PMI

PMI Linear Motion Systems

BallScrews

FA Series

www.pmi-amt.com

Contents

1 Features 01

2 Specifications 01

3 Application range 01

4 Dimensions of FA Series 02

- Screw Dia Ø12 Lead 05 / 10
- Screw Dia Ø15 Lead 05 / 10
- Screw Dia Ø20 Lead 05
- Screw Dia Ø20 Lead 10
- Screw Dia Ø20 Lead 20
- Screw Dia Ø25 Lead 05
- Screw Dia Ø25 Lead 10,20 and 25

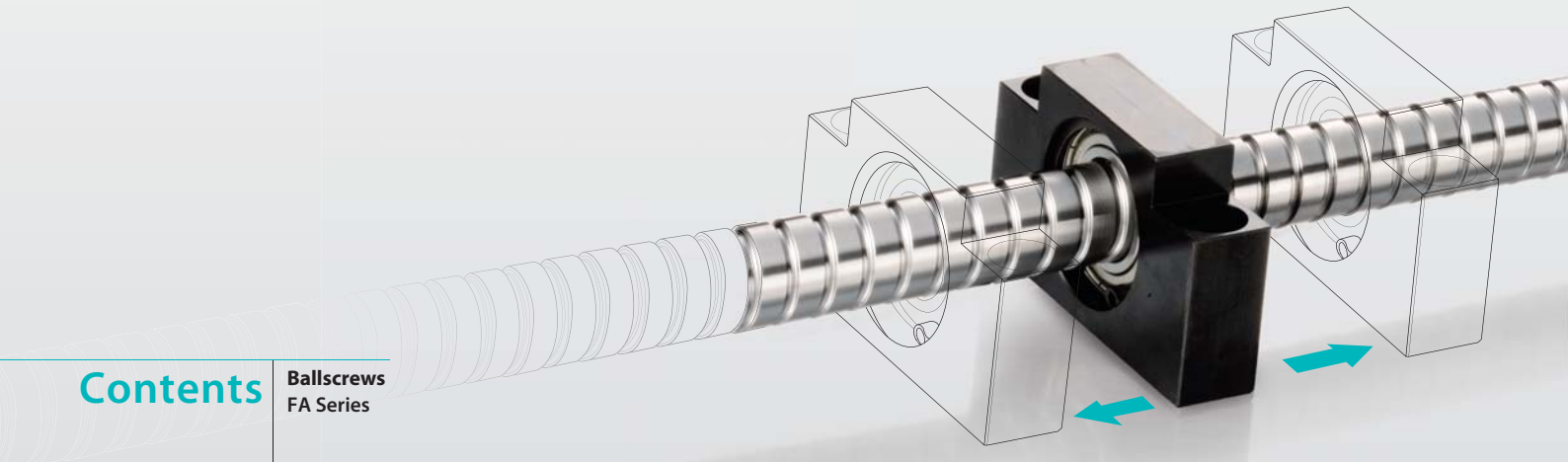
5 Dimensions of Ballscrew Modules 10

- PBKN Ballscrew Module
- PMAN Ballscrew Module
- PMBN Ballscrew Module
- PMCN Ballscrew Module

6 Screw Module Accessories 18

- BKN Housing
- BFN Support Unit
- PMAN, PMBN, and PMCN Motor Mounts (with Housing)
- PMAN Motor Mount
- PMBN Motor Mount
- PMCN Motor Mount
- PFA Nut Bearing
- DCT Coupling
- GWT,GWK, and GWL Wedges

7 Order Code 28



Ballscrews
FA Series

The new circulation design of *PMI* FA series of precision ballscrews carried out the advantages of High Speed, Low Noise, Efficiency, and Standaardization for different kinds of application.

1 Features

Short Delivery

In order to achieve the purpose of standardized stock for short delivery time, the precise outer diameter of screw shaft is used for support bearing seat.

Flexibility of stroke length

Due to the precise outer diameter of screw shaft is used for support bearing seat, the specific length of shaft can be freely cut from standardized screw shaft. Therefore, the flexible stroke length is allowable for simple support end.

High accuracy with reasonable price

The accuracy can be as higher as JIS C5 grade and with axial clearance within 5 ***μm***.

Space saving

Comparing with conventional ballscrew, the outer diameter of nut is reduced as 20~25% as much, and the nut length is also shorter than usual. Therefore, the mounting space can be saved from engineering design.

High speed and lower noise

Taking advantage of ***PMI*** unique technology of high-speed, noise reduction, the rotation speed can be as higher as 5000 rpm. Moreover, due to the design of special circulation system, the vibration and noise(6 db less) are much lower than conventional type of ballscrew.

Patent

Taiwan, Japan, Germany, China

2 Specifications

Accuracy Grade

JIS C5 grade

Axial Clearance

Within 0.005mm

Max. Rotation Speed

5000 rpm

End Shape

Fixed support side ; Machined ;
Support end ; Thread cutting

Dust Protection

Oil Sealing

Lubrication

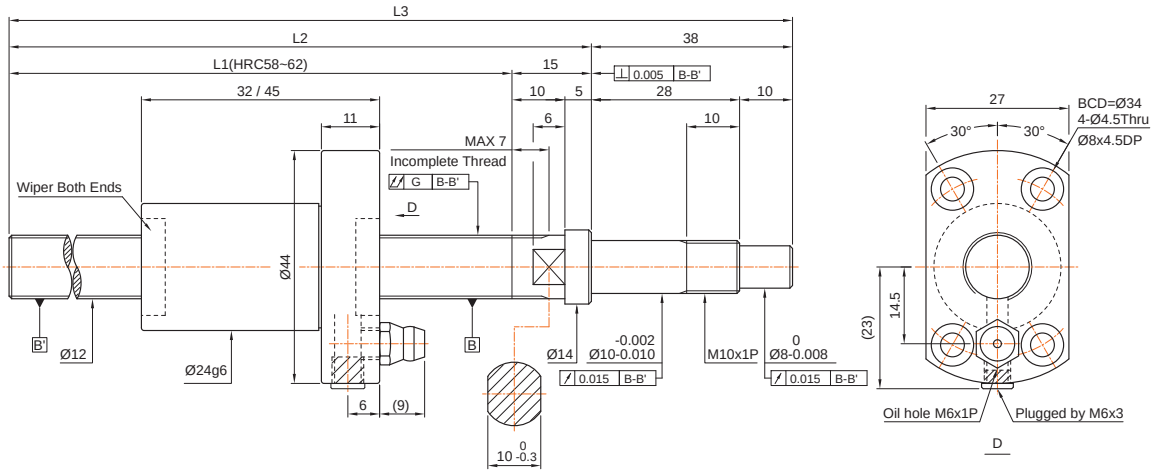
LS-EP1

3 Application range

Semiconductor equipments, Measuring devices, Inspection equipments, Medical equipments, Automation, Light load machining, Glue depositing, and other precision motion and positioning applications.

4 Dimensions of FA Series

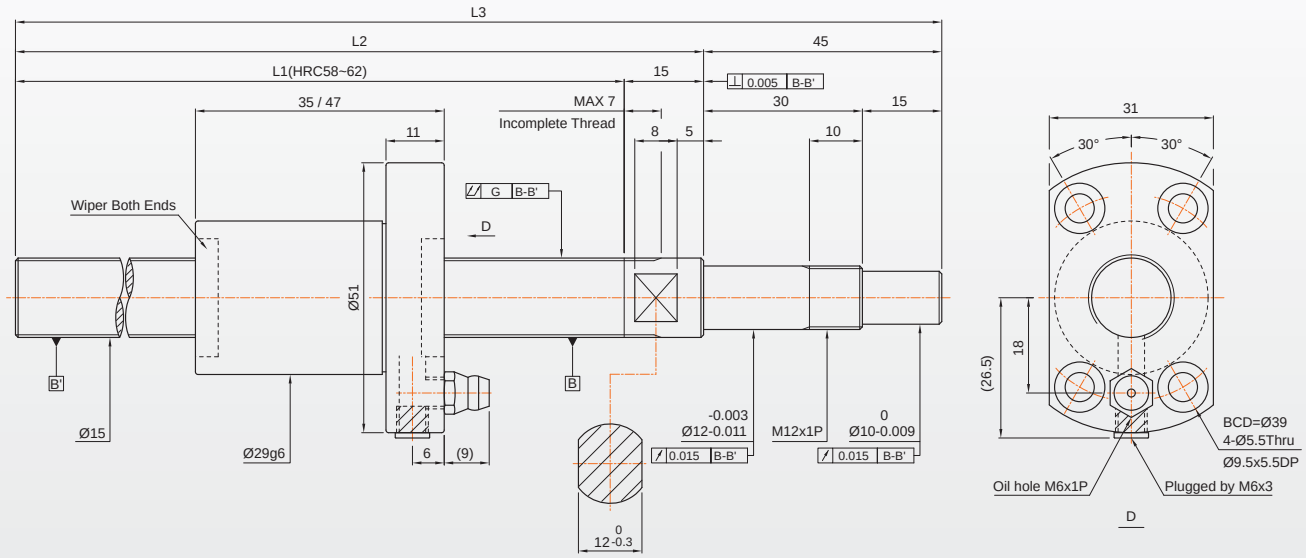
Screw Dia.Ø12 Lead05 / Lead10



Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length		
	d	l	Dynamic Cam	Static Coam	L1	L2	L3
BL012050400+A000 / BL012100400+A000	12	5/10	5.8	11.4	347	362	400
BL012050600+A000 / BL012100600+A000	12	5/10	5.8	11.4	547	562	600
BL012050900+A000 / BL012100900+A000	12	5/10	5.8	11.4	847	862	900

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

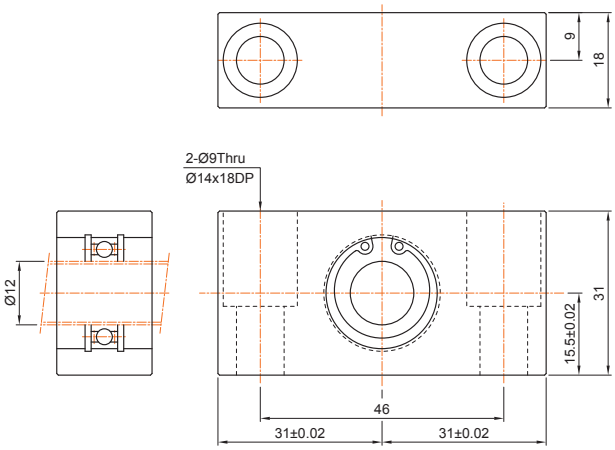
Screw Dia.Ø15 Lead05 / Lead10



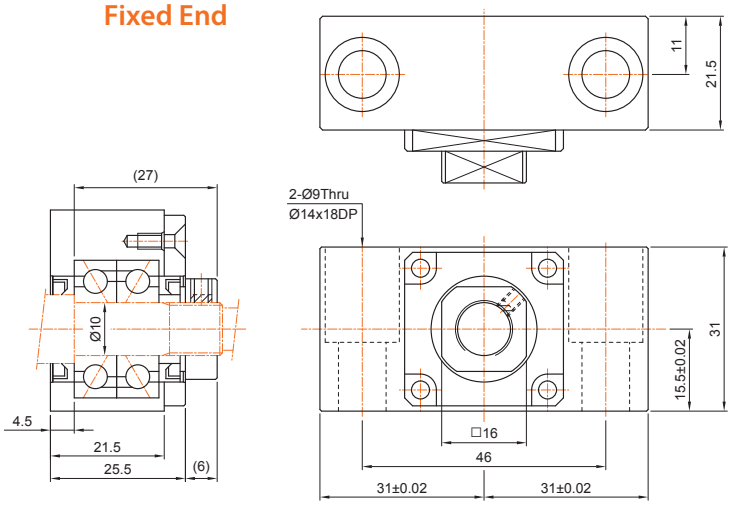
Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length		
	d	l	Dynamic Cam	Static Coam	L1	L2	L3
BL015050500+A000 / BL015100500+A000	15	05 / 10	7.4 / 8.2	13.3 / 15.8	440	455	500
BL015051000+A000 / BL015101000+A000	15	05 / 10	7.4 / 8.2	13.3 / 15.8	940	955	1000
BL015051450+A000 / BL015101450+A000	15	05 / 10	7.4 / 8.2	13.3 / 15.8	1390	1405	1450

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

Supported End



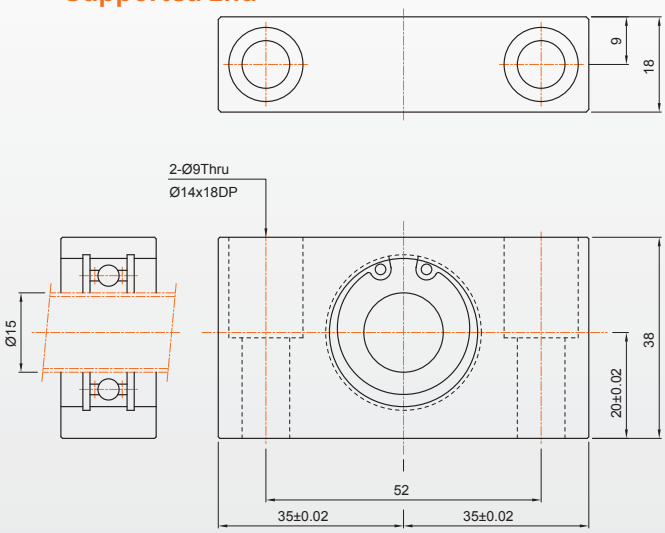
Fixed End



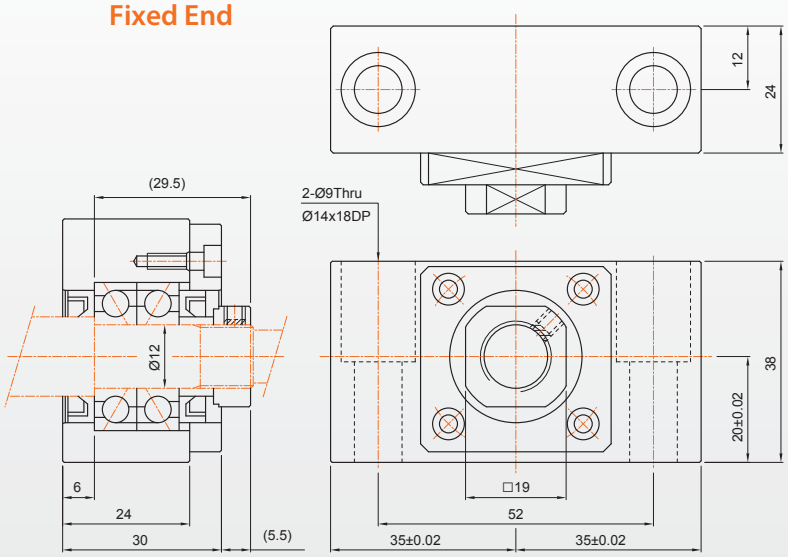
UNIT : mm

Accuracy Grade	Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
		Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
C5	<0.005	0	0.023	0.018	0.065	5.35	2.6	1.92	1.04
C5	<0.005	0	0.027	0.018	0.090	5.35	2.6	1.92	1.04
C5	<0.005	0	0.035	0.018	0.150	5.35	2.6	1.92	1.04

Supported End



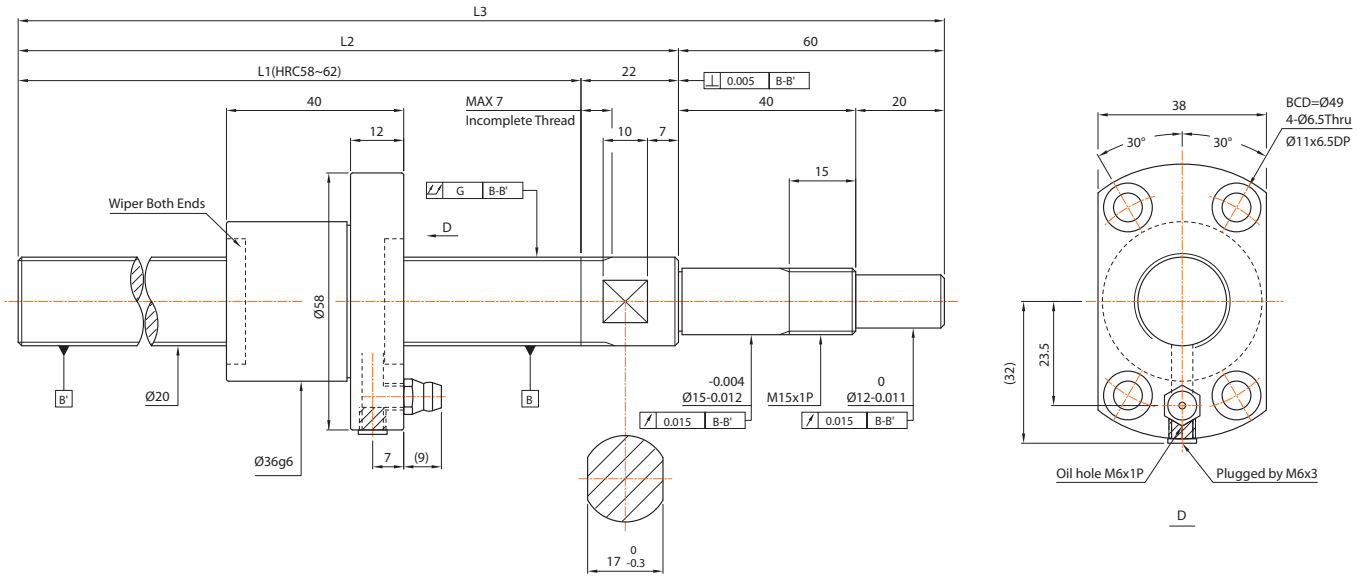
Fixed End



UNIT : mm

Accuracy Grade	Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
		Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
C5	<0.005	0	0.025	0.018	0.060	5.80	2.98	3.65	2.00
C5	<0.005	0	0.040	0.018	0.120	5.80	2.98	3.65	2.00
C5	<0.005	0	0.054	0.018	0.190	5.80	2.98	3.65	2.00

