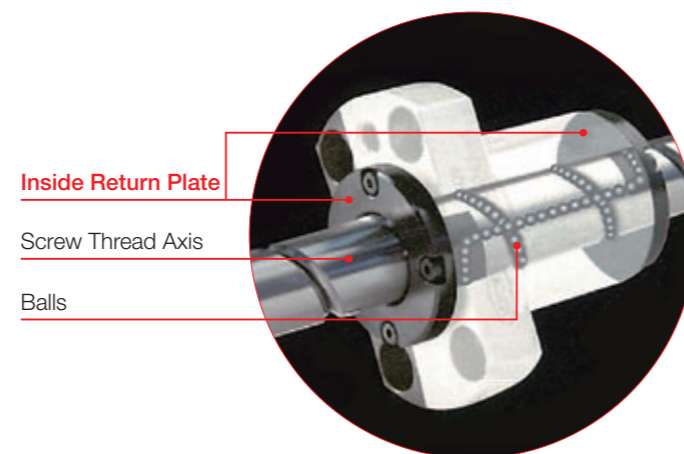


## Features

- Achieve higher speed with less noise than our current high-lead style ball screw.
- External nut diameter is approximately 20% smaller than our current model.
- Compact size of BSIR allows for better utilization of space helping to reduce cost of machines and equipment.

## Structure of Nut Circulation

- Achieve smooth ball circulation by applying Inside Return Style (= Internal Circulation Style).
  - Has a maximum possible high speed of 5000min<sup>-1</sup>.
- \* Each permissible rotation is specified by each ball screw size applied.



Identification Number of Nut	Nominal Dia.	Nominal Lead	Dimension of Nut											Basic Load Ratings (N)	
			D	A	L	Lb	B	F	T	W	X	Y	Z	Ca	Coa
BSIR0804R	8	4	18	30	23	14.5	5	18	-	24	3.4	-	-	1790	2890
BSIR0808R	8	8	18	30	34	25.5	5	18	-	24	3.4	-	-	1790	2970
BSIR0816T	8	16	18	30	41	32.5	5	18	-	24	3.4	-	-	1120	1880
BSIR1010T	10	10	23	43	42	27.5	10	26	M6	33	4.5	8	4.5	2830	4830
BSIR1020T	10	20	23	43	51.5	32.5	10	26	M6	33	4.5	8	4.5	1850	3250
BSIR1210R	12	10	24	44	43	24	10	27	M6	34	4.5	8	4.5	3150	5880
BSIR1220T	12	20	24	44	50.5	31.5	10	27	M6	34	4.5	8	4.5	2040	3800
BSIR1510R	15	10	28	51	46	30	11	31	M6	39	5.5	9.5	5.5	6630	11930
BSIR1520T	15	20	32	55	51	35.75	11	33	M6	43	5.5	9.5	5.5	4360	7670
BSIR1530T	15	30	32	55	70	54	11	33	M6	43	5.5	9.5	5.5	4260	7960
BSIR1520T	15	20	32	55	51	35.75	11	33	M6	43	5.5	9.5	5.5	4360	7670
BSIR1530T	15	30	32	55	70	54	11	33	M6	43	5.5	9.5	5.5	4260	7960
BSIR2020T	20	20	36	62	52	34	13	38	M6	49	6.6	11	6.5	5770	12280
BSIR2030T	20	20	36	62	52	34	13	38	M6	49	6.6	11	6.5	5770	12280
BSIR2040T	20	40	36	62	91	73	13	38	M6	49	6.6	11	6.5	5440	12550
BSIR2525T	25	25	40	62	62	45.1	12	48	M6	51	6.6	-	-	5780	13240

Remarks: Basic load ratings (N) in above table is shown as load without pre-load.





Ball Screw with OS unit (OS means Oil (lubricant) Supply unit)

# BSF Series



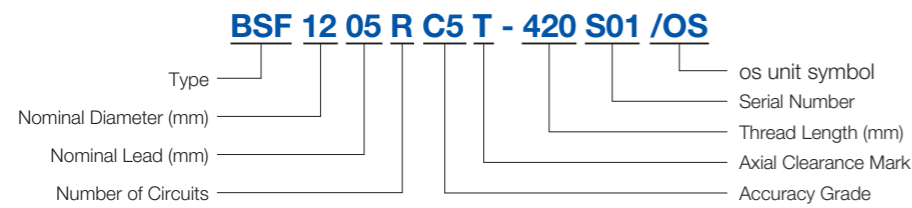
## Longer Operating Life

Achieve long-period maintenance free equipment.

