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Alliance Partner Products



IKO Alliance Partner Products



Alliance Partner 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.



1 Ball Transfers



2 Couplings

Type of Alliance Partner Products

3 Linear Bushings



4 Linear Clampers



5 Spherical Rolling Joints



1 Ball Transfers

1-1. Heavy-Load Ball Transfers

What is a Ball Transfers?

Ball transfer units consist of a large load-ball that sits upon small balls encapsulated in a hemispherical cup. Ball transfers fall into two categories, Ball-up type and Ball-down type, like a caster. Also, in some applications, they are used to support from the side as a guide. Their design creates a multi-directional, material-handling system that enables heavy loads to be moved smoothly along with minimal effort and friction.

They are designed to assist in transferring, directing, or facilitating loading of products in workplaces such as warehouses, production lines, port cargo handling facilities, semiconductor production systems, FPD production systems, PV, solar glass handling production lines, medical equipment, research laboratories, under-floor facilities of buildings and offices manufacturing or freight transfer. Similar to a roller systems, the balls are installed within the table or work surface and the product rolls over the balls and allows for turning, lifting, directing or transferring from one conveyor line to another.

People with lifting or carrying restrictions resulting from back, neck, shoulder, heart, and various repetitive strain injuries may benefit from the use of ball transfers technology if there is a need for lifting or handling products on a repetitive basis within the workplace.



IS type (Upward)

IK type (Downward)

Application Examples



1-2. Air Ball Lifter

What is an Air Ball Lifter?

Pneumatic Air Ball Lifters have a unique construction – 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 labor saving unit. Roll on-Roll off facility dramatically reduces changeover times.



Application Examples



1 Ball Transfers

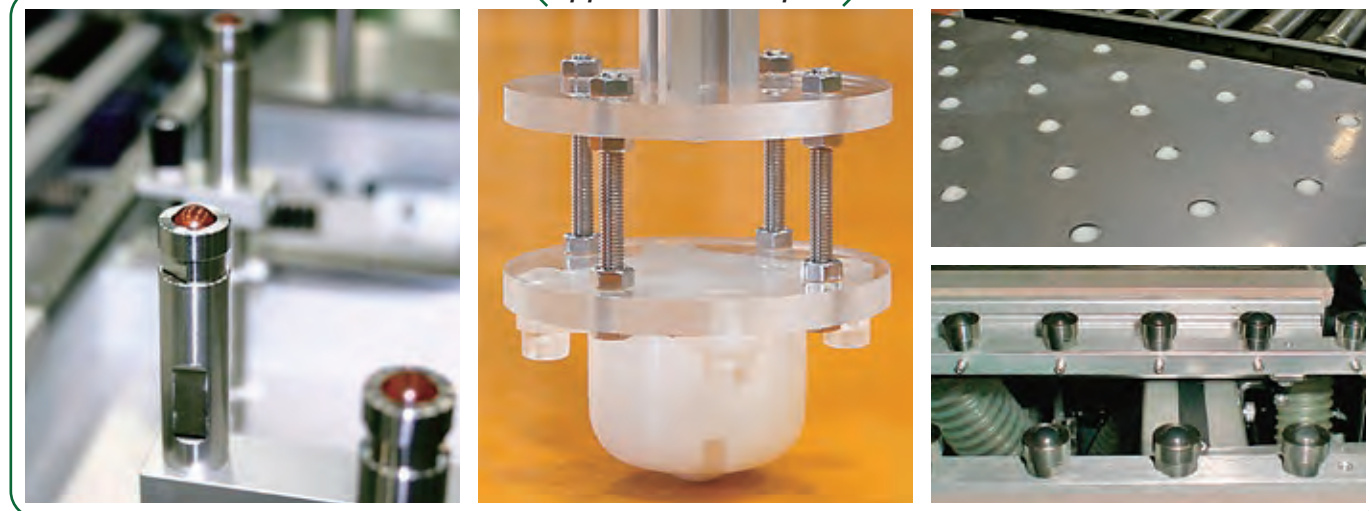
1-3. Cleanroom Type Ball Transfers

Clean room Ball Transfers are used extensively in FPD (Flat Panel Display), PV (Photo-voltaic) production lines all over the world due to its innovative technology for alignment and positioning of glass substrates.

