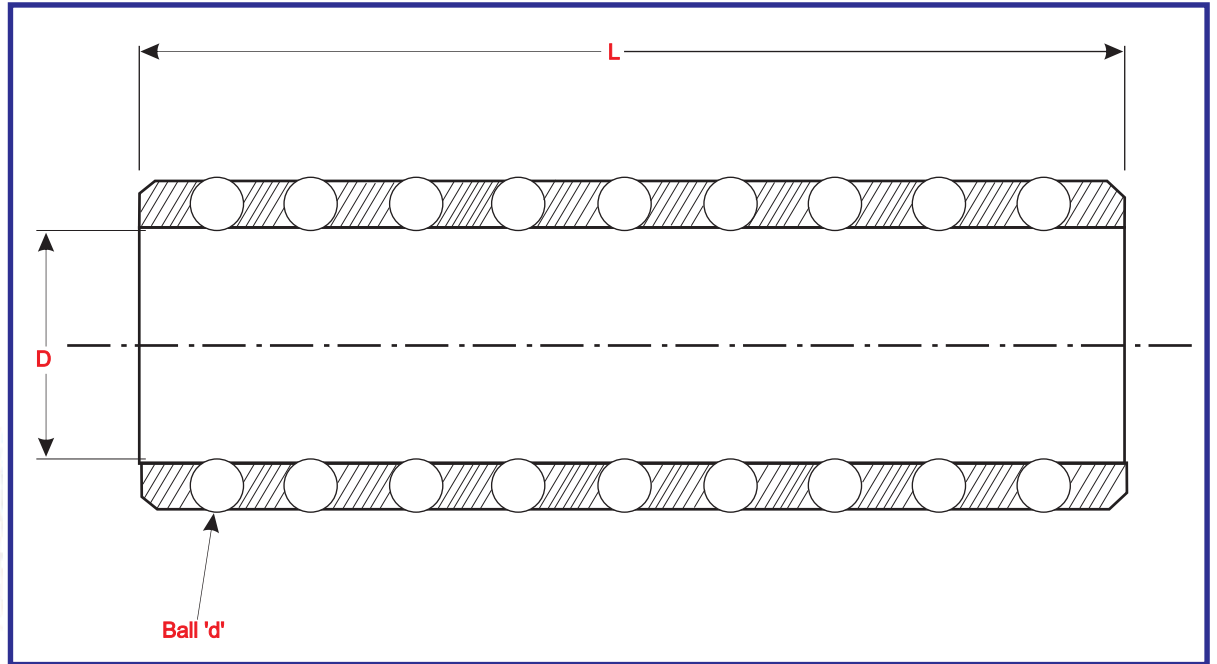


# Guiding Elements





## ► Ballcages



**Material** :- Aluminium / Brass / Nylon      **Ball Material** :- Alloy Steel (Hardness 60-62 HRC)

**Ball Size** :- 2mm; 3mm; 4mm; 5mm; 6mm.

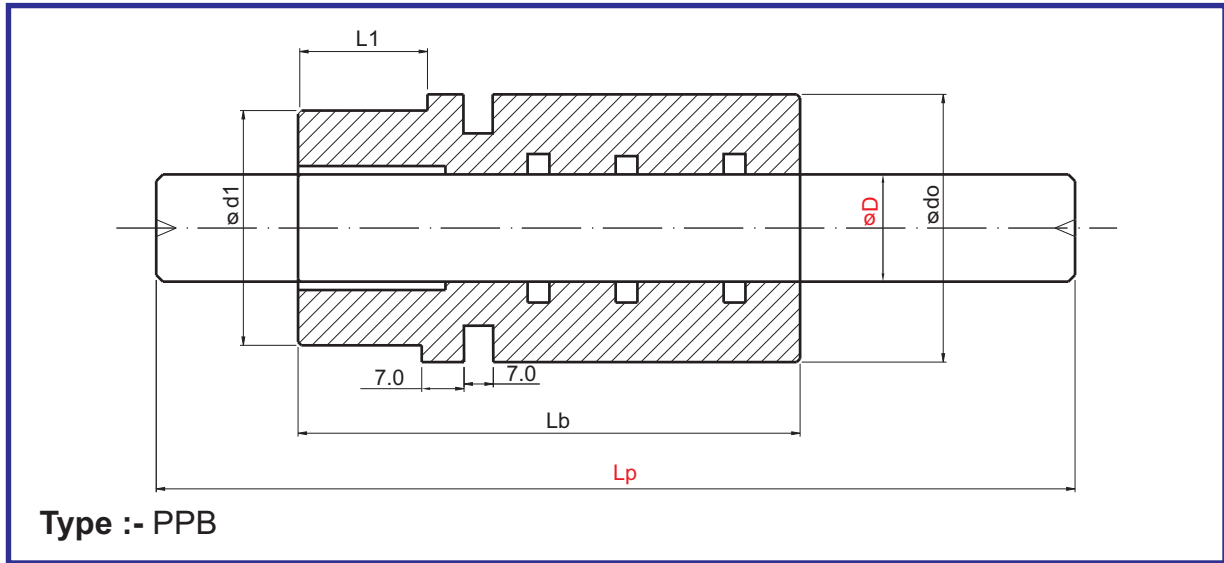
Pillar Dia (D)mm	Ball (d) mm	Length - (L) mm										
		20	30	40	50	60	70	80	90	100	125	150
10	2,3	*	*	*								
12	2,3	*	*	*								
14	2,3	*	*	*	*							
16	2,3	*	*	*	*	*						
18	2,3		*	*	*	*	*					
20	2,3,4		*	*	*	*	*	*	*	*		
24	3,4		*	*	*	*	*	*	*	*		
25	3,4		*	*	*	*	*	*	*	*		
28	3,4,5			*	*	*	*	*	*	*		
29	3,4,5			*	*	*	*	*	*	*		
30	3,4,5			*	*	*	*	*	*	*	*	
32	3,4,5			*	*	*	*	*	*	*	*	
34	3,4,5			*	*	*	*	*	*	*	*	*
35	3,4,5			*	*	*	*	*	*	*	*	*
36	3,4,5				*	*	*	*	*	*	*	*
38	4,5				*	*	*	*	*	*	*	*
40	4,5					*	*	*	*	*	*	*
42	4,5					*	*	*	*	*	*	*
48	4,5					*	*	*	*	*	*	*
50	4,5					*	*	*	*	*	*	*
52	4,5					*	*	*	*	*	*	*
60	4,5,6					*	*	*	*	*	*	*

**Order Type** :- Material X Piller Dia (D) X Ball Size (d) X Length (L).

**Example** :- Brass X 35 X 4 X 80

**Note** :- Ball cage of other length can also be manufactured

## ► Pillar Bush (PPB)



**Material :-** En353

**Hardness :-** 55-58 HRC.

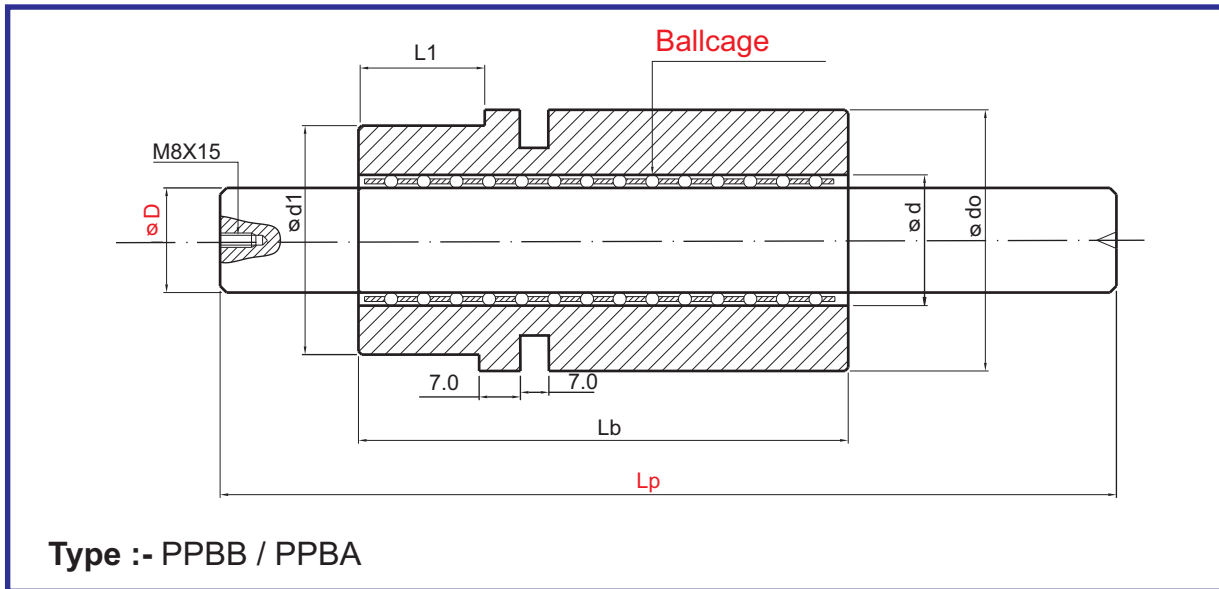


Dia D (mm)	Dia d1 (mm)	Dia do (mm)	Length Lp (mm)	Length L1 (mm)	Length Lb(mm)
H7/g6	p6		Increment of 25mm		
20	33.5	38	150-300	22.5	73
21	33.5	38	150-300	22.5	73
24	37	43	150-300	27.5	82
25	37	43	150-300	27.5	82
28	43.5	48	180-300	27.5	92
29	43.5	48	180-300	27.5	92
30	48.5	53	200-350	32	100
32	48.5	53	200-350	32	100
34	48.5	53	200-350	37	109
35	48.5	53	200-350	37	109
40	58	63	200-350	37	113
42	58	63	200-350	37	113

