

# Pillow Blocks

Cast Housing / Standard, Eccentric

Pillow Blocks – Cast Housing Standard, Eccentric



Accuracy: JIS B 1558 / JIS B 1559  
 Bearing inner diameter tolerance: H7 (Clearance Fit)  
 Operating Temperature: -10 – +80°C

RoHS10

**Pillow Blocks**

Set Screw Type  
**PBT** (Steel)

**Eccentric Ring Fixed**

**PBR** (Steel)  
**PBR**S (Stainless Steel Bearing)  
**PBR**SX (Stainless Steel)

**Diamond Shape Flanged**

Set Screw Type  
**HBT** (Steel)

**Eccentric Ring Fixed**

**HBR** (Steel)  
**HBR**S (Stainless Steel Bearing)  
**HBR**SX (Stainless Steel)

**Components Material**

Type	Pillow Blocks	Diamond Shape Flange	(1) Housing	(2) Bearing	(3) Rubber Seal	(4) Set Screw	(5) Eccentric Ring
Set Screw Fixed	PBT	HBT	Zinc Alloy Die Cast (ZDC)	52100 Bearing Steel	Nitrile Rubber (NBR)	4137 Alloy Steel or Equivalent	—
	PBR	HBR	Zinc Alloy Die Cast (ZDC)	52100 Bearing Steel	Nitrile Rubber (NBR)	4137 Alloy Steel or Equivalent	1020 Carbon Steel
Eccentric Ring Fixed	PBR	HBR	Zinc Alloy Die Cast (ZDC) + Nickel Chrome Plating	440C Stainless Steel or Equivalent	Nitrile Rubber (NBR)	304 Stainless Steel	1020 Carbon Steel + Nickel Chrome Plating
	PBR	HBR	Stainless Steel Cast (JIS SCS13)	440C Stainless Steel or Equivalent	Nitrile Rubber (NBR)	304 Stainless Steel	304 Stainless Steel

**Notes:**

- \*2-M (Set Screw) angles for Set Screw Fixed Type are 120°.
- Eccentric Ring Fixed Type has one set screw and one through hole, with an angle of 90°.
- Eccentric rings are used to secure shafts.
- Ball bearing moves slightly due to self-aligning function.
- To maintain transition fit, the fit between the main body and the bearing is designed slightly tight (Except Cast Iron Type). If the bearing is inclined when delivered, insert the shaft into the bearing to adjust the inclination.

Part Number	Type	D	H	L	L <sub>1</sub>	A	d	t			H <sub>1</sub>			B	S	Mass (g)					
								PBT	PBR	PBR	PBR	PBR	PBR			PBR	PBR	PBR			
PBT PBR PBR PBR	D10-25	10	18	67	53	16	7	6	5	35	34	14	17.5	4	70	77	79				
		12	19	71	56				6	38	37	14.5						80	91	98	
		15	22	80	63				6	43	42	16.5						120	125	129	
		17	24	85	67				7	47	46	17.5						140	156	170	
		20	28	100	80				9	55	53.5	21						24.5	210	230	258
		25	32	112	90				10	62	60.5	22.5						25.5	270	294	333
30	36	132	106	13	11	—	—	24.5	26.5	6.5	410	454	—								

kgf=Nx0.101972

Part Number	Type	D	L	L <sub>1</sub>	t	A <sub>2</sub>	A <sub>1</sub>	d	W	A		B		S	Mass (g)		
										HBT	HBR	HBR	HBR		HBT	HBR	HBR
HBR (D = 8 is for HBR Only)	HBR	8	48	37	4	4.5	8.5	4.8	27	—	16	—	15	3.5	—	30	—
		10	60	45	5.5	5.5	11.5	7	36	15.5	19	14	17.5	4	50	60	77
		12	63	48	6.5	6.5	13	7	38	16	19	14.5	17.5	4	70	76	87
		15	67	53	7	7	14	7	42	18.5	20.5	16.5	18.5	4.5	90	100	115
		17	71	56	7	7	14	7	46	19.5	22.5	17.5	20.5	5	115	129	146
HBT HBR HBR HBR	D10-25	20	90	71	8	8	16	10	55	23	26.5	21	24.5	6	190	205	253
		25	95	75	8	8	16	10	60	24.5	27.5	22.5	25.5	6	220	244	298
		30	112	85	9	9	18	13	70	27	29	24.5	26.5	6.5	340	354	—

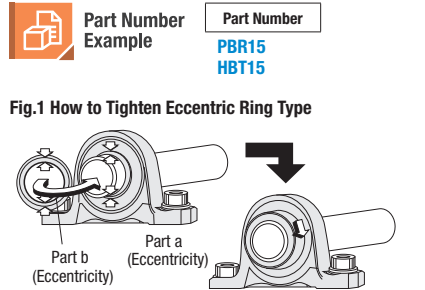
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D	Basic Load Rating				Set Screw Detailed Dimensions			
	Cr (Dynamic) N		Cor (Static) N		M	Tightening Torque (Nm)	Axial Load Capacity (kN)	
	PBT	PBR	PBR	PBR			PBT	PBR
8	3300	—	1260	—	—	—	—	0.39
10	4600	3900	2000	1550	—	—	—	—
12	5100	4300	2400	1900	—	—	—	—
15	5600	4750	2800	2250	—	—	—	—
17	6000	5100	3300	2650	—	—	—	—
20	9350	7900	5100	4000	M3 x 0.35	0.59	1.5	0.88
25	10100	8600	5800	4650	M4 x 0.5	1.47	—	—
30	13200	11300	8300	6600	M5 x 0.5	2.94	2.9	1.76

**How to Secure the Shaft**

**Set Screw Fixed** - There are two set screws at the end face of the bearing inner ring (at 120°). The shaft is connected by tightening the set screws.