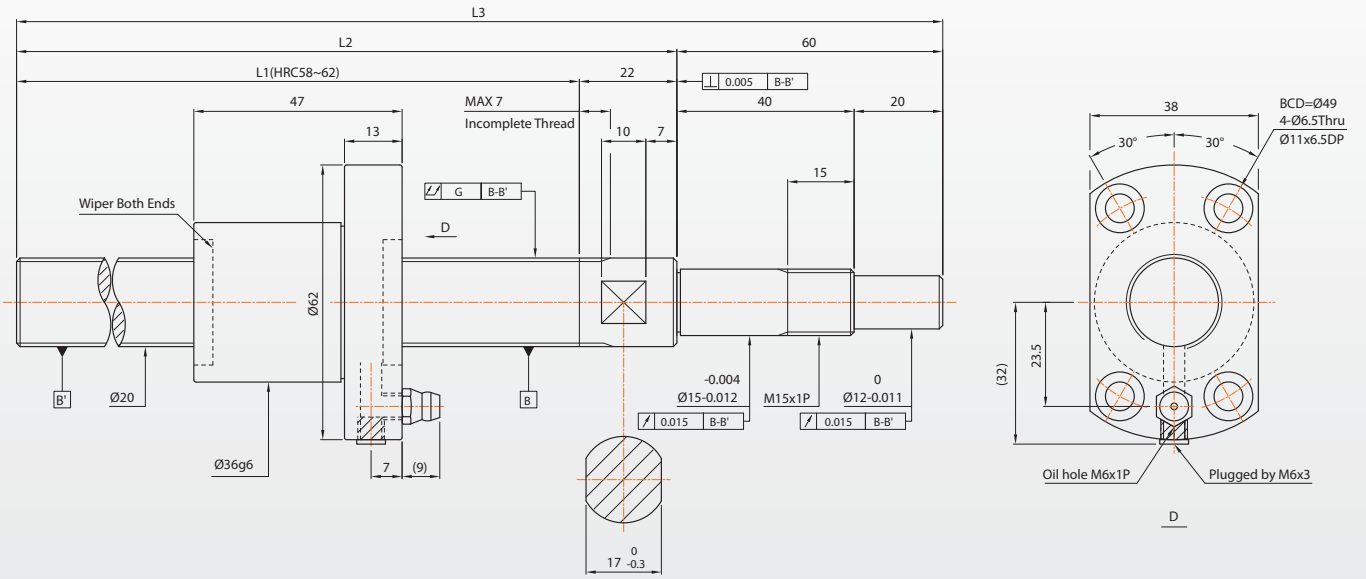
Screw Dia.Ø20 Lead05



Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length			Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	
BL020050600+A000	20	05	12.7	29.7	518	540	600	C5
BL020051000+A000	20	05	12.7	29.7	918	940	1000	C5
BL020051450+A000	20	05	12.7	29.7	1368	1390	1450	C5

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

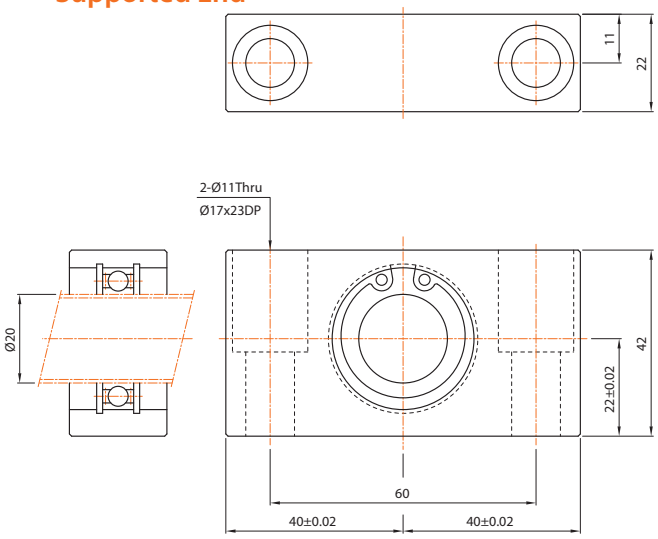
Screw Dia.Ø20 Lead10



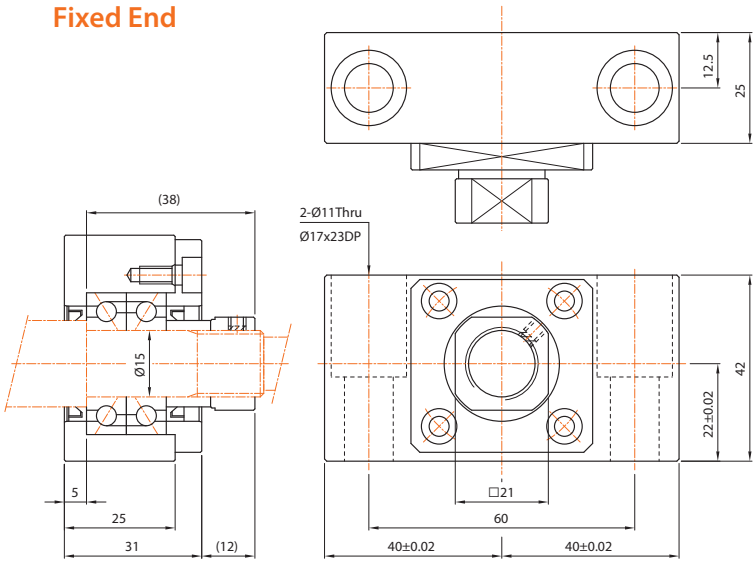
Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length			Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	
BL020100600+A000	20	10	9.7	21.8	518	540	600	C5
BL020101000+A000	20	10	9.7	21.8	918	940	1000	C5
BL020101450+A000	20	10	9.7	21.8	1368	1390	1450	C5

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

Supported End



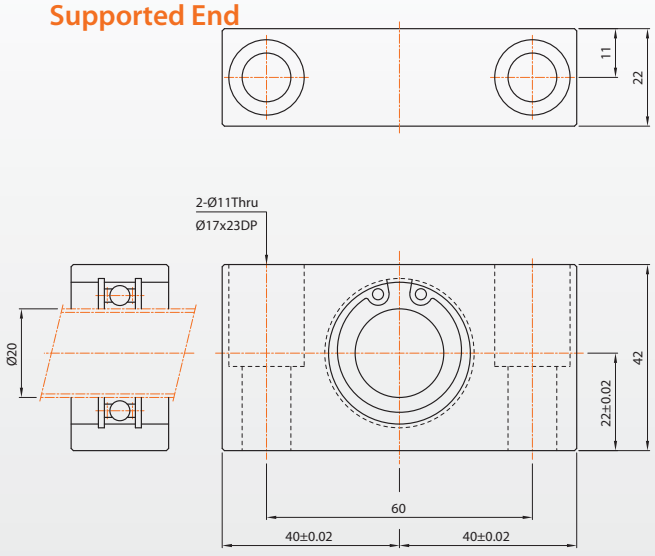
Fixed End



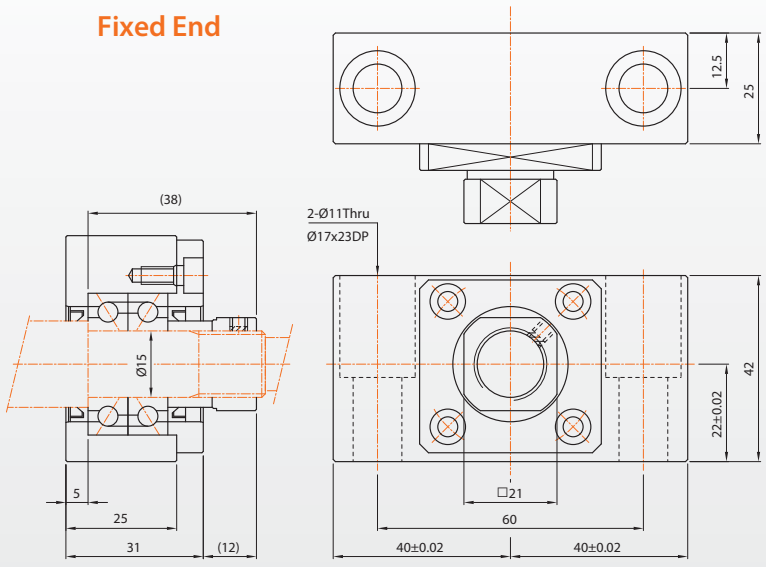
UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.030	0.018	0.075	6.10	3.45	4.00	2.47
<0.005	0	0.040	0.018	0.120	6.10	3.45	4.00	2.47
<0.005	0	0.054	0.018	0.190	6.10	3.45	4.00	2.47

Supported End



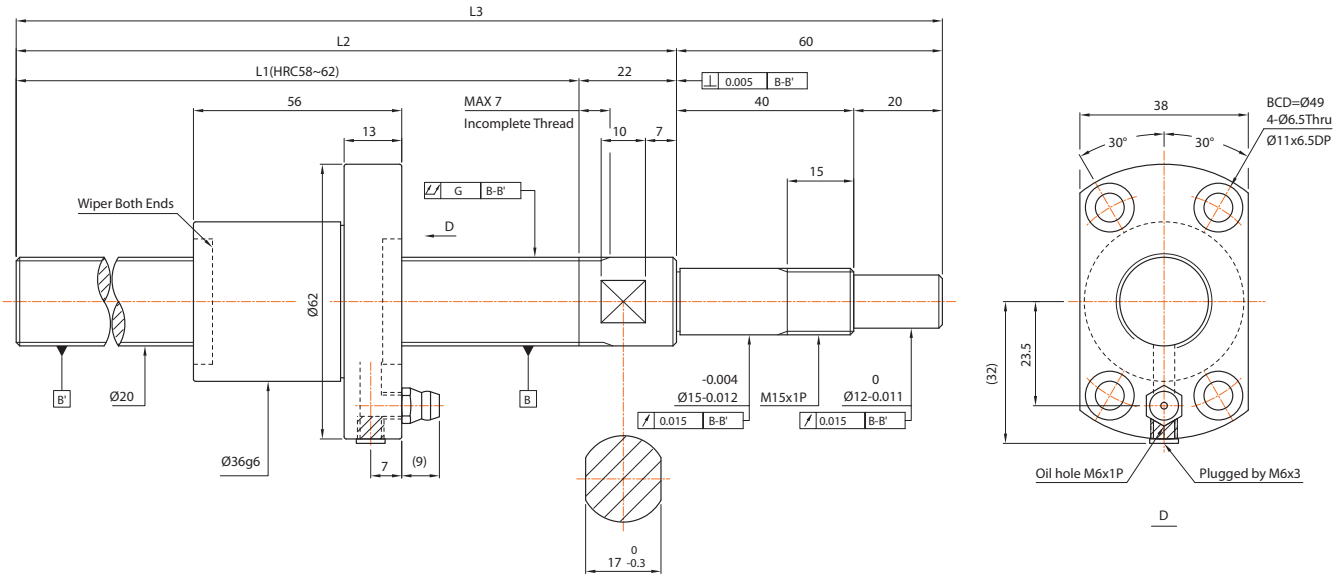
Fixed End



UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation E	Lead Deriation in random 300mm e300	Overall Radial Runout G	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.030	0.018	0.075	6.10	3.45	3.45	2.47
<0.005	0	0.040	0.018	0.120	6.10	3.45	3.45	2.47
<0.005	0	0.054	0.018	0.190	6.10	3.45	3.45	2.47

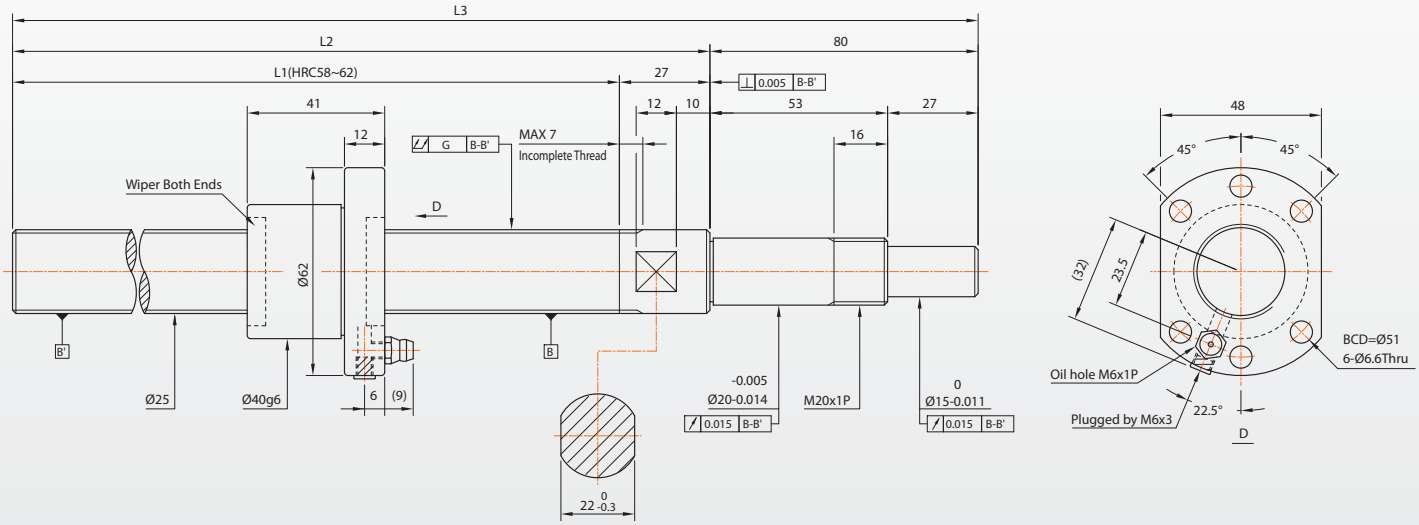
Screw Dia.Ø20 Lead20



Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length			Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	
BL020200600+A000	20	20	6.6	14.2	518	540	600	C5
BL020201000+A000	20	20	6.6	14.2	918	940	1000	C5
BL020201450+A000	20	20	6.6	14.2	1368	1390	1450	C5

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

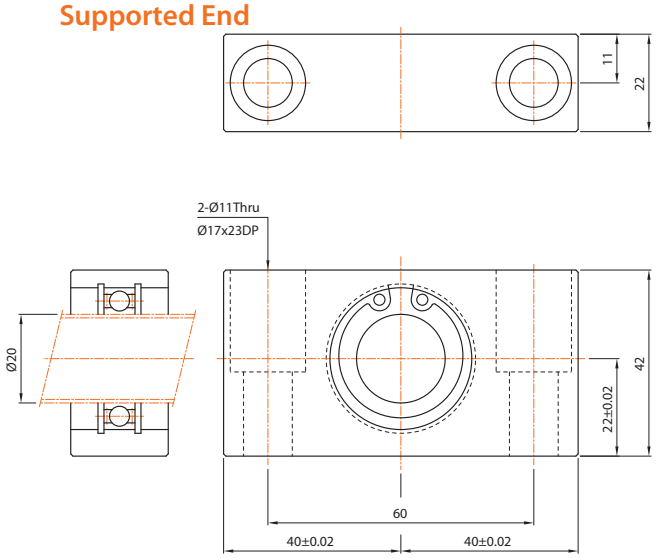
Screw Dia.Ø25 Lead05



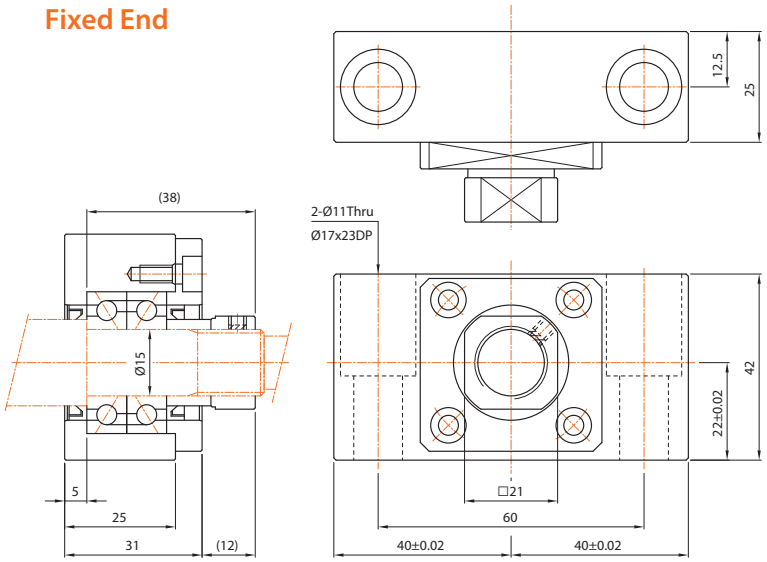
Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length			Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	
BL025050600+A000	25	05	14.1	37.6	493	520	600	C5
BL025051000+A000	25	05	14.1	37.6	893	920	1000	C5
BL025051450+A000	25	05	14.1	37.6	1343	1370	1450	C5