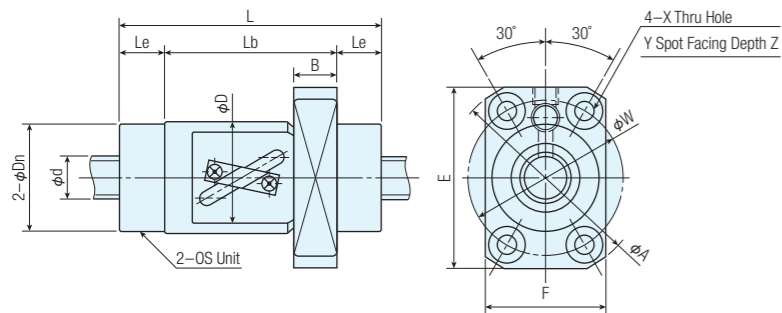
## Cost Reduction

To reduce the frequency of maintenance, and cutting man-hours and the lubricating oil consumption.

## Notation



## Dimension



unit: mm

Identification Number of Nut	Nominal Dia.	Nominal Lead	Ball Dia.	Dimension of Nut & Unit												
				D	Dn	A	L	Lb	Le	B	E	F	W	X	Y	Z
BSF1004E	10	4	2.000	26	25	46	55	34	10.5	10	42	28	36	4.5	8	4.4
BSF1005E	10	5	2.000	26	25	46	61	40	10.5	10	42	28	36	4.5	8	4.4
BSF1010A	10	10	2.000	26	25	46	61	40	10.5	10	42	28	36	4.5	8	4.4
BSF1204E	12	4	2.381	30	29	50	58	36	11	10	45	32	40	4.5	8	4.4
BSF1205E	12	5	2.381	30	29	50	62	40	11	10	45	32	40	4.5	8	4.4
BSF1210E	12	10	2.381	30	29	50	76	50	13	10	45	32	40	4.5	8	4.4
BSF1220A	12	20	2.381	30	29	50	88	62	13	12	45	32	40	4.5	8	4.4
BSF1510E	15	10	3.175	34	33	57	79	51	14	11	50	34	45	5.5	9.5	5.4
BSF1520A	15	20	3.175	34	33	57	90	62	14	12	50	34	45	5.5	9.5	5.4
BSF2010E	20	10	3.175	44	43	67	85	54	15.5	13	60	44	55	5.5	9.5	5.4
BSF2010E-UN	20	10	3.969	46	45	74	85	54	15.5	13	66	46	59	6.6	11	6.5
BSF2020A	20	20	3.969	46	45	74	105	70	17.5	15	66	46	59	6.6	11	6.5

Remarks: 1. Each dimension is shown as dimension when OS unit is attached to standard ball screw.  
2. BSF2010E-UN is for unworked shaft ends.



Super Miniature Ball Screw

# BSP Series



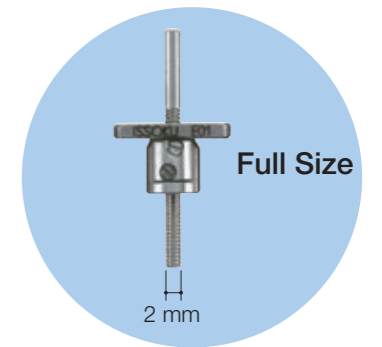
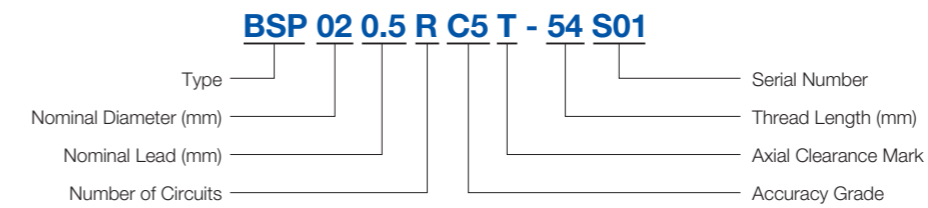
## The World Smallest

A compact of the apparatus in the world's smallest class of ball screw.