Ball Transfers have been evolving continuously with a new added-value to satisfy panel makers to improve products yield potential. After it was successfully proven in LCD post-processing, the application expanded to a variety of new applications. Especially in recent years, the demand for pre-processing has increased. At present, we have cleared 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.



Application Examples



1-4. SW Type Special Wheel

These unique, original, compact and durable Special Wheels are used beneath car turn tables as a guide, as well as under extreme loads and environments.

Head options: material, painting, quenching and redesigning available upon request.



Application Examples

TURN TABLE
Grabbing a slice of No.1 in Japan



Indexing table load capacity 3 ton. Quick turns with easy mounting.



Production line in between conveyors.




2 High-Gain Rubber Type Coupling

Recent high Using the latest FEM analysis techniques, the construction of the anti-vibration rubber is designed to yield high torsional stiffness and torque.

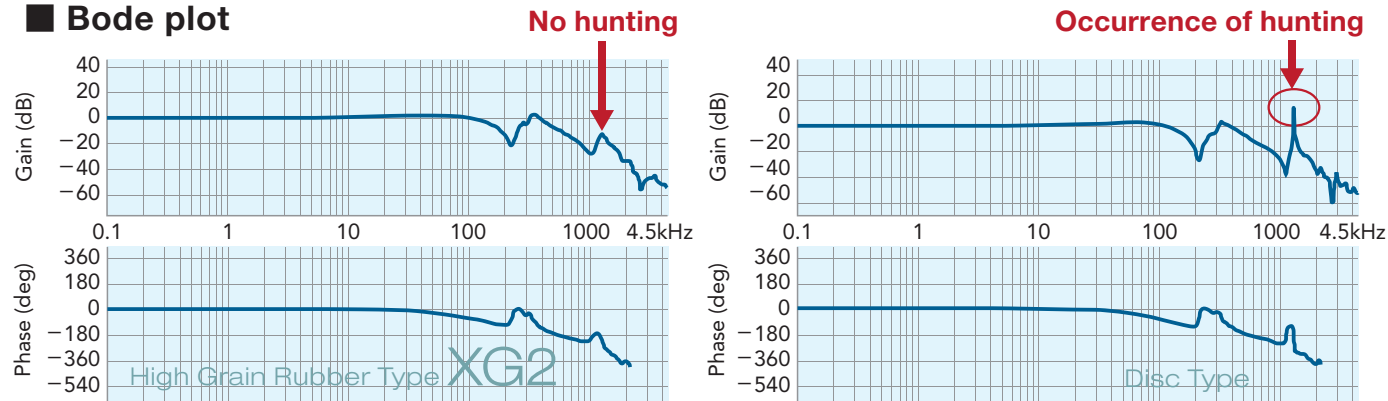


1 Reduction of Stabilization Time

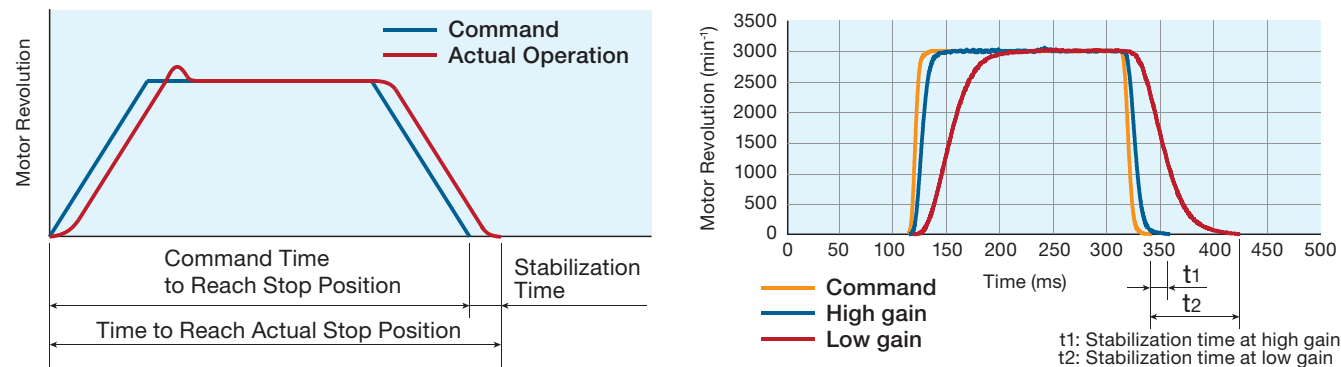
Increased motor gain results in a reduction in stabilization time.

→ Productivity can be improved

Bode plot



Gain and stabilization time



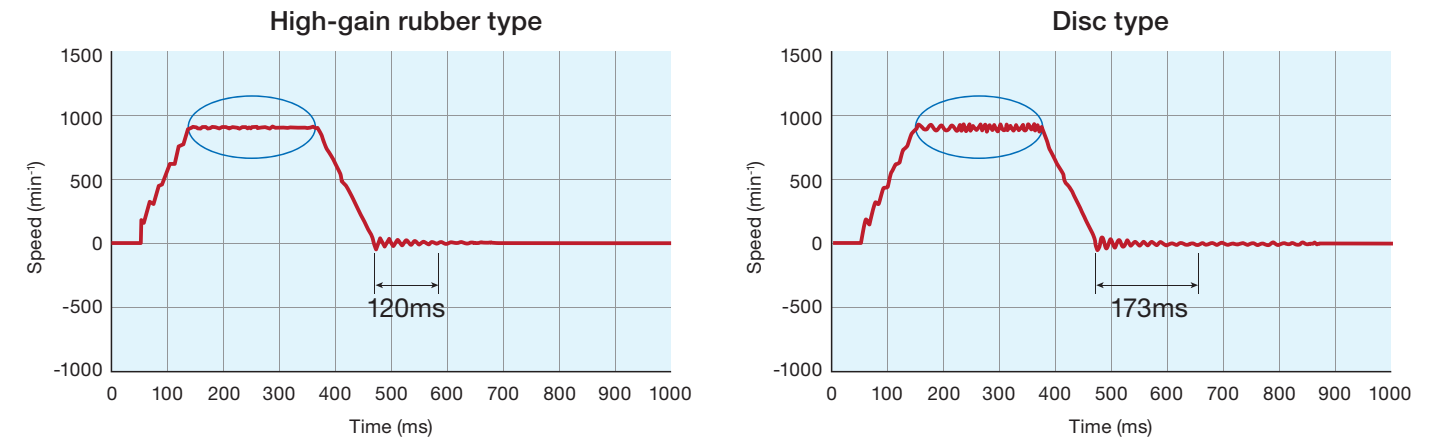
Measurement of stabilization time, positioning accuracy and overshoot

Gain*		XG2 series	XG series	Disc 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