**Order Type :-** Type - Dia (D) X Length (Lp)

**Example :-** PPB - 25 X 200

## ► Pillar Bush with Ballcage (PPBB / PPBA)



### Material :-

Pillar :- En353  
Bush :- En 353

### Hardness :-

Pillar :- 58 - 60 HRC  
Bush :- 58 - 60 HRC

### Ball cage Type :-

PPBB :- With Brass Ballcage  
PPBA :- With Aluminium Ballcage



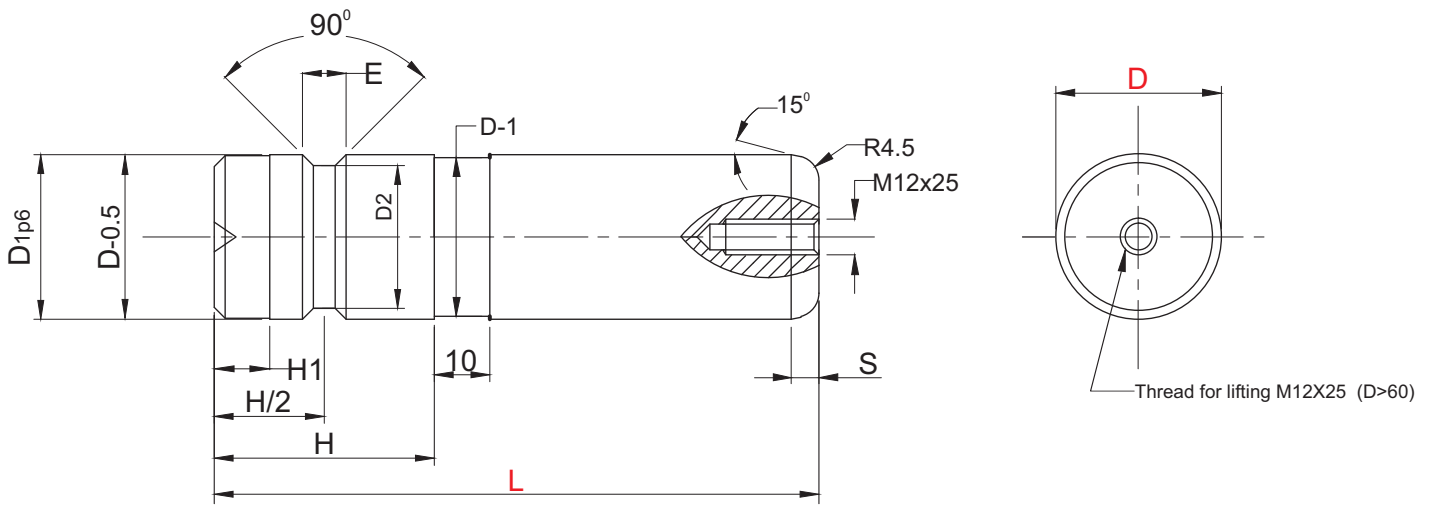
**Note :-** The set will consist of spring for Ballcage support & Locking Button as per standard.

Dia D (mm)	Dia d (mm)	Dia d1 (mm)	Dia do (mm)	Length Lp (mm) Increment of 25mm	L1 mm	Lb mm	Ballcage	
							Ball Dia	Length
20	26	39	43.5	150-300	22.5	70	3	60
21	27	39	43.5	150-300	22.5	70	3	60
24	32	44	48.5	150-300	27.5	80	4	70
25	33	44	48.5	150-300	27.5	80	4	70
28	36	49	53.5	180-300	27.5	90	4	80
29	37	49	53.5	180-300	27.5	90	4	80
30	38	54	58.5	200-350	32.0	100	4	80
32	40	54	58.5	200-350	32.0	100	4	80
34	42	54	58.5	200-350	37.0	100	4	80
35	43	54	58.5	200-350	37.0	100	4	80
40	48	64	78.5	200-350	37.0	100	4	100
42	50	64	78.5	200-350	37.0	100	4	100

**Order Type :-** Type - Dia (D) X Length (Lp) X Ballcage Material

**Example :-** PPBB - 25 X 200 X Brass

## ► Pillar (PPO)



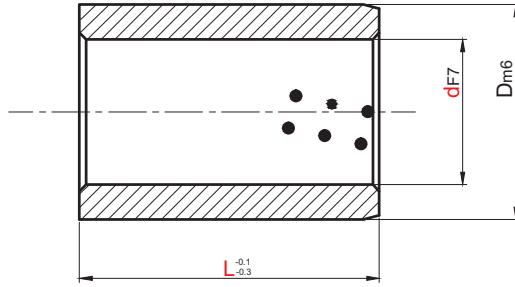
**Material :-** En353/20MnCr5  
**Hardness :-** 55-60HRC



Type	D		D1p6		D2	H	E	S	H1	L	
PPO	25	(-0.005) (-0.015)	25	(+0.035) (+0.022)	21	30	8	5	5	80, 100, 120, 140, 160,	
	30		30		26	40				100, 120, 140, 160, 180, 200	
	40	(-0.005) (-0.015)	40	(+0.042) (+0.026)	36	50	8	5		120, 140, 160, 180, 200	
	50		50		45	70	10	10		160, 180, 200, 250, 300	
	60	(-0.010) (-0.020)	60	(+0.051) (+0.032)	55	90	12	10		10	200, 220, 250, 300, 350
	65		65		60	100					250, 300, 350,
	80	80	80	75	120	12	10	250, 300, 350, 400			
	100	100	100	95	150	12	10	300, 350, 400, 450, 500			

**Order Type :-** Code x D X L  
**Example :-** PPO X 50 X 200

## ► Oilless Bush (PBOA)



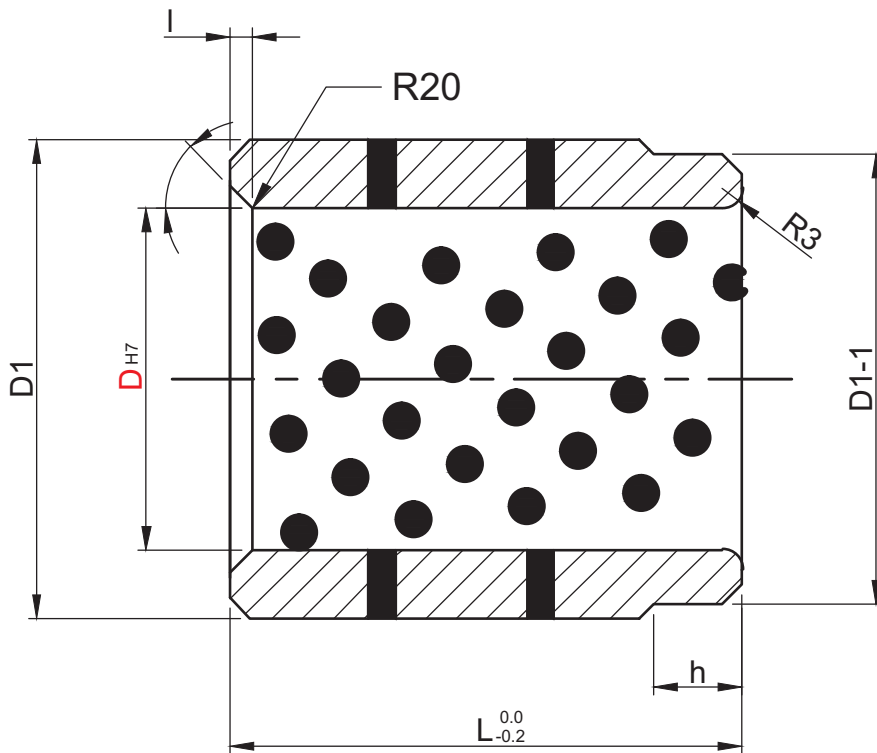
**Material :-** Phosphorus Bronze  
Embedded with solid lubricant

Type	dF7		Dm6		d	L
PBOA	8	(+0.028)	12	(+0.018)	8	8, 10, 12, 15
	10	(+0.013)	14	(+0.007)	10	8, 10, 12, 15, 20
	12	(±0.034) (+0.016)	18	(±0.021) (+0.008)	12	8, 10, 12, 15, 16, 19, 20, 25, 30
	13		19		13	10, 12, 15, 16, 20
	14		20		14	10, 12, 15, 20, 25, 30
	15		21		15	10, 12, 15, 16, 20, 25, 30
	16		22		16	10, 12, 15, 16, 19, 20, 25, 30, 35, 40
	17		23		17	15
	18	(±0.041) (+0.020)	24	(±0.025) (+0.009)	18	12, 15, 16, 20, 25, 30, 35, 40
	19		26		19	15, 20
	20		28		20	10, 12, 15, 16, 19, 20, 25, 30, 35, 40, 50
	20		30		20A	16, 20, 25, 30, 35, 40
	22		32		22	12, 15, 20, 25
	25		33		25	12, 15, 16, 20, 25, 30, 35, 40, 50, 60
	25	(±0.050) (+0.025)	35	(±0.030) (+0.011)	25A	12, 15, 16, 20, 25, 30, 35, 40, 50
	28		38		28	20, 25, 30, 40
	30		38		30	12, 15, 20, 25, 30, 35, 40, 50, 60
	30		40		30A	12, 15, 20, 25, 30, 35, 40, 50, 60
	32		42		32	15, 20, 30, 40
	35		44		35	20, 25, 30, 35, 40, 50, 60
	35	(±0.060) (+0.030)	45	(±0.035) (+0.013)	35A	20, 25, 30, 35, 40, 50, 60
	38		48		38	30, 40
	40		50		40	15, 20, 25, 30, 35, 40, 50, 60, 70, 80
	40		55		40A	15, 25, 30, 35, 40, 50, 60
	45		55		45	30, 35, 40, 50, 60
	45		56		45A	30, 35, 40, 50, 60
	45	(±0.071) (+0.036)	60	(±0.040) (+0.015)	45B	30, 35, 40, 50, 60, 70, 80
	50		60		50	20, 30, 35, 40, 50, 60, 70, 80
	50		62		50A	30, 35, 40, 50, 60, 70
	50		65		50B	30, 40, 50, 60, 70, 80, 100
	55		70		55	30, 35, 40, 50, 60, 70
	60		74		60	30, 35, 40, 50, 60, 70, 80, 100
	60	(±0.083) (+0.043)	75	(±0.040) (+0.015)	60A	30, 35, 40, 50, 60, 70, 80, 100
	63		75		63	60, 70, 80
	65		80		65	40, 50, 60, 70, 80
	70		85		70	30, 35, 40, 50, 60, 70, 80, 100
	70		90		70A	50, 60, 70, 80
	75		90		75	50, 60, 70, 80, 100
	75	(±0.083) (+0.043)	95	(±0.040) (+0.015)	75A	60, 70, 80, 100
	80		96		80	20, 40, 50, 60, 70, 80, 100, 120
80	100		80A		40, 50, 60, 70, 80, 100, 120, 140	
85	100		85		25, 60, 80	
90	110		90		30, 50, 60, 70, 80, 90, 100, 120	
100	(±0.083) (+0.043)		120		(±0.040) (+0.015)	100
110		130	110	50, 70, 80, 100, 120		
120		140	120	70, 80, 90, 100, 120, 140		
125		145	125	100, 120		
130		150	130	80, 100, 130		
140		160	140	100, 140		
150	(±0.083) (+0.043)	170	(±0.040) (+0.015)	150	80, 100, 150	
160		180		160	80, 100, 150	