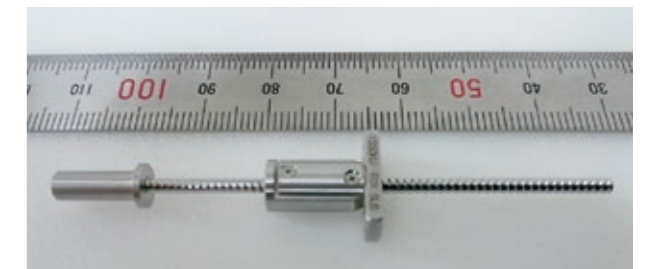
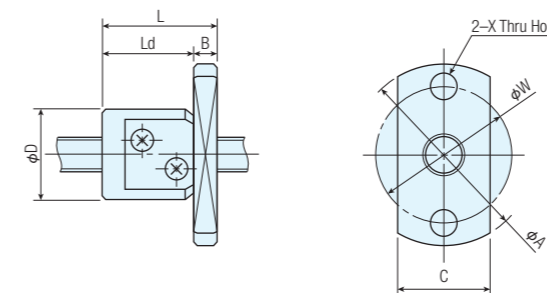
## High Anti-rust Specification

Prevent rust by all stainless steel support.

## Notation



## Dimension



unit: mm

Identification Number of Nut	Nominal Dia.	Nominal Lead	Dimension of Nut								BCD	Circuits x Turn	Basic Load Ratings (N)	
			D	A	L	Lb	B	C	W	X			Ca	Coa
BSP02005S	2	0.5	7	15	11	9	2	7	11	2.4	2.14	3.7×1	140	157
BSP0201S	2	1	7	15	15	13	2	7	11	2.4	2.14	3.7×1	140	157
BSP0201.5S	2	1.5	7	15	17	15	2	7	12	2.4	3.14	3.7×1	140	163

Remarks: 1. Basic Load Ratings in the above table shows Load without pre-load.  
2. Appearance, the specifications or somethings about these screws may be changed without any previous notice.





Spherical Rolling Joint — Our quality is all about pursuing precision to forge the future.

# SRJ Series

## High Precision

The movable part has less frictional resistance due to its rolling joint structure under preload, achieving high precision with zero clearance.

## Downsizing of Joints with Multiple Degrees of Freedom

Compared with those combining rolling bearings with 3 degrees of freedom, higher rigidity and downsizing has been achieved.

## Application to Parallel Mechanism

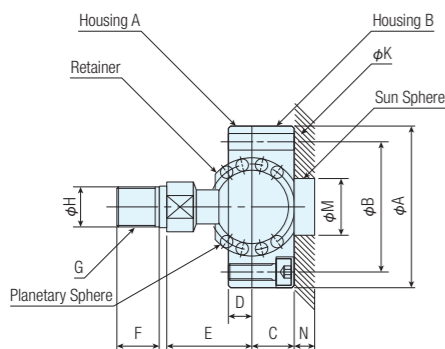
Optimal for achieving high precision, high rigidity and downsizing of parallel mechanism.

## Superfine Inner Spherical Machining Technology

Realized with our super fine inner spherical machining technology.



## Dimension



## Notation

SRJ 012 C P

P	Precision	Run-out ±2.5μm
SP	Super-Precision	Run-out ±1.0μm

Sphere Size (in 1/16th inch multiples)

Spherical Rolling Joint

(Standard product material is SUJ2)

## C series

Type	A	B	C	D	E	F	G	H	K	M	N	C (N)	Co (N)	Spot Facing Depth	Width Across Flat	Weight (kg)	Permissible Angle of Swing
SRJ004C	19	15	3.8	2.5	10	6	M3	3.6	2	6	1.5	128	100	1.5	4	0.015	±15°
SRJ006C	25	20	5.5	3.8	11.5	8	M4×0.5	4.5	3	10	2	320	280	2.3	5	0.036	±30°
SRJ008C	30	24	7	4	16	12	M5×0.5	5.5	3.4	11	2	490	540	2	7	0.06	±30°
SRJ012C	42	34	11	6	20	15	M10	11	4.3	14	2	720	770	3.6	14	0.18	±30°
SRJ016C	56	45	12	7	32	18	M12	12.6	5.5	25	5	1170	1300	4.6	14	0.37	±30°
SRJ024C	74	62	17	11	42	23	M14	15	6.6	35	7	2840	3920	5.5	17	0.93	±30°
SRJ032C	100	84	22	16	60	30	M16	16.6	9	48	10	5800	8820	8.6	22	2.3	±30°
SRJ048C	136	114	38	22	78	38	M28×2	30	11	60	10	10600	16000	10.8	30	6.73	±30°

C and Co indicate the cases of compression (indentation) loads acting on the rod. The above dimensions may be changed without prior notice.



