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Pawan International

Partners in Excellence



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Partners in Excellence

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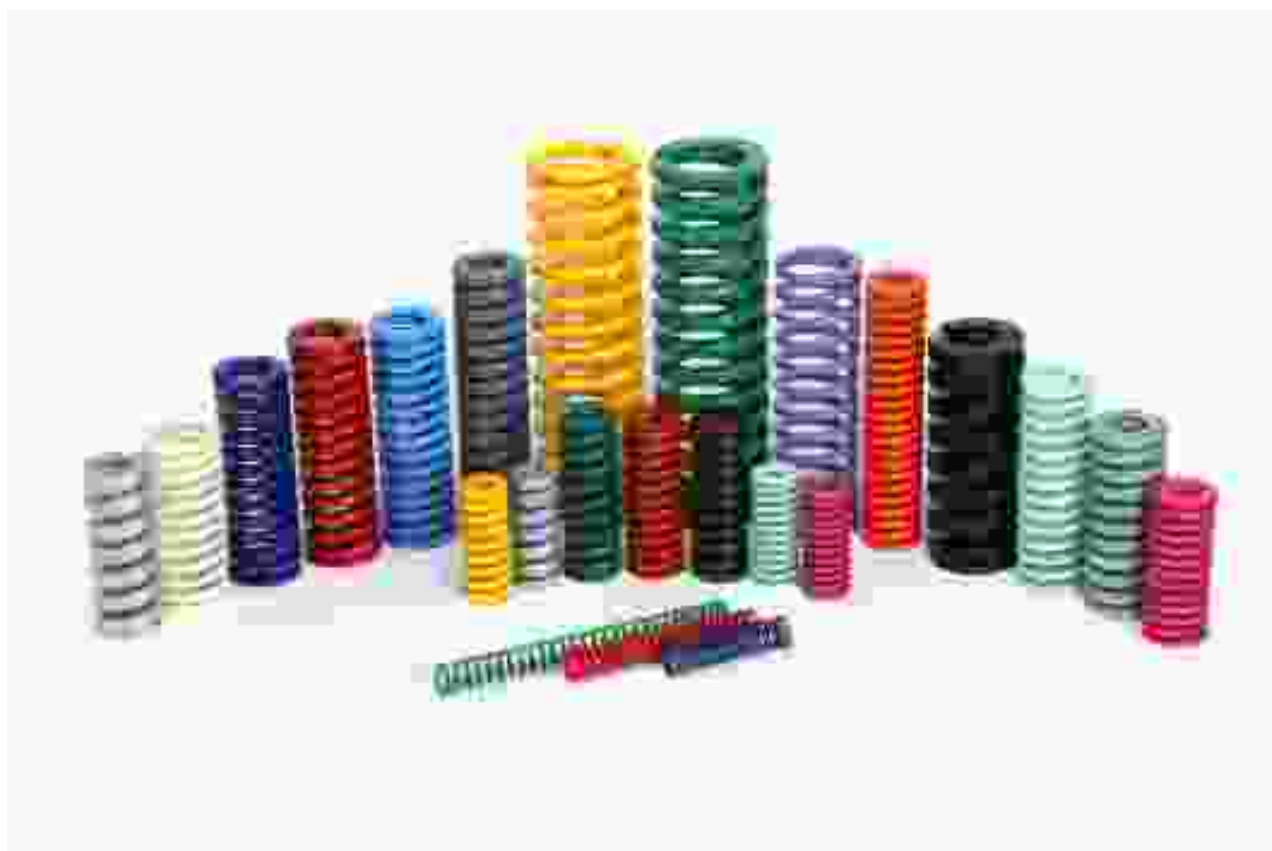


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Springs



Introduction to Springs

A spring is an elastic member which store energy and provides a force over a distance by elastic compression. Spring have ability to withstand relatively large compressions elastically. Today springs find tremendous applications in engineering and other areas, which makes wide variety of springs both in size and shapes. Springs are mainly used for following functions.

- 1] To cushion, absorb or control the energy either due to shocks, vibration as in railway wagons, automobiles, shock absorbers, press tools etc.
- 2] To exert force as in spring loaded safety valve, clutches etc.
- 3] To support moving masses or to isolate vibrations.
- 4] To store energy, as in clocks, toys, machines etc.

Springs are classified as :

- 1] Compression Springs.
- 2] Tension Springs.
- 3] Spiral Spring.
- 4] Disc Spring.
- 5] Spring rings and bars

In this catalogue we are mainly provided details of compression springs used for following applications.

- 1] Press tool dies for sheet metal working.
- 2] Moulds for plastic injection moulding.
- 3] Jigs, Fixtures and machine tools.

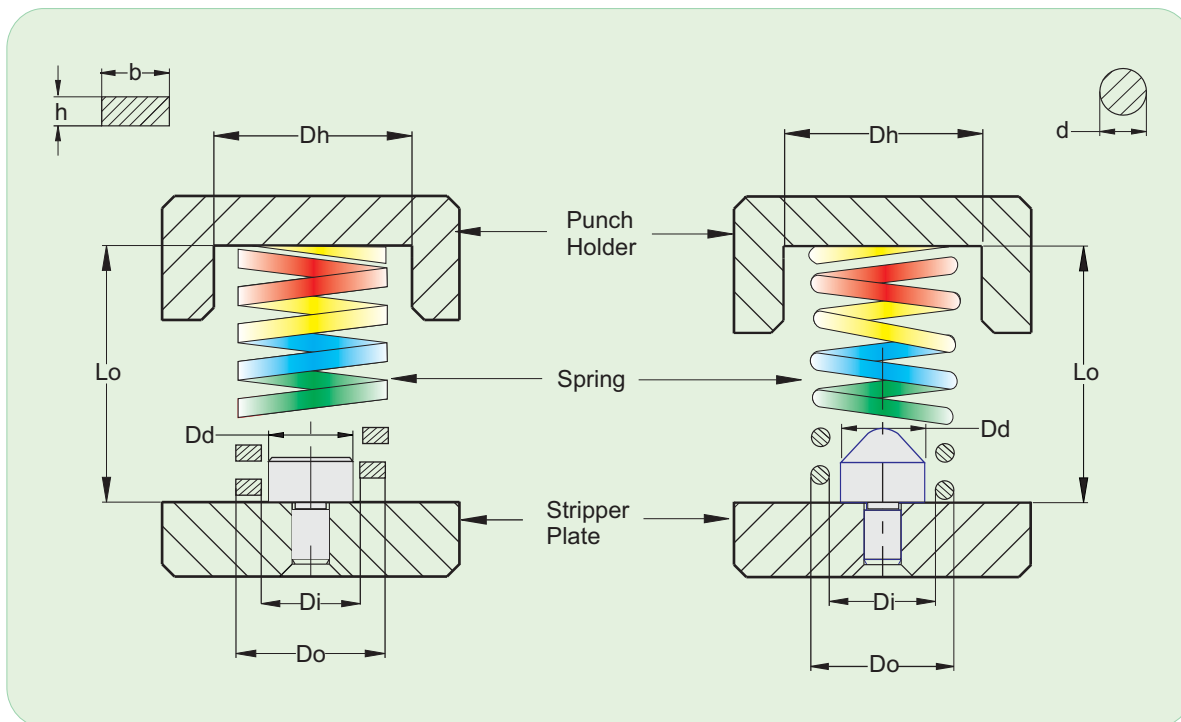
The Spring Which are commonly us in such application mention above are made of rectangular Wire, This spring are knows as Die Spring. The advantage of Die Spring over round wire spring is it can give higher compression as compare to the round wire spring & also generate higher force at same compression resulting into higher life of spring in operation. It is always recommended to use spring at its long life compression & shall never be used above average life compression.