Order Type :- Code X d X L

Example :- PBOA X 18 X 35

## ► Oilless Bush (PBOB)



**Material :-** Phosphorus Bronze (PB) / Cast Iron (CI) Grade FG260  
Embedded with solid lubricant

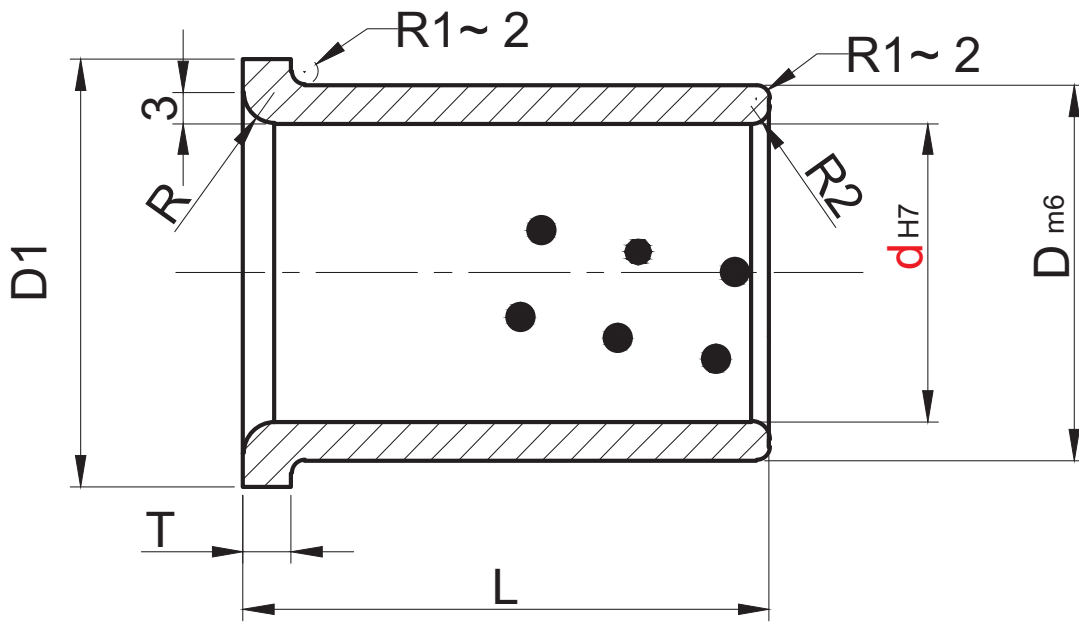
Type	D1		Dh7		L	h	l	D
PBOB	50	±0.008	30	(+0.021) (-0.0)	50	10	5	30
	60	±0.0095	40	(+0.025) (-0.0)	60			40
	70		50		75	15	10	50
	80	±0.011	60	(+0.030) (-0.0)	90	20		60
	100		80		120	25		80
	120	±0.013	100	(+0.035) (-0.0)	150		100	

**Order Type :-** Code X dia(D) X Material

**Example :-** PBOB X 50 X CI



## ► Oilless Bush (PBOC)



**Material :-** Phosphorus Bronze - Embedded with Solid Lubricant

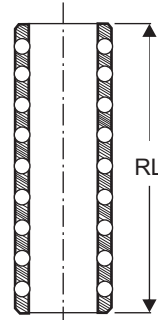
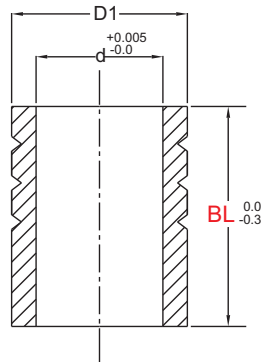
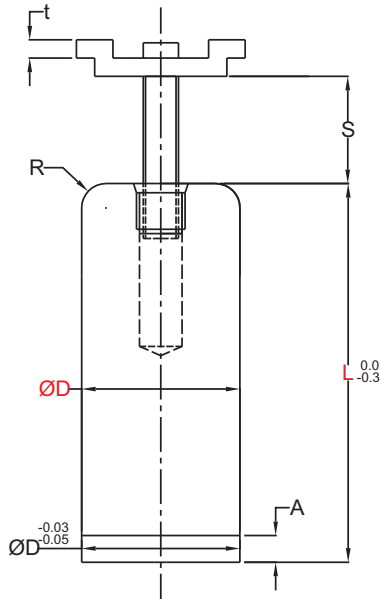
TYPE	d	dh7		Dm6		D1	T	R	L
PBOC	25	25	(+0.021) (-0.0)	35	(+0.025) (+0.009)	45	7	10	40
	30	30		40		50			50
	40	40	(+0.025) (-0.0)	55		65			70
	50	50		65		75			
	60	60	(+0.030) (+0.011)	75		85			80
	65	65		80		90			10
	65A			100	110		100		
	80	80	(+0.035) (+0.013)						140
	80A					100			
	100	100	(+0.035) (-0.0)	120		130		100	
	100A							140	

**Order Type :-** Code X d

**Example :-** PBOC X 40

**Note :-** Phosphorus Bronze bush as per drawing can also be manufactured.

## ► Pillar Bush with Ballcage (PPBM)



**Material :-** EN353/20MnCr5  
**Hardness :-** 60-62HRC

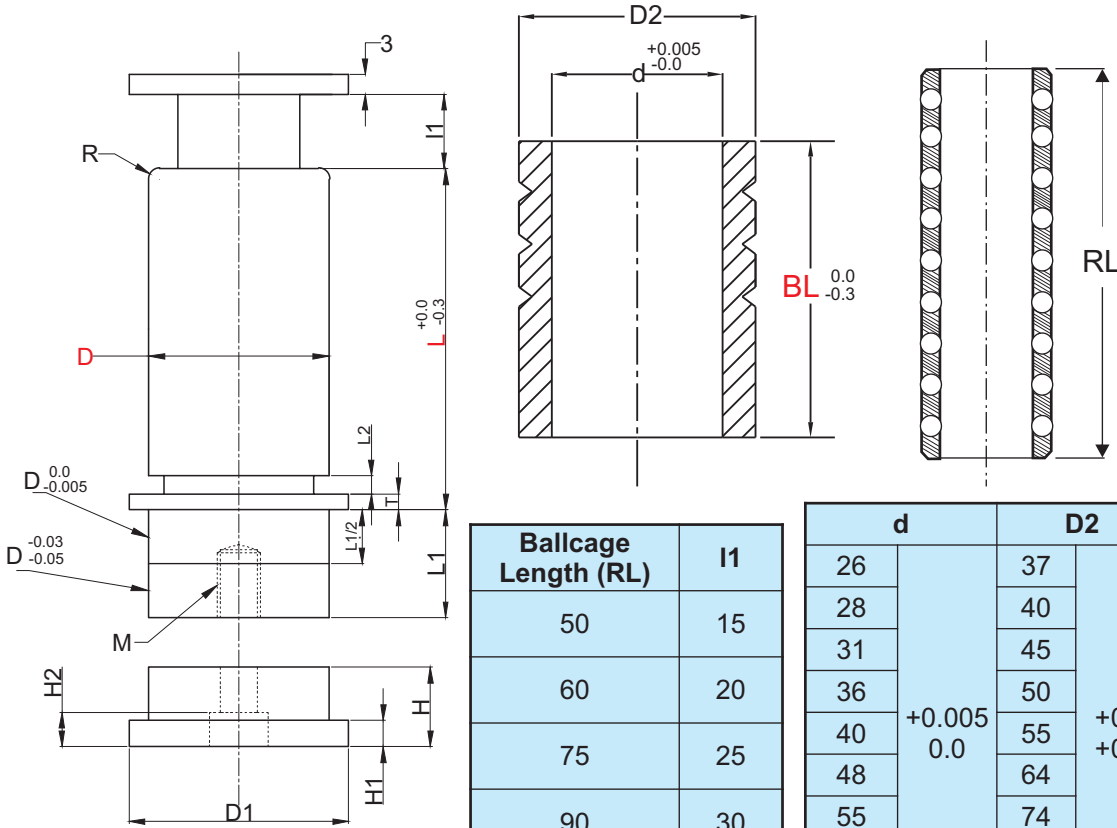
Pillar						
D		A	R	t	L	Ballcage Length (RL)
20	(+0.020) (+0.015)	4	2	1.6	100, 110, 120, 130, 140, 150, 160, 170, 180	50
22			3		120, 130, 140, 150, 160, 170, 180	50, 60
25		3	120, 130, 140, 150, 160, 170, 180		60, 75	
28	(+0.025) (+0.020)	5	3.5	1.6	140, 150, 160, 170, 180, 190, 200	60, 75
32					160, 170, 180, 190, 200, 220, 240	75, 90
38	(+0.030) (+0.025)	6	4	2	180, 190, 200, 220, 240, 260	75, 90
45					180, 190, 200, 220, 240, 260	90, 110
50	(+0.035) (+0.030)	7	5	2	200, 220, 240, 260	90, 110
60					200, 220, 240, 260	90, 110

Ballcage Length (RL)	S
50	0~19
60	0~23
75	0~30
90	0~37
110	0~47

Bush				
d	D1	D1T	Bush Length (BL)	D
26	37	(+0.5) (+0.3)	50	20
28	40		50, 60	22
31	45		60, 80	25
36	50		60, 80	28
40	55		80, 100	32
48	64		80, 100	38
55	74		100, 120	45
60	83		100, 120	50
70	95		100, 120	60