Hybrid Flange Linearbush —

# JFK Series

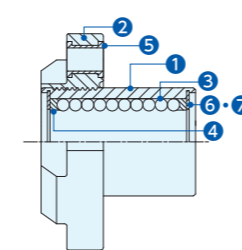


## Easy Fitting & Low Cost by Use of High-strength Plastic Flange

- Use of molded inserts (flange, outer cylinder joint)
  - ..... Secures flange accuracy and adhesion strength
- Weight reduction
  - ..... Up to 25% down \*
- Cost
  - ..... Up to 40% down \*

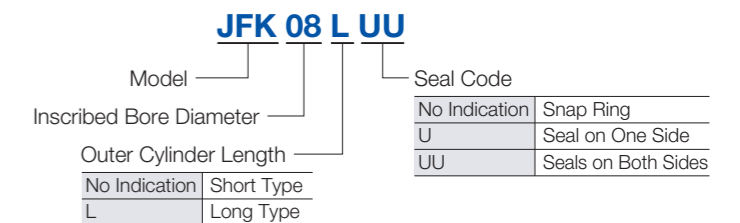
\* Comparison with metal flanges of existing products

## Part Configuration and Materials



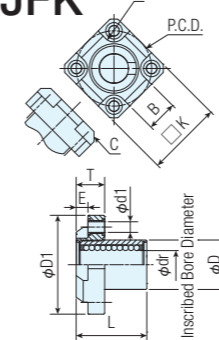
	Part Name	Material
1	Outer Cylinder	Bearing Steel
2	Flange	High-strength Plastic
3	Steel Balls	Bearing Steel
4	Retainer	Polyacetal
5	Collar	Steel
6	Snap Ring	Steel
7	Seal	Synthetic Rubber + Steel

## Notation



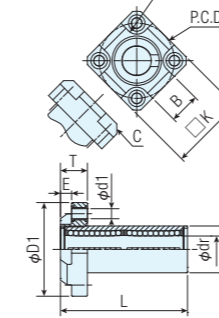
## Dimension

### JFK



Model	Ball Rows	Inscribed Bore Diameter		O.D.		Overall Length		Flange Diameter		K	B	R	T	E	C	PCD	d1	Flange Perpendicularity	Eccentricity	Basic Load Rating		Mass (g)
		dr	Tolerance	D	Tolerance	L	Tolerance	D1	Tolerance											C(N)	Co(N)	
JFK 08	4	8		15	0 -0.011	24		32		25	10	R4	10	4		24	3.4			118	226	20
JFK 10		10	0	19	0	29	0	39		30	12					29		0.012	0.012	206	353	35
JFK 12		12	-0.009	21	0 -0.013	30	-0.2	42	0	32	13	R5	12	5	C3	32	4.5			265	500	38
JFK 16	5	16		28		37		48		37	18					38				440	735	88
JFK 20		20	0	32	0	42		54		42	21					43				610	1010	104
JFK 25	6	25	-0.010	40	0 -0.016	59	0 -0.3	62		50	26	R6	16	6		51	5.5	0.015	0.015	1000	1960	234

### JFK-L



Model	Ball Rows	Inscribed Bore Diameter		O.D.		Overall Length		Flange Diameter		K	B	R	T	E	C	PCD	d1	Flange Perpendicularity	Eccentricity	Basic Load Rating		Mass (g)
		dr	Tolerance	D	Tolerance	L	Tolerance	D1	Tolerance											C(N)	Co(N)	
JFK 08L	4	8		15	0 -0.013	45		32		25	10	R4	10	4		24	3.4			196	441	32
JFK 10L		10	0	19	0	55	0	39		30	12					29		0.015	0.015	324	706	58
JFK 12L		12	-0.010	21	0 -0.016	57	-0.3	42	0	32	13	R5	12	5	C3	32	4.5			422	1000	63
JFK 16L	5	16		28		70		48		37	18					38				706	1460	158
JFK 20L		20	0	32	0	80		54		42	21					43				990	2030	182
JFK 25L	6	25	-0.012	40	0 -0.019	112	0 -0.4	62		50	26	R6	16	6		51	5.5	0.020	0.020	1590	3920	421



