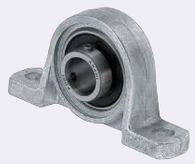
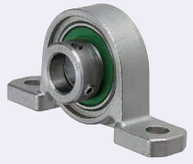
Ball Bearing Units
Pillow Blocks / Diamond Flanged

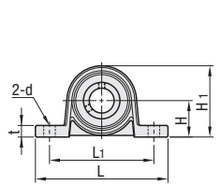
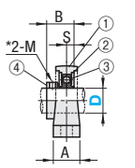
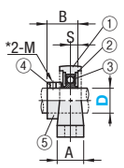
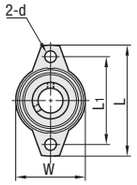
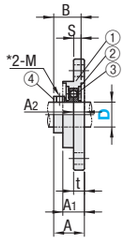
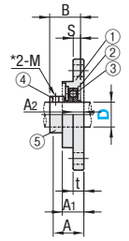
RoHS10

■Pillow Blocks
Set Screw Fixed
PBT (Steel)

Eccentric Ring Fixed
PBR (Steel)
PBRS (Stainless Steel Bearing)
PBRSX (Stainless Steel)

■Diamond Flanged
Set Screw Fixed
HBT (Steel)

Eccentric Ring Fixed
HBR (Steel)
HBRS (Stainless Steel Bearing)
HBRSX (Stainless Steel)

- *2-M (Set Screw) angles are 120° for set screws and 90° for eccentric rings.
- 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.
- PBRSX and HBRSX (Cast Type) conform to JIS B 1559.

Accuracy: JIS B 1558,
Operating Temperature: -10 ~ +80°C

Type	Pillow Blocks	Diamond Flanged	Component / Material ① Housing	② Bearing	③ Rubber Seal	④ Set Screw	⑤ Eccentric Ring
Set Screw Fixed	PBT	HBT	Zinc Alloy Die Casting (Zinc Die Cast)	EN 1.3505 Equiv.	Nitrile Rubber (NBR)	EN 1.7220 Equiv.	-
	PBR	HBR	Zinc Alloy Die Casting (Zinc Die Cast)	EN 1.3505 Equiv.	Nitrile Rubber (NBR)	EN 1.7220 Equiv.	EN 1.1149 Equiv.
Eccentric Ring Fixed	PBRS	HBRS	Zinc Alloy Die Casting (Zinc Die Cast) + Nickel Chrome Plating	EN 1.4125 Equiv.	Nitrile Rubber (NBR)	EN 1.4301 Equiv.	EN 1.1149 Equiv. + Nickel Chrome Plating
	PBRSX	HBRSX	Stainless Steel Cast (EN 1.4308 Equiv.)	EN 1.4125 Equiv.	Nitrile Rubber (NBR)	EN 1.4301 Equiv.	EN 1.4301 Equiv.

Part Number Type	D	H	L	L_1	A	d	t PBT PBR PBRS	t PBRSX	H_1 PBT PBR PBRS	H_1 PBRSX	B PBT	B PBR PBRS PBRSX	S	Mass (g) PBT	Mass (g) PBR PBRS	Mass (g) PBRSX	Unit Price PBT PBR	Unit Price PBRS	Unit Price PBRSX
PBT PBR PBRS PBRSX (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			7		43	42	16.5	18.5	4.5	120	125	129			
	17	24	85	67	18			7	47	46	17.5	20.5	5	140	156	170			
	20	28	100	80	20	10	9	8	55	53.5	21	24.5	6	210	230	258			
	25	32	112	90			10	9	62	60.5	22.5	25.5		270	294	333			
	30	36	132	106	26	13	11	-	70	-	24.5	26.5	6.5	410	454	-			-

kgf=Nx0.101972

Part Number Type	D	L	L_1	t	A_2	A_1	d	W	A HBT	A HBR HBRS HBRSX	B HBT	B HBR HBRS HBRSX	S	Mass (g) HBT	Mass (g) HBR HBRS	Mass (g) HBRSX	Unit Price HBT HBR	Unit Price HBRS	Unit Price HBRSX
HBR (D=8 is for HBR only)	8	48	37	4	4.5	8.5	4.8	27	-	16	-	15	3.5	-	30	-		-	-
HBT HBR HBRS HBRSX (D10~25)	10	60	45	5.5	5.5	11.5	7	36	15.5	19	14	17.5	4	50	60	77			
	12	63	48					38	16		14.5			70	76	87			
	15	67	53	6.5	6.5	13		42	18.5	20.5	16.5	18.5	4.5	90	100	115			
	17	71	56	7	7	14		46	19.5	22.5	17.5	20.5	5	115	129	146			
	20	90	71	8	8	16	10	55	23	26.5	21	24.5	6	190	205	253			
	25	95	75					60	24.5	27.5	22.5	25.5		220	244	298			
	30	112	85	9	9	18	13	70	27	29	24.5	26.5	6.5	340	354	-			-

kgf=Nx0.101972

■Basic Load Rating

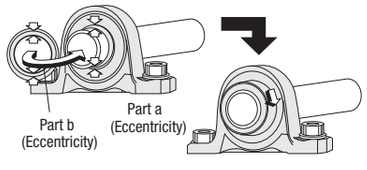
D	Basic Load Rating Cr (Dynamic) N: PBT PBR HBT HBR	Cr (Dynamic) N: PBRS PBRSX HBRS HBRSX	Cor (Static) N: PBT PBR HBT HBR	Cor (Static) N: PBRS PBRSX HBRS HBRSX
8	3300	-	1260	-
10	4600	3900	2000	1550
12	5100	4300	2400	1900
15	5600	4750	2800	2250
17	6000	5100	3300	2650
20	9350	7900	5100	4000
25	10100	8600	5800	4650
30	13200	11300	8300	6600