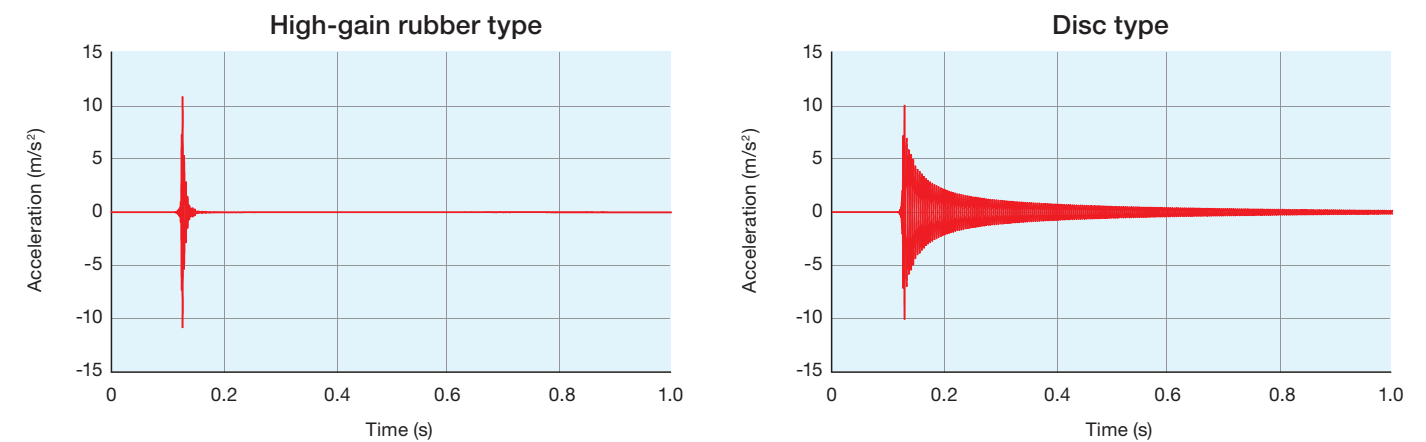
2 Suppressing Speed Unevenness

Suppressing speed and torque unevenness without occurs by misalignment.



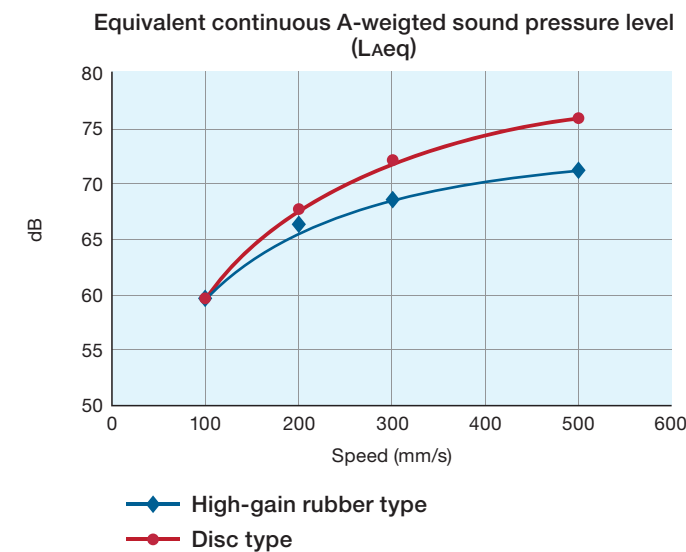
3 Suppression of Vibration

Damping ratio of XG2 series is high, enabling rapid absorption of vibration.



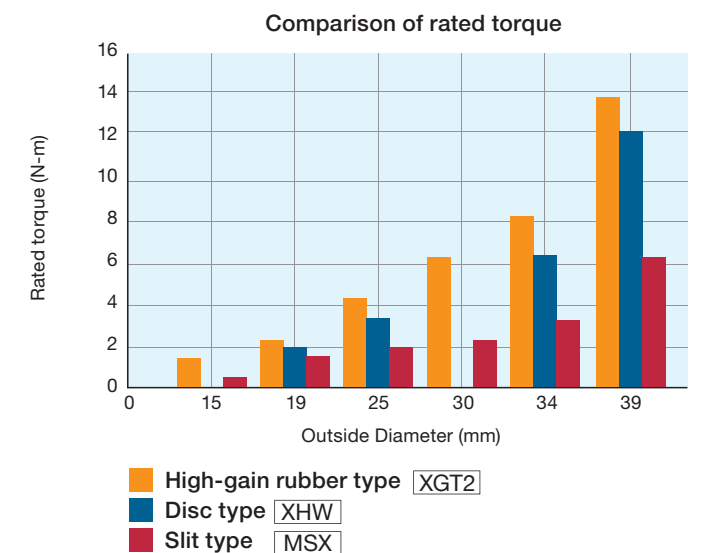
4 Lower Sound

Able to reduce actuator drive sound.