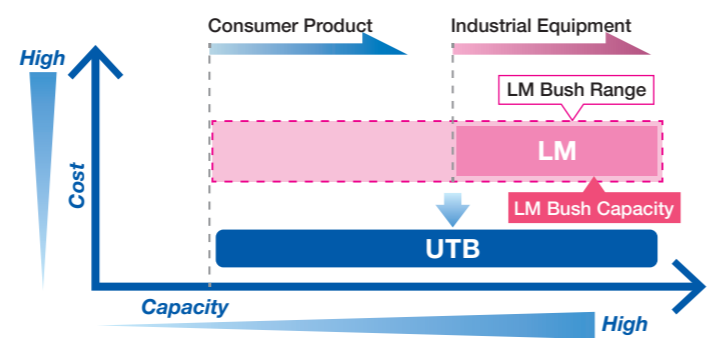


# Utility Track Ball

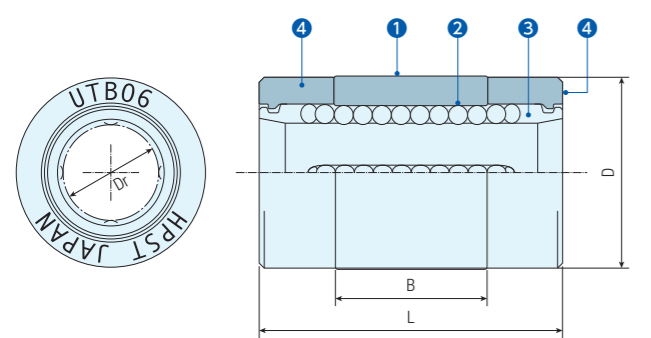
## UTB Series



### Realized Substantial Mark-down with New Product Design & its Process



### Part Configuration and Materials



Part Name	Material
1 Outer Cylinder	Bearing Steel
2 Steel Balls	Bearing Steel
3 Retainer	Polyacetal
4 End Cap	Polyacetal

### Dimension

Type	Overall Length L	Outer Diameter D	Length of Outer Cylinder B	Inscribed Circle Diameter Dr	Mass (g)	Basic Load Rating	
						C (N)	Co (N)
UTB05	15 <sup>0</sup> <sub>-0.12</sub>	10 <sup>0</sup> <sub>-0.009</sub>	7.9	5 <sup>0</sup> <sub>-0.008</sub>	2.7	167	206
UTB06	19 <sup>0</sup> <sub>-0.2</sub>	12 <sup>0</sup> <sub>-0.011</sub>	9.5	6 <sup>0</sup> <sub>-0.009</sub>	5.2	206	265

unit: mm

#### UTB05



\*Actual size picture

#### UTB06



\*Actual size picture



# Linear Ball Bush

## LM Series



### High Performance

Four to six lines of balls arranged within a narrow space, supported by a tough outer shells, smoothly move against external forces applied from various directions forming an energy-efficient bearing with less sleeve resistance.

### Low Noise

The plastic retainer ensures low friction and smooth ball cycles with less noise during travelling.

### Long Life

Long life can be expected due to proper material of each component, fine ball orbit precisely hardened and large load rating.

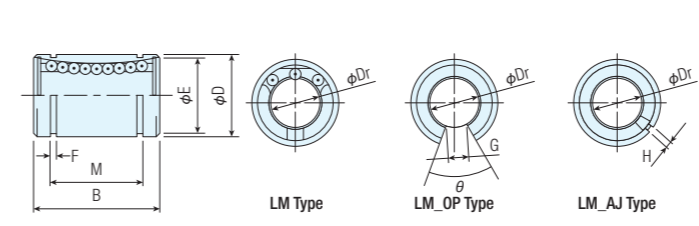
### High Precision

Each accurately machined component ensures high precision. In order to maintain the accuracy of linear bearing, it is necessary to properly adjust a clearance between the bearing and shaft. We can adjust the clearance to your needs and offer the combined product with shaft.