**Order Type :-** Code X D X L X Bush Length  
**Example :-** PPBM X 20 X 150 X 50

# ► Pillar Bush with Ballcage (PPKB)



**Material :-** EN353/20MnCr5  
**Hardness :-** 60-62HRC

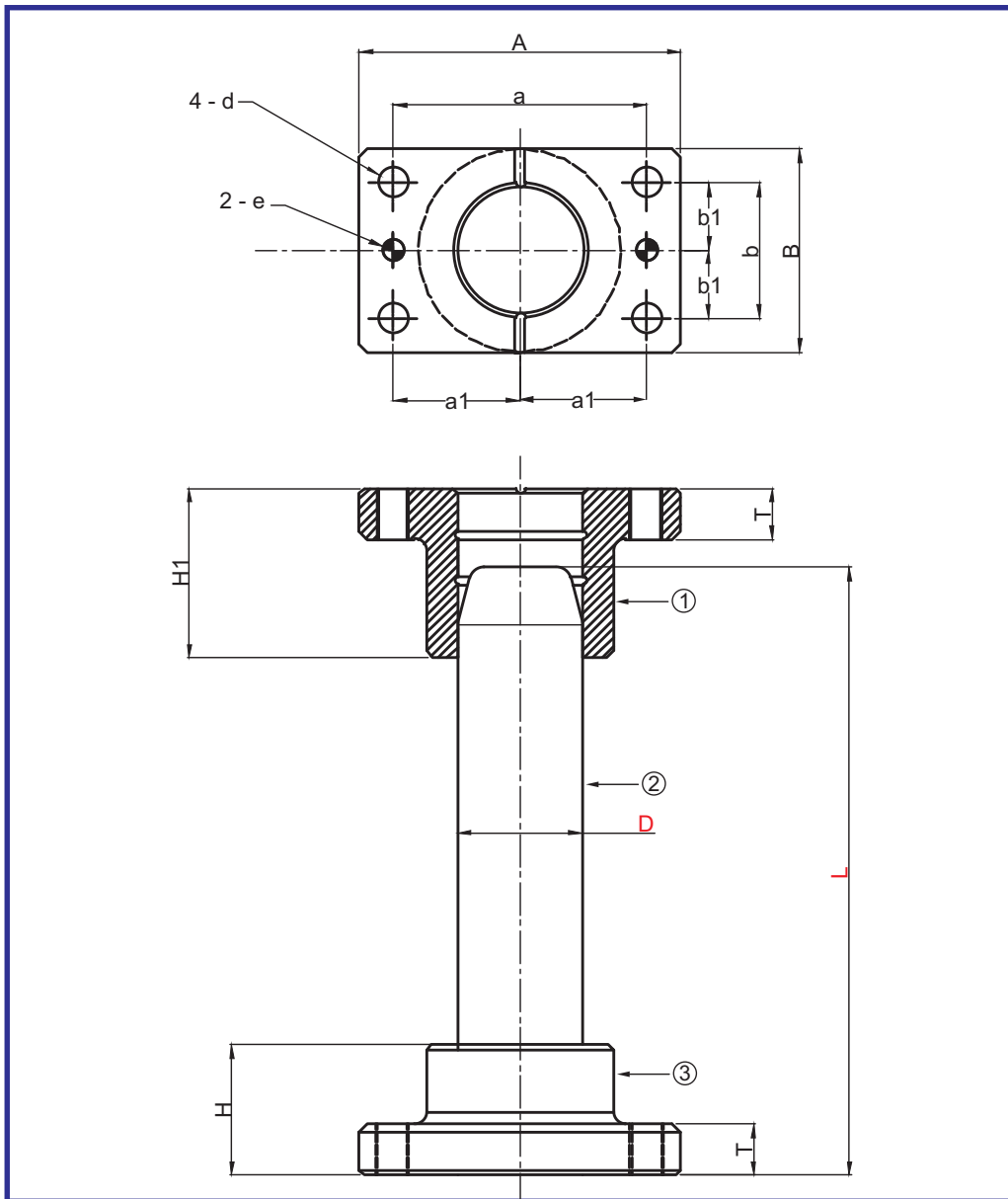
Ballcage Length (RL)	I1
50	15
60	20
75	25
90	30
110	35

d	D2	Bush Length
26	+0.005 0.0	37
28		40
31		45
36		50
40		55
48		64
55		74
60		83
70		95
		+0.5 +0.3
	50, 60	
	60, 80	
	60, 80	
	80, 100	
	80, 100	
	100, 120	
	100, 120	
	100, 120	
	100, 120	

Pillar												
D	D1	L1	L2	H	H1	H2	T	M	R	L	Ballcage Length RL	
20	(+0.020) (+0.015)	28	15	10	14	7	8.5	5	M8x18	2	80, 90, 100, 110, 120	50
22		30	16								80, 90, 100, 110, 120	50, 60
25		35	18								80, 90, 100, 110, 120, 130	60, 75
28	(+0.025) (+0.020)	36	20	12	16	8	10.5	10	M10x22	3.5	100, 110, 120, 130, 140, 150, 160	60, 75
32		40	23								120, 130, 140, 150, 160	75, 90
38	(+0.030) (+0.025)	49	27	15	18	10	12.5	12	M12x27	4	140, 150, 160, 170, 180	75, 90
45		55	32								140, 150, 160, 170, 180	90, 110
50	(+0.035) (+0.030)	62	35	15	20	12	14.5	15	M14x31	4.5	160, 170, 180, 200	90, 110
60		72	42								160, 170, 180, 200	90, 110

**Order Type :-** Code X D X L X Bush Length  
**Example :-** PPKB X 20 X 110 X 50

## ► Plain Guide Post with Dowel Hole (DEMP - O / DEMP - OL)



### Material :-

- 1) FG 260
- 2) C 45
- 3) FG 260

### Hardness :-

Pillar - 53 to 55 HRC

**O** - Oil Type

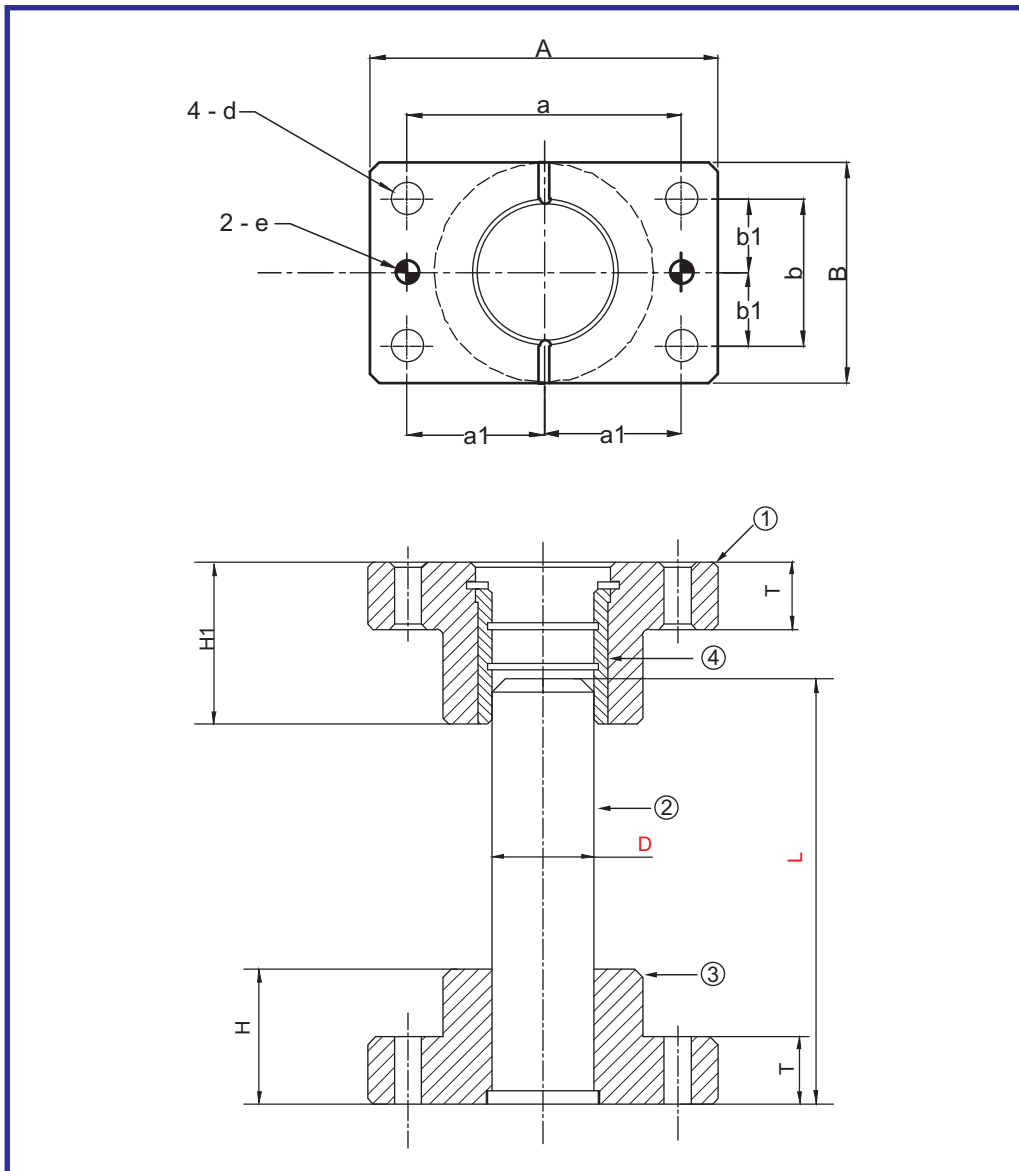
**OL** - Oilless Type

CODE Type	Dia D	A	B	a	a1	b	b1	H	H1	T	eh7	Dia d
		±1	±1	±0.015		±0.015		±1	±1	±0.5	+0.2	0.015
DEMP	20	74	44	56	28	30	15	30	40	15	6	6.6
DEMP	25	84	48	66	33	30	15	30	45	20	8	9
DEMP	30	100	58	76	38	36	18	40	50	20	8	11
DEMP	32	100	58	76	38	36	18	40	50	20	8	11
DEMP	36	130	75	100	50	44	22	50	60	25	10	11
DEMP	38	130	75	100	50	44	22	50	60	25	10	11
DEMP	40	130	75	100	50	44	22	50	60	25	10	11
DEMP	48	155	90	125	62.5	60	30	65	85	25	10	14
DEMP	50	155	90	125	62.5	60	30	65	85	25	10	14
DEMP	60	190	120	150	75	80	40	75	100	30	13	18
DEMP	80	230	150	180	90	110	55	100	130	35	16	22

**Order Type :** Code - Type Dia (D) X Pillar Length | **Example :** DEMP - OL 32 X 200

**Note :** Kindly refer Page No.115 for Guide Post Length

► Plain Guide Post with Dowel Hole & Harden Sleeve (DEMH - O / DEMH - OL)



**Material :-**

- 1) FG 260
- 2) C 45
- 3) FG 260
- 4) EN 353

**Hardness :-**

Pillar - 53 to 55 HRC

**O** - Oil Type

**OL** - Oilless Type

CODE Type	Dia D	A	B	a	a1	b	b1	H	H1	T	eh7	Dia d
		±1	±1	±0.015		±0.015		±1	±1	±0.5	+0.2	0.015
DEMH	20	74	44	56	28	30	15	30	40	15	6	6.6
DEMH	25	84	48	66	33	30	15	30	45	20	8	9
DEMH	30	100	58	76	38	36	18	40	50	20	8	11
DEMH	32	100	58	76	38	36	18	40	50	20	8	11
DEMH	36	130	75	100	50	44	22	50	60	25	10	11
DEMH	38	130	75	100	50	44	22	50	60	25	10	11
DEMH	40	130	75	100	50	44	22	50	60	25	10	11
DEMH	48	155	90	125	62.5	60	30	65	85	25	10	14
DEMH	50	155	90	125	62.5	60	30	65	85	25	10	14
DEMH	60	190	120	150	75	80	40	75	100	30	13	18
DEMH	80	230	150	180	90	110	55	100	130	35	16	22