This Catalogue covers Die Spring As per ISO10243 & JIS5012B Standard. The Color of the spring identifies its Compression & Load Characteristics. The spring covered in the catalog are Stock Items.

Guide Line - Spring selection and operating condition

- Select the spring carefully at the design stage.
- For longer stroke - select light load or medium load spring.
- For more load - select heavy load or extra heavy load springs.
- Calculate spring stroke (required compression.)
- Preloading compression should be equal to 5 % of the length.
- Use guide pin, a locating bore as a guide - this is essential for spring having a free length / diameter ratio exceeding 3.5
- If possible use longer springs for lower loadings.
- Never compress springs beyond the average life load and compression.
- Always check spring holder heights and working strokes of moving elements after die tools has been reground.
- Protects springs from corrosive agents.
- Do not exceed a working temperature of 250° C, No significant load reduction occurs up to 120° C, beyond this temperature an average loss of 1 % for every 40° C must be calculated.
- Do not replace one spring at a time, if they are multiple in use.
- Do not alter physical characteristics of springs like cutting of coils, grinding of internal or external diameter.

Spring Geometry



Specifications

Sr. No.	Description	Terminology	Units
01]	Hole Diameter	Dh	mm
02]	Rod Diameter	Dd	mm
03]	Outside Diameter	Do	mm
04]	Inside Diameter	Di	mm
05]	Spring Mean Diameter	Dm	mm
06]	Free Length	Lo	mm
07]	Solid Length	Lb	mm
08]	Spring Compression	L	mm
09]	Spring Rate (Load required for 1mm compression)	C	Kg / mm
10]	Load - Maximum Life	Pm	Kg
11]	Compression - Maximum Life	Lm	mm
12]	Load - Medium Life	Pc	Kg
13]	Compression - Medium Life	Lc	mm
14]	Load - Average Life	Pa	Kg
15]	Compression - Average Life	La	mm
16]	Load - Out of Service	Ps	Kg
17]	Compression - Out of Service	Ls	mm
18]	Squareness	E1	mm
19]	Coiling Direction (All Die springs are right hand coiling)	RH	

Spring Compression Table

Compression in % of Length (Lo)

Series	Load	Colour	Long Life	Medium Life	Average Life	Equivalent Standards
Power Max Spring						
P1	Extra Heavy Load	Grey	16%	18%	20%	
P2	Heavy Load	Pista Green	20%	22%	25%	
P3	Medium Load	Orange	25%	30%	34%	
P4	Light Load	Pink	32%	36%	40%	
Die Spring (Equivalent to ISO 10243)						
PGR	Light Load	Green	25%	30%	40%	ISO 10243
PBL	Medium Load	Blue	25%	30%	37.5%	ISO 10243
PRE	Heavy Load	Red	20%	25%	30%	ISO 10243
PYE	Extra Heavy Load	Yellow	17%	20%	25%	ISO 10243
Die Spring (Equivalent to JIS B 5012)						
PSF	Lightest Load	Yellow	40%	45%	50%	JIS B 5012
PSL	Light Load	Sky Blue	32%	36%	40%	JIS B 5012
PSM	Medium Load	Red	25.6%	28.8%	32%	JIS B 5012
PSH	Heavy Load	Dark Green	19.2%	21.6%	24%	JIS B 5012
PSB	Extra Heavy Load	Brown	16%	18%	20%	JIS B 5012
High Compression Die Spring						
PGL	Lightest Load	Pista	30%	40%	50%	
PSR	High Compression	Ivory	45%	50%	60%	
PTY	High Compression	Violet	45%	50%	60%	
Ultra Heavy Die Spring						
PUL	Ultra Load	Silver	10%	12%	15%	
PZZ	Ultra Load	Black	16%	18%	20%	

Tolerance

Sr. No.	Specification	Tolerance
1]	Spring Rate	+ / - 10 %
2]	Free Length	+ / - 1 % +/- 0.75 mm at least
3]	Squareness	0.03 x Lo Min 0.05 Lo Max

- * Outside diameter of Spring is less than the specified hole size(Dh)
- * Inside diameter of Spring is more than the specified Rod size (Dd)



Power Max Spring - Extra Heavy Load

Series P1 | Deflection - 20%

Colour : Grey



Pawan

P1-15				Max Life		Avg Life		Code
Do	di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(Kg)	(mm)	(Kg)	(mm)	
15	7.5	25	31.0	125.0	4.0	156.3	5.0	P1 -15-25
		30	26.0	124.8	4.8	156.0	6.0	P1 -15-30
		35	21.6	121.0	5.6	151.0	7.0	P1 -15-35
		40	17.6	112.6	6.4	140.8	8.0	P1 -15-40
		50	13.8	110.7	8.0	138.4	10.0	P1 -15-50
		55	12.5	110.0	8.8	137.5	11.0	P1 -15-55
		60	11.0	105.6	9.6	132.0	12.0	P1 -15-60
		65	10.1	105.0	10.4	131.3	13.0	P1 -15-65
		70	9.0	100.8	11.2	126.0	14.0	P1 -15-70
		75	8.0	96.0	12.0	120.0	15.0	P1 -15-75
		80	7.8	100.4	12.8	125.4	16.0	P1 -15-80
		90	7.0	100.8	14.4	126.0	18.0	P1 -15-90
100	6.2	99.5	16.0	124.4	20.0	P1 -15-100		

P1-25				Max Life		Avg Life		Code
Do	di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
25	12.5	25	76.2	304.8	4.0	381.0	5.0	P1 -25-25
		30	69.8	335.0	4.8	418.8	6.0	P1 -25-30
		35	59.6	333.8	5.6	417.2	7.0	P1 -25-35
		40	47.7	305.3	6.4	381.6	8.0	P1 -25-40
		50	39.5	316.0	8.0	395.0	10.0	P1 -25-50
		55	34.5	303.8	8.8	379.7	11.0	P1 -25-55
		60	30.1	288.5	9.6	360.6	12.0	P1 -25-60
		65	28.1	291.7	10.4	364.7	13.0	P1 -25-65
		70	24.6	275.5	11.2	344.4	14.0	P1 -25-70
		75	22.6	271.7	12.0	339.6	15.0	P1 -25-75
		80	22.0	281.2	12.8	351.5	16.0	P1 -25-80
		90	18.4	265.0	14.4	331.2	18.0	P1 -25-90
		100	16.7	267.2	16.0	334.0	20.0	P1 -25-100
		110	15.1	265.8	17.6	332.2	22.0	P1 -25-110
		125	13.1	262.0	20.0	327.5	25.0	P1 -25-125
		140	11.9	266.6	22.4	333.2	28.0	P1 -25-140
		150	9.9	237.6	24.0	297.0	30.0	P1 -25-150
175	9.5	266.0	28.0	332.5	35.0	P1 -25-175		
200	8.1	257.9	32.0	322.4	40.0	P1 -25-200		