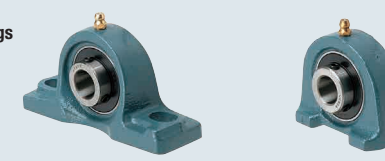
**Eccentric Ring Fixed** - Dissociate the centers of the convex outer surface at the end of the bearing inner race (part a) and the concave inner surface of the eccentric ring (part b), connect the shaft and the inner ring by forming a wedge on the circumference (Refer to Figure 1). Also, there is a set screw and a hole each (at the angle of 90°) on the end face of eccentric ring, which helps to prevent loosening by using the set screw as well as tightening as described above. -The D hole is for inserting a small diameter rod when loosening the connection.



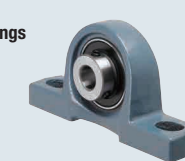
# Pillow Blocks

Cast Housing with Grease Fittings / Cast Housing Compact with Grease Fittings

Pillow Blocks – Cast Housing with Grease Fittings



Pillow Blocks – Cast Housing Compact with Grease Fittings



**PDR**  
Pillow Blocks

**PDRCP**  
Compact Pillow Blocks

**Accuracy:** JIS B 1558  
 JIS B 1514  
 JIS B 1559

**Bearing Inner Diameter Tolerance:** H7 (Clearance Fit)

- Only PDRCP, J7 (Transition Fit)
- Operating Temperature: -15 – +100°C
- Grease Fitting Nominal Diameter: 1/4 to 28 UNF (Unified Standard)
- Ball bearing moves slightly due to self-aligning function.
- For PDRCP, the fit between the main body and the bearing is designed to be slightly tight to maintain transition fit. If the bearing is skewed upon delivery, insert the shaft or similar into the bearing and adjust the inclination.
- The lubrication-free version comes pre-filled with the correct amount of grease, and no lubrication is required for usage under normal conditions.

Components	Material
(1) Housing	Cast Iron Class No.30
(2) Bearing	52100 Bearing Steel
(3) Rubber Seal	Nitrile Rubber (NBR Nitrile Rubber)
(4) Set Screw	4137 Alloy Steel or Equivalent

Part Number	Type	JIS Nominal	H	L	L <sub>1</sub>	A	d <sub>i</sub>	d	M	I	t				H <sub>1</sub>		B	S	Basic Load Rating (kN)		Set Screw		Weight (g)												
											PDR	PBR	PBR	PBR	Cr (Dynamic)	Cor (Static)			M <sub>1</sub>	Tightening Torque (N•cm)	Axial Load Capacity (N)	PDR	PBR												
PDR PDR	D	UCP201	12	30.2	114	87	25	16	12	57	22.0	6	9.55	4.8	M5 x 0.8	240	476	390	380	360	—	—	—	—											
			15																						62	62	31.0	12.7	12.8	6.6	M6 x 0.75	392	640	650	550
			17																																
		20	33.3	36.5	140	84	105	56	16	M10 x 1.5	12	15	8	62	62	31.0	14.3	14.0	7.9	—	—	—	—	—	—										
		25	70																							72	34.1	14.3	14.0	7.9	M8 x 1	490	1400	790	720
		30	83																							84	38.1	15.9	19.6	11.3					
		35	94																							95	42.9	17.5	25.9	15.4	M8 x 1	490	1400	1590	1580
		40	100																							100	49.2	19.9	29.3	17.9					
		45	108	108	54.0	22.0	33.0	20.5	M10 x 1.25	2350	3550	2590	2440																						
		50	114	116	57.2	23.2	35.5	23.2						M10 x 1.25	2350	3550	2590	2440																	

kgf=Nx0.101972

Part Number	Type	D	H	L	L <sub>1</sub>	A	d <sub>i</sub>	d	t	H <sub>1</sub>	B	S	Basic Load Rating (kN)		Set Screw		Weight (g)								
													Cr (Dynamic)	Cor (Static)	M <sub>1</sub>	Tightening Torque (N•cm)									
PDRCP	D	12	30.2	114	87	25	16	12	57	22.0	6	6	9.55	4.8	M5 x 0.8	240	476	390							
		15																	12.8	6.6	M6 x 0.75	490	1400	590	
		20																							12
		25																	13	7.0	7.5	M6 x 0.75	490	1400	590
		30																	15	8.3	8				

**Part Number Example**

**PDR15**  
**PDRCP12**