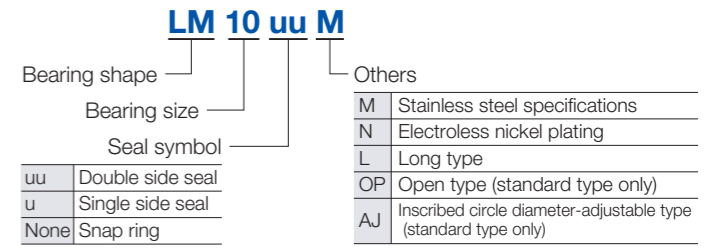
### High Rigidity

Integrated flange type with cold forging has been developed. Different from the jointed flange type, it ensures high rigidity, machining accuracy and reliability. It also contributes to impact resistance and vibration resistance in actual use.

### Dimension



### Notation



Type			Inscribed Circle Diameter Dr		Outer Diameter D		Whole Length B		M	E	F	Fundamental Load Rating C (N)	Fundamental Static Load Rating Co (N)	Number of Lines Z	q	G	H		
LM	LM OP	LM AJ	Reference Size	Allowable Tolerance	Reference Size	Allowable Tolerance	Reference Size	Allowable Tolerance											
LM-3	-	-	3	0 -0.008	7	0 -0.008	10	0 -0.12	-	-	-	20	39	4	-	-	-		
LM-4	-	-	4		8		12		-	-	-	29	59	4	-	-	-	-	-
LM-5	-	-	5		10		15		10.2	9.6	1.1	44	88	4	-	-	-	-	-
LM-6	-	LM-6 AJ	6		12		19		13.5	11.5	1.1	74	147	4	-	-	-	-	1
LM-8S	-	LM-8S AJ	8		15		17		11.5	14.3	1.1	78	118	4	-	-	-	-	1
LM-8	-	LM-8 AJ	8		15		24		17.5	14.3	1.1	118	226	4	-	-	-	-	1
LM-10	-	LM-10 AJ	10		19		29		22	18	1.3	206	353	4	-	-	-	-	1
LM-12	LM-12 OP	LM-12 AJ	12		21		30		23	20	1.3	265	500	4	80°	8	1.5	-	-
LM-13	LM-13 OP	LM-13 AJ	13		23		32		23	22	1.3	295	510	4	80°	9	1.5	-	-
LM-16	LM-16 OP	LM-16 AJ	16		28		37		26.5	247	1.6	440	735	5	60°	11	1.5	-	-
LM-20	LM-20 OP	LM-20 AJ	20	32	42	30.5	30.5	1.6	610	1010	5	60°	11	1.5	-	-			
LM-25	LM-25 OP	LM-25 AJ	25	0 -0.010	0 -0.014	41	38	1.85	1000	1960	6	50°	12	2	-	-			
LM-30	LM-30 OP	LM-30 AJ	30			45	64	44.5	43	1.85	1400	2500	6	50°	15	2.5	-	-	
LM-35	LM-35 OP	LM-35 AJ	35			52	70	49.5	49	2.1	1510	2805	6	50°	17	2.5	-	-	
LM-40	LM-40 OP	LM-40 AJ	40			60	80	60.5	57	2.1	2225	4020	6	50°	20	3	-	-	
LM-50	LM-50 OP	LM-50 AJ	50			80	100	74	76.5	2.6	4120	7110	6	50°	25	3	-	-	
LM-60	LM-60 OP	LM-60 AJ	60			90	110	85	86.5	3.15	5690	8875	6	50°	30	3	-	-	





# Slide Rail

## Miniature Type Slide Rail

# U1000 Series

The U1000 series - the world's smallest class of slide rails, are compact with a width of 10.6 mm and a height of 5 mm, and are used in areas designed with restricted space.



## U1011 - 80

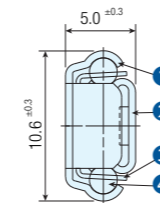
Model

Part Number

### Features

- World smallest class slide rail, the result of press forming. (as of our research in September 2014)
- Linear motion type: Inner member moves linearly within outer member.