■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

Supported End



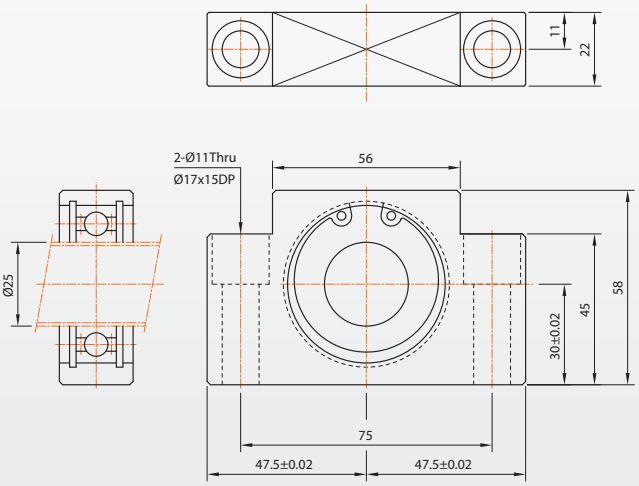
Fixed End



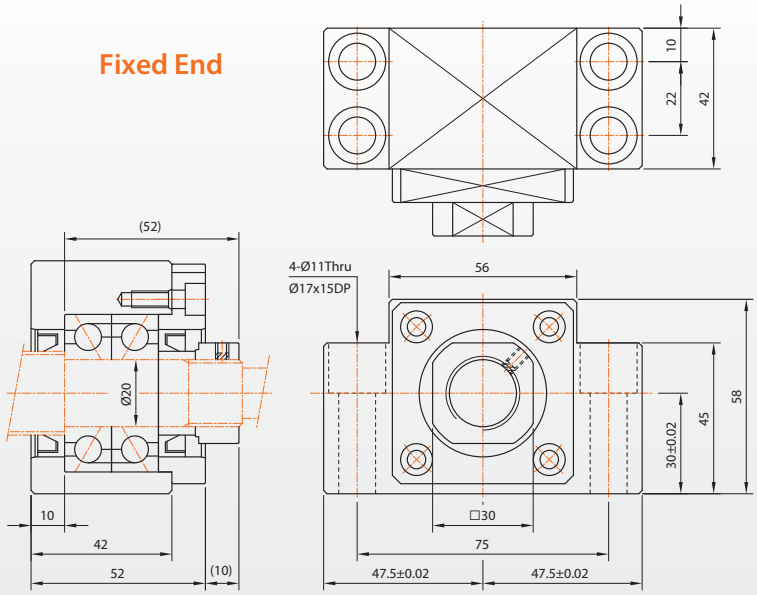
UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.027	0.018	0.075	6.10	3.45	4.00	2.47
<0.005	0	0.040	0.018	0.120	6.10	3.45	4.00	2.47
<0.005	0	0.054	0.018	0.190	6.10	3.45	4.00	2.47

Supported End



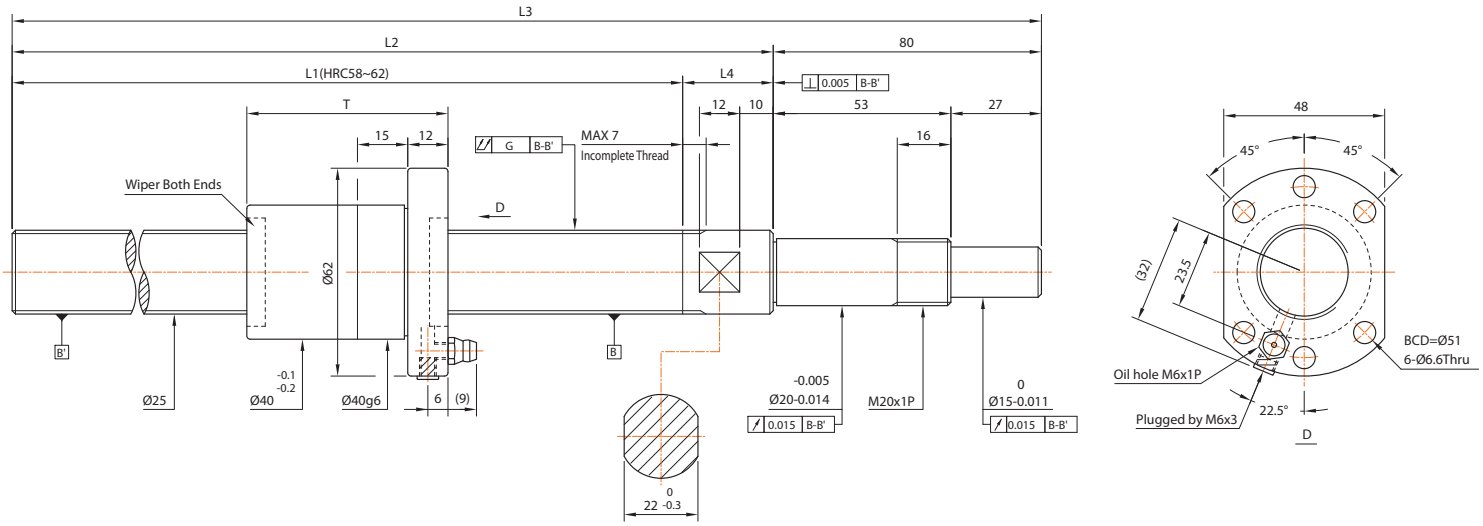
Fixed End



UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.027	0.018	0.050	14.50	8.30	10.10	5.85
<0.005	0	0.040	0.018	0.085	14.50	8.30	10.10	5.85
<0.005	0	0.054	0.018	0.130	14.50	8.30	10.10	5.85

Screw Dia.Ø25 Lead10, 20, 25



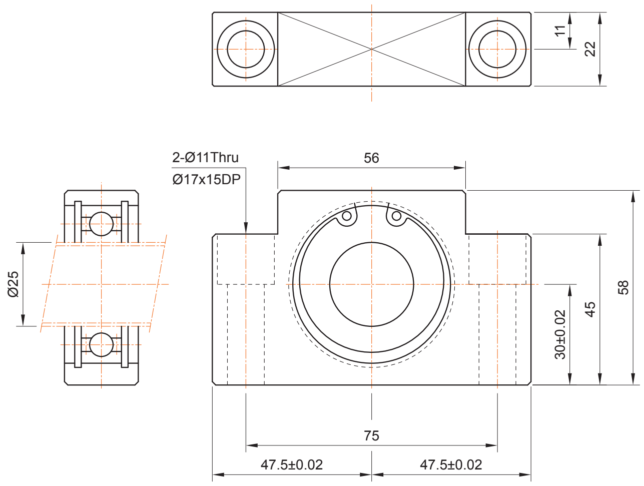
Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length				Nut Size	Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	L4	T	
BL025100600+A000	25	10	14	37.4	493	520	600	27	71	C5
BL025101000+A000	25	10	14	37.4	893	920	1000	27	71	C5
BL025101450+A000	25	10	14	37.4	1343	1370	1450	27	71	C5

Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length				Nut Size	Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	L4	T	
BL025200600+A000	25	20	7.4	18	494	520	600	26	71	C5
BL025201000+A000	25	20	7.4	18	894	920	1000	26	71	C5
BL025201450+A000	25	20	7.4	18	1344	1370	1450	26	71	C5

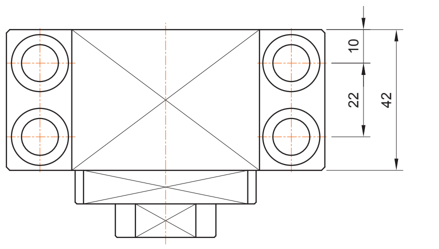
Model No.	Screw Dia.	Lead	Basic Rated Load(KN)		Screw Shaft Length				Nut Size	Accuracy Grade
	d	l	Dynamic Cam	Static Coam	L1	L2	L3	L4	T	
BL025250600+A000	25	25	7.2	17.7	494	520	600	30	71	C5
BL025251000+A000	25	25	7.2	17.7	894	920	1000	30	71	C5
BL025251450+A000	25	25	7.2	17.7	1344	1370	1450	30	71	C5

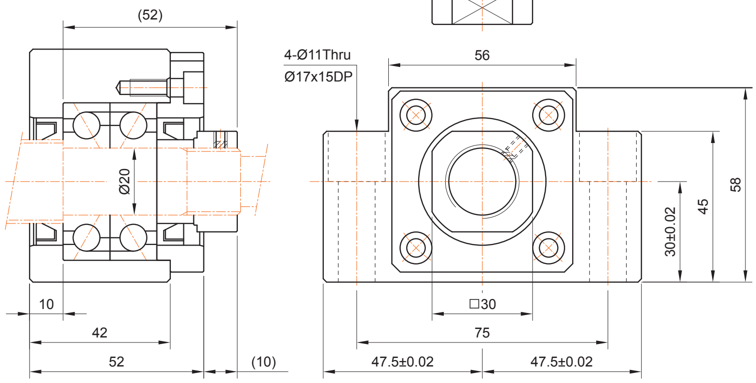
■ Coam and Cam are the modified static and dynamic load capacities,calculated according to ISO-3408-5

Supported End



Fixed End





UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.027	0.018	0.050	14.50	8.30	10.10	5.85
<0.005	0	0.040	0.018	0.085	14.50	8.30	10.10	5.85
<0.005	0	0.054	0.018	0.130	14.50	8.30	10.10	5.85

UNIT : mm

Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.027	0.018	0.050	14.50	8.30	10.10	5.85
<0.005	0	0.040	0.018	0.085	14.50	8.30	10.10	5.85
<0.005	0	0.054	0.018	0.130	14.50	8.30	10.10	5.85

UNIT : mm

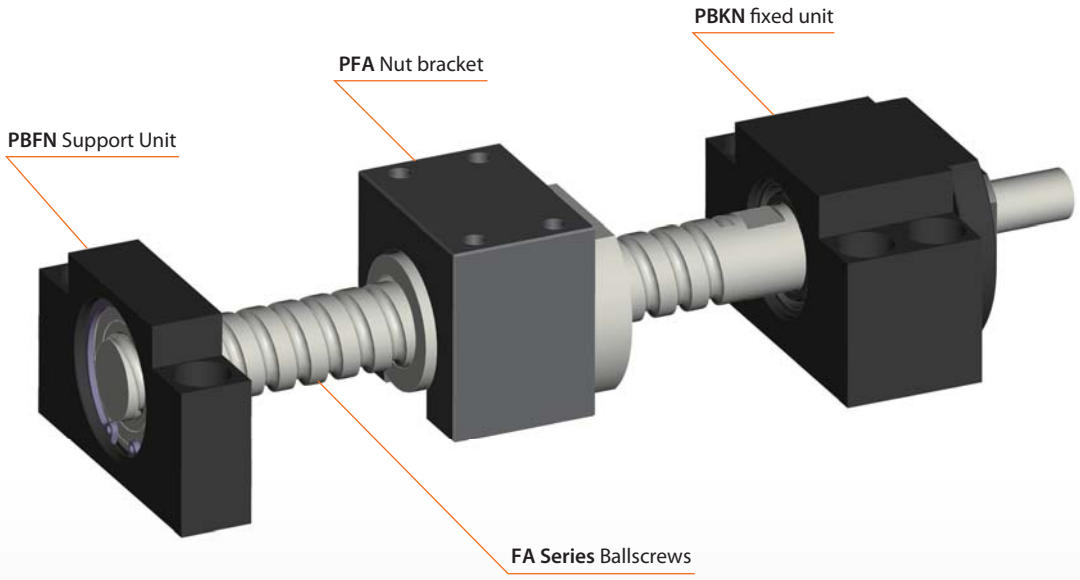
Axial Play	Lead Accuracy			Tolerances	Fixed End–bearing(KN)		Supported End–bearing(KN)	
	Specified Travel(T)	Accumulated reference lead deviation (E)	Lead Deriation in random 300mm (e300)	Overall Radial Runout	Dynamic Ca	Static Co	Dynamic Ca	Static Co
<0.005	0	0.027	0.018	0.050	14.50	8.30	10.10	5.85
<0.005	0	0.040	0.018	0.085	14.50	8.30	10.10	5.85
<0.005	0	0.054	0.018	0.130	14.50	8.30	10.10	5.85

5 Dimensions of Ballscrew Modules

PBKN Ballscrew Module

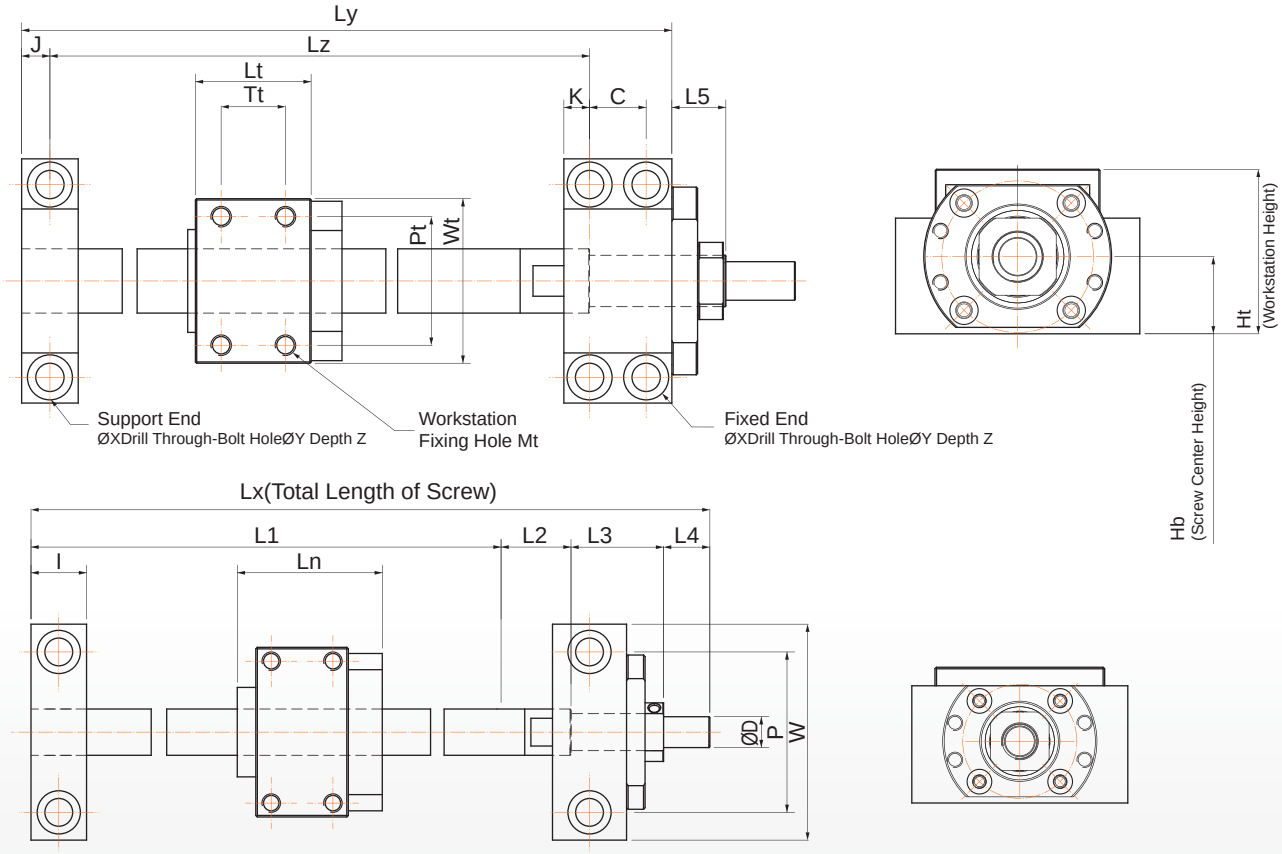
As a single module, including PBKN fixed unit, PBFN support unit, PFA nut bracket, and FA series ballscrew except motor bracket. The designer may design one motor bracket by himself.

Due to the precise outer diameter of ballscrew shaft is used for support bearing seat, the specific length of shaft can be cut freely from standardized screw shaft. Therefore, the flexible stroke length is allowable for simple support end.