**Order Type :** Code - Type Dia (D) X Pillar Length

**Example :** DEMH - OL 32 X 200

**Note :** Kindly refer Page No.115 for Guide Post Length

## ► Guide Post with Ballcage & Dowel Hole (DEMBB / DEMBA)



### Material :-

- 1) FG 250
- 2) EN 353
- 3) Aluminium / Brass
- 4) FG 250
- 5) EN 353

### Hardness :-

- Pillar - 58 to 60 HRC  
 Bush - 58 to 60 HRC

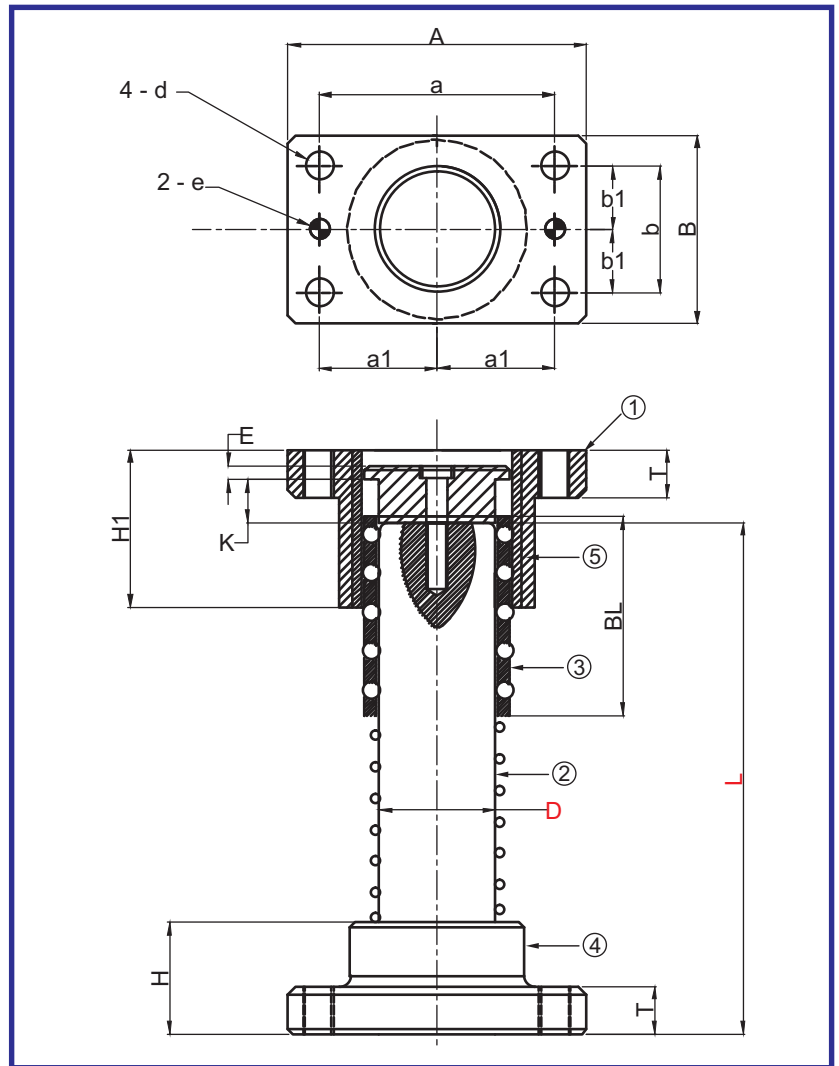
### Stopper Type :-

- Movable Stopper (M)  
 Fixed Stopper (F)

### Ballcage Type :-

- DEMBB** - With Alluminium Ballcage  
**DEMBA** - With Brass Ballcage

**Length of Ballcage** = 1/3 of the Pillar length



CODE	Dia D	A	B	a	a1	b	b1	H	H1	T	K	E	Ls	eh7	Dia d
<b>Type</b>		±1	±1	±0.015		±0.015		±0.5	±0.5	±0.2			±0.5	+0.015	
DEMB	20	74	44	56	28	30	15	30	40	15	20	5	40	6	6.6
DEMB	25	84	48	66	33	30	15	30	50	20	20	5	50	8	9
DEMB	30	100	58	76	38	36	18	40	60	20	25	5	60	8	11
DEMB	32	100	58	76	38	36	18	40	60	20	25	5	60	8	11
DEMB	36	130	75	100	50	44	22	50	70	25	30	10	70	10	11
DEMB	38	130	75	100	50	44	22	50	70	25	30	10	70	10	11
DEMB	40	130	75	100	50	44	22	50	70	25	30	10	70	10	11
DEMB	48	155	90	125	62.5	60	30	65	90	25	40	10	90	10	14
DEMB	50	155	90	125	62.5	60	30	65	90	25	40	10	90	10	14
DEMB	60	190	120	150	75	80	40	75	100	30	50	10	100	13	18

**Order Type** : Code - Stopper Type Dia (D) X Pillar Length

**Example** : DEMBB - F 25 X 200

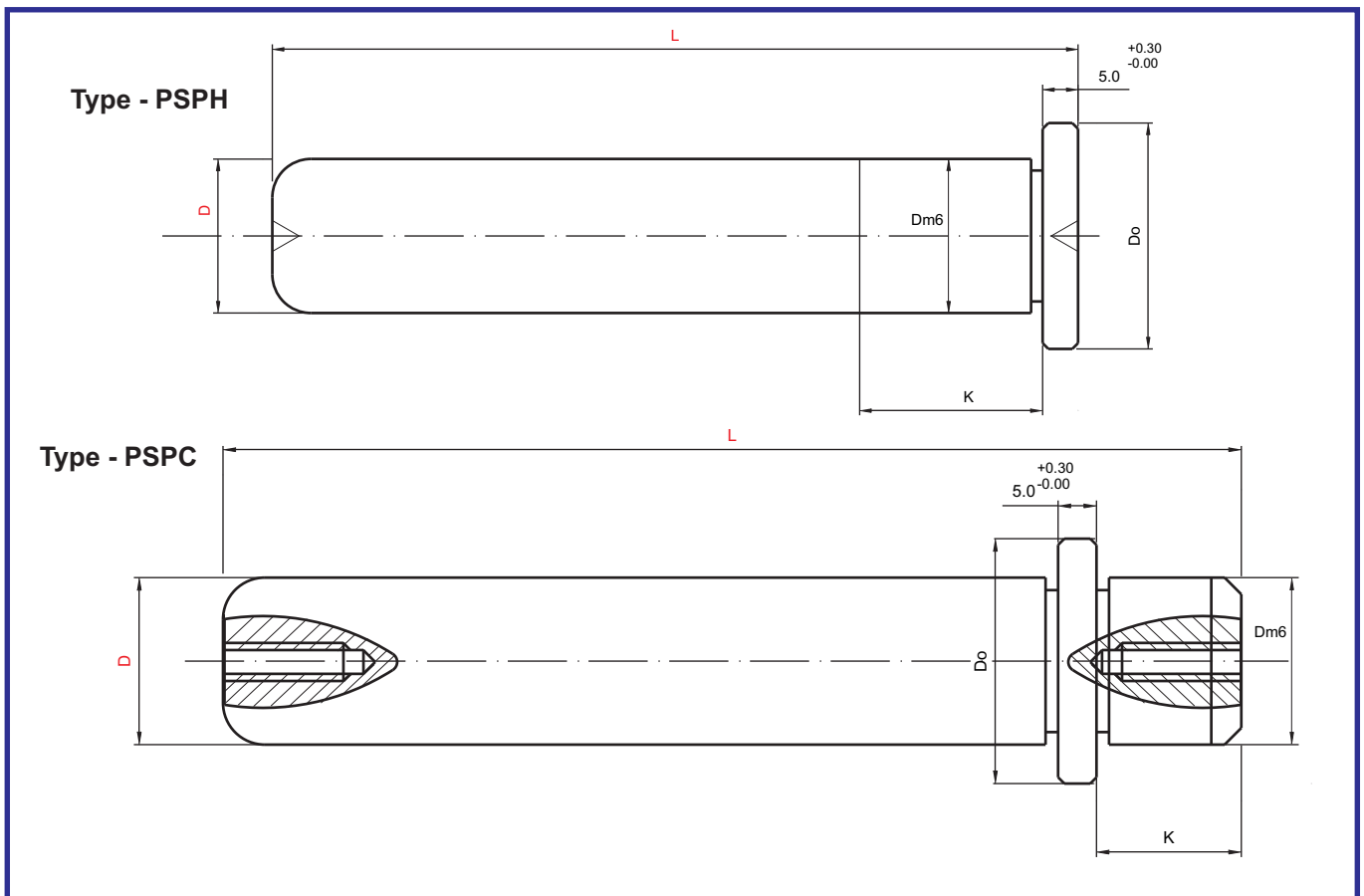
**Note** : Kindly refer Page No.115 for Guide Post Length

## ▶ Table for Guide Post Length

Type	D	L														
		80	90	100	110	125	140	150	160	170	180	200	220	250	280	300
DEMP-O DEMP-OL	20	*	*	*	*	*	*	*	*							
	25	*	*	*	*	*	*	*	*	*	*	*				
	30					*	*	*	*	*	*	*	*	*		
	32		*	*	*	*	*	*	*	*	*	*	*	*		
	36					*	*	*	*	*	*	*				
	38				*	*	*	*	*	*	*	*	*	*	*	*
	40				*	*	*	*	*	*	*	*	*	*	*	*
	48								*	*	*	*	*	*	*	*
	50								*	*	*	*	*	*	*	*
	60										*	*	*	*	*	*
	80													*	*	*

Type	D	L														
		80	90	100	110	125	140	150	160	170	180	200	220	240	260	300
DEMBA-F DEMBA-M	20			*	*	*	*	*	*	*	*	*				
	25		*	*	*	*	*	*	*	*	*	*				
	30				*	*	*	*	*	*	*	*	*	*		
	32				*	*	*	*	*	*	*	*	*	*		
	36					*	*	*	*	*	*	*	*	*	*	*
	38					*	*	*	*	*	*	*	*	*	*	*
	40					*	*	*	*	*	*	*	*	*	*	*
	48									*	*	*	*	*	*	*
	50									*	*	*	*	*	*	*
	60											*	*	*	*	*