5 High Torque

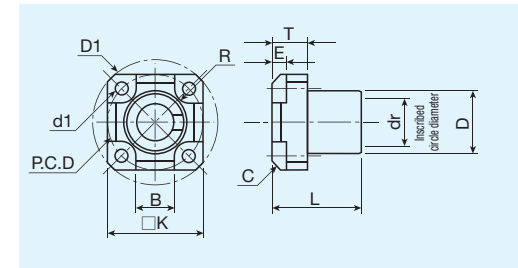
Usage under the condition of higher torque than disc type and Slit type is allowed.



3 Linear Bushings

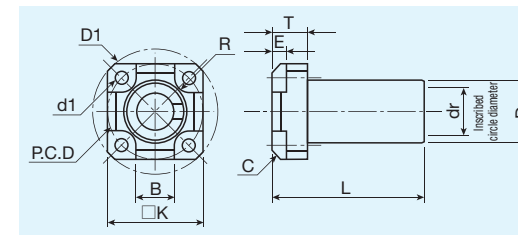
High grade engineering plastic is used in the construction of the flange to achieve strength whilst offering a more cost effective option than steel type Linear Bushings.

Since the internal structure is comparable to that of a conventional linear bushing minimal design changes are needed to incorporate this product.



Standard length type

Model	Number of Ball raceway	dr	D	L	D1	K	B	R	T	E	C	PCD	d1
JFK12	4	12	21	30	42	32	13	5	12	5	3	32	4.5
JFK16	5	16	28	37	48	37	18					38	
JFK20			20	32	42	54	42	21	16	6	43	5.5	