Screw Module	I	J	W	K	C	P	ØD	Hb $^{0}_{-0.05}$	X	Y	Z	Lt	Tt	Wt	Pt	Ht
PBKN1210	18	9	62	11	-	46	8	15.5	9	14	9	30	20	50	42	33.5
PBKN1510	18	9	70	12	-	52	10	20	9	14	9	30	20	55	46	44
PBKN2005	22	11	80	12.5	-	60	12	22	11	17.5	11	30	20	64	50	44
PBKN2010																
PBKN2020												40				
PBKN2505	22	11	95	10	22	75	15	30	11	17.5	11	28	15	64	50	64
PBKN2510												45	25			
PBKN2520												45	25			
PBKN2525												55	35			

- Dimensions are subject to change. Please contact our sales representatives to place orders.
- For detailed dimensions, please refer to Part 6: Screw Module Accessories



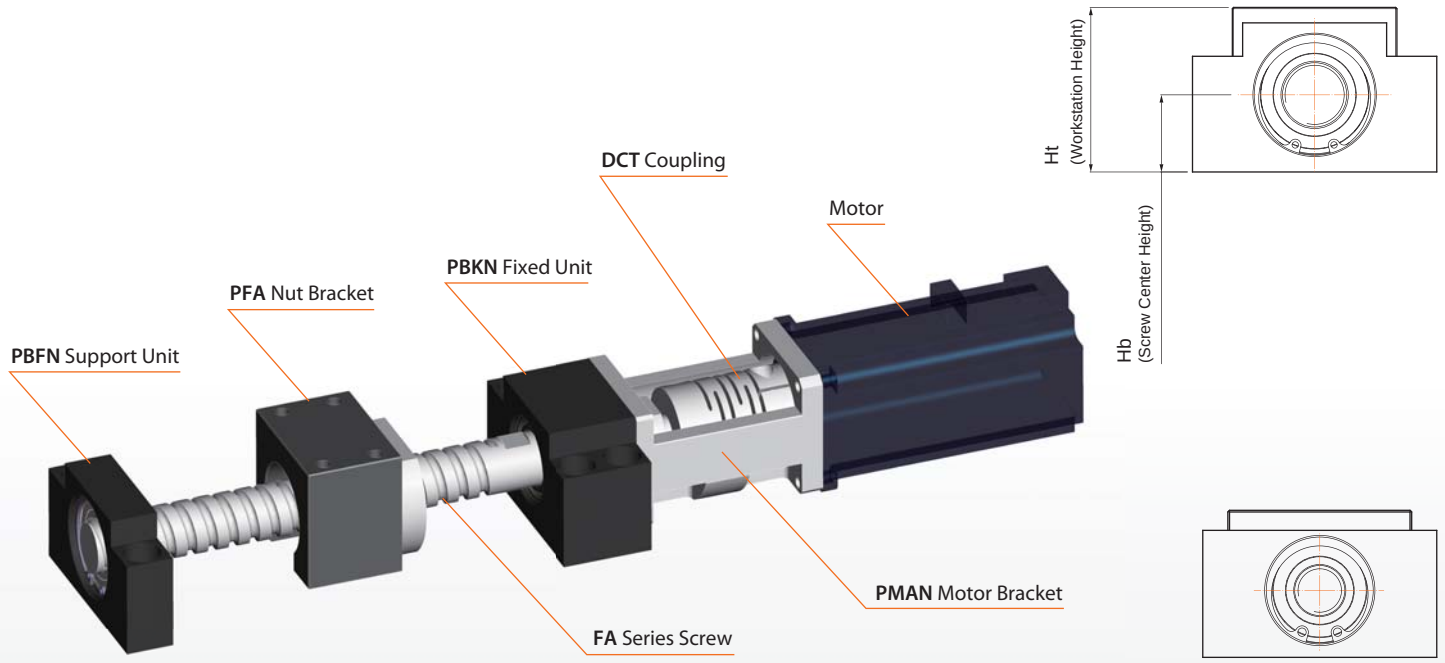
Unit : mm

Mt	Ln	Lx (Standard Length)			Ly	Lz	L1	L2	L3	L4	L5	Support Unit Model	Housing Model	Nut Bearing Model
M5X0.8P	45	400	600	900	Lx-21	Lx-41	L1	L2	28	10	11	PBFN12	PBKN10	PFA1210
M6X1.0P	47	500	1000	1450	Lx-27	Lx-48	Lx-53	15	30	15	12	PBFN15	PBKN12	PFA1510
M6X1.0P	40	600	1000	1450	Lx-40	Lx-63.5	Lx-82	22	40	20	18	PBFN20	PBKN15	PFA2010
	47													
	56													PFA2020
M8X1.25P	41	600	1000	1450	Lx-48	Lx-91	Lx-107	27	53	27	20	PBFN25	PBKN20	PFA2505
	60													PFA2510
	60						Lx-106	26						
	71						Lx-110	30						PFA2525

PMAN Ballscrew Module

Including FA series ballscrew, PFA nut bracket, PMAN motor bracket, PBKN fixed unit, PBFN support unit, and DCT coupling. It is simply constructed.

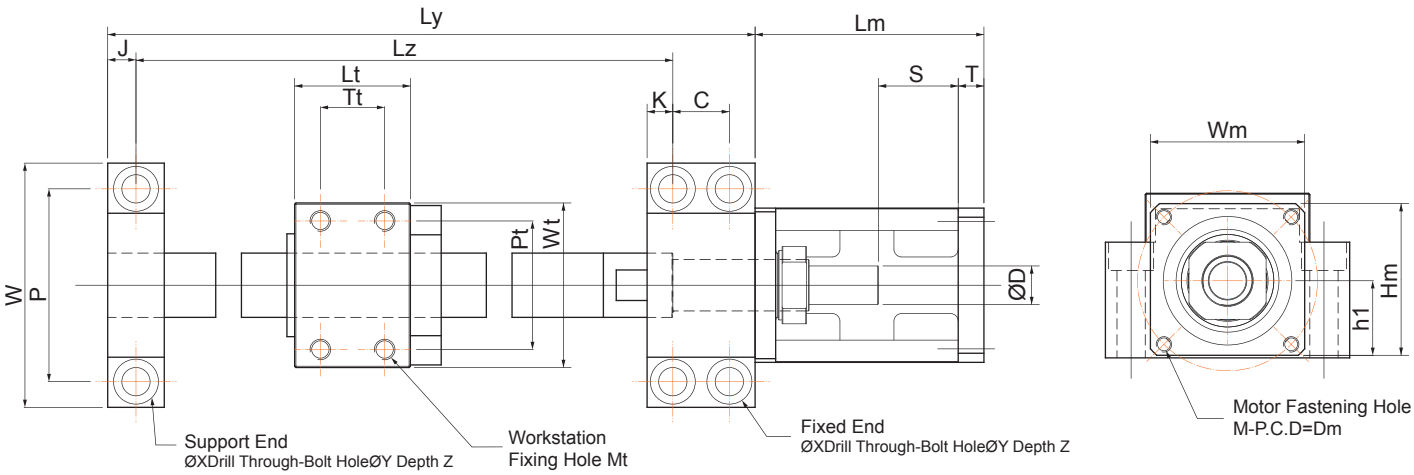
The cover plate of bearing and the installation section on the motor side are made as a single whole, reducing geometric errors of the angle and tolerance of height between ballscrew and motor shaft.

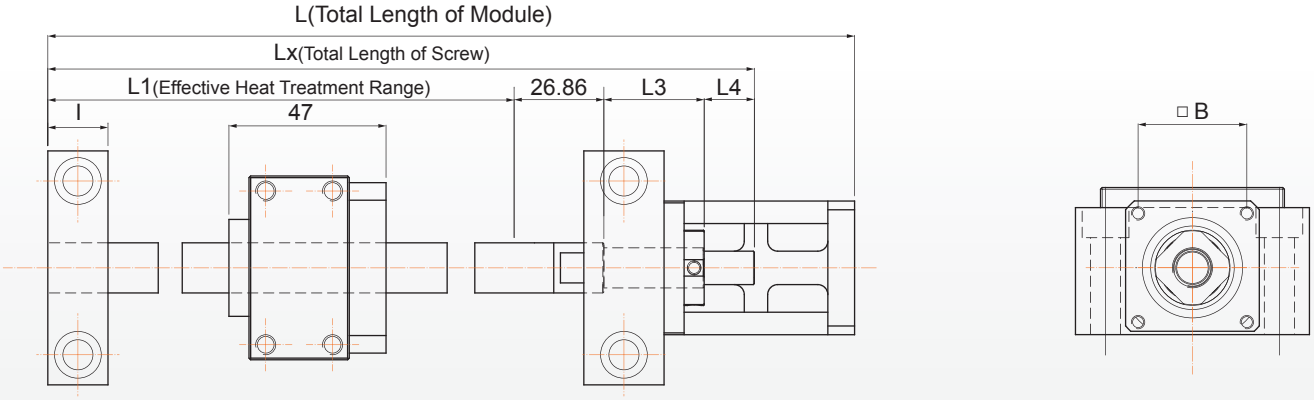


Screw Module	I	J	W	K	C	P	ØD	Hb $^{0}_{-0.05}$	X	Y	Z	Lt	Tt	Wt	Pt	Ht	Mt	Ln	Wm	Hm
PMAN1210	18	9	62	11	-	46	8	15.5	9	14	18	30	20	50	42	33.5	M5X0.8P	45	30	29
PMAN1510	18	9	70	12	-	52	10	20	9	14	19	30	20	55	46	44	M6X1.0P	47	40	39
PMAN2005	22	11	80	12.5	-	60	12	22	11	17	23	30	20	64	50	44	M6X1.0P	40	40	41
PMAN2010																		47		
PMAN2020												40						56		
PMAN2505	22	11	95	10	22	75	15	30	11	17	19	28	15	64	50	64	M8X1.25P	41	60	59
PMAN2510												45	25					60		
PMAN2520												45	25					60		
PMAN2525												55	20					71		

■ Dimensions are subject to change. Please contact our sales representatives to place orders.

■ For detailed dimensions, please refer to Part 6: Screw Module Accessories





UNIT : mm

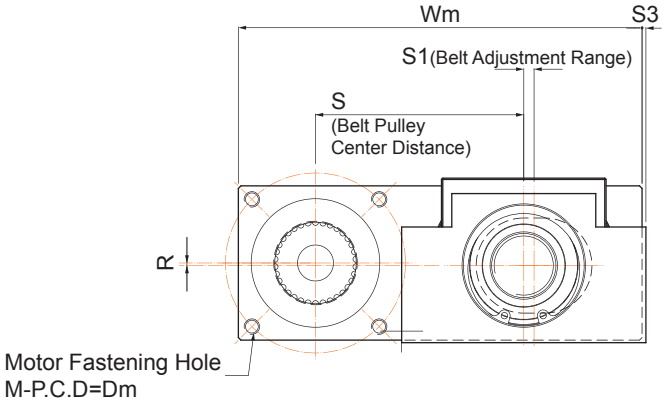
h1	B	M	Dm	Lm	L	S	T	Lx (Standard Length)			Ly	Lz	L1	L2	L3	L4	Motor Mount Model	Support Unit Model	Nut Bearing Model
14.5	23	Ø3	-	47	Lx+26	20	6	400	600	900	Lx-21	Lx-40.5	Lx-53	15	28	10	PMAN10	PBFN12	PFA1210
19	-	M4X0.7P	46	57	Lx+30	22	8	500	1000	1450	Lx-27	Lx-48	Lx-60	15	30	15	PMAN12	PBFN15	PFA1510
21	-	M4X0.7P	46	70	Lx+30	22	8	600	1000	1450	Lx-40	Lx-63.5	Lx-82	22	40	20	PMAN15	PBFN20	PFA2010
																			PFA2020
29	-	M6X1.0P	70	89	Lx+41	31	10	600	1000	1450	Lx-48	Lx-91	Lx-107	27	53	27	PMAN20	PBFN25	PFA2505
													Lx-106	26					PFA2510
													Lx-110	30					PFA2525

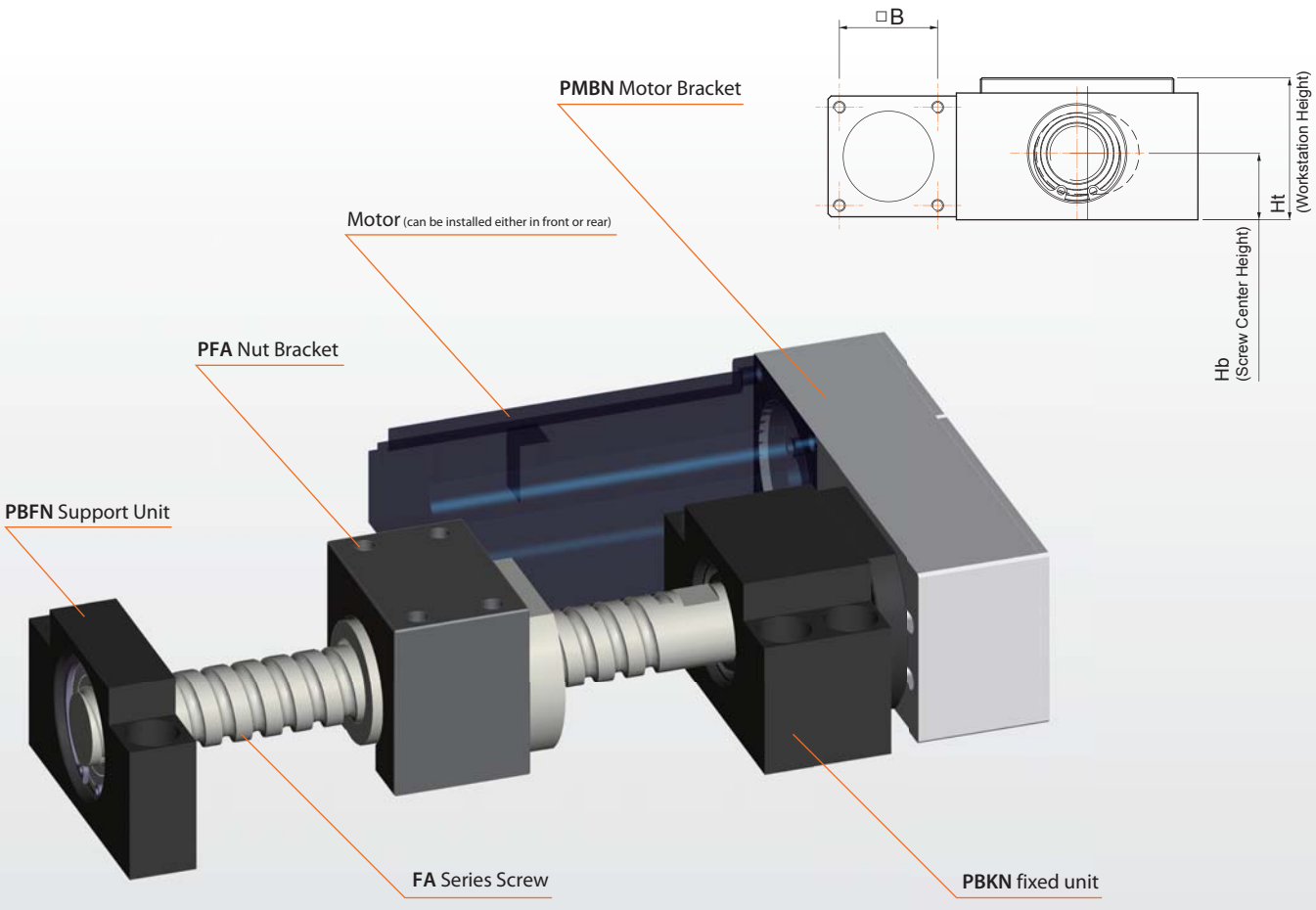
PMBN Ballscrew Module

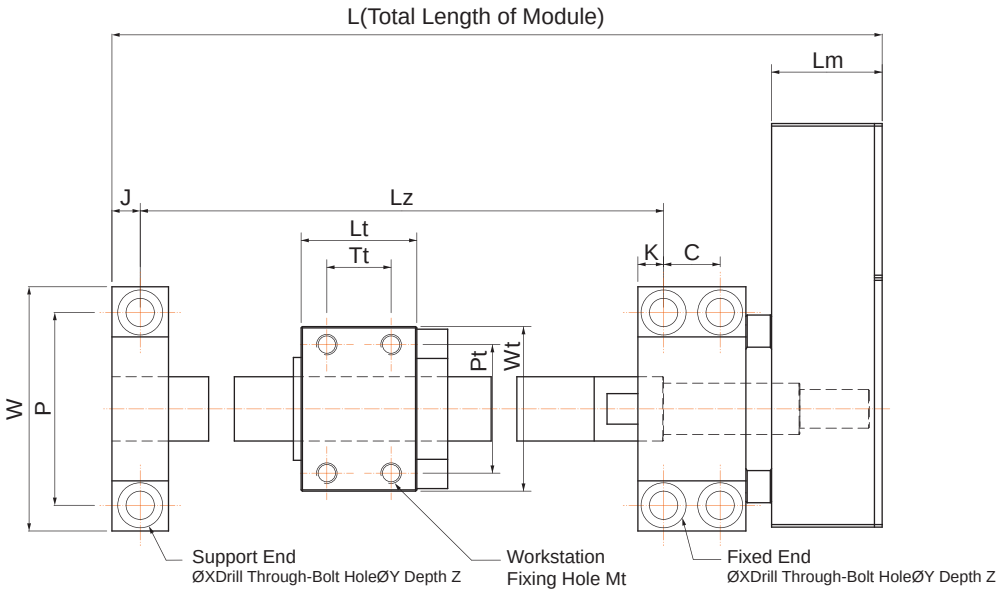
Parts include FA series ballscrew, PFA nut bracket, PMBN motor bracket, PBKN fixed unit, PBFN support unit, DCT coupling, and timing belt set which reduction ratio of 1:1.

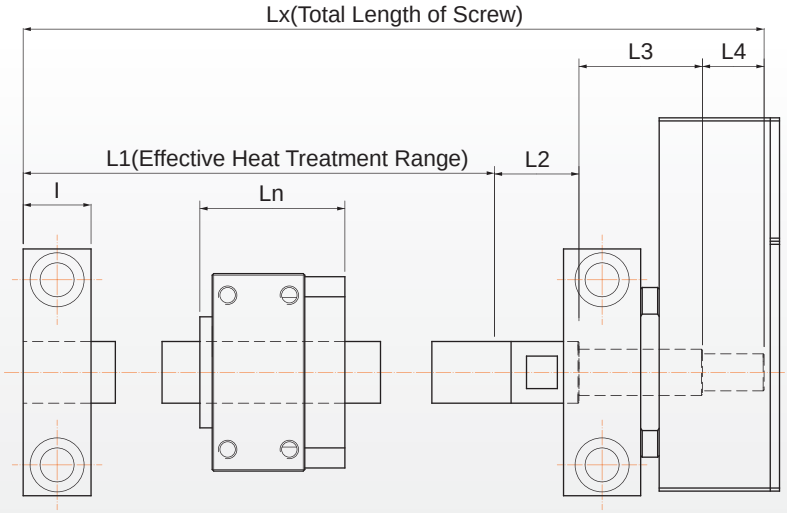
- Due to space restrictions, the PMCN series are designed the motor shaft and screw shoulder on the same side. With the power transmitted by the timing belt.