P1-20				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
20	10	25	54.8	219.0	4.0	273.8	5.0	P1-20-25
		30	43.7	209.6	4.8	262.0	6.0	P1-20-30
		35	42.0	234.9	5.6	293.7	7.0	P1-20-35
		40	27.6	176.6	6.4	220.8	8.0	P1-20-40
		50	24.6	196.5	8.0	245.6	10.0	P1-20-50
		55	20.8	183.3	8.8	229.1	11.0	P1-20-55
		60	18.9	181.7	9.6	227.2	12.0	P1-20-60
		65	17.6	183.0	10.4	228.8	13.0	P1-20-65
		70	16.7	187.0	11.2	233.8	14.0	P1-20-70
		75	14.6	175.2	12.0	219.0	15.0	P1-20-75
		80	14.7	188.2	12.8	235.2	16.0	P1-20-80
		90	12.6	181.4	14.4	226.8	18.0	P1-20-90
		100	11.4	182.4	16.0	228.0	20.0	P1-20-100
		110	10.1	177.9	17.6	222.4	22.0	P1-20-110
		125	8.8	176.8	20.0	221.0	25.0	P1-20-125
140	7.6	170.2	22.4	212.8	28.0	P1-20-140		
150	7.1	170.9	24.0	213.6	30.0	P1-20-150		

P1-32				Max Life		Avg Life		CODE
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
32	15	40	96.2	615.9	6.4	769.8	8.0	P1 -32-40
		50	73.6	588.8	8.0	736.0	10.0	P1 -32-50
		55	63.8	561.6	8.8	702.0	11.0	P1 -32-55
		60	55.5	532.8	9.6	666.0	12.0	P1 -32-60
		65	53.3	554.1	10.4	692.6	13.0	P1 -32-65
		70	45.5	509.8	11.2	637.3	14.0	P1 -32-70
		75	45.0	540.4	12.0	675.5	15.0	P1 -32-75
		80	40.2	515.1	12.8	643.8	16.0	P1 -32-80
		90	35.7	514.1	14.4	642.6	18.0	P1 -32-90
		100	31.7	507.2	16.0	634.0	20.0	P1 -32-100
		110	27.9	491.0	17.6	613.8	22.0	P1 -32-110
		125	24.2	484.2	20.0	605.3	25.0	P1 -32-125
		140	21.1	473.1	22.4	591.4	28.0	P1 -32-140
		150	19.7	472.8	24.0	591.0	30.0	P1 -32-150
		175	16.7	467.6	28.0	584.5	35.0	P1 -32-175
		200	15.3	490.6	32.0	613.2	40.0	P1 -32-200

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)





Power Max Spring - Extra Heavy Load

Series P1 | Deflection - 20%

Colour : Grey



WIRE

P1-35				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
35	18	50	59.0	472.0	8.0	590.0	10.0	P1 -35-50
		55	54.0	475.2	8.8	594.0	11.0	P1 -35-55
		60	49.0	470.4	9.6	588.0	12.0	P1 -35-60
		65	44.0	457.6	10.4	572.0	13.0	P1 -35-65
		70	39.6	443.5	11.2	554.4	14.0	P1 -35-70
		75	35.0	420.0	12.0	525.0	15.0	P1 -35-75
		80	32.0	409.6	12.8	512.0	16.0	P1 -35-80
		90	0.0	0.0	14.4	0.0	18.0	P1 -35-90
		100	0.0	0.0	16.0	0.0	20.0	P1 -35-100

P1-38				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
38	18	50	83.3	666.0	8.0	832.5	10.0	P1 -38-50
		55	78.0	686.4	8.8	858.0	11.0	P1 -38-55
		60	70.0	672.0	9.6	840.0	12.0	P1 -38-60
		65	62.7	652.1	10.4	815.1	13.0	P1 -38-65
		70	55.8	624.5	11.2	780.6	14.0	P1 -38-70
		75	53.6	643.2	12.0	804.0	15.0	P1 -38-75
		80	49.3	631.6	12.8	789.4	16.0	P1 -38-80
		90	42.4	610.6	14.4	763.2	18.0	P1 -38-90
		100	37.6	601.6	16.0	752.0	20.0	P1 -38-100
		110	33.9	596.6	17.6	745.8	22.0	P1 -38-110
		125	33.1	661.6	20.0	827.0	25.0	P1 -38-138
		140	27.0	604.8	22.4	756.0	28.0	P1 -38-140
		150	24.5	588.0	24.0	735.0	30.0	P1 -38-150
		175	20.4	571.2	28.0	714.0	35.0	P1 -38-175
		200	17.8	569.6	32.0	712.0	40.0	P1 -38 200

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Power Max Spring - Heavy Load

Series P2 | Deflection - 25%

Colour : Pista Green



Pawan

P2-25-20				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
20	10	25	31.4	157.0	5.0	196.3	6.3	P2 -20-25
		30	27.8	167.0	6.0	208.7	7.5	P2 -20-30
		35	24.0	168.0	7.0	210.0	8.8	P2 -20-35
		40	18.7	149.6	8.0	187.0	10.0	P2 -20-40
		50	14.9	149.1	10.0	186.4	12.5	P2 -20-50
		55	13.5	148.5	11.0	185.6	13.8	P2 -20-55
		60	12.3	147.6	12.0	184.5	15.0	P2 -20-60
		65	10.8	140.1	13.0	175.2	16.3	P2 -20-65
		70	9.6	134.4	14.0	168.0	17.5	P2 -20-70
		75	9.1	136.5	15.0	170.6	18.8	P2 -20-75
		80	8.5	136.0	16.0	170.0	20.0	P2 -20-80
		90	7.5	135.0	18.0	168.8	22.5	P2 -20-90
		100	6.7	134.6	20.0	168.3	25.0	P2 -20-100
		110	6.1	134.2	22.0	167.8	27.5	P2 -20-110
125	5.4	135.0	25.0	168.8	31.3	P2 -20-125		
140	4.9	137.2	28.0	171.5	35.0	P2 -20-140		
150	4.4	132.0	30.0	165.0	37.5	P2 -20-150		

P2-25-32				Max Life		Avg Life		Code
do	di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
32	15	40	55.4	443.2	8.0	554.0	10.0	P2 - 32-40
		50	38.7	387.2	10.0	484.0	12.5	P2 - 32-50
		55	35.8	393.4	11.0	491.7	13.8	P2 - 32-55
		60	32.5	390.0	12.0	487.5	15.0	P2 - 32-60
		65	30.1	391.8	13.0	489.8	16.3	P2 - 32-65
		70	27.0	377.6	14.0	472.0	17.5	P2 - 32-70
		75	24.9	373.5	15.0	466.9	18.8	P2 - 32-75
		80	22.5	359.8	16.0	449.8	20.0	P2 - 32-80
		90	19.9	358.6	18.0	448.2	22.5	P2 - 32-90
		100	18.1	362.0	20.0	452.5	25.0	P2 - 32-100
		110	15.7	345.8	22.0	432.3	27.5	P2 - 32-110
		125	13.7	342.5	25.0	428.1	31.3	P2 - 32-132
		140	12.2	342.7	28.0	428.4	35.0	P2 - 32-140
		150	11.3	337.5	30.0	421.9	37.5	P2 - 32-150
		175	9.9	345.1	35.0	431.4	43.8	P2 - 32-175
		200	8.7	348.0	40.0	435.0	50.0	P2 - 32- 200