## ► Stripper Guide Pin (PSPC/ PSPH)



**Material :-** En 353  
**Hardness :-** 53-56 Hrc



Size	Code	Dia D	Do	K	L				
Tolerance		h7	-0.02(max)	-1.0(max)	+1.0(max)				
	PSPH	8	11	8	50	60			
		10	13	13	50	60	80		
		16	19	18	50	60	80	100	120
		20	23	22		60	80	100	120
		25	28	28			80	100	120

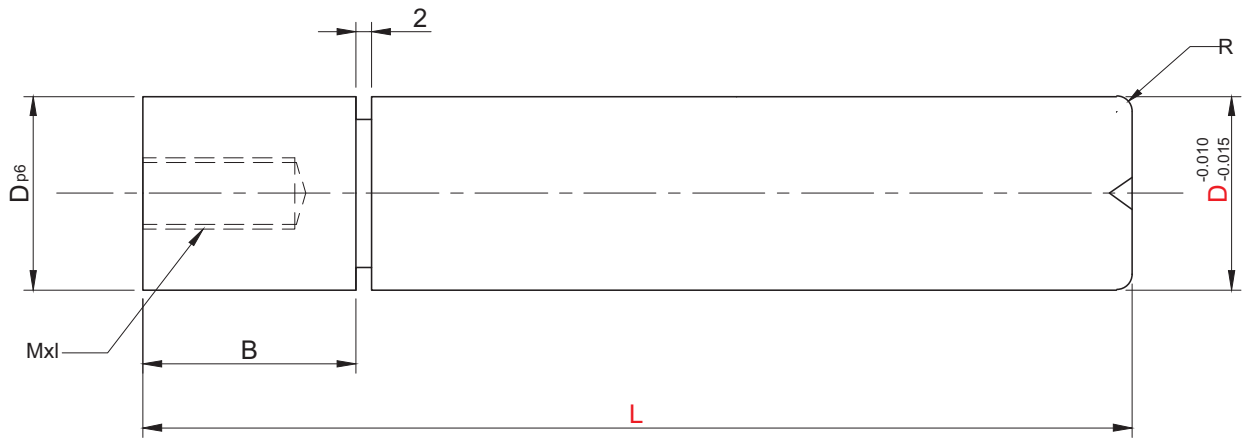
Size	Code	Dia D	Do	K	L					
Tolerance		h7	-0.02(max)	-1.0(max)	+1.0(max)					
	PSPC	8	11	8	30	50	60			
		10	13	8	30	50	60	80		
		16	19	10		50	60	80	100	120
		20	23	13			60	80	100	120
		25	28	16				80	100	120

**Order Type :** Code X Dia D X Length L

**Example :** PSPC X 16 X 80



## ► Stripper Guide Pin - PSPN



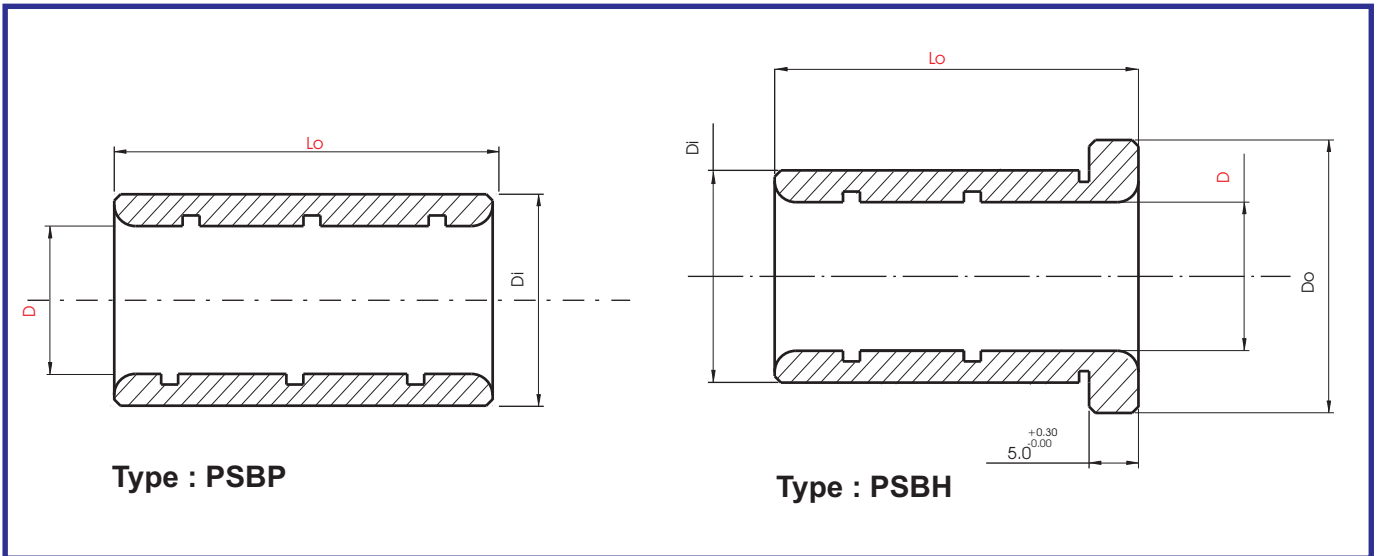
**Material :-** 20 MnCr5 / En353  
**Hardness :-** 55-58 HRC



Type	Dp6		M x l Pitch	R	B	D	L
PSPN	8	(+0.024) (+0.015)	M5x12 P0.8	1	10	8	40 50 60 70 80
	10				13	10	40 50 60 70 80 90 100
	13	(+0.029) (+0.018)	M6x15 P1	1.5	16	13	40 50 60 70 80 90 100 110 120
	16				20	16	50 60 70 80 90 100 110 120
	20	(+0.035) (+0.022)	M8x20 P1.25	2	25	20	60 70 80 90 100 110 120 130 140
	25				28	25	70 80 90 100 110 120 130 140

**Order Type :-** Code X D X L  
**Example :-** PSPN X 20 X 100

## ► Stripper Guide Bush (PSBP / PSBH)



Material:- En353  
Hardness:- 53-56 HRC



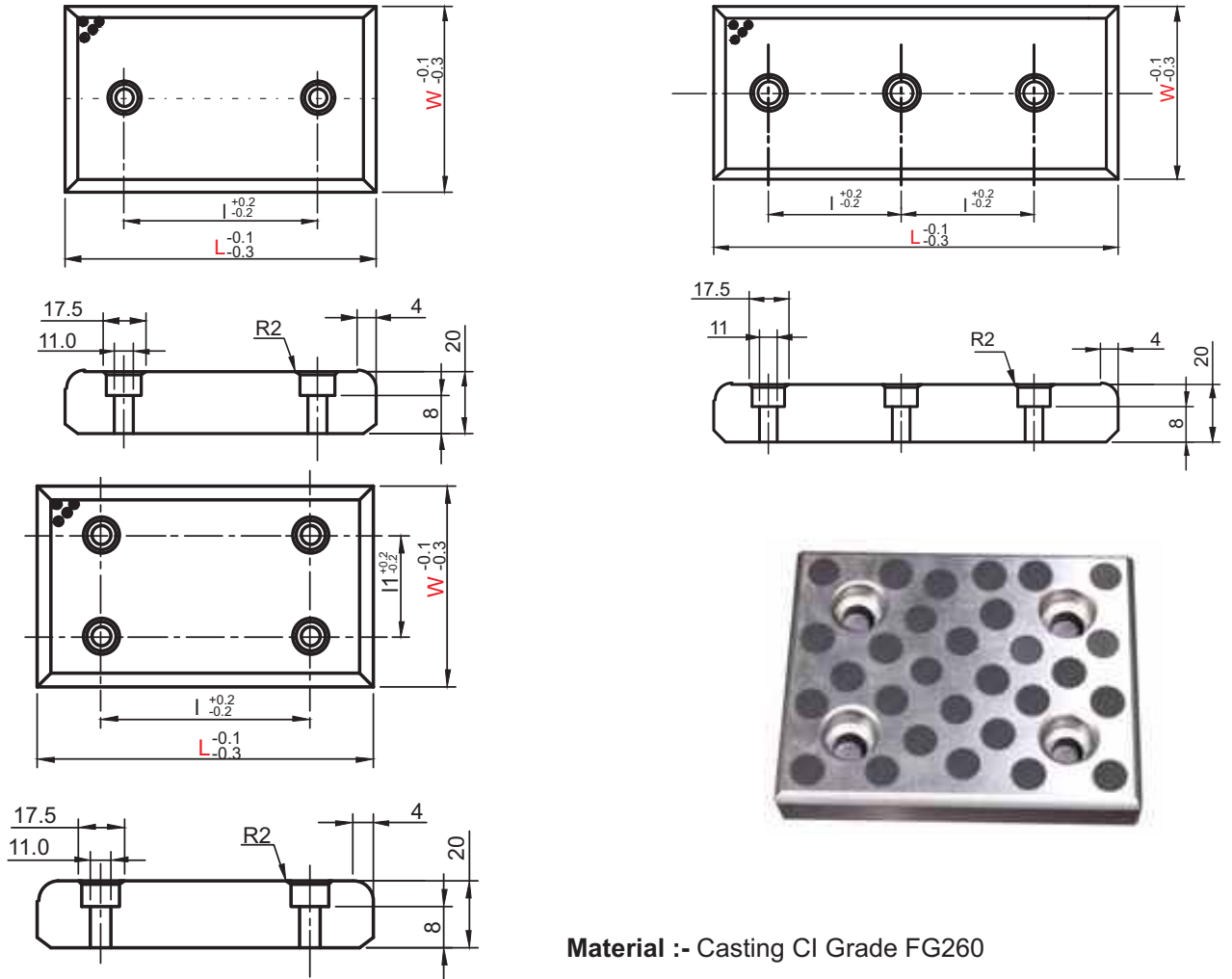
Size	Code	D	Di	L				
Tolerance		G6	+0.02(max)	-1.0(max)				
	PSBP	8	14	10	16	20		
		10	16	10	16	20	25	
		16	22		16	20	25	30
		20	25			20	25	30
		25	32				25	30

Size	Code	D	Do	Di	L				
Tolerance		G6	-0.2(max)	+0.02(Max)	-1.0(max)				
	PSBH	8	17	14	10	16	20		
		10	19	16	10	16	20	25	
		16	25	22		16	20	25	30
		20	28	25			20	25	30
		25	35	32				25	30

**Order Type :** Code X Dia D X Length L

**Example :** PSBP X 16 X 25

## ► Wear plate (PWP - CI)



**Material :- Casting CI Grade FG260**

Type		W	I	I1	L
PWP-CI	4 bolt holes	100	50	50	100
			75		125
			100		150
			150		200
			200		250
			200		300
		125	75	50	125
			100		150
			150		200
			200		250
			200		300
		150	100	100	150
150	200				
200	250				
250	300				
200	150	150	200		
	200		250		
	250		300		

