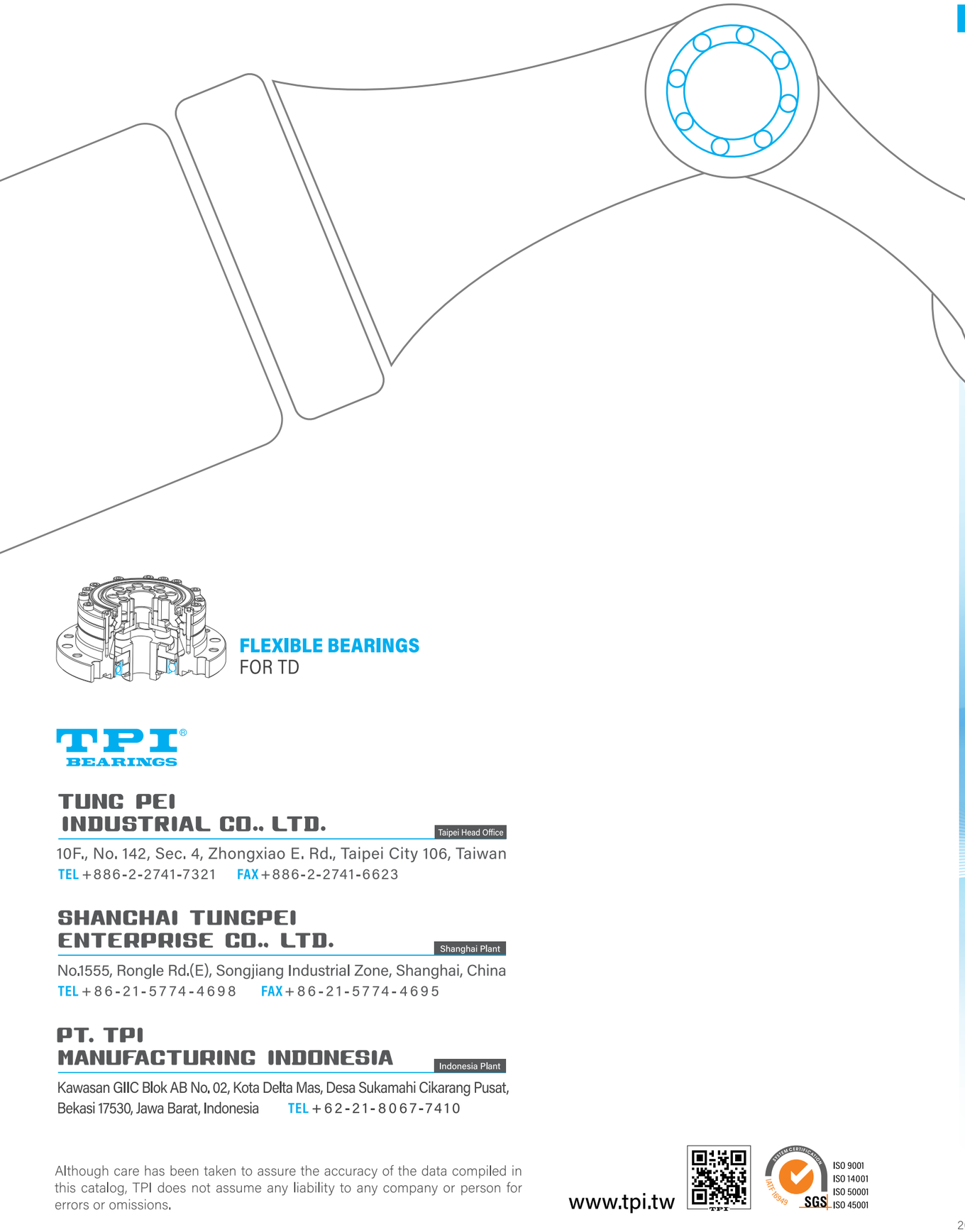
TPI® BEARINGS

Technology Precision Innovation

FLEXIBLE BEARINGS FOR TD



FLEXIBLE BEARINGS
FOR TD

TPI® BEARINGS

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ISO 9001
ISO 14001
ISO 50001
ISO 45001

2023/06 NO:FB001/EN

SX 05 T01 T2X

Form — Inner Diameter

Retainer — Serial No.

BEARING NOMINAL NAME

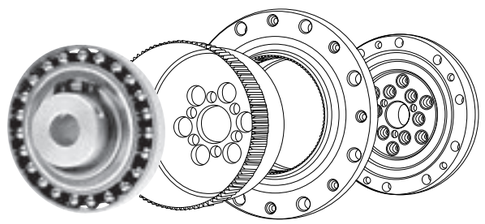
The nominal name of the bearing is a code used to indicate the form, size, accuracy, and internal structure of the bearing.

STRUCTURAL FEATURES

The flexible bearing for strainwave drive is composed of inner ring, outer ring, ball, and retainer (Figure 1-1), which can be applied to the strainwave drive and installed on the wave generator (Figure 1-2) to act as the wave generator to transmit waveforms, and can withstand the radial load.