For detailed dimensions, please contact our sales representatives.





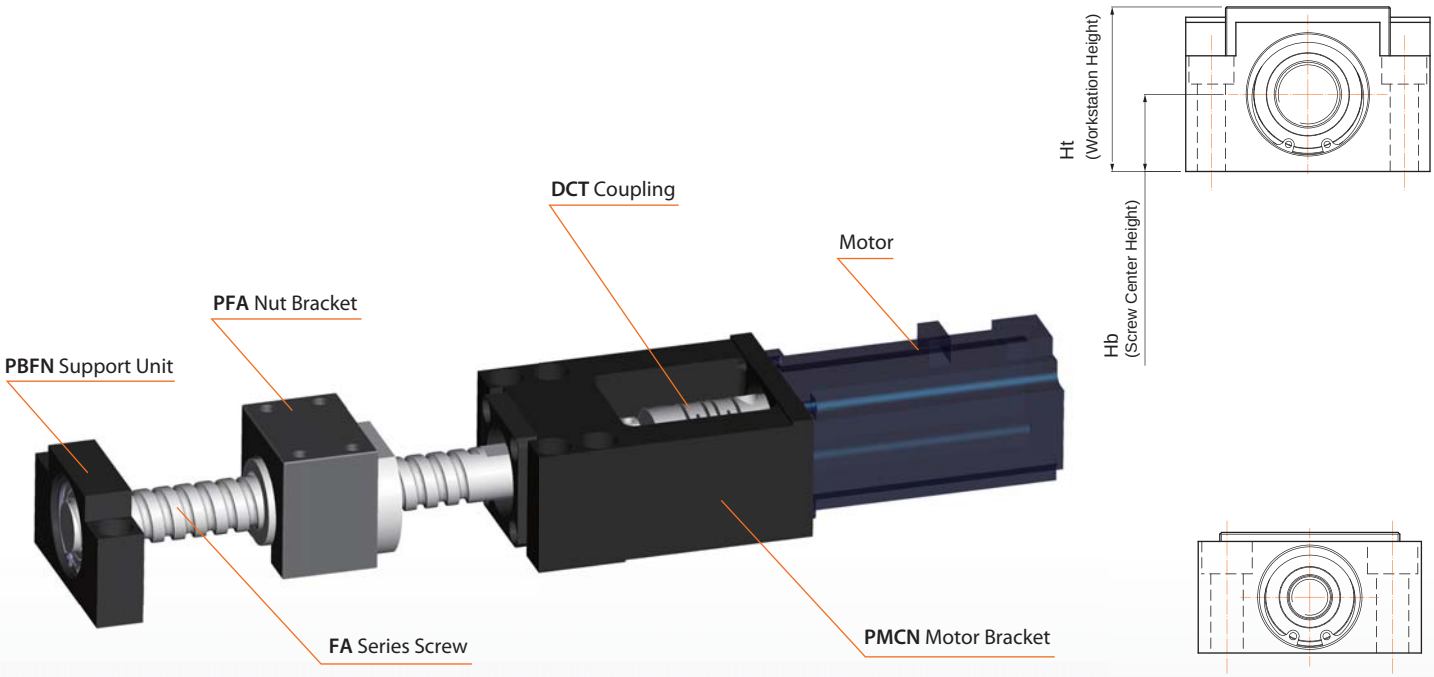

L(Total Length of Module)
Lm
J
Lz
Lt
Tt
K
C
W
P
Pt
Wt
Support End
ØXDrill Through-Bolt HoleØY Depth Z
Workstation
Fixing Hole Mt
Fixed End
ØXDrill Through-Bolt HoleØY Depth Z


Lx(Total Length of Screw)
L3
L4
L1(Effective Heat Treatment Range)
L2
l
Ln

PMCN Ballscrew Module

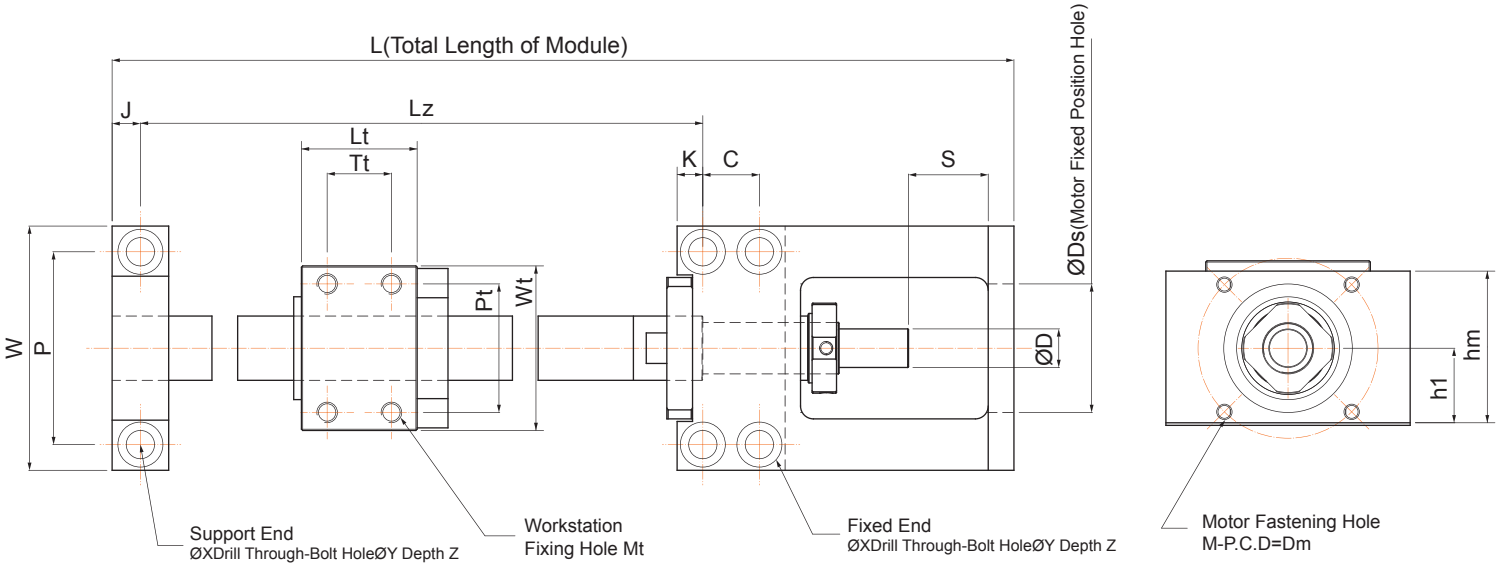
Including FA series ballscrew, PFA nut bracket, PMCN motor bracket, PBFN support unit, and DCT coupling. With the ballscrew fixed unit already in place, motor is easily to assemble.

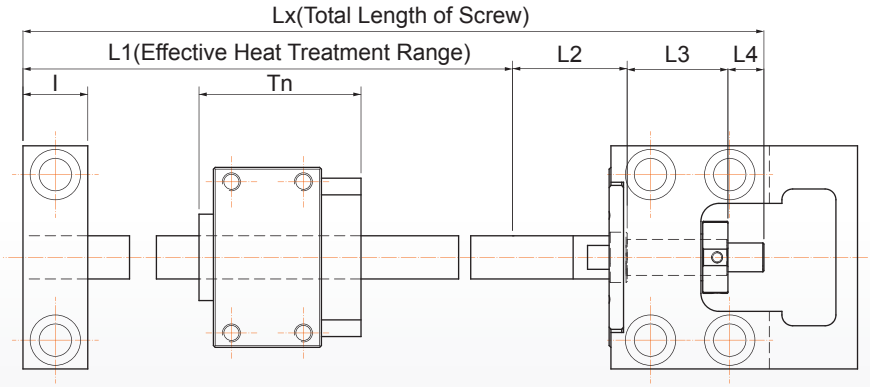
- The motor bracket and the fixed unit are combined in a single unit, giving it higher strength, which results in a high geometric.

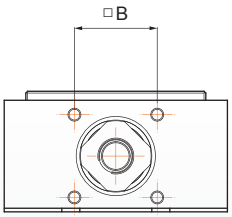


Screw Module	I	J	W	K	C	P	ØD	Hb $^{0}_{-0.05}$	X	Y	Z	Lt	Tt	Wt	Pt	Ht	Mt	Ln	Hm
PMCN1210	18	9	62	11	22	46	8	15.5	9	14	18	30	20	50	42	33.5	M5X0.8P	45	29
PMCN1510	18	9	70	12	22	52	10	20	9	14	19	30	20	55	46	44	M6X1.0P	47	39
PMCN2005	22	11	80	12.5	22	60	12	22	11	17	23	30	20	64	50	44	M6X1.0P	40	41
PMCN2010																		47	
PMCN2020												40						56	
PMCN2505	22	11	95	10	22	75	15	30	11	17	19	28	15	64	50	64	M8X1.25P	41	59
PMCN2510												45	25					60	
PMCN2520												45	25					60	
PMCN2525												55	20					71	

- Dimensions are subject to change. Please contact our sales representatives to place orders.
- For detailed dimensions, please refer to Part 6: Screw Module Accessories







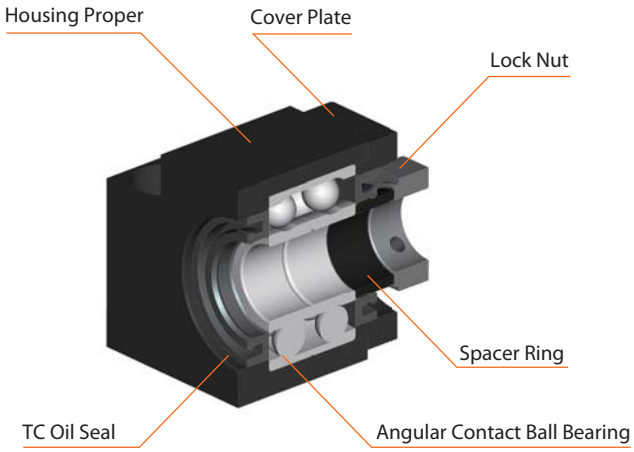
UNIT : mm

h1	h1	B	Mm	Dm	Ds	Ly	S	Lx (Standard Length)			Ly	Lz	L1	L2	L3	L4	Motor Mount Model	Support Unit Model	Nut Bearing Model
14.5	14.5	23	Ø3	-	22	Lx+26	20	400	600	900	Lx-40.5	Lx-40.5	Lx-53	15	28	10	PMCN10	PBFN12	PFA1210
19	19	-	M4X0.7P	46	30	Lx+30	22	500	1000	1450	Lx-48	Lx-48	Lx-60	15	30	15	PMCN12	PBFN15	PFA1510
21	21	-	M4X0.7P	46	30	Lx+30	22	600	1000	1450	Lx-63.5	Lx-63.5	Lx-82	22	40	20	PMCN15	PBFN20	PFA2010
																			PFA2020
29	29	-	M6X1.0P	70	50	Lx+41	31	600	1000	1450	Lx-91	Lx-91	Lx-107	27	53	27	PMCN20	PBFN25	PFA2505
																			PFA2510
													Lx-106	26					
													Lx-110	30					PFA2525

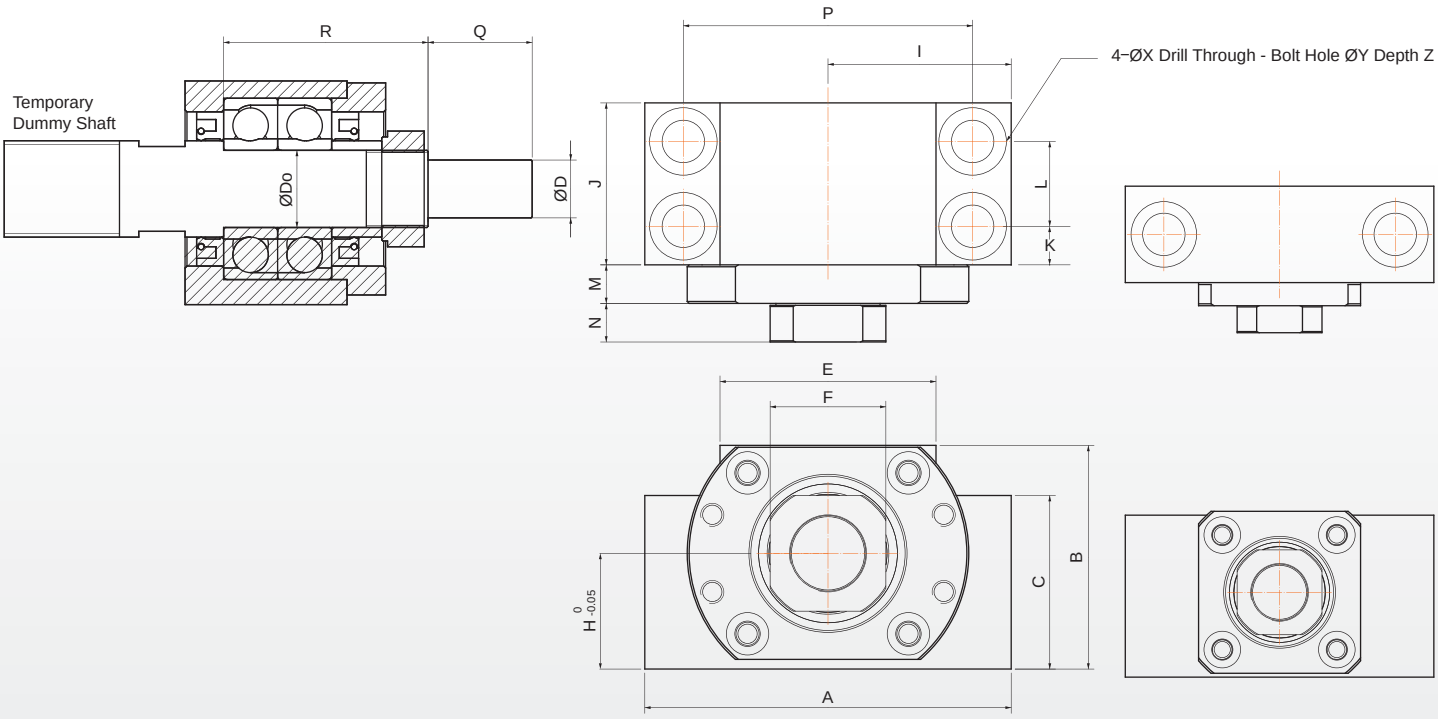
6 Screw Module Accessories

PBKN Fixed Unit

The housing comes with angular contact ball bearings. The bearings have been matched and preloaded, offering a stable rotating performance with high accuracy and rigidity.



Item	Parts	Material	Quantity	Surface Treatment
1	Housing Proper	S45C	1	Blackened
2	Lock Nut	-	1	-
3	Spacer Ring	S45C	1	Blackened
4	Cover Plate	-	2	-
5	Bearing Pressure Plate	S45C	1	Blackened
6	Oil Seal	-	2	TC Series



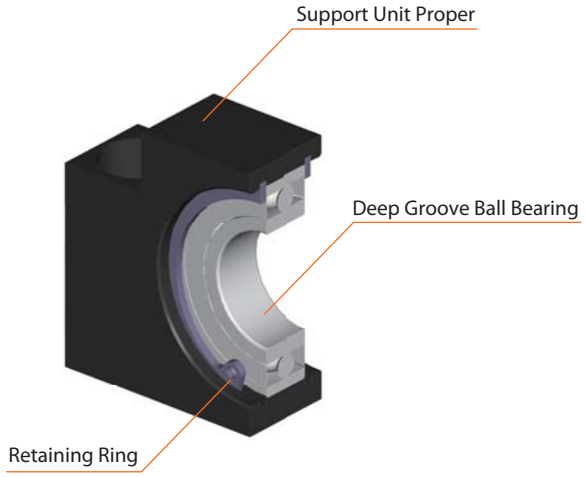
UNIT : mm

Model No.	A	B	C	D	Do	E	F	H	I	J	K	L	M	N	P	Q	R	X	Y	Z	Bearing Model	Dynamic Load Rating (KN)	Static Load Rating (KN)
PBKN10	62	31	-	8	10	-	17	15.5	31	21.5	10.5	-	4	7	46	10	28	9	14	9	7000A	5.35	2.60
PBKN12	70	38	-	10	12	-	19	20	35	24	12	-	6	6	52	15	30	9	14	9	7001A	5.80	2.98
PBKN15	80	42	-	12	15	-	22	22	40	25	12.5	-	6	12	60	20	40	11	17.5	11	7002A	6.10	3.45
PBKN20	95	58	45	15	20	56	30	30	47.5	42	10	22	10	10	75	53	27	11	17.5	11	7204A	14.50	8.30

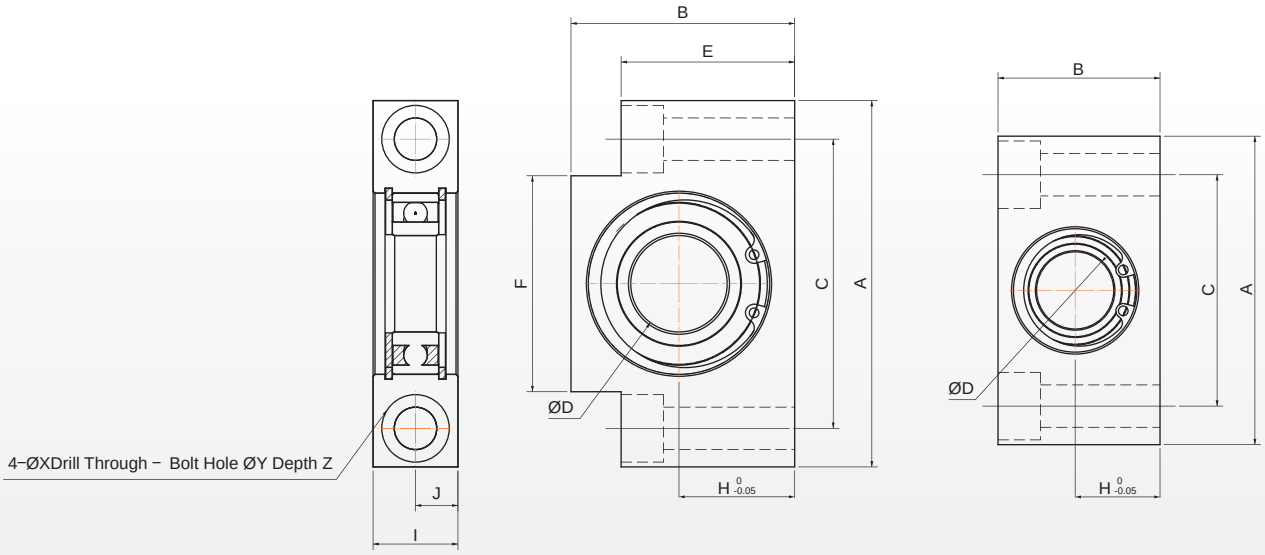
■ Dimensions are subject to change. Please contact our sales representatives to place orders.