P2-25-25				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
25	12.5	25	61.1	305.3	5.0	381.6	6.3	P2 - 25-25
		30	42.5	254.8	6.0	318.5	7.5	P2 - 25-30
		35	35.6	249.3	7.0	311.6	8.8	P2 - 25-35
		40	28.8	230.2	8.0	287.7	10.0	P2 - 25-40
		50	21.1	211.0	10.0	263.8	12.5	P2 - 25-50
		55	18.2	200.2	11.0	250.3	13.8	P2 - 25-55
		60	16.6	199.4	12.0	249.3	15.0	P2 - 25-60
		65	16.1	209.2	13.0	261.5	16.3	P2 - 25-65
		70	13.9	194.0	14.0	242.6	17.5	P2 - 25-70
		75	13.9	209.1	15.0	261.4	18.8	P2 - 25-75
		80	12.0	192.0	16.0	240.0	20.0	P2 - 25-80
		90	10.6	190.8	18.0	238.5	22.5	P2 - 25-90
		100	9.5	190.4	20.0	238.0	25.0	P2 - 25-100
		110	8.8	193.8	22.0	242.3	27.5	P2 - 25-110
		125	7.6	190.8	25.0	238.4	31.3	P2 - 25-25
		140	6.7	188.2	28.0	235.2	35.0	P2 - 25-40
150	6.3	189.9	30.0	237.4	37.5	P2 - 25-50		
175	5.3	186.6	35.0	233.2	43.8	P2 - 25-75		
200	4.8	190.0	40.0	237.5	50.0	P2 - 25-100		

P2-25-35				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
35	18	50	38.0	380.0	10.0	475.0	12.5	P2 - 35-50
		55	35.0	385.0	11.0	481.3	13.8	P2 - 35-55
		60	30.6	367.2	12.0	459.0	15.0	P2 - 35-60
		65	26.5	344.5	13.0	430.6	16.3	P2 - 35-65
		70	25.6	358.4	14.0	448.0	17.5	P2 - 35-70
		75	23.0	345.0	15.0	431.3	18.8	P2 - 35-75
		80	21.4	342.4	16.0	428.0	20.0	P2 - 35-80
		90	18.0	324.0	18.0	405.0	22.5	P2 - 35-90
		100	16.1	322.0	20.0	402.5	25.0	P2 - 35-100
		110	21.6	475.2	22.0	594.0	27.5	P2 - 35-110
		125	18.2	455.0	25.0	568.8	31.3	P2 - 35-135
		140	16.6	464.8	28.0	581.0	35.0	P2 - 35-140
		150	15.2	456.0	30.0	570.0	37.5	P2 - 35-150
		175	12.8	448.0	35.0	560.0	43.8	P2 - 35-175
		200	12.0	480.0	40.0	600.0	50.0	P2 - 35- 200

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)





Power Max Spring - Heavy Load

Series P2 | Deflection - 25%

Colour : Pista Green



WIRE

P2-25-38				Max Life		Avg Life		Code
do	di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
38	18	50	51.5	515.0	10.0	643.8	12.5	P2 - 38-50
		55	47.6	523.6	11.0	654.5	13.8	P2 - 38-55
		60	42.0	504.0	12.0	630.0	15.0	P2 - 38-60
		65	39.2	509.6	13.0	637.0	16.3	P2 - 38-65
		70	34.0	476.0	14.0	595.0	17.5	P2 - 38-70
		75	33.6	504.0	15.0	630.0	18.8	P2 - 38-75
		80	32.7	523.2	16.0	654.0	20.0	P2 - 38-80
		90	26.4	475.2	18.0	594.0	22.5	P2 - 38-90
		100	23.0	460.0	20.0	575.0	25.0	P2 - 38-100
		110	21.6	475.2	22.0	594.0	27.5	P2 - 38-110
		125	18.2	455.0	25.0	568.8	31.3	P2 - 38-138
		140	16.6	464.8	28.0	581.0	35.0	P2 - 38-140
		150	15.2	456.0	30.0	570.0	37.5	P2 - 38-150
		175	12.8	448.0	35.0	560.0	43.8	P2 - 38-175
200	12.0	480.0	40.0	600.0	50.0	P2 - 38-200		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Power Max Spring - Medium Load

Series P3 | Deflection - 34%

Colour : Orange



P35-20				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
20	10	25	17.1	119.4	7.0	149.3	8.8	P3-20-25
		30	13.6	113.8	8.4	142.3	10.5	P3-20-30
		35	11.3	110.6	9.8	138.3	12.3	P3-20-35
		40	9.7	108.1	11.2	135.1	14.0	P3-20-40
		50	6.9	96.6	14.0	120.8	17.5	P3-20-50
		55	6.4	98.6	15.4	123.2	19.3	P3-20-55
		60	5.8	97.8	16.8	122.2	21.0	P3-20-60
		65	5.3	97.2	18.2	121.5	22.8	P3-20-65
		70	5.1	100.0	19.6	125.0	24.5	P3-20-70
		75	4.4	93.0	21.0	116.3	26.3	P3-20-75
		80	4.3	96.3	22.4	120.4	28.0	P3-20-80
		90	3.7	94.0	25.2	117.5	31.5	P3-20-90
		100	3.2	90.7	28.0	113.4	35.0	P3-20-100
		110	2.9	89.9	30.8	112.4	38.5	P3-20-110
		125	2.6	90.3	35.0	112.9	43.8	P3-20-125
140	2.3	89.4	39.2	111.7	49.0	P3-20-140		
150	2.1	89.9	42.0	112.4	52.5	P3-20-150		

P35-32				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
32	15	50	17.01	238.1	14.0	297.7	17.5	P3-32-50
		55	15.17	233.6	15.4	292.0	19.3	P3-32-55
		60	13.24	222.4	16.8	278.0	21.0	P3-32-60
		65	12.79	232.8	18.2	291.0	22.8	P3-32-65
		70	11.54	226.2	19.6	282.7	24.5	P3-32-70
		75	10.27	215.7	21.0	269.6	26.3	P3-32-75
		80	9.25	207.2	22.4	259.0	28.0	P3-32-80
		90	8.64	217.7	25.2	272.2	31.5	P3-32-90
		100	7.62	213.4	28.0	266.7	35.0	P3-32-100
		110	6.90	212.5	30.8	265.7	38.5	P3-32-110
		125	6.02	210.7	35.0	263.4	43.8	P3-32-132
		140	5.70	223.4	39.2	279.3	49.0	P3-32-140
		150	4.86	204.1	42.0	255.2	52.5	P3-32-150
		175	4	196.0	49.0	245.0	61.3	P3-32-175
		200	3.5	196.0	56.0	245.0	70.0	P3-32-200