CAUTIONS

If this flexible bearing is a one-piece retainer, it is recommended to design a shoulder stop mechanism on the wave generator to avoid the falling off of retainer during operation. If it is a double piece retainer, please avoid interfering the retainer during installation (please consult TPI staff if any special requirements).



FLEXIBLE BEARINGS
FOR **STRAINWAVE DRIVE**

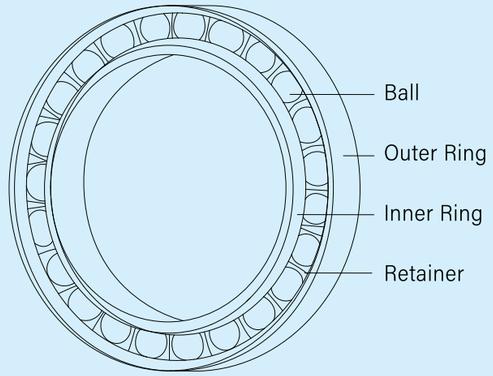


Figure1-1 : Flexible Bearing Structure Drawing

It shows that the flexible bearing is composed of inner ring, outer ring, ball, and retainer.

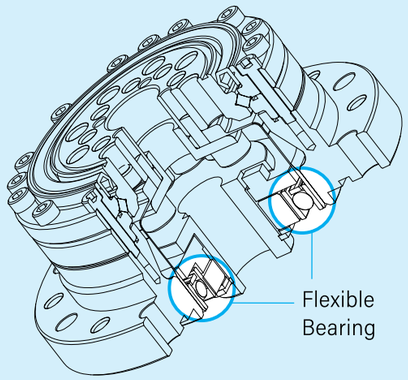
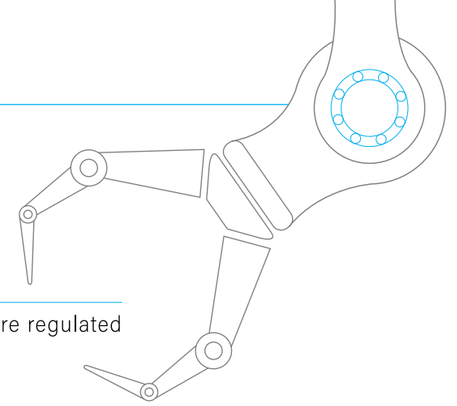


Figure 1-2: Assembly Schematic

It shows the schematic diagram of flexible bearing and strainwave drive, and the product is applied to the mechanical arm of precision robot.



ACCURACY

Bearing "tolerances" or dimensional accuracy and running accuracy are regulated by ISO and JIS B 1514 standards.

Tolerance classifications of national standards

Spec.		Applicable Tolerance Class					Bearing Type
JIS	JIS B 1514	Class 0	Class 6	Class 5	Class 4	Class 2	ALL
ISO	ISO 492	Normal Class	Class 6	Class 5	Class 4	Class 2	Radial bearing
DIN	DIN 620	P 0	P 6	P 5	P 4	P 2	ALL
ANSI	ANSI/AFBMA Std. 20[1])	ABEC-1 RBEC-1	ABEC-3 RBEC-3	ABEC-5 RBEC-5	ABEC-7	ABEC-9	Radial bearing (exclude Tapered Roller Bearings)
	ANSI/AFBMA Std. 19.1	Class K	Class N	Class C	Class B	Class A	Tapered Roller Bearings Metric Design
AFBMA	ANSI B 3.19 AFBMA Std. 19	Class 4	Class 2	Class 3	Class 0	Class 00	Tapered Roller Bearings Inch Design
	ANSI/AFBMA Std. 12.1	-	Class 3P	Class 5P Class 5T	Class 7P Class 7T	Class 9P	Ball bearing Metric Design
	ANSI/AFBMA Std. 12.2	-	Class 3P	Class 5P Class 5T	Class 7P Class 7T	Class 9P	Ball bearing Inch Design

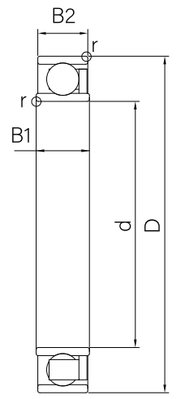
Note) ABEC suitable for ball bearing, RBEC suitable for roller bearing.

Note 1 : JIS B 1514、ISO 492 and DIN620 are on an equal basis.
Note 2 : There are slightly different on tolerance and allowance between JIS B1514 and AFBMA specification.

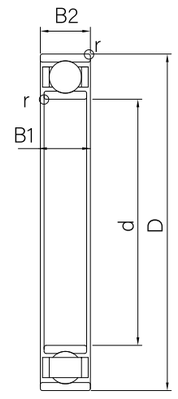
SX series

[mm]

Bearing Type	Boundary Dimensions				
	d	D	B1	B2	r_{min}
SX05T01T2	25.074	33.9	6.41	6.16	0.2
SX06T01T2	33.306	41.73	6.68	6.1	0.2
SX07T01T2	35.57	49.08	8.12	7.22	0.3
SX09T01T9X	45.21	61.34	6.32	9	0.3
SX12T01T9X	58.928	79.76	8.6	11.82	0.3



T2 cage



T9X cage