PBFN Support Unit

The deep groove ball bearing of the support unit is fixed by two retaining rings.



Item	Parts	Material	Quantity	Surface Treatment
1	Support Unit Proper	S45C	1	Blackened
2	Deep Groove Ball Bearing	-	1	-
3	Retaining Ring	-	2	Blackened



UNIT : mm

Model No.	A	B	C	D	E	F	H	I	J	X	Y	Z	Bearing Model	Dynamic Load Rating (KN)	Static Load Rating (KN)
PBSN12	62	31	46	12	-	-	15.5	18	9	9	14	9	6000ZZ	1.92	1.04
PBSN15	70	38	52	15	-	-	20	18	9	9	14	9	6001ZZ	3.65	2.00
PBSN20	80	42	60	20	-	-	22	22	11	11	17.5	11	6804ZZ	4.00	2.47
PBSN25	95	58	75	25	45	56	30	22	11	11	17.5	11	6005ZZ	10.10	5.85

■ Dimensions are subject to change. Please contact our sales representatives to place orders.

PMAN、PMBN and PMCN Motor Bracket (with fixed unit)

- We offer 3 types for different needs, PMAN and PMCN employ direct coupling AC servo motor, while PMBN employs belt drive with a reduction ratio of 1:1
- Ballscrew side and the installation section on the motor side are made as a single whole, reducing geometric errors of the angle and tolerance of height between ballscrew and motor shaft. Easy to assemble—simply insert the motor and begin positioning.
- The PBKN, PMAN, PMBN, and PMCN screw modules have identical pin hole positions, screw center heights, and workstation heights. The four types are interchangeable as long as the screws are of the same length.

Compatible Motor and Coupling Models

We offer the following motors as design basis. For special P.C.D or motor location holes, please contact our sales representatives.

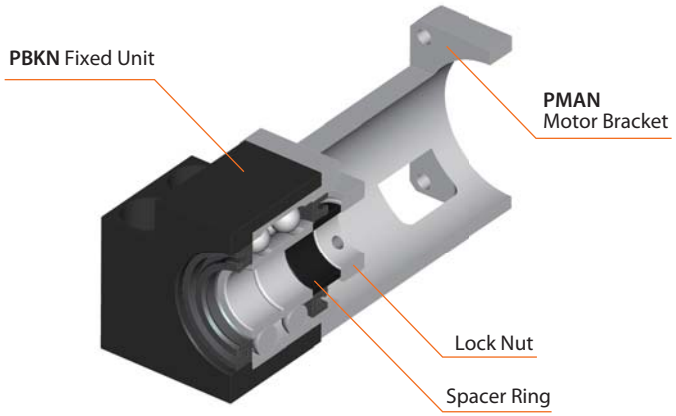
UNIT : mm

Module Model	Screw Outer Dimension	Lead	Manufacturer	Motor Model	Output (W)	Flange	Compatible Coupling
PMAN PMBN PMCN	12	10	Sanyo Denki	PMM33A2	6	□28	DCT-20C
	15 20	05 10 20	YASKAWA Electric	SGMAH-A3	30	□40	DCT-25C
				SGMAH-A5	50		
				SGMAH-01	100		
			Mitsubishi Electric	HC-MFS053	50		
				HC-MFS13	100		
			Sanyo Denki	P30B04003	30		
				P30B04005	50		
				P30B04010	100		
			OMRON	R88M-W03030	30		
				R88M-W05030	50		
				R88M-W10030	100		
	25	05 10 20 25	YASKAWA Electric	SGMAH-02	200	□60	DCT-40C
				SGMAH-04	400		
			Mitsubishi Electric	HC-MFS23	200		
				HC-KFS23	200		
				HC-MFS43	400		
				HC-KFS43	400		
			Sanyo Denki	P30B06020	200		
				P30B06040	400		
			OMRON	R88M-W20030	200		
				R88M-W40030	400		

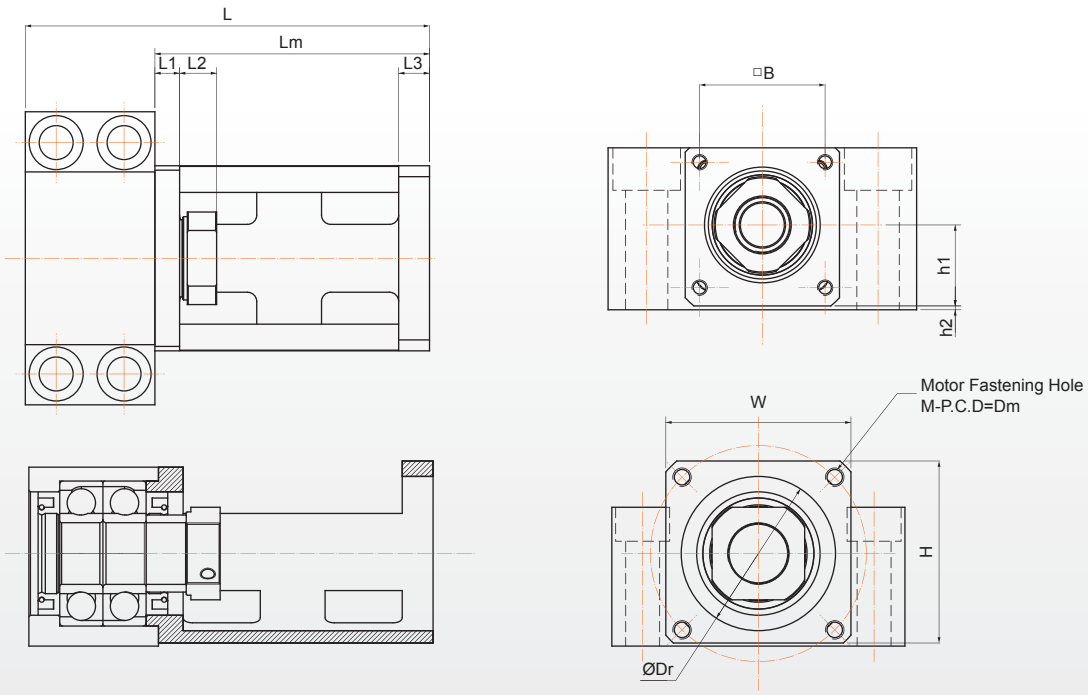
■ The models and dimensions of motors and couplings are subject to change. Please verify the specifications of the motors.

PMAN Motor Bracket

The pin hole position is identical to that of the PBKN bearing pressure plate. To install a motor bracket on the PBKN fixed unit, simply replace the bearing pressure plate with the PMAN motor bracket.



Item	Parts	Material	Quantity	Surface Treatment
1	PBKN Housing	-	1	-
2	PBKN Fixed Unit	-	1	-
3	PMAN Motor Mount	A6061	1	Sand blasted, anodized matte black
4	Spacer Bracket	S45C	1	Blackened



UNIT : mm

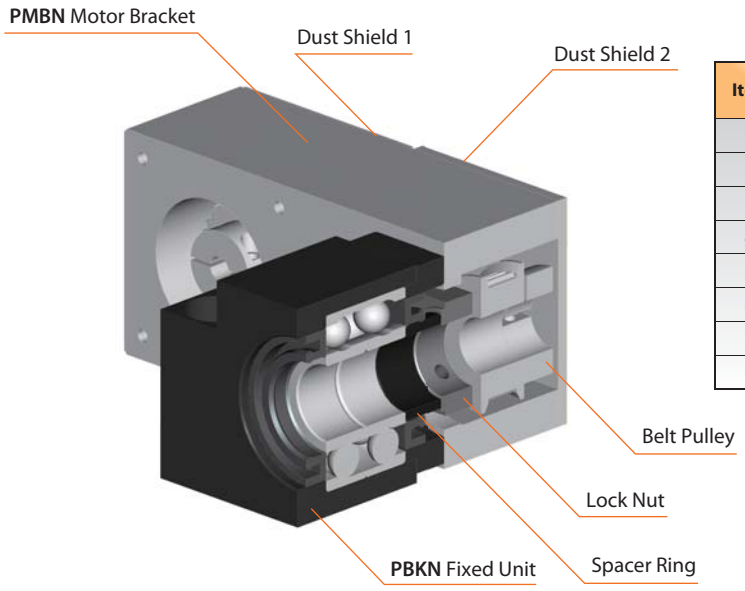
Model No.	W	B	H	h1	h2	M	Dr	Dm	L	Lm	L1	L2	L3	Housing Model	Compatible Support End
PMAN10	30	23	29	14.5	1	Ø3	22	-	68.5	47	4	7	6	PBKN10	PBFN12
PMAN12	40	-	31	19	1	M4X0.7P	30	46	81	57	6	6	8	PBKN12	PBFN15
PMAN15	40	-	41	21	1	M4X0.7P	30	46	95	70	6	12	8	PBKN15	PBFN20
PMAN20	60	-	59	29	1	M6X1.0P	50	70	131	89	8	12	10	PBKN20	PBFN25

■ Dimensions are subject to change. Please contact our sales representatives to place orders.

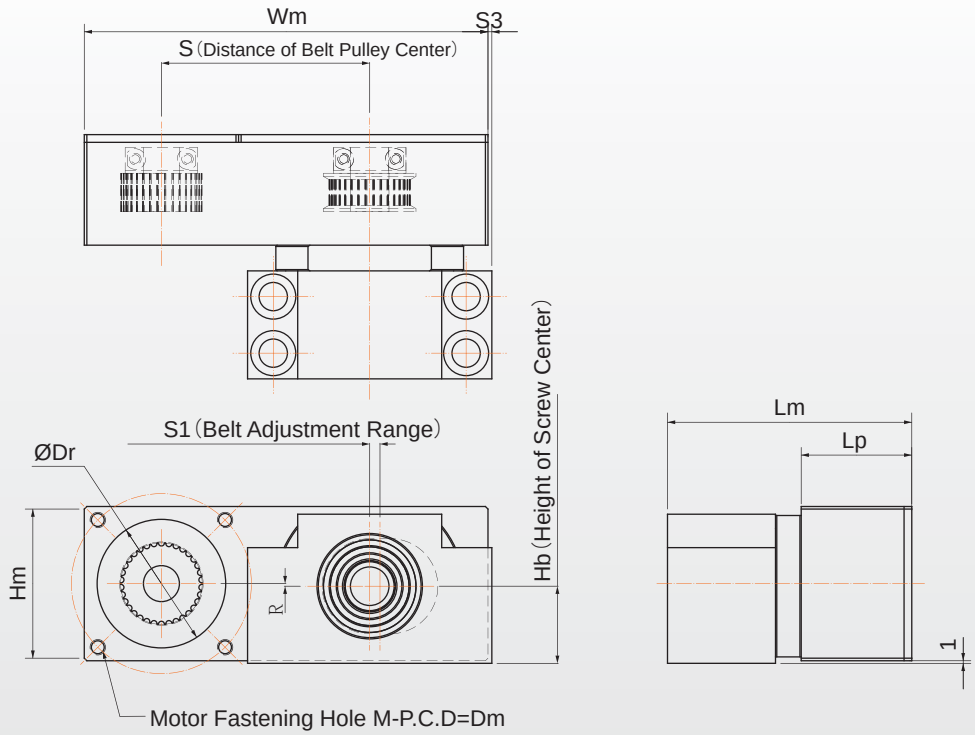
PMBN Motor Bracket

With reduced axis length and belt transmission, the motor and the screw module are set horizontally. Reduction ratio is 1:1.

For detailed dimensions, please contact our sale representatives.

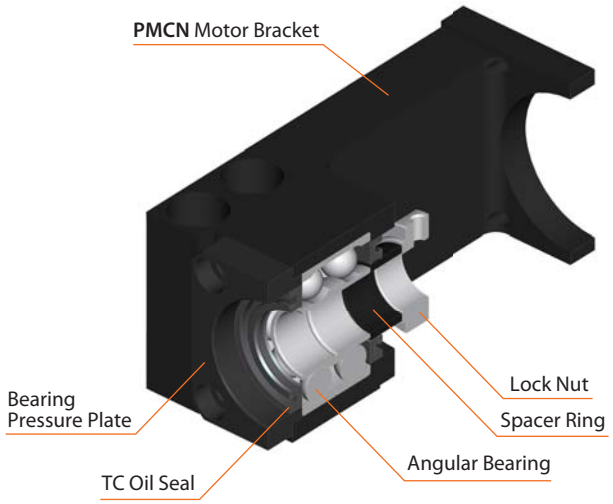


Item	Parts	Material	Quantity	Surface Treatment
1	PBKN Fixed Unit	-	1	-
2	Lock Nut	-	1	-
3	PMBN Motor Bracket	A6061	1	Sand Blasted, anodized matte black
4	Spacer Ring	S45C	1	Blackened
5	3M Timming Belt	-	1	-
6	Belt Pulley	A6061	2	-
7	Dust Shield 1	SS41	1	-
8	Dust Shield 2	SS41	1	-

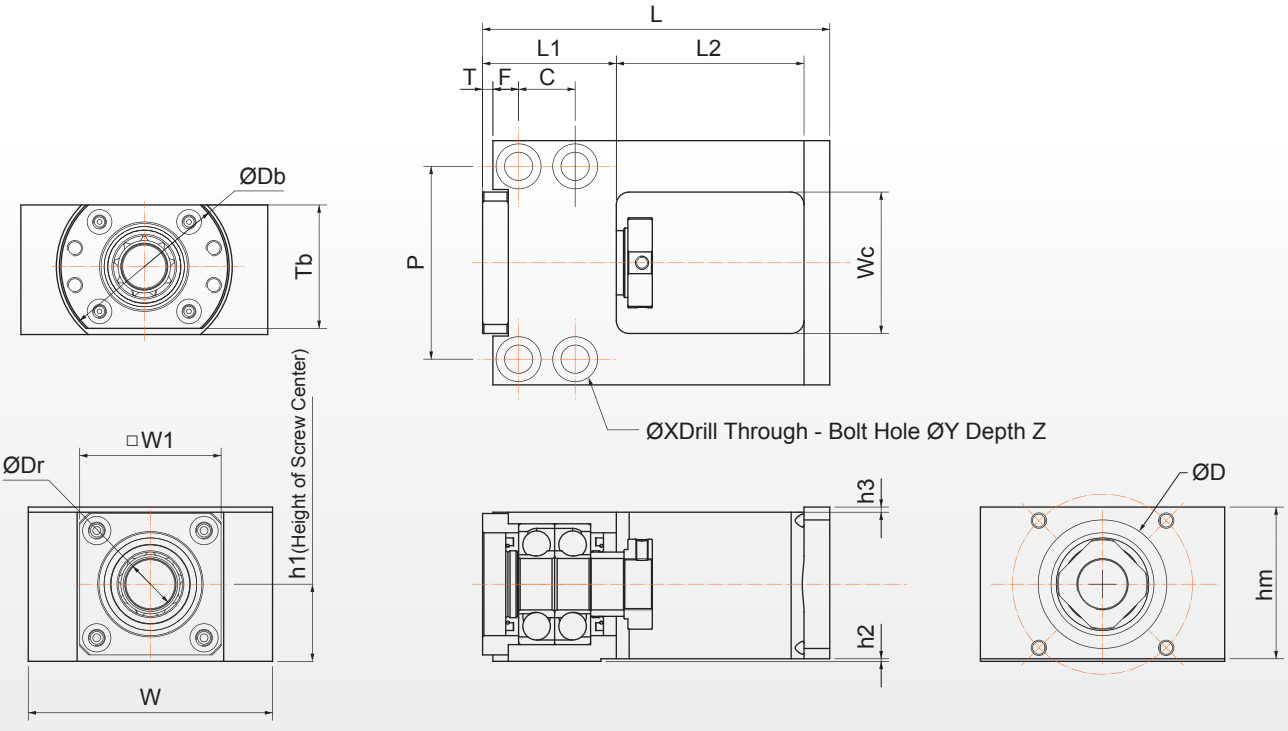


PMCN Motor Bracket

The housing and motor bracket of the PMCN series are made as a single unit, which gives it a high strength as well as reduces geometric errors of the angle and the height of the two axes. Easy to assemble—simply insert the motor and begin positioning.