P35-25				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
25	12.5	25	26.6	186.0	7.0	232.5	8.8	P3-25-25
		30	20.0	168.3	8.4	210.3	10.5	P3-25-30
		35	16.6	163.1	9.8	203.8	12.3	P3-25-35
		40	14.0	157.2	11.2	196.6	14.0	P3-25-40
		50	10.6	147.7	14.0	184.6	17.5	P3-25-50
		55	9.4	144.8	15.4	181.0	19.3	P3-25-55
		60	8.2	137.4	16.8	171.8	21.0	P3-25-60
		65	7.7	140.9	18.2	176.1	22.8	P3-25-65
		70	7.0	138.0	19.6	172.5	24.5	P3-25-70
		75	6.6	138.6	21.0	173.3	26.3	P3-25-75
		80	6.0	134.4	22.4	168.0	28.0	P3-25-80
		90	5.4	134.8	25.2	168.5	31.5	P3-25-90
		100	4.7	132.4	28.0	165.6	35.0	P3-25-100
		110	4.2	129.4	30.8	161.7	38.5	P3-25-110
		125	3.9	135.1	35.0	168.9	43.8	P3-25-125
140	3.5	137.2	39.2	171.5	49.0	P3-25-140		
150	3.1	130.2	42.0	162.8	52.5	P3-25-150		
175	2.9	142.1	49.0	177.6	61.3	P3-25-175		
200	2.2	123.2	56.0	154.0	70.0	P3-25-200		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Power Max Spring - Light Load

Series P4 | Deflection - 40%

Colour : Pink



P40-20				Max Life		Avg Life		Code
Do	DI	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
20	10	25	5.0	40.0	8.0	50.0	10.0	P4-20-25
		30	4.7	45.1	9.6	56.4	12.0	P4-20-30
		35	4.5	50.4	11.2	63.0	14.0	P4-20-35
		40	4.1	52.5	12.8	65.6	16.0	P4-20-40
		50	3.7	59.2	16.0	74.0	20.0	P4-20-50
		55	3.4	60.2	17.6	75.2	22.0	P4-20-55
		60	3.1	59.9	19.2	74.9	24.0	P4-20-60
		65	2.8	58.7	20.8	73.3	26.0	P4-20-65
		70	2.7	60.3	22.4	75.3	28.0	P4-20-70
		75	2.5	59.0	24.0	73.8	30.0	P4-20-75
		80	2.3	58.9	25.6	73.6	32.0	P4-20-80
		90	2.0	57.6	28.8	72.0	36.0	P4-20-90
		100	1.8	58.6	32.0	73.2	40.0	P4-20-100
		110	1.6	56.3	35.2	70.4	44.0	P4-20-110
		125	1.4	57.2	40.0	71.5	50.0	P4-20-125
140	1.3	58.2	44.8	56.0	56.0	P4-20-140		
150	1.2	55.7	48.0	69.6	60.0	P4-20-150		

P40-32				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
32	15	40	9.2	117.8	12.8	147.2	16.0	P4-32-40
		50	8.4	133.8	16.0	167.2	20.0	P4-32-50
		55	7.8	137.3	17.6	171.6	22.0	P4-32-55
		60	6.1	116.4	19.2	145.4	24.0	P4-32-60
		65	6.2	129.2	20.8	161.5	26.0	P4-32-65
		70	5.2	116.5	22.4	145.6	28.0	P4-32-70
		75	5.3	126.0	24.0	157.5	30.0	P4-32-75
		80	4.6	117.2	25.6	146.6	32.0	P4-32-80
		90	3.9	112.3	28.8	140.4	36.0	P4-32-90
		100	3.6	114.2	32.0	142.8	40.0	P4-32-100
		110	3.2	112.6	35.2	140.8	44.0	P4-32-110
		125	3.0	120.0	40.0	150.0	50.0	P4-32-132
		140	2.8	123.2	44.8	154.0	56.0	P4-32-140
		150	2.5	120.0	48.0	150.0	60.0	P4-32-150
		175	2.3	126.0	56.0	157.5	70.0	P4-32-175
200	2.0	128.0	64.0	160.0	80.0	P4-32-200		

P40-25				Max Life		Avg Life		Code
Do	Di	Lo	Load Rate	Pm	Lm	Pa	La	
(mm)	(mm)	(mm)	(Kg)	(kg)	(mm)	(kg)	(mm)	
25	12.5	25	12.0	96.0	8.0	120.0	10.0	P4-25-25
		30	10.0	96.0	9.6	120.0	12.0	P4-25-30
		35	8.0	89.6	11.2	112.0	14.0	P4-25-35
		40	7.1	90.88	12.8	113.6	16.0	P4-25-40
		50	5.9	94.4	16.0	118.0	20.0	P4-25-50
		55	4.4	77.3	17.6	96.6	22.0	P4-25-55
		60	4.1	78.0	19.2	97.4	24.0	P4-25-60
		65	3.8	78.0	20.8	97.5	26.0	P4-25-65
		70	3.4	75.7	22.4	94.6	28.0	P4-25-70
		75	3.1	75.4	24.0	94.2	30.0	P4-25-75
		80	2.9	74.8	25.6	93.4	32.0	P4-25-80
		90	2.5	73.2	28.8	91.4	36.0	P4-25-90
		100	2.3	74.2	32.0	92.8	40.0	P4-25-100
		110	2.1	73.9	35.2	92.4	44.0	P4-25-110
		125	1.8	72.0	40.0	90.0	50.0	P4-25-125
140	1.7	73.9	44.8	92.4	56.0	P4-25-140		
150	1.5	72.0	48.0	90.0	60.0	P4-25-150		
175	1.2	67.2	56.0	84.0	70.0	P4-25-175		
200	0.9	57.6	64.0	72.0	80.0	P4-25-200		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Light Load Springs