### Part Configuration and Materials



	Part Name	Material	Remark
1	Outer Member	SUS304	t : 0.5
2	Inner Member	SUS304	t : 0.5
3	Ball Retainer	SUS304	t : 0.3
4	Ball	SUJ-2	5/64"

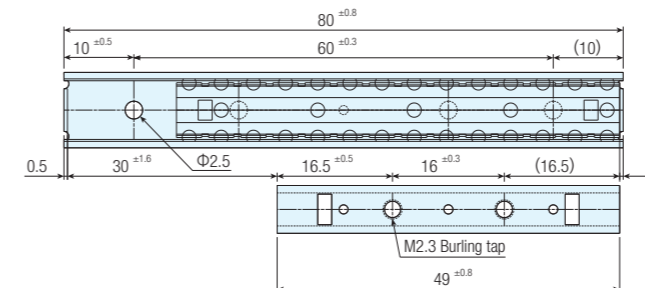
#### Recommended screws:

M2.3 pan head screws or cross-recessed pan head screws for precision equipment

[Caution]  
Inner member mounting screw length must be within mounting material thickness +1.8 mm. (Long screws will contact the ball retainer and impede rail operation or cause damage.)

**Grease:** Nichimoly G-03031X

### Dimension



Part Number	Slide Length (mm)	Travel (mm)	Mounting Hole (mm) ± 0.3 mm			Product Weight (g/piece)	Quantity in Package (pieces)
			A	B	C		
80	80	30.0	15.0	45.0	60.0	9	40

### RoHS Compliant

All products in our catalog comply with RoHS.

### Heat Resistance

Standard specifications posit use at room temperature ranges.

We also offer special-order products which can be used outside room temperature ranges as well.

### Safety

The rail will not break even if a static load twice the load capacity is temporarily applied to the slide rail load position. The unit design features protection from unexpected loads.

### Shock Resistance

The slide rail stoppers are constructed for the stop function in normal use.

They are not intended for violent shocks or excessively repeated impacts.

Depending on the model, special-order products are available for increased shock resistance.

### Order Made

We offer as order-made products slide rails manufactured in accordance with customer requests, modifying standard products which do not match customer devices by changing slide length, travel, or mounting hole position or adding special mechanisms, etc.

### Slide Rail Load Capacity

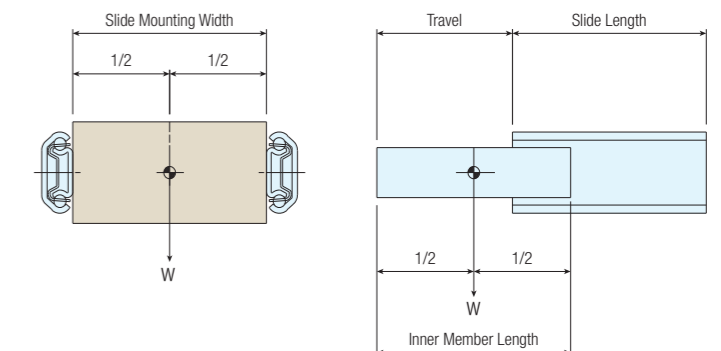
Load capacity and life cycle are intimately related. As well, lifetime is also significantly affected by the center of gravity of the mounted unit and the strength of the cabinet.

Our slide rails' load capacity are based on a 10,000 cycle dynamic test.

This test is based on the center of gravity of the load being the mid-point of the inner member length and in the middle of the drawer (drawer width is basically 400 mm).

Be careful, as the definition of load capacity also varies among manufacturers.

If anything is unclear, please contact our Technology Services Group.





## U1020 - 80

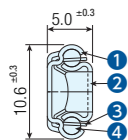
Model Part Number

### Features

- World smallest class slide rail, the result of press forming. (as of our research in September 2014)



### Part Configuration and Materials



Part Name	Material	Remark
1 Outer Member	SUS304	t : 0.5
2 Inner Member	SUS304	t : 0.5
3 Ball Retainer	SUS304	t : 0.3
4 Ball	SUJ-2	5/64"

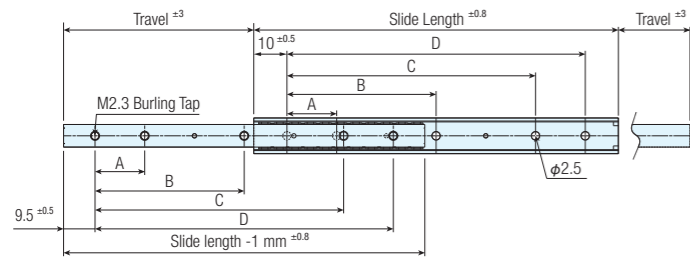
#### Recommended screws:

M2.3 pan head screws or cross-recessed pan head screws for precision equipment

[Caution]  
Inner member mounting screw length must be within mounting material thickness +1.8 mm. (Long screws will contact the ball retainer and impede rail operation or cause damage.)