Item	Parts	Material	Quantity	Surface Treatment
1	Bracket	S45C	1	Blackened
2	Lock Nut	-	1	-
3	Spacer Ring	S45C	1	Blackened
4	Angular Bearing	-	2	-
5	Bearing Pressure Plate	S45C	1	Blackened
6	Oil Seal	-	2	TC Series



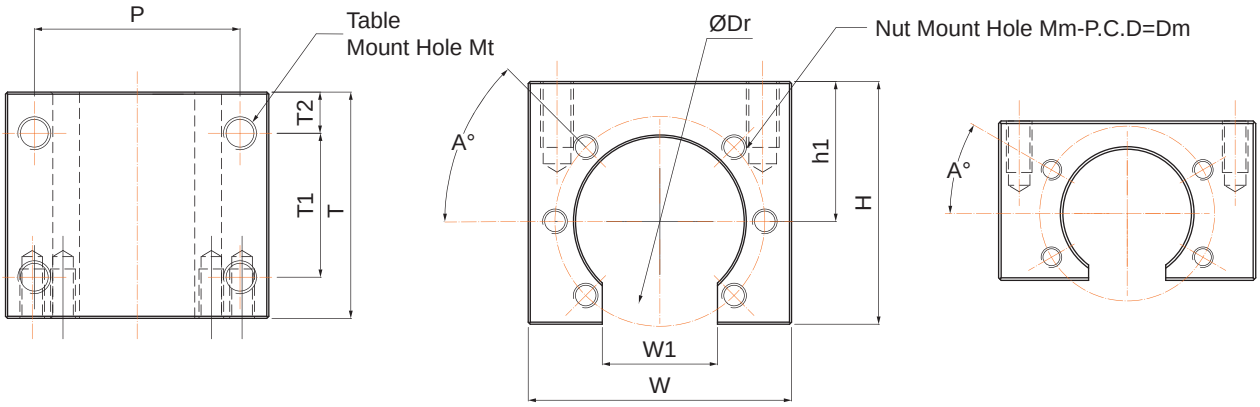
UNIT : mm

Model No.	W	hm	h1	h2	h3	Tb	Db	W1	Dr	D	Wc	P	T	F	C	L	L1	L2	X	Y	Z	Compatible Coupling	Compatible Support End
PMCN10	62	31	15.5	1	-	30	50	-	10	22	30	46	-	11	22	69	25.5	37.5	9	14	18	DCT-20C	PBFN12
PMCN12	70	40	20	1	2	36	50	-	12	30	36	52	2	12	22	83	30	45	9	14	18	DCT-25C	PBFN15
PMCN15	80	42	22	1	-	40	55	-	15	30	40	60	3	12.5	22	98	31	59	11	17	23	DCT-25C	PBFN20
PMCN20	95	60	30	1	2	-	73	55	20	50	55	75	4	10	22	135	52	73	11	17	15	DCT-40C	PBFN25

■ Dimensions are subject to change. Please contact our sales representatives to place orders.

PFA Nut Bracket

The nut bracket is a nut support unit for the standard FA series ballscrew. It can be fastened on the table simply by bolts.

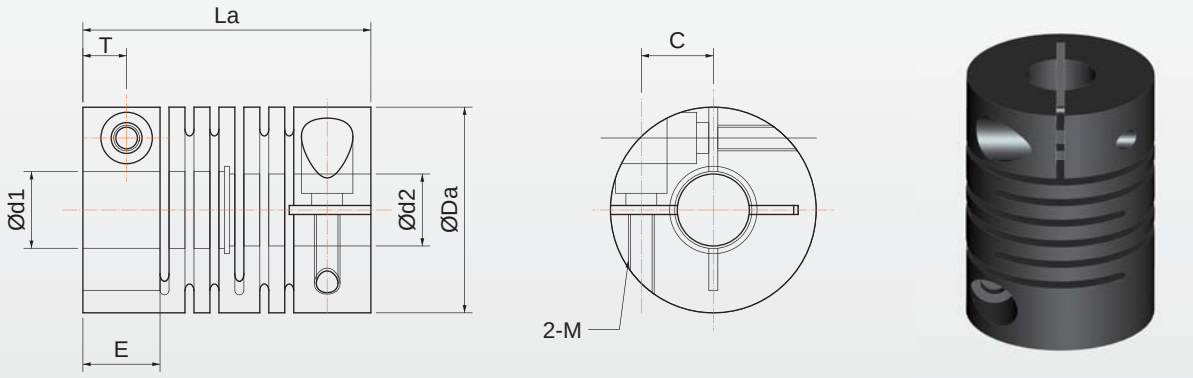


Model No.	W	W1	P	ØD	T	T1	T2	H	h1	A°	Number of Nut Mounting Holes	Mm	Dm	Mr
PFA1210	50	15	42	25	30	20	5	32	18	30	4	M4X0.7P	34	M5X0.8P
PFA1510	55	18	46	30	30	20	5	40	24	30	4	M5X0.8P	39	M6X1.0P
PFA2010	64	23	50	37	30	20	5	42	22	30	4	M6X1.0P	49	M6X1.0P
PFA2020	64	23	50	37	40	20	10	42	22	30	4	M6X1.0P	49	M6X1.0P
PFA2510	64	28	50	41	28	15	6.5	59	34	45	6	M6X1.0P	51	M8X1.25P
PFA2520	64	28	50	41	45	25	10	59	34	45	6	M6X1.0P	51	M8X1.25P
PFA2525	64	28	50	41	55	35	10	59	34	45	6	M6X1.0P	51	M8X1.25P

■ Dimensions are subject to change. Please contact our sales representatives to place orders.

DCT Coupling

Flexible couplings come in three models—DCT20, DCT25, and DCT40. Each matches a type of screw module.



UNIT : mm

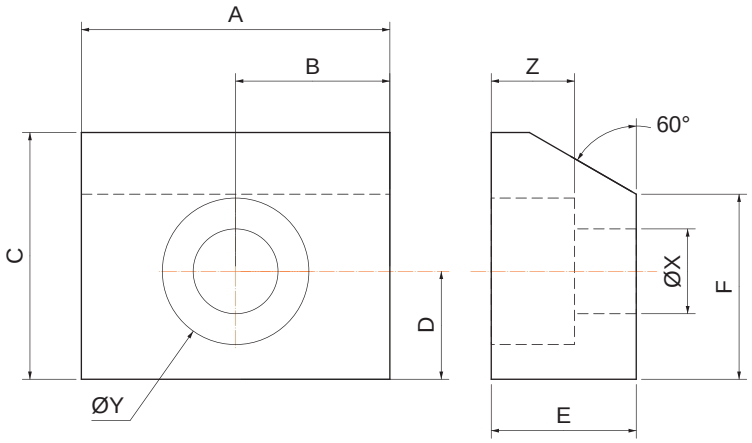
Model No.	Da	E	La	T	C	M	d1xd2 Hole Diameter Tolerance		Mass (g)	Normal Torque (N · M)	Maximum Torque (N · M)	Maximum Rotation Speed (min-1)	Inertia (kg · m²)	Static Tortional Stiffness (N · m/rad)	Error of Eccentricity (mm)	Error of Angularity (°)	Error of Shaft End-play (mm)
							Min	Max									
DCT-20C	20	7.5	26	3.75	6.5	M3	4	8	16	0.5	1	7600	9.1X10-7	120	0.1	2	±0.4
DCT-25C	25	8.5	31	4.25	9	M4	5	12	28	1	2	6100	2.6X10-6	170	0.15	2	±0.5
DCT-40C	40	15	56	8.5	14	M5	8	16	140	5	10	3800	3.3X10-5	350	0.2	2	±0.5

■ The above couplings are optional accessories, and can be used with our motor mounts.

GWT,GWK, and GWL Wedges

All screws or screw modules can be used with our MSA, MSB, and MSC linear guideways, and we offer wedges for all series of linear guideways.

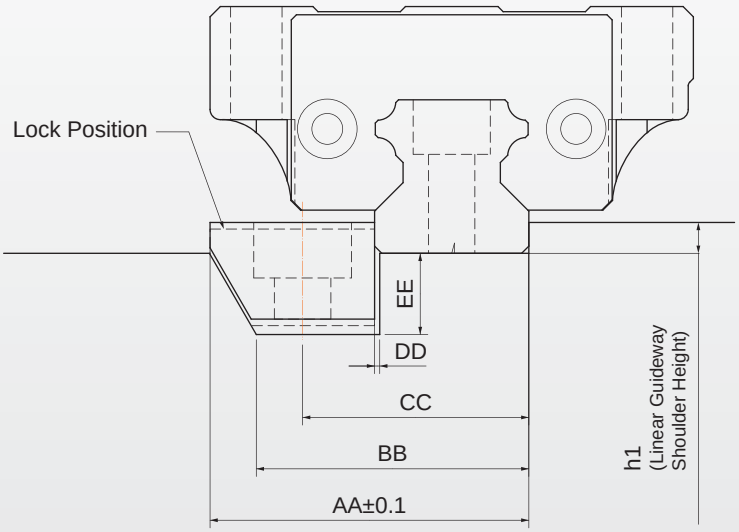
GWT Wedges



UNIT : mm

Model No.	A	B	C	D	E	F	X	Y	Z
GWT1	20.0	10.0	16.0	7.0	9.4	12.0	5.5	9.5	5.4
GWT2	25.0	12.5	20.0	8.0	10.5	15.0	7.0	11.0	6.5
GWT3	30.0	15.0	24.0	9.0	13.6	17.5	9.0	14.0	8.9

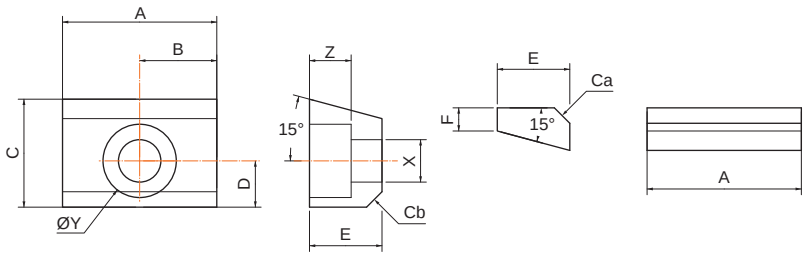
Example



UNIT : mm

Linear Guideway Model	AA	BB	CC	DD	EE	h1	Compatible Wedges
MSC9	25.0	20.5	16.0	0.3	9.3	1.6	GWT1
MSC12	28.0	23.5	19.0	0.4	9.3	2.4	GWT1
MSC15	31.0	26.5	22.0	0.5	8.5	3.4	GWT1
MSA15	31.0	26.5	22.0	0.5	7.5	3.0	GWT1
MSA20	40.0	34.5	28.0	0.5	8.5	3.5	GWT2
MSA25	43.0	37.5	31.0	1.0	8.5	5.0	GWT2
MSA30	48.0	42.5	36.0	1.0	7.0	5.0	GWT2
MSA35	54.0	48.5	42.0	1.0	6.0	6.0	GWT2
MSA45	69.0	62.0	54.0	1.0	7.1	8.0	GWT3
MSA55	77.0	70.0	62.0	1.5	5.1	10.0	GWT3
MSA65	87.0	80.0	72.0	1.5	5.1	10.0	GWT3
MSB15	31.0	26.5	22.0	0.5	7.5	3.0	GWT1
MSB20	40.0	34.5	28.0	0.5	8.0	4.0	GWT2
MSB25	43.0	37.5	31.0	1.0	8.0	5.0	GWT2
MSB30	48.0	42.5	36.0	1.0	7.0	7.0	GWT2
MSB35	58.0	51.0	43.0	1.0	8.1	8.0	GWT3

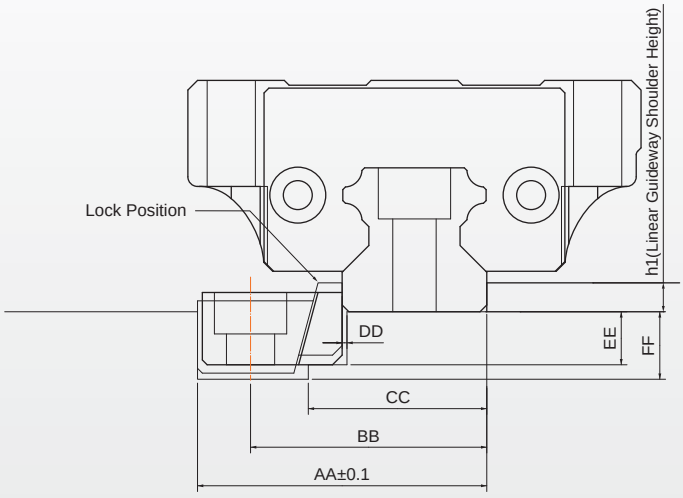
GWK Wedge



UNIT : mm

Model No.	A	B	C	D	E	F	Ca	Cb	X	Y	Z
GWK1	10.0	5.0	8.5	3.5	5.5	2.0	0.5	0.5	4.0	6.0	3.2
GWK2	15.0	7.5	12.0	5.0	7.5	3.0	0.5	1.0	5.0	7.5	4.3
GWK3	20.0	10.0	14.0	6.0	9.5	3.0	0.8	1.0	6.0	9.5	5.4
GWK4	25.0	12.5	18.0	6.5	12.0	4.0	0.8	1.0	7.0	11.0	6.6
GWK5	30.0	15.0	22.0	9.0	15.0	4.0	1.0	1.0	9.0	14.0	8.6

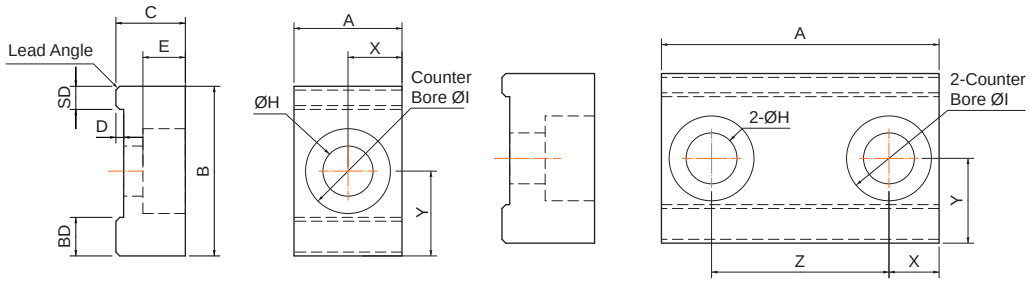
Example



UNIT : mm

AA	BB	CC	DD	EE	FF	h1	Compatible Wedges
20.0	1.0	11.6	0.3	4.9	6.4	1.6	GWK1
23.0	19.0	14.6	0.4	4.9	6.4	2.4	GWK1
30.0	24.5	18.5	0.5	5.1	6.6	3.4	GWK2
30.0	24.5	18.5	0.5	5.5	7.0	3.0	GWK2
37.5	31.0	24.5	0.5	7.0	8.5	3.5	GWK3
40.5	34.0	27.0	1.0	5.5	7.0	5.0	GWK3
50.0	43.0	32.0	1.0	8.0	9.5	5.0	GWK4
56.0	49.0	39.2	1.0	8.0	9.5	6.0	GWK4
71.5	62.0	50.2	1.0	8.0	9.5	8.0	GWK5
79.5	70.0	59.0	1.5	6.0	7.5	10.0	GWK5
89.5	80.0	69.0	1.5	6.0	7.5	10.0	GWK5
30.0	24.5	18.5	0.5	5.5	7.0	3.0	GWK2
35.0	29.5	23.5	0.5	4.5	6.0	4.0	GWK2
40.5	34.0	27.0	1.0	5.5	7.0	5.0	GWK3
40.5	39.0	32.0	1.0	3.5	5.0	7.0	GWK3
56.0	49.0	39.2	1.0	5.0	6.5	8.0	GWK4

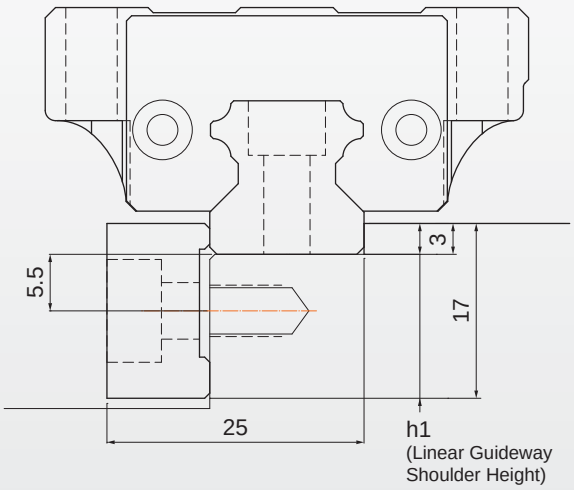
GWL Wedge



UNIT : mm

Model No.	A	B	C	D	E	X	Y	Z	BD	SD	ØI	ØH	Lead Angle
GWL1	10.0	12.0	8.0	0.5	4.2	5.0	6.0	-	3.0	2.0	7.5	4.4	0.3
GWL2	15.0	17.0	10.0	1.0	5.3	8.0	8.5	-	4.0	2.5	10.0	5.5	0.5
GWL3	20.0	22.0	12.0	1.0	6.4	10.0	11.0	-	5.0	3.0	11.0	6.6	0.5
GWL4	2.0	32.0	15.0	1.0	8.5	13.0	16.0	-	7.0	4.5	14.0	8.7	0.8
GWXL1	19.0	12.0	8.0	0.5	4.2	4.5	6.0	10.0	3.0	2.0	7.5	4.4	0.3
GWXL2	26.0	17.0	10.0	1.0	5.3	5.5	8.5	15.0	4.0	2.5	10.0	5.5	0.5
GWXL3	36.0	22.0	12.0	1.0	6.4	6.5	11.0	23.0	5.0	3.0	11.0	6.6	0.5
GWXL4	46.0	32.0	15.0	1.0	8.5	9.0	16.0	28.0	7.0	4.5	14.0	8.7	0.8