■Set Screw Detailed Dimensions

D	M PBT HBT	M PBR, PBRS, PBRSX HBR, HBRS, HBRSX	Tightening Torque (N·m) PBT HBT	Tightening Torque (N·m) PBR, PBRS, PBRSX HBR, HBRS, HBRSX	Axial Load Capacity (kN) PBT HBT	Axial Load Capacity (kN) PBR, PBRS, PBRSX HBR, HBRS, HBRSX
8	-	M3x0.5	-	0.59	-	0.39
10	M3x0.35	M4x0.7	0.59	1.5	0.35	0.88
12						
15	M4x0.5		1.47		0.43	
17						
20	M5x0.5	M5x0.8	2.94	2.9	0.72	1.76
25						
30						

Ordering Example — Part Number: PBR15, HBT15

Fig.1 How to Tighten Eccentric Ring Type

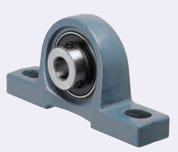


■How to Secure the Shaft

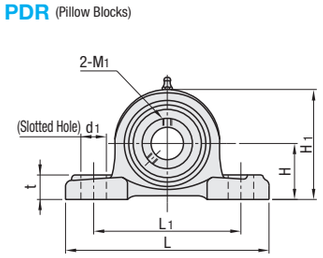
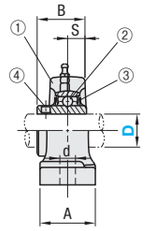
Set Screw Fixed	• There are two set screws at the end face of the bearing inner ring (at 120°). The shaft is connected by tightening the set screws.
Eccentric Ring Fixed	• Dissociate the centers of the convex outer surface at the end of the bearing inner race (part a) and the concave inner surface of the eccentric ring (part b), connect the shaft and the inner ring by forming a wedge on the circumference (Refer to Fig. 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.

Ball Bearing Units
Cast Iron, Pillow Blocks / Bottom Mount

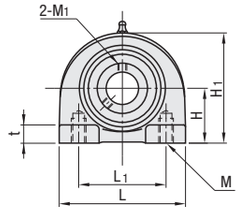
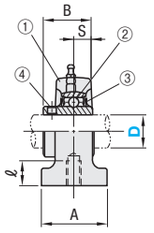




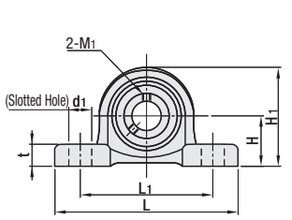
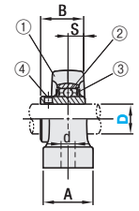
PDR (Pillow Blocks)

PDB (Bottom Mount)

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

Component	Material
①Housing	M EN-JL 1030 Equiv.
②Bearing	M EN 1.3505 Equiv.
③Rubber Seal	M Nitrile Rubber (NBR)
④Set Screw	M EN 1.7220 Equiv.

Part Number Type	D	JIS Nominal PDR	H PDR	H PDB	L PDR	L PDB	L_1 PDR	L_1 PDB	A	d_1	d	M	ℓ	t PDR	t PDB	H_1 PDR	H_1 PDB	B	S	Basic Load Rating (kN) Cr (Dynamic)	Basic Load Rating (kN) Cor (Static)	Set Screw M_1	Set Screw Tightening Torque (N·cm)	Set Screw Axial Load Capacity (N)	Mass (g) PDR	Mass (g) PDB	Unit Price PDR	Unit Price PDB
PDR PDB	12	UCP201																							650	550		
	15	UCP202	30.2																						630	530		
	17	UCP203																							620	520		
	20	UCP204	33.3													65									650	500		
	25	UCP205	36.5	36.5	140	84	105	56	38	19	13	M10×1.5	12	15	8	62	62	31.0	12.7	12.8	6.6	M6×0.75	392	640	1280	650	500		
	30	UCP206	42.9	42.9	165	94	121	66						16		70	72	34.1	14.3	14.0	7.9				1400	790	720		
	35	UCP207	47.6	47.6	167	110	127	80	48	21	17	M14×2.0	15	16	10	83	84	38.1	15.9	19.6	11.3		490		1960	1260	1020		
	40	UCP208	49.2	49.2	184	116	137	84					20	18		94	95	42.9	17.5	25.9	15.4				2590	1590	1580		
	45	UCP209	54.0	54.2	190	120	146	90	54	25				19	12	100	100	49.2		29.3	17.9	M8×1			2930	1920	1840		
	50	UCP210	57.2	57.2	206	130	159	94	60	25	20	M16×2.0	25	20		108	108		19	33.0	20.5		1180		3300	2190	2060		
														22	14	114	116	51.6		35.5	23.2	M10×1.25	2350	3550	2590	2440		

kgf=Nx0.101972

Part Number Type	D	H	L	L_1	A	d_1	d	t	H_1	B	S	Basic Load Rating (kN) Cr (Dynamic)	Basic Load Rating (kN) Cor (Static)	Set Screw M_1	Set Screw Tightening Torque (N·cm)	Set Screw Axial Load Capacity (N)	Mass (g)	Unit Price
PDRCP	12	30.2	114	87	25	16	12	12	57	22.0	6	9.55	4.8	M5x0.8	240	476	390	
	15																380	
	17																360	
	20	33.3	125	97	27			13	64	24.7	7	12.8	6.6		250	1280	480	
	25	36.5	130	100	29				70	27.0	7.5	14.0	7.9	M6x0.75	490	1400	590	
	30	42.9	156	120	33	21	14	15	83	30.3	8	19.6	11.3			1960	700	

kgf=Nx0.101972

Ordering Example — Part Number: PDR15, PDRCP12