**Grease:** Nichimoly G-03031X

### Dimension



Part Number	Slide Length (mm)	Travel (mm)	Mounting Hole (mm) ± 0.3 mm				Load Capacity (N/pair)	Product Weight (g/piece)	Quantity in Package (pieces)
			A	B	C	D			
80	80.0	40.2	15.0	45.0	60.0	-	49	11	40
140	140.0	72.6	15.0	60.0	105.0	120.0	49	19	40
200	200.0	105.0	15.0	90.0	165.0	180.0	49	27	40

### Structure

Height (mm)	Rail Size (mm)	Load Capacity (N/set)	Model
107.5			
94.0			
81.0			
71.4			
63.0			
54.8			
46.0			
35.3			
27.0			
20.0			
14.0			
10.6			
	10.6 × 5.0	49	U1011 U1020
	10.6 × 10.0	49	U1031
	14 × 6.4	98	U1411 U1421
	14 × 12.8	98	U1431
	18.3 × 7.5	59	UC180
	19.7 × 10.2	98	UC200T
	20 × 8.0	147 ~196	2011 2020 2021
	20 × 16.0	98 ~147	2031
	27 × 9.5	235 ~275	2721 U2721 U2725
	27 × 19.0	275 ~363	2731M U2731
	27 × 19.0	275 ~363	2736 U2736
	35.3 × 13.0	294 ~343	C350 C351 C352 C357
	35.3 × 9.6	284 ~441	3511 U11 3521 U21 3521HD U23
	35.3 × 19.2	402 ~471	3531 U31
	35.3 × 19.2	402 ~471	3535 U35 3535 HDS
	71.4 × 23.8	1030 ~1098	3551 U51
	107.5 × 23.8	1657 ~1746	3553 U53
	63 × 16.0	785 ~1324	C630
	69.8 × 19.8	1765 ~	C690
	94 × 18.0		6315

## U1031 - 50

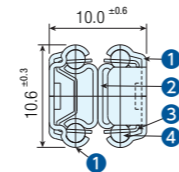
Model Part Number

### Features

- World smallest class slide rail, made with press forming. (as of our research in September 2014)



### Part Configuration and Materials



Part Name	Material	Remark
1 Cabinet Member	SUS304	t : 0.5
2 Drawer Member	SUS304	t : 0.5
3 Center Member	SUS304	t : 0.5
4 Ball Retainer	SUS304	t : 0.3
Ball	SUJ-2	5/64"

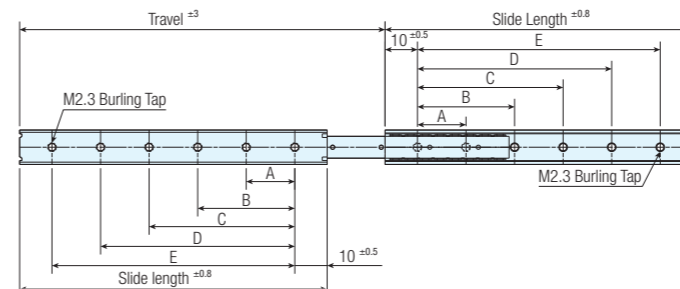
#### Recommended screws:

M2.3 pan head screws or cross-recessed pan head screws for precision equipment

[Caution]  
Inner member mounting screw length must be within mounting material thickness +1.8 mm. (Long screws will contact the ball retainer and impede rail operation or cause damage.)

**Grease:** Nichimoly G-03031X

### Dimension



Part Number	Slide Length (mm)	Travel (mm)	Mounting Hole (mm) ± 0.3 mm					Load Capacity (N/pair)	Product Weight (g/piece)	Quantity in Package (pieces)
			A	B	C	D	E			
50	50.0	50.5	30.0	-	-	-	-	49	13	20
95	95.0	112.9	15.0	60.0	75.0	-	-	49	24	20
155	155.0	177.7	15.0	60.0	120.0	135.0	-	49	40	20
215	215.0	242.5	15.0	75.0	120.0	180.0	195.0	49	55	20