Equivalent to ISO 10243

Colour - Green

PGR



Pawan

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
10	5	25	1.0	6.4	6.3	10.2	10.0	PGR 10 X 025		
		32	0.9	6.9	8.0	11.1	12.8	PGR 10 X 032		
		38	0.7	6.6	9.5	10.5	15.2	PGR 10 X 038		
		44	0.6	6.7	11.0	10.8	17.6	PGR 10 X 044		
		51	0.5	6.5	12.8	10.4	20.4	PGR 10 X 051		
		64	0.4	6.9	16.0	11.2	25.6	PGR 10 X 064		
		76	0.3	6.1	19.0	9.9	30.4	PGR 10 X 076		
		305	0.1	8.4	76.3	13.7	122.0	PGR 10 X 305		
13	6.3	25	1.8	11.4	6.3	18.3	10.0	PGR 13 X 025		
		32	1.7	13.4	8.0	21.4	12.8	PGR 13 X 032		
		38	1.4	13.1	9.5	21.1	15.2	PGR 13 X 038		
		44	1.2	13.5	11.0	21.7	17.6	PGR 13 X 044		
		51	1.2	14.8	12.8	23.8	20.4	PGR 13 X 051		
		64	0.9	15.0	16.0	24.3	25.6	PGR 13 X 064		
		76	0.7	13.7	19.0	22.0	30.4	PGR 13 X 076		
		89	0.6	12.2	22.3	19.6	35.6	PGR 13 X 089		
		102	0.4	10.5	25.5	17.0	40.8	PGR 13 X 102		
		305	0.06	10.7	76.3	17.4	122.0	PGR 13 X 305		
		16	8	25	2.4	14.9	6.3	23.9	10.0	PGR 16 X 025
				32	2.3	18.6	8.0	29.9	12.8	PGR 16 X 032
38	2.0			18.6	9.5	29.9	15.2	PGR 16 X 038		
44	1.7			19.1	11.0	30.7	17.6	PGR 16 X 044		
51	1.6			20.4	12.8	32.6	20.4	PGR 16 X 051		
64	1.1			17.4	16.0	27.9	25.6	PGR 16 X 064		
76	1.0			19.4	19.0	31.0	30.4	PGR 16 X 076		
89	0.9			19.4	22.3	31.2	35.6	PGR 16 X 089		
102	0.8			20.1	25.5	32.4	40.8	PGR 16 X 102		
115	0.7			19.3	28.8	31.0	46.0	PGR 16 X 115		
305	0.3			19.1	76.3	31.1	122.0	PGR 16 X 305		
20	10			25	5.7	35.6	6.3	56.9	10.0	PGR 20 X 025
		32	4.6	36.7	8.0	58.8	12.8	PGR 20 X 032		
		38	3.4	32.2	9.5	51.6	15.2	PGR 20 X 038		
		44	3.1	33.7	11.0	53.9	17.6	PGR 20 X 044		
		51	2.5	31.7	12.8	51.0	20.4	PGR 20 X 051		
		64	2.0	32.6	16.0	52.2	25.6	PGR 20 X 064		
		76	1.6	31.0	19.0	49.6	30.4	PGR 20 X 076		
		89	1.4	31.6	22.3	50.8	35.6	PGR 20 X 089		
		102	1.2	31.1	25.5	50.0	40.8	PGR 20 X 102		
		115	1.1	31.9	28.8	51.1	46.0	PGR 20 X 115		
		127	1.0	30.5	31.8	49.3	50.8	PGR 20 X 127		
		139	0.9	29.5	34.8	47.9	56.0	PGR 20 X 139		
		152	0.8	28.9	38.0	46.5	60.8	PGR 20 X 152		
		305	0.4	30.5	76.3	49.8	122.0	PGR 20 X 305		
25	12.5	25	10.2	63.8	6.3	102.0	10.0	PGR 25 X 025		
		32	8.2	65.5	8.0	104.9	12.8	PGR 25 X 032		
		38	6.3	60.0	9.5	96.1	15.2	PGR 25 X 038		
		44	5.4	59.3	11.0	95.0	17.6	PGR 25 X 044		
		51	4.5	57.1	12.8	91.6	20.4	PGR 25 X 051		
		64	3.6	57.4	16.0	91.9	25.6	PGR 25 X 064		
		76	2.9	54.2	19.0	86.8	30.4	PGR 25 X 076		
		89	2.4	54.3	22.3	87.1	35.6	PGR 25 X 089		
		102	2.2	54.8	25.5	87.8	40.8	PGR 25 X 102		
		115	1.9	54.6	28.8	87.7	46.0	PGR 25 X 115		
		127	1.7	54.0	31.8	86.5	50.8	PGR 25 X 127		
		139	1.6	54.2	34.8	87.4	56.0	PGR 25 X 139		

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
25	12.5	152	1.4	54.0	38.0	86.8	60.8	PGR 25 X 152		
		178	1.3	56.5	44.5	90.8	71.2	PGR 25 X 178		
		203	1.1	53.8	50.8	86.1	81.2	PGR 25 X 203		
		305	0.7	54.1	76.3	87.1	122.0	PGR 25 X 305		
32	16	38	9.6	91.0	9.5	145.8	15.2	PGR 32 X 038		
		44	8.1	89.1	11.0	142.7	17.6	PGR 32 X 044		
		51	6.8	87.1	12.8	139.4	20.4	PGR 32 X 051		
		64	5.4	86.4	16.0	138.4	25.6	PGR 32 X 064		
		76	4.5	85.1	19.0	136.5	30.4	PGR 32 X 076		
		89	3.8	84.3	22.3	135.0	35.6	PGR 32 X 089		
		102	3.3	83.1	25.5	133.2	40.8	PGR 32 X 102		
		115	3.0	84.8	28.8	136.1	46.0	PGR 32 X 115		
		127	2.6	81.0	31.8	129.5	50.8	PGR 32 X 127		
		139	2.3	81.3	34.8	131.4	56.0	PGR 32 X 139		
		152	2.2	83.2	38.0	133.3	60.8	PGR 32 X 152		
		178	1.9	82.3	44.5	132.2	71.2	PGR 32 X 178		
		203	1.6	81.7	50.8	130.9	81.2	PGR 32 X 203		
		254	1.3	80.6	63.5	129.5	101.6	PGR 32 X 254		
305	1.1	80.1	76.3	128.2	122.0	PGR 32 X 305				
40	20	51	9.4	119.6	12.8	191.5	20.4	PGR 40 X 051		
		64	7.4	119.0	16.0	190.6	25.6	PGR 40 X 064		
		76	6.4	122.0	19.0	195.3	30.4	PGR 40 X 076		
		89	5.2	115.7	22.3	185.2	35.6	PGR 40 X 089		
		102	4.4	111.7	25.5	178.9	40.8	PGR 40 X 102		
		115	4.0	115.9	28.8	185.8	46.0	PGR 40 X 115		
		127	3.8	119.7	31.8	191.8	50.8	PGR 40 X 127		
		139	3.3	113.3	34.8	182.8	56.0	PGR 40 X 139		
		152	2.9	108.3	38.0	173.6	60.8	PGR 40 X 152		
		178	2.6	114.4	44.5	183.0	71.2	PGR 40 X 178		
		203	2.3	117.2	50.8	188.0	81.2	PGR 40 X 203		
		254	1.7	109.9	63.5	176.2	101.6	PGR 40 X 254		
		305	1.5	114.4	76.3	184.2	122.0	PGR 40 X 305		
		50	25	64	15.9	254.4	16.0	407.0	25.6	PGR 50 X 064
76	12.8			243.2	19.0	389.1	30.4	PGR 50 X 076		
89	11.1			247.0	22.3	395.2	35.6	PGR 50 X 089		
102	9.6			244.8	25.5	391.7	40.8	PGR 50 X 102		
115	8.3			238.6	28.8	381.8	46.0	PGR 50 X 115		
127	7.2			228.6	31.8	365.8	50.8	PGR 50 X 127		
139	6.8			236.3	34.8	380.8	56.0	PGR 50 X 139		
152	6.1			231.8	38.0	370.9	60.8	PGR 50 X 152		
178	5.3			235.9	44.5	377.4	71.2	PGR 50 X 178		
203	4.5			228.4	50.8	365.4	81.2	PGR 50 X 203		
50	25	254	3.6	228.6	63.5	365.8	101.6	PGR 50 X 254		
		305	2.9	221.1	76.3	353.8	122.0	PGR 50 X 305		
		63	38	76	19.3	366.7	19.0	586.7	30.4	PGR 63 X 076
				89	16.1	358.2	22.3	573.2	35.6	PGR 63 X 089
102	13.4			341.7	25.5	546.7	40.8	PGR 63 X 102		
115	11.8			339.3	28.8	542.8	46.0	PGR 63 X 115		
127	10.5			333.4	31.8	533.4	50.8	PGR 63 X 127		
152	8.6			326.8	38.0	522.9	60.8	PGR 63 X 152		
178	7.3			324.9	44.5	519.8	71.2	PGR 63 X 178		
203	6.3			319.7	50.8	511.6	81.2	PGR 63 X 203		
254	4.8			304.8	63.5	487.7	101.6	PGR 63 X 254		
305	3.9			297.4	76.3	475.8	122.0	PGR 63 X 305		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)