Example

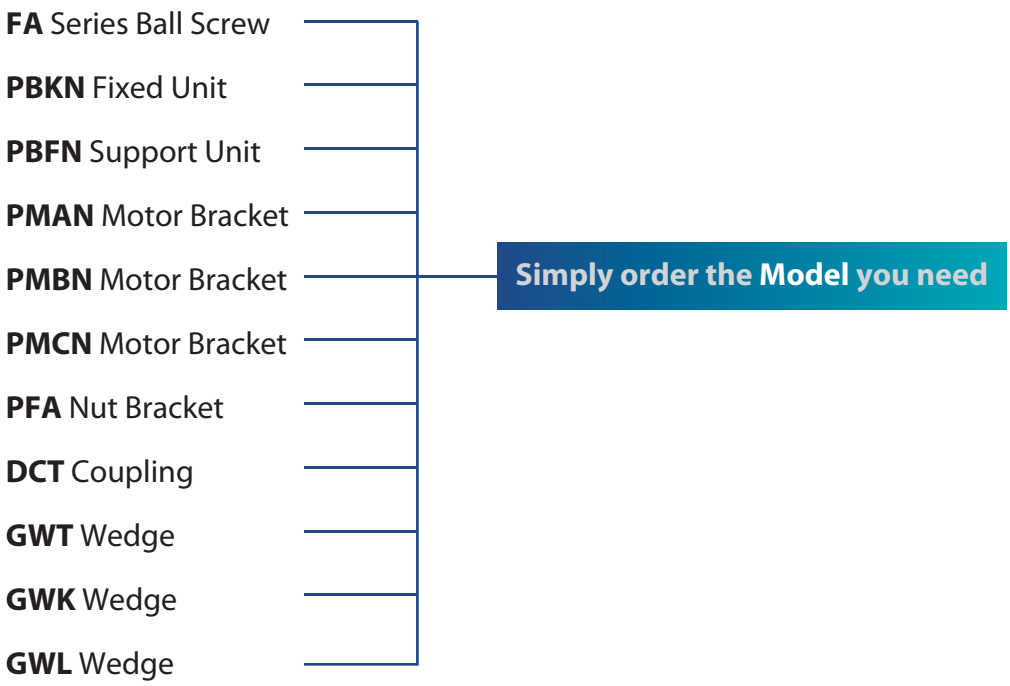


UNIT : mm

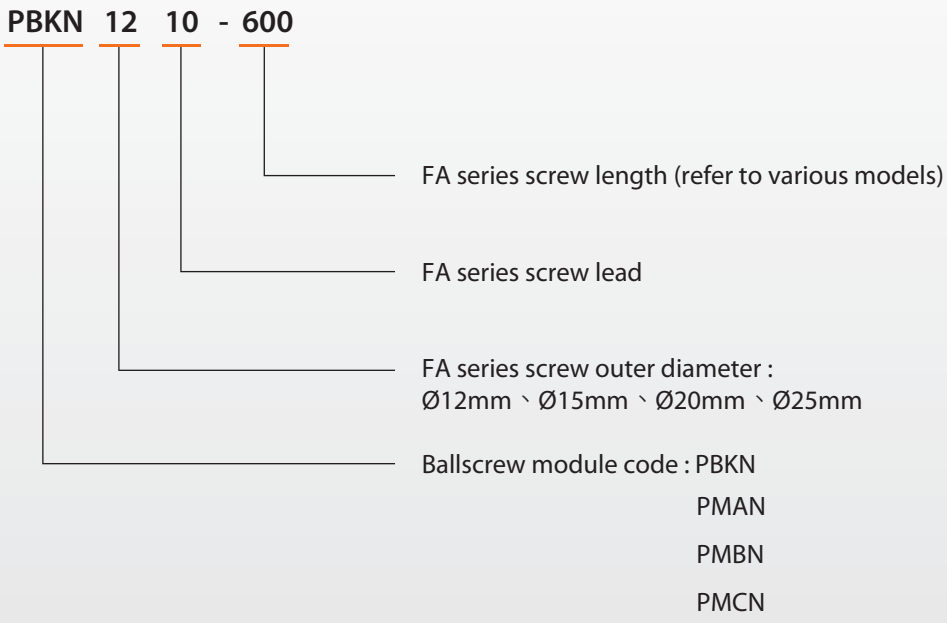
Linear Guideway Model	AA	BB	CC	h1	Compatible Wedges
MSC9	17.0	10.4	4.4	1.6	GWL1/GWXL1
MSC12	20.0	9.6	3.6	2.4	GWL1/GWXL1
MSC15	25.0	13.5	5.1	3.4	GWL2/GWXL2
MSA15	25.0	14.0	5.5	3.0	GWL2/GWXL2
MSA20	30.0	14.0	5.5	3.5	GWL2/GWXL2
MSA25	35.0	17.0	6.0	5.0	GWL3/GWXL3
MSA30	40.0	17.0	6.0	5.0	GWL3/GWXL3
MSA35	46.0	16.0	5.0	6.0	GWL3/GWXL3
MSA45	60.0	24.0	8.0	8.0	GWL4/GWXL4
MSA55	68.0	22.0	6.0	10.0	GWL4/GWXL4
MSA65	78.0	22.0	6.0	10.0	GWL4/GWXL4
MSB15	25.0	14.0	5.5	3.0	GWL2/GWXL2
MSB20	30.0	13.0	4.5	4.0	GWL2/GWXL2
MSB25	35.0	17.0	6.0	5.0	GWL3/GWXL3
MSB30	40.0	15.0	4.0	7.0	GWL3/GWXL3
MSB35	49.0	24.0	8.0	8.0	GWL4/GWXL4

7 Order Code

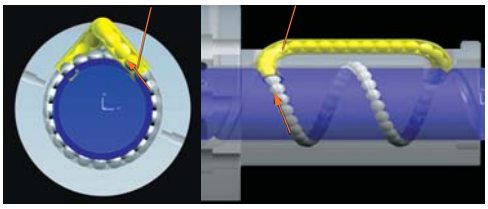
Optional Accessories for Screw Modules



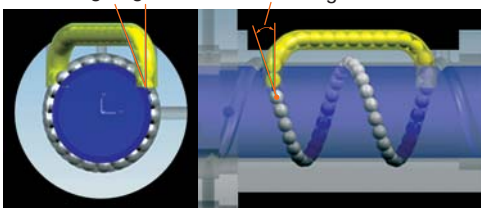
Ballscrew Module



Ball Screws For Heavy Load
FSVH series



FSVH circulation system structure(NEW)



FSVC circulation system structure

Heavy Load

Focused on improvements of contact points of balls and thread grooves, ball diameter and circulation system for new type, FSVH. The rated dynamic load has been increased to as two times as that of conventional type, FSVC.

Long Life

Structure of the newly developed circulation system is designed to distribute the load uniformly to the load balls and it also increases the life of ballscrews.
On conventional circulation system, FSVC, the returning tube is inserted into the holes on ballnut perpendicularly which forms an advancing angle. While ball moves into returning tube, it will hit tube end area and then move into returning tube. New circulation system, FSVH, ball will move into returning tube smoothly by tangent line as the same direction as lead angle. It can increase the life of circulation system structure.

High DN Value

With the newly developed circulation system, ballscrews can meet the demands of high speed running with high DN value.

Low Noise

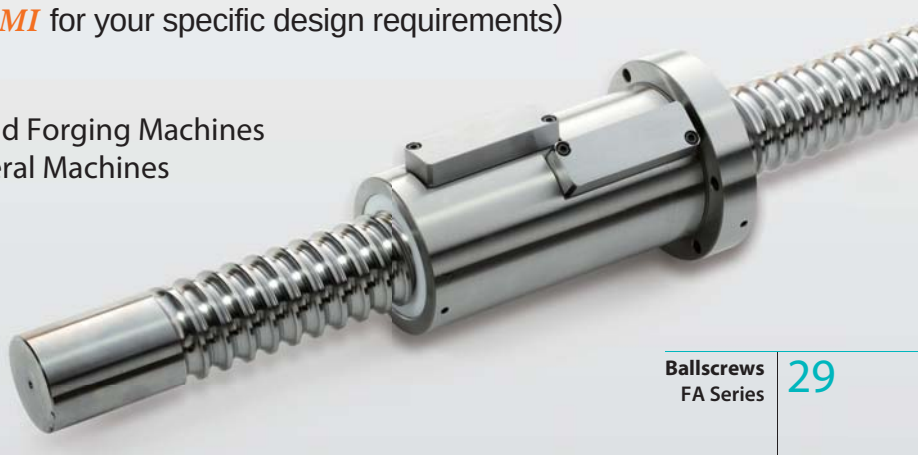
To use tangential circulation system structure, it can eliminate the noise while balls run into the returning tube.

Various Specifications Combination

PMI can supply various ballscrews with diameter 50mm~100mm and lead 16mm to 25mm.(Please contact *PMI* for your specific design requirements)

Application

Plastic Injection Machines / Press and Forging Machines
Semi-conductor Equipments / General Machines



Ballscrews
D-TYPE series

Features

It is important for a high-lead ballscrew to be with characteristics of high rigidity, low noise and thermal control.
PMI takes its patented design and treatments to achieve the following characteristics:

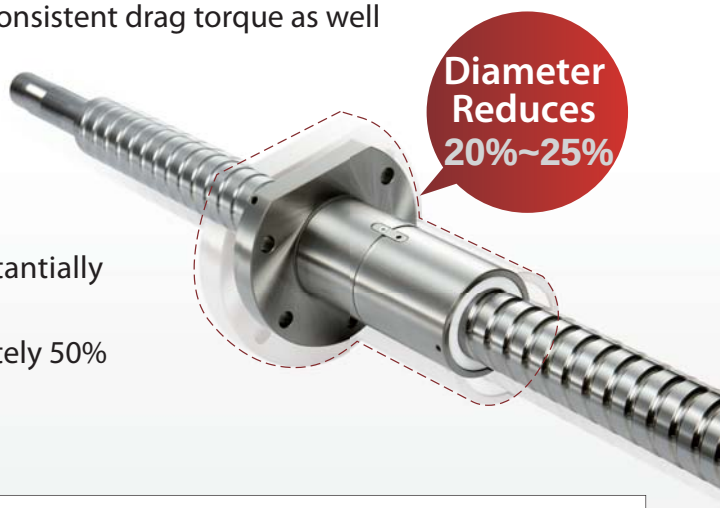
High DN Value

Max. DN Value: 220,000

Low Noise

The average and accurate ball circle diameter (BCD) through whole threads make the ballscrews to obtain the stable and consistent drag torque as well as to reduce the noise.

The audio frequency is low and deep due to the designed of plastic circulation system.

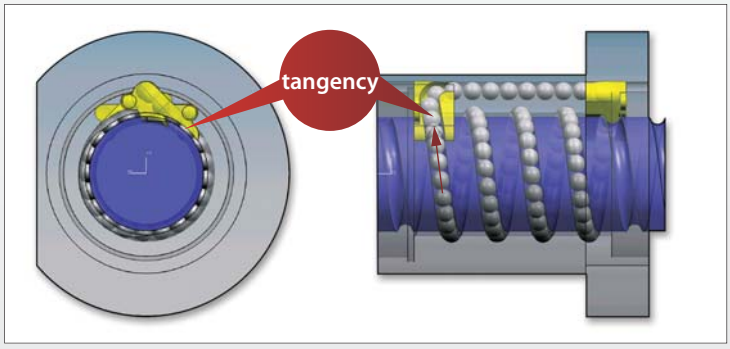


Space Saving

The ballnut diameter reduces 20%~25% substantially and the length of nut is shorter.
The total space shall be reduced to approximately 50% consequently.

Circulation

The specially designed pathway of the Recirculation System makes a contact with lead angle and also with BCD in the same tangency, improving its smoothness effectively.



Applications

- CNC Machinery
- Precision Machinery
- High Speed Machinery
- Semi-Conductor Equipment
- Medical equipment

Ball Chain Type Linear Guideway
SME series

Characteristics

The ball chain type linear guideway, SME series, equip with the patent of ball chain design can make the movement smooth and stability, especially suit for the requests of high speed, high accuracy.

The Optimization Design of Direction Load

Through the structure stress analysis, SME series have four trains of balls are designed to a circular contact angle of 45° and the section design for high rigidity. Except for bearing heavier loads in radial, reversed radial and lateral directions, a sufficient preload can be achieved to increase rigidity, and this makes it suitable for any kind of installation.

Self Alignment Capability

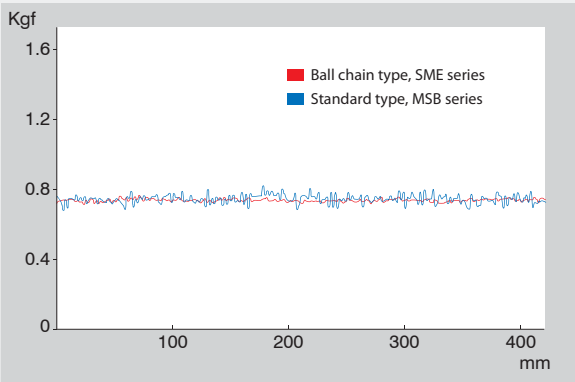
The self adjustment is performed spontaneously as the design of face-face (DF) circular arc groove. Therefore, the installation error could be compensated even under a preload, and which results in precise and smooth linear motion.

Ball Chain Design, Smooth Movement

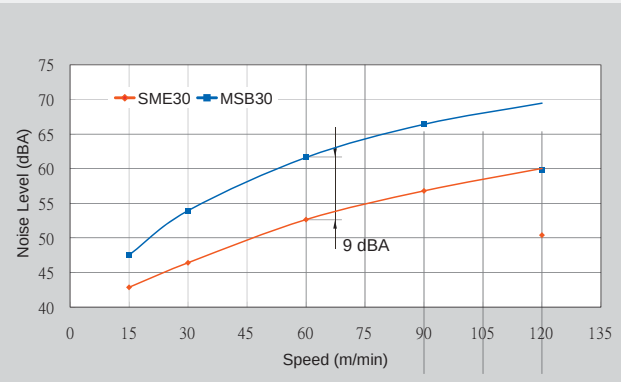
The concise and smooth design of circulating system with strengthened synthetic resin accessories and cooperating with the ball chain, these can avoid interference between balls and make the balls more stability during passing in and out the load district. Besides, the ball chain can keep the ball move in a line and improve the movement most smooth substantially.

Low Noise, Good Lubricant Effect

The ball chain design avoids interference between balls, lowers the operating noise, and can keep the lubricant between the balls and ball retainer effectively. Moreover, improve the movement smooth and service life of the whole, can meet high accuracy, high reliability and smooth and stability.



Rolling resistance test



Noise level comparison test

Roller Chain Type Linear Guideway
SMR series

Characteristics

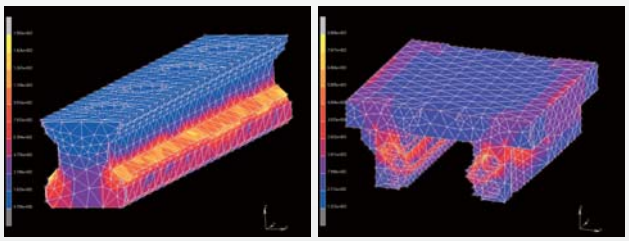
The roller chain type linear guideway, SMR series, equip with rollers instead of the ball, and therefore the SMR series can provide higher rigidity and loading than the normal type with the same size. Besides, the patent of roller chain design can make the movement smooth and stability, especially suit for the requests of high accuracy, heavy load and high rigidity.

High Rigidity, Ultra Heavy Load

SMR linear guideway through rollers have a line contact with carriage and rail. Relative to the general type linear guideway through balls have a point contact; the SMR type linear guideway can offer lower elastic deformation while bearing the same load. Base on the rollers have the same outer diameter with balls, the roller can bear the heavier load. The excellent characteristics of high rigidity and ultra heavy load can suitable for the high accuracy application that heavy load is processed even more.

The Optimization Design of Four Direction Load

Through the structure stress analysis of finite element method, SMR series have four trains of rollers are designed to a contact angle of 45° and the section design for high rigidity. Except for bearing heavier loads in radial, reversed radial and lateral directions, a sufficient preload can be achieved to increase rigidity, and this makes it suitable for any kind of installation.



Roller Chain Design, Smooth Movement

The concise and smooth design of circulating system with strengthened synthetic resin accessories and cooperating with the roller chain, these can avoid interference between rollers and make the rollers more stability during passing in and out the load district. Besides, the roller chain can keep the roller move in a line and improve the movement most smooth substantially.

Low Noise, Good Lubricant Effect

The roller chain design avoids interference between rollers, lowers the operating noise, and can keep the lubricant between the rollers and roller chain effectively. Moreover, improve the movement smooth and service life of the whole, can meet high accuracy, high reliability and smooth and stability.

Ballscrews
FA Series

Ballscrews
FA Series

PRECISION MOTION INDUSTRIES, INC.
No.71, Lane 20, Dafu Road, Shen Kang Hsiang,
Taichung Hsien 42946, Taiwan
TEL: +886-4-25282984 FAX: +886-4-25283392
E-mail: pmi.info@pmi-amt.com.tw

BEB/0301/09.02 © PMI-2009
Printed in Taiwan

Designed by Point / +886-4-2296-2988 | +886-932-604960