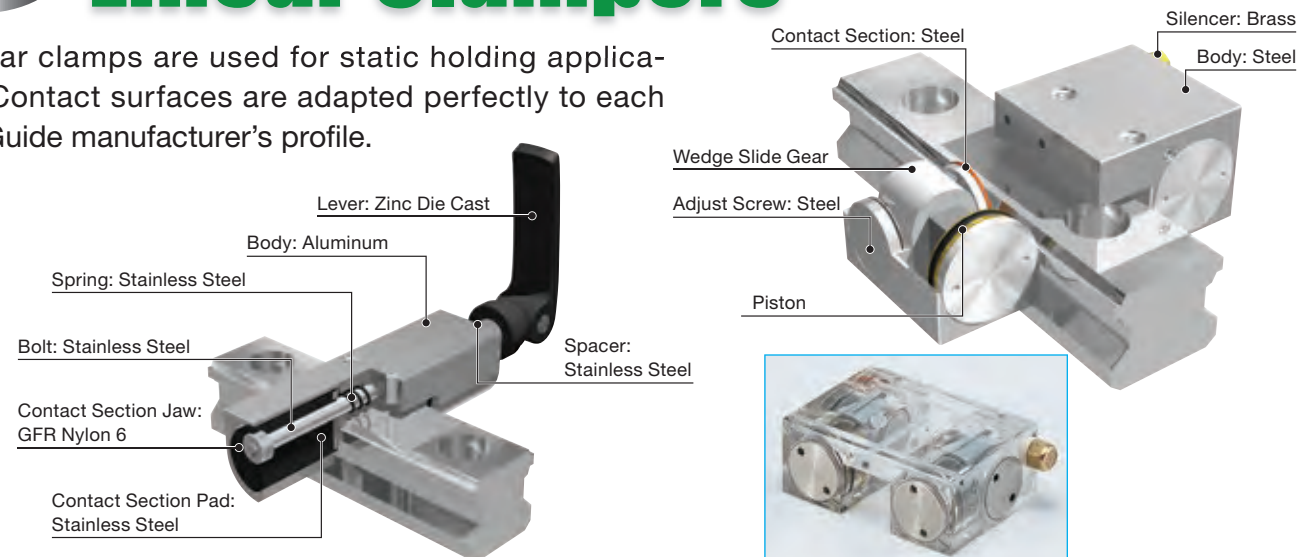


Long length type

Model	Number of Ball raceway	dr	D	L	D1	K	B	R	T	E	C	PCD	d1
JFK12L	4	12	21	57	42	32	13	5	12	5	3	32	4.5
JFK16L	5	16	28	70	48	37	18					38	
JFK20L			20	32	80	54	42	21	16	6	43	5.5	

4 Linear Clampers

Linear clamps are used for static holding applications. Contact surfaces are adapted perfectly to each Linear Guide manufacturer's profile.



Linear Guide Rail CLAMPS are designed and used for STATIC holding applications

Photo	Manual clamp 350~800N	Manual clamp 45~300N	Pneumatic (Air) 250~3300N	Pneumatic (Oil) 1600~22700N	Pneumatic (Air) round shaft clamping 300~2000N
Power	Manual clamp 350~800N	Manual clamp 45~300N	Pneumatic (Air) 250~3300N	Pneumatic (Oil) 1600~22700N	Pneumatic (Air) round shaft clamping 300~2000N
Linear Way Rail size	#15~#35	#5~#25	#15~#65	#15~#65	φ12mm~φ60mm

5 Spherical Rolling Joints

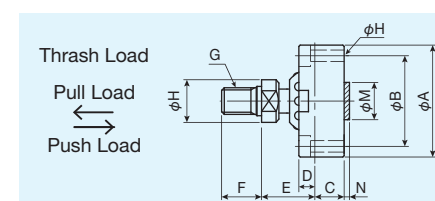
Provide high precision and rigidity with zero clearance rolling guideways.

Although the integration of spherical rolling joints provide 2 or 3 degrees of freedom, a requirement for use in parallel mechanism, the result is complex and bulky.

Sliding spherical rolling joints having multiple degrees of freedom are also available but have negative characteristics that include frictional resistance and internal clearance problems.

Features

- 1. Highly Precise**
Since the center glove is assembled under pre-load conditions, a smooth rocking motion with extremely low frictional resistance, zero clearance, and high performance is achieved.
- 2. Compact Multi-Degrees of Freedom**
The single unit provides a greater rigidity and greater compactness than joints made from integrating rolling joints having 3 degrees of freedom.
- 3. Highly Suited for Parallel Mechanisms**
Optimal for parallel mechanisms requiring high precision, high rigidity, and compactness.
- 4. Super-Precise Spherical Surface Processing**
Unique processing technology provides super-precise spherical surfaces.



Model No.	A	B	C	D	E	F	G	H	K	M	N	C(N)	Co(N)	Counterbore (mm)	Width across flat (mm)	Weight (kg)	Permissible tilting Angle (°)
SRJ004C	19	19	3.8	2.5	10	6	M3	3.6	2	6	1.5	128	100	1.5	4	0.015	±15
SRJ006C	25	25	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	30	7	4	16	12	M5×0.5	5.5	3.4	11	2	490	540	2	7	0.06	±30
SRJ012C	42	42	11	6	20	15	M10	11	4.3	14	2	720	770	3.6	14	0.18	±30
SRJ016C	56	56	12	7	32	18	M12	12.6	5.5	25	5	1170	1300	4.6	14	0.37	±30
SRJ024C	74	74	17	11	42	23	M14	15	6.6	35	7	2840	3920	5.5	17	0.93	±30
SRJ032C	100	100	22	16	60	30	M16	16.6	9	48	10	5800	8820	8.6	22	2.3	±30
SRJ048C	136	136	38	22	78	38	M28×2	30	11	60	10	10600	16000	10.8	30	6.73	±30