PBL

Medium Load Springs Equivalent to ISO 10243 Colour - Blue



Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
10	5	25	1.6	10.2	6.3	15.3	9.4	PBL 10 X 025
		32	1.3	10.6	8.0	15.9	12.0	PBL 10 X 032
		38	1.2	11.5	9.5	17.3	14.3	PBL 10 X 038
		44	1.1	11.6	11.0	17.3	16.5	PBL 10 X 044
		51	0.9	11.5	12.8	17.3	19.1	PBL 10 X 051
		64	0.8	12.2	16.0	18.4	24.0	PBL 10 X 064
		76	0.5	10.3	19.0	15.4	28.5	PBL 10 X 076
		305	0.2	12.2	76.3	18.7	114.4	PBL 10 X 305
13	6.3	25	3.1	19.1	6.3	28.8	9.4	PBL 13 X 025
		32	2.5	20.2	8.0	30.4	12.0	PBL 13 X 032
		38	2.2	20.7	9.5	31.2	14.3	PBL 13 X 038
		44	1.9	20.7	11.0	31.1	16.5	PBL 13 X 044
		51	1.6	20.1	12.8	30.2	19.1	PBL 13 X 051
		64	1.2	19.7	16.0	29.6	24.0	PBL 13 X 064
		76	1.0	19.8	19.0	29.7	28.5	PBL 13 X 076
		89	0.9	18.9	22.3	28.7	33.4	PBL 13 X 089
		102	0.6	16.3	25.5	24.6	38.3	PBL 13 X 102
		305	0.2	16.0	76.3	24.5	114.4	PBL 13 X 305
16	8	25	5.0	31.4	6.3	47.3	9.4	PBL 16 X 025
		32	3.8	30.2	8.0	45.4	12.0	PBL 16X 032
		38	3.5	32.8	9.5	49.5	14.3	PBL 16 X 038
		44	3.1	33.7	11.0	50.5	16.5	PBL 16 X 044
		51	2.7	34.3	12.8	51.4	19.1	PBL 16 X 051
		64	2.1	33.4	16.0	50.2	24.0	PBL 16 X 064
		76	1.8	34.4	19.0	51.7	28.5	PBL 16 X 076
		89	1.6	34.5	22.3	51.8	33.4	PBL 16 X 089
		102	1.4	34.9	25.5	52.7	38.3	PBL 16 X 102
		115	1.2	34.5	28.8	51.9	43.1	PBL 16 X 115
		305	0.5	36.6	76.3	56.0	114.4	PBL 16 X 305
		20	10	25	10.0	62.4	6.3	93.9	9.4	PBL 20 X 025
32	7.4			59.2	8.0	88.8	12.0	PBL 20 X 032
38	5.7			54.2	9.5	81.7	14.3	PBL 20 X 038
44	4.8			53.2	11.0	80.0	16.5	PBL 20 X 044
51	4.3			54.2	12.8	81.2	19.1	PBL 20 X 051
64	3.3			52.6	16.0	79.1	24.0	PBL 20 X 064
76	2.6			48.6	19.0	72.9	28.5	PBL 20 X 076
89	2.2			49.8	22.3	75.0	33.4	PBL 20 X 089
102	2.0			51.3	25.5	77.3	38.3	PBL 20 X 102
115	1.8			52.9	28.8	79.6	43.1	PBL 20 X 115
127	1.7			53.7	31.8	88.6	47.6	PBL 20 X 127
139	1.5			53.5	34.8	80.9	52.5	PBL 20 X 139
152	1.3			50.9	38.0	76.1	57.0	PBL 20 X 152
305	0.6			47.3	76.3	71.2	114.4	PBL 20 X 305
25	12.5			25	15.0	93.7	6.3	141.0	9.4	PBL 25 X 025
		32	12.0	96.2	8.0	144.4	12.0	PBL 25 X 032
		38	9.5	90.1	9.5	135.7	14.3	PBL 25 X 038
		44	8.2	90.6	11.0	136.0	16.5	PBL 25 X 044
		51	7.0	89.1	12.8	133.6	19.1	PBL 25 X 051
		64	5.4	86.4	16.0	129.7	24.0	PBL 25 X 064
		76	4.4	83.6	19.0	125.6	28.5	PBL 25 X 076
		89	3.9	86.6	22.3	130.2	33.4	PBL 25 X 089
		102	3.4	85.7	25.5	128.9	38.3	PBL 25 X 102
		115	2.9	81.9	28.8	123.1	43.1	PBL 25 X 115
		127	2.6	83.8	31.8	125.8	47.6	PBL 25 X 127
		139	2.4	82.0	34.8	124.2	52.5	PBL 25 X 139

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
25	12.5	152	2.1	80.6	38.0	121.0	57.0	PBL 25 X 152
		178	1.8	80.5	44.5	121.3	66.8	PBL 25 X 178
		203	1.6	81.7	50.8	122.6	76.1	PBL 25 X 203
		305	1.0	79.3	76.3	119.0	114.4	PBL 25 X 305
32	16	38	18.9	179.3	9.5	269.9	14.3	PBL 32 X 038
		44	16.1	177.2	11.0	265.9	16.5	PBL 32 X 044
		51	13.7	174.2	12.8	261.0	19.1	PBL 32 X 051
		64	10.1	161.4	16.0	242.4	24.0	PBL 32 X 064
		76	8.2	156.0	19.0	234.0	28.5	PBL 32 X 076
		89	7.1	156.9	22.3	235.4	33.4	PBL 32 X 089
		102	6.0	152.7	25.5	229.7	38.3	PBL 32 X 102
		115	5.3	150.9	28.8	226.4	43.1	PBL 32 X 115
		127	4.6	144.8	31.8	217.5	47.6	PBL 32 X 127
		139	4.3	149.8	34.8	226.5	52.5	PBL 32 X 139
		152	3.9	146.3	38.0	219.8	57.0	PBL 32 X 152
		178	3.3	147.3	44.5	221.4	66.8	PBL 32 X 178
		203	2.9	149.2	50.8	224.3	76.1	PBL 32 X 203
254	2.2	138.4	63.5	208.0	95.3	PBL 32 X 254		
305	1.9	141.8	76.3	213.6	114.4	PBL 32 X 305		
40	20	51	18.5	236.1	12.8	353.8	19.1	PBL 40 X 051
		64	14.3	228.5	16.0	342.7	24.0	PBL 40 X 064
		76	11.0	209.2	19.0	314.0	28.5	PBL 40 X 076
		89	9.3	205.8	22.3	309.0	33.4	PBL 40 X 089
		102	8.3	210.6	25.5	316.4	38.3	PBL 40 X 102
		115	7.3	210.5	28.8	315.7	43.1	PBL 40 X 115
		127	6.4	202.9	31.8	304.5	47.6	PBL 40 X 127
		139	5.9	203.6	34.8	307.9	52.5	PBL 40 X 139
		152	5.3	199.9	38.0	300.0	57.0	PBL 40 X 152
		178	4.5	199.8	44.5	300.5	66.8	PBL 40 X 178
		203	3.7	189.8	50.8	284.9	76.1	PBL 40 X 203
		254	3.1	194.9	63.5	292.6	95.3	PBL 40 X 254
305	2.5	190.6	76.3	287.0	114.4	PBL 40 X 305		
50	25	64	21.3	341.0	16.0	511.0	24.0	PBL 50 X 064
		76	17.1	325.0	19.0	487.0	28.5	PBL 50 X 076
		89	14.3	319.0	22.3	478.0	33.4	PBL 50 X 089
		102	12.1	309.0	25.5	463.0	38.3	PBL 50 X 102
		115	10.8	311.0	28.8	465.0	43.1	PBL 50 X 115
		127	9.9	315.0	31.8	471.0	47.6	PBL 50 X 127
		139	8.9	312.0	35.0	467.0	52.5	PBL 50 X 139
		152	8.2	312.0	38.0	467.0	57.0	PBL 50 X 152
		178	7.1	316.0	44.5	474.0	66.8	PBL 50 X 178
		203	6.1	310.0	50.8	464.0	76.1	PBL 50 X 203
		229	5.2	298.0	57.3	447.0	85.9	PBL 50 X 229
		254	4.5	286.0	63.5	429.0	95.3	PBL 50 X 254
		305	3.9	298.0	76.3	446.0	114.4	PBL 50 X 305
		63	38	76	31.8	604.0	19.0	906.0	28.5	PBL 63 X 076
89	26.5			591.0	22.3	885.0	33.4	PBL 63 X 089
102	22.5			574.0	25.5	862.0	38.3	PBL 63 X 102
115	19.1			550.0	28.8	823.0	43.1	PBL 63 X 115
127	17.1			544.0	31.8	814.0	47.6	PBL 63 X 127
152	13.9			528.0	38.0	792.0	57.0	PBL 63 X 152
178	11.6			516.0	44.5	775.0	66.8	PBL 63 X 178
203	10.2			518.0	50.8	776.0	76.1	PBL 63 X 203
229	9.1			521.0	57.3	782.0	85.9	PBL 63 X 229
254	8.0			508.0	63.5	762.0	95.3	PBL 63 X 254
305	6.6			504.0	76.3	755.0	114.4	PBL 63 X 305