**Order Type :- Code X W X L | Example :- PWP-CI X 100 X 150**

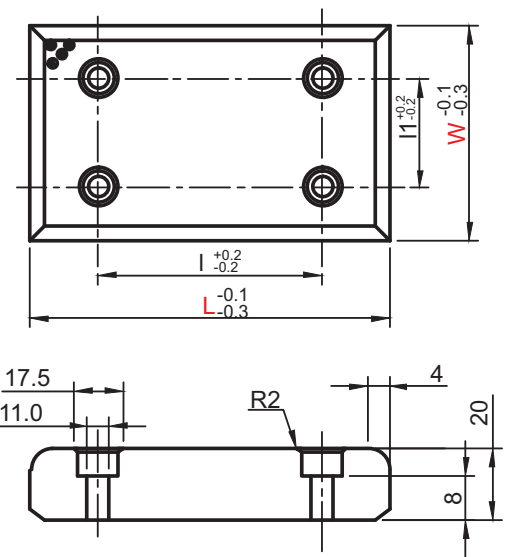
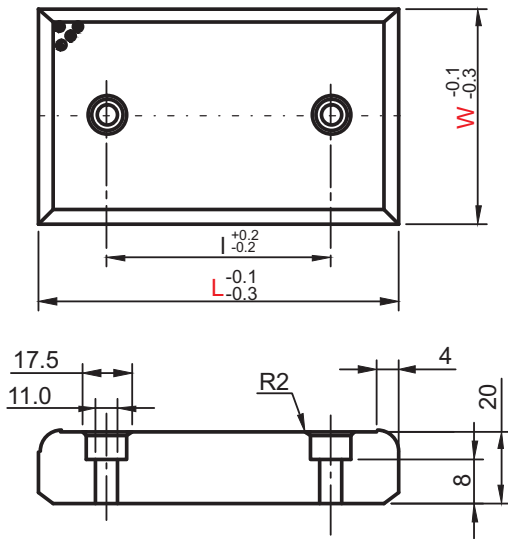
## ► Wear plate (PWP - CI)

Type		W	I	L
PWP - CI	2 bolt holes (W=28 - 75) (*3 bolt holes)	28	45	75
			50	100
			75	125
			100	150
			150	200
		38	45	75
			50	100
			75	125
			100	150
			150	200
		48	45	75
			50	100
			75	125
			100	150
		58	100	150
			150	200
			45	75
			50	100
		75	75	125
			100	150
	150		200	
	200		250	
	100*		300	
	25		75	
	50		100	
	2 bolt holes (W=100 - 150)	100	75	125
			100	150
			150	200
			200	250
			200	300
			50	100
		125	75	125
100			150	
150			200	
200			250	
150	200	300		
	100	150		
	150	200		
	200	250		
		250	300	

**Order Type** :- Code X W X L

**Example** :- PWP-CI X 100 X 150

## ► Wear plate (PWP - PB)



**Material :-** Phosphorus Bronze



Type		W	I	I1	L			
PWP-PB	4 bolt holes	100	50	50	100			
			75		125			
			100		150			
			150		200			
			200		250			
			200		300			
	4 bolt holes	125	50	75	125			
				100	150			
				150	200			
				200	250			
				200	300			
				4 bolt holes	150	100	100	150
							150	200
200	250							
-	-							

**Order Type :-** Code X W X L

**Example :-** PWP-PB X 100 X 150

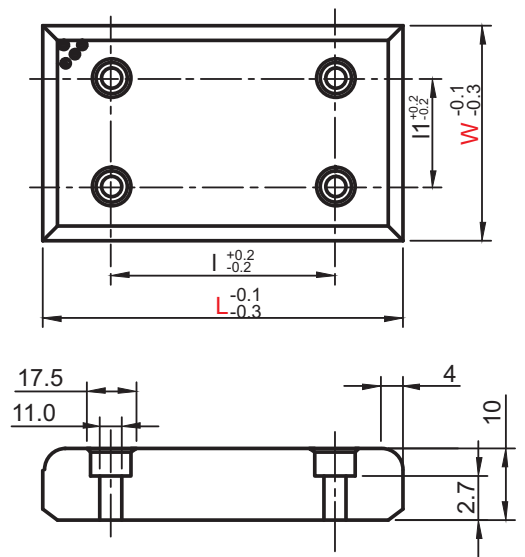
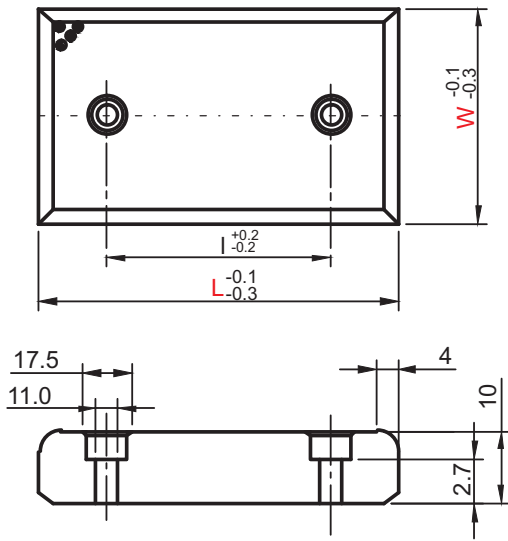
## ► Wear plate (PWP - PB)

Type		W	I	L
PWP - PB	2 bolt holes (W=28 - 75)	28	45	75
			50	100
			–	–
			100	150
			–	–
		38	45	75
			50	100
			–	–
			100	150
			–	–
		48	45	75
			50	100
			75	125
			100	150
			150	200
	58	45	75	
		50	100	
		–	–	
		100	150	
	75	25	75	
		50	100	
		75	125	
		100	150	
		150	200	
		–	–	
		–	–	
	2 bolt holes (W=100 - 150)	100	50	100
			75	125
			100	150
			150	200
200			250	
200			300	
125		75	125	
		100	150	
		150	200	
		200	250	
		200	300	
150		200	350	
		100	150	
		150	200	
		200	250	

**Order Type :-** Code X W X L

**Example :-** PWP-PB X 100 X 150

## ► Wear plate (PWPZ - PB)



**Material :-** Phosphorus Bronze



Type		W	I	I1	L
PWPZ-PB	4 bolt holes	100	50	50	100
			75		125
			100		150
			150		200
			200		250
			-		-
	4 bolt holes	125	-	50	-
			100		150
			150		200
			200		250
			-		-
			-		-
4 bolt holes	150	100	100	150	
		150		200	
		-		-	
		-		-	

**Order Type :-** Code X W X L

**Example :-** PWPZ-PB X 100 X 150

► **Wear plate (PWPZ - PB)**

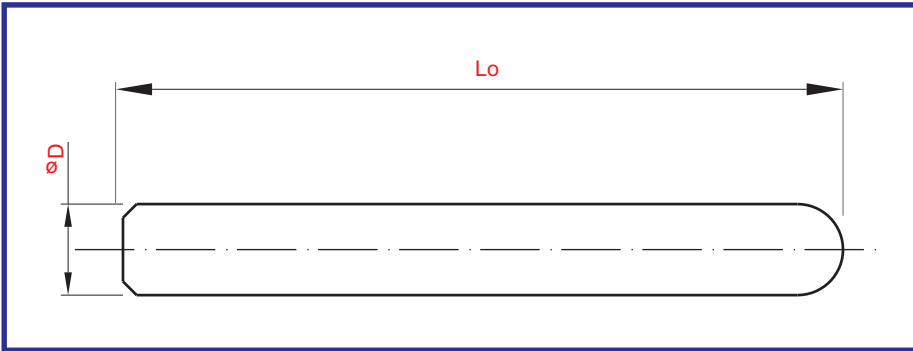
Type		W	I	L
PWPZ - PB	2 bolt holes (W=28 - 75)	28	45	75
			50	100
			75	125
			100	150
			–	–
		38	45	75
			50	100
			75	125
			100	150
			–	–
		48	45	75
			50	100
			75	125
			100	150
			150	200
		58	45	75
			50	100
			–	–
			100	150
		75	25	75
	50		100	
	75		125	
	100		150	
	150		200	
	–		–	
	–		–	
	2 bolt holes (W=100 - 150)	100	50	100
			75	125
			100	150
			150	200
			200	250
			–	–
125		–	–	
		100	150	
		150	200	
		200	250	
150		–	–	
		100	150	
	150	200		
	–	–		

**Order Type :-** Code X W X L

**Example :-** PWPZ-PB X 100 X 150



## ► Dowel Pin Plain



**Material :-** Case Hardened Alloy Steel

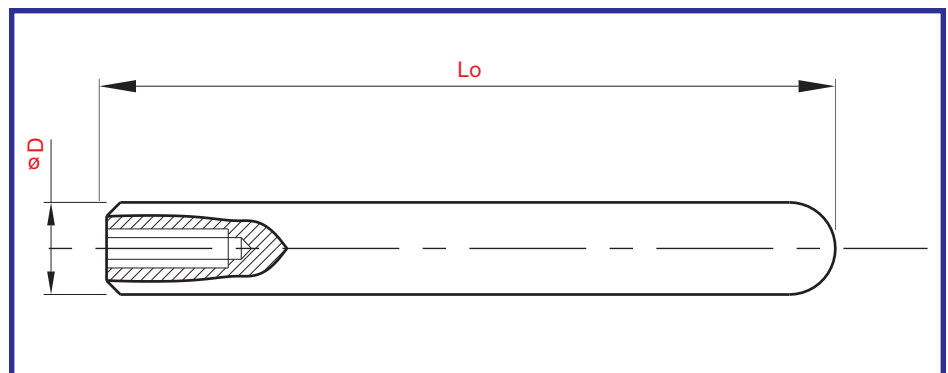
**Hardness :-** 58-62 HRC

**Order Type :-** Dowel (Type) - Dia (D) X Length ( $L_o$ )

**Example :-** Dowel (Threaded / Plain) 10 X 50

Dia	Length ( $L_o$ )																		
D	8	10	12	16	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100
3	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
5			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
6				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12						*	*	*	*	*	*	*	*	*	*	*	*	*	*
16							*	*	*	*	*	*	*	*	*	*	*	*	*
20								*	*	*	*	*	*	*	*	*	*	*	*

## ► Dowel Pin Threaded



**Material :-** Case Hardened Alloy Steel

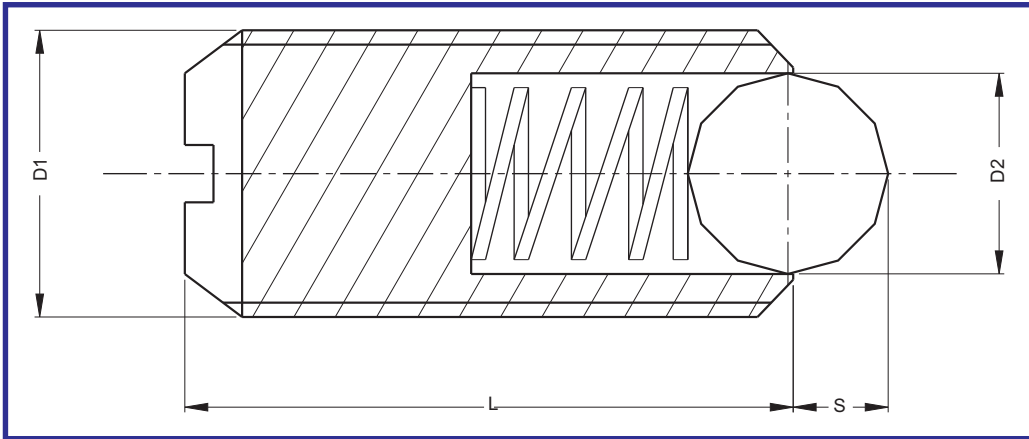
**Hardness :-** 58-62 HRC

Dia	Length ( $L_o$ )																		
D	8	10	12	16	20	25	30	35	40	45	50	55	60	65	70	75	80	90	100
6				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
8				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12						*	*	*	*	*	*	*	*	*	*	*	*	*	*
16							*	*	*	*	*	*	*	*	*	*	*	*	*
20								*	*	*	*	*	*	*	*	*	*	*	*

**Order Type :-** Dowel (Type) - Dia (D) X Length ( $L_o$ )

**Example :-** Dowel (Threaded / Plain) 10 X 50

## ► Spring Plunger (PSP-B)



**Material :-**  
 BALL :- Alloy Steel  
 Body :- En9  
 Spring :- En47

**Hardness :-**  
 BALL :- 60-62 HRC

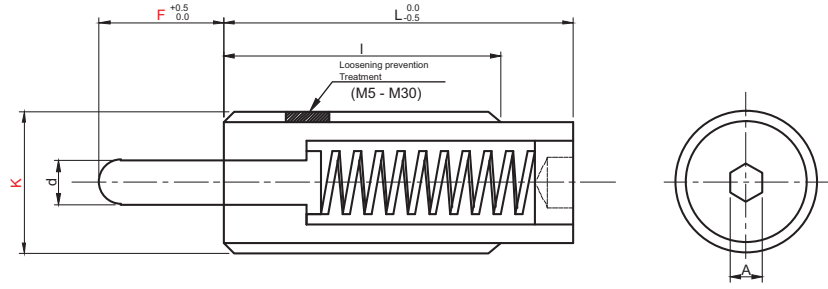
**Surface Treatment :-**  
 Blackodised

Code	D1	L mm	S mm	D2 mm	Initial Force kg	Final Force kg
PSP M4	M4	9	0.8	2.5	0.612	1.22
PSP M5	M5	12	0.9	3	0.714	1.32
PSP M6	M6	14	1.0	3.5	0.918	1.53
PSP M8	M8	16	1.5	5	2.04	3.57
PSP M10	M10	19	2.0	6	2.55	4.59
PSP M12	M12	22	2.5	8	3.57	6.12
PSP M16	M16	24	3.5	10	6.63	11.22

**Order Type :-** Code  
**Example :-** PSP-B M8



## ► Spring Plunger (PSP-P)

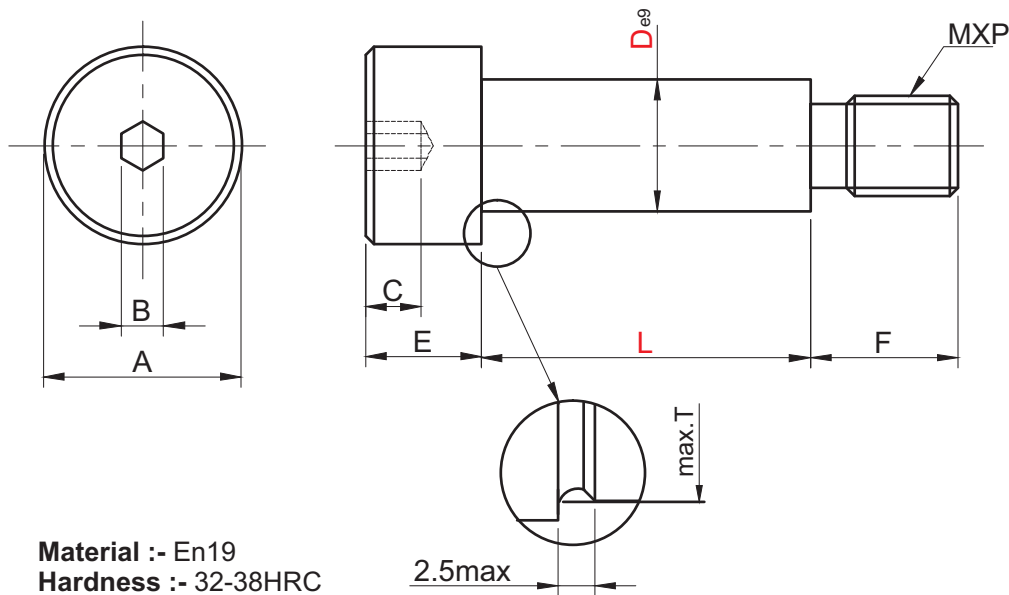


**Material :-** En8d  
**Hardness :-** 32-38 HRC  
**Surface Treatment :-** Blackodised

Type	d	l	L		A	For light load		K	F
			Light & heavy loads	Extremely heavy loads		min. N(kgf)	max.		
PSP - P	1.1	10 (15)	10	15	0.9	0.44 (0.05)	1.6(0.2)	3	1.5
	1.1	15 (20)	15	20	0.9	0.29 (0.03)	1(0.1)		3
	1.6	15 (24)	15	24	1.3	0.9 (0.1)	4.1(0.4)	4	2
	1.6	24	24	24	1.3	0.7 (0.1)	2.2(0.2)		4
	2	20 (27)	20	27	1.5	1.5 (0.2)	9.8(0.1)	5	3
	2	27 (39)	27	39	1.5	1.6 (0.2)	10.4(1.1)		5
	2.5	25 (30)	25	30	2	3.4 (0.4)	10.4(1.1)	6	3
	2.5	30 (36)	30	36	2	1.9 (0.2)	9.7(1)		5
	2.5	30	39	-	2	1.5 (0.2)	10.9(1.1)	6	10
	3.1	25 (27)	25	27	2.5	3.5 (0.4)	9.4(1)		8
	3.1	27 (30)	27	35	2.5	2.9 (0.3)	9.6(1)	5	
	3.1	30	43	-	2.5	3.1 (0.3)	11.2(1.1)	8	10
	3.8	30	30	35	3	2.8 (0.3)	14.1(1.4)		10
	3.8	30	43	53	3	2.9 (0.3)	14.6(1.5)	10	
	3.8	30	58	-	3	3.4 (0.4)	17(1.7)	10	15
	5.5	30 (35)	30	43	4	3.5 (0.4)	17.1(1.7)		12
	5.5	35	43	58	4	2.5 (0.3)	21.1(2.2)	10	
	5.5	35	51	78	4	2.3 (0.2)	19.4(2)	12	15
	5.5	35	78	-	4	4.1 (0.4)	22.5(2.3)		20
	8	35	60	60	5	12.1 (1.2)	38(3.9)	16	10
	8	35	60	70	5	9.7 (1)	39.7(4.1)		15
	8	35	85	90	5	8.6 (0.9)	40.1(4.1)	16	20
	8	35	125	125	5	17 (1.7)	38(3.9)		30
	8	35	125	-	5	5.5 (0.6)	41.2(4.2)	16	40
	8	35	155	-	5	4.4 (0.5)	48.3(4.9)		50
	8	35	159	-	5	4.1 (0.4)	49.6(5.1)	16	60
	8	35	185	-	5	3.1 (0.3)	55.7(5.7)		70
	8	35	185	-	5	2.5 (0.3)	51.3(5.2)	16	80
	10	45	60	80	6	14.4 (1.5)	79.4(8.1)		20
	10	45	72	-	6	13.9 (1.4)	83.4(8.5)	20	
10	45	96	-	6	13.6 (1.4)	88.3(9)	20	30	
10	45	120	-	6	13.4 (1.4)	109.8(11.2)		40	
10	45	60	-	10	27.8 (2.8)	65.9(6.7)	24	7	
10	45	60	84	10	25.5 (2.6)	106.9(10.9)		15	
10	45	75	-	10	15.3 (1.6)	101(10.3)	24	20	
10	45	100	-	10	19.1 (2)	100(10.2)		30	
10	45	124	-	10	17.1 (1.7)	98.1(10)	24	40	
14	45	66	-	14	9.3 (1)	104.4(10.7)		30	15
14	45	78	-	14	55.2 (5.6)	156.9(16)	20		
14	45	100	-	14	28.4 (2.9)	128.3(13.1)	30	30	
14	45	123	-	14	14.7 (1.5)	109.2(11.1)		40	

**Order Type :-** Code X K X F | **Example :-** PSP-P X 6 X 10

## ► Stripper Bolt (PSTB)



Material :- En19  
Hardness :- 32-38HRC



TYPE	De9	A	B	C	E	F	MXP	T	L	
PSTB	4	6.5	2.5	1.6	3	5	2.5X0.45	4.5	25 30 35 40 45	
	4.5	7				6	3X0.5	5	25 30 35 40 45 50	
	5	8				3.5	5.5	25 30 35 40 45 50		
	5.5	9	3	2.2	4	7	4X0.7	6	25 30 35 40 45 50 55	
	6			2				6.5	25 30 35 40 45 50 55 60 65 70	
	6.5	10	4	2.5	5	9	5X0.8	7	75	25 30 35 40 45 50 55 60 65 70
	8								80	25 30 35 40 45 50 55 60 65 70
	10								90	25 30 35 40 45 50 55 60 65 70
	12	17	6	4	8	12	8X1.25	12.8	75	25 30 35 40 45 50 55 60 65 70
	13								90	25 30 35 40 45 50 55 60 65 70
16	24	10	7	14	18	12X1.75	17	75	25 30 35 40 45 50 55 60 65 70	
20								90	25 30 35 40 45 50 55 60 65 70	
									100	

Order Type :- Code X D X L  
Example :- PSTB X 10 X 45