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Heavy Load Springs

Equivalent to ISO 10243

Colour - Red

PRE



Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
10	5	25	2.3	11.3	5.0	16.9	7.5	PRE 10 X 025
		32	1.8	11.4	6.4	17.1	9.6	PRE 10 X 032
		38	1.7	13.2	7.6	19.9	11.4	PRE 10 X 038
		44	1.5	13.5	8.8	20.2	13.2	PRE 10 X 044
		51	1.3	13.3	10.2	20.0	15.3	PRE 10 X 051
		64	1.1	14.0	12.8	20.9	19.2	PRE 10 X 064
		76	0.8	11.6	15.2	17.4	22.8	PRE 10 X 076
		305	0.2	12.8	61.0	19.6	91.5	PRE 10 X 305
13	6.3	25	4.3	21.5	5.0	32.2	7.5	PRE 13 X 025
		32	3.4	21.6	6.4	32.5	9.6	PRE 13 X 032
		38	3.0	22.6	7.6	34.1	11.4	PRE 13 X 038
		44	2.5	22.0	8.8	33.2	13.2	PRE 13 X 044
		51	2.0	20.3	10.2	30.1	15.3	PRE 13 X 051
		64	1.5	19.6	12.8	29.4	19.2	PRE 13 X 064
		76	1.3	20.4	15.2	30.7	22.8	PRE 13 X 076
		89	1.2	20.6	17.8	31.0	26.7	PRE 13 X 089
		102	0.9	17.3	20.4	26.2	30.6	PRE 13 X 102
		305	0.3	17.1	61.0	26.1	91.5	PRE 13 X 305
16	8	25	7.7	38.6	5.0	57.9	7.5	PRE 16 X 025
		32	5.4	34.4	6.4	51.7	9.6	PRE 16 X 032
		38	4.9	37.5	7.6	56.4	11.4	PRE 16 X 038
		44	4.4	38.4	8.8	57.6	13.2	PRE 16 X 044
		51	3.8	38.6	10.2	57.9	15.3	PRE 16 X 051
		64	3.1	39.6	12.8	59.4	19.2	PRE 16 X 064
		76	2.6	39.8	15.2	59.8	22.8	PRE 16 X 076
		89	2.2	39.3	17.8	59.1	26.7	PRE 16 X 089
		102	2.0	40.0	20.4	60.3	30.6	PRE 16 X 102
		115	1.6	36.8	23.0	55.3	34.5	PRE 16 X 115
		305	0.7	43.9	61.0	66.3	91.5	PRE 16 X 305
20	10	25	22.0	110.2	5.0	165.2	7.5	PRE 20 X 025
		32	17.1	109.6	6.4	164.5	9.6	PRE 20 X 032
		38	13.2	100.5	7.6	150.0	11.4	PRE 20 X 038
		44	11.4	100.5	8.8	150.8	13.2	PRE 20 X 044
		51	9.6	97.7	10.2	146.7	15.3	PRE 20 X 051
		64	7.4	94.1	12.8	141.2	19.2	PRE 20 X 064
		76	6.1	92.4	15.2	138.8	22.8	PRE 20 X 076
		89	5.2	91.7	17.8	137.5	26.7	PRE 20 X 089
		102	4.5	91.8	20.4	138.0	30.6	PRE 20 X 102
		115	3.9	89.9	23.0	135.2	34.5	PRE 20 X 115
		127	3.5	88.1	25.4	132.5	38.1	PRE 20 X 127
		139	3.2	87.8	27.8	132.8	42.0	PRE 20 X 139
		152	2.9	87.2	30.4	131.2	45.6	PRE 20 X 152
		305	1.5	92.7	61.0	140.0	91.5	PRE 20 X 305
25	12.5	25	38.3	191.3	5.0	286.9	7.5	PRE 25 X 025
		32	30.3	193.9	6.4	290.8	9.6	PRE 25 X 032
		38	22.3	169.7	7.6	254.7	11.4	PRE 25 X 038
		44	19.1	167.8	8.8	251.7	13.2	PRE 25 X 044
		51	15.9	162.3	10.2	243.5	15.3	PRE 25 X 051
		64	12.5	160.5	12.8	240.9	19.2	PRE 25 X 064
		76	10.1	153.4	15.2	230.2	22.8	PRE 25 X 076
		89	8.6	152.4	17.8	228.8	26.7	PRE 25 X 089
		102	7.4	151.8	20.4	227.9	30.6	PRE 25 X 102
		115	6.6	152.5	23.0	228.8	34.5	PRE 25 X 115
		127	5.9	149.4	25.4	224.2	38.1	PRE 25 X 127
		139	5.4	149.3	27.8	225.7	42.0	PRE 25 X 139

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
25	12.5	152	4.9	148.0	30.4	222.4	45.6	PRE 25 X 152		
		178	4.2	148.8	35.6	223.3	53.4	PRE 25 X 178		
		203	3.7	148.2	40.6	222.4	60.9	PRE 25 X 203		
		305	2.3	142.1	61.0	213.7	91.5	PRE 25 X 305		
		32	16	38	39.6	300.7	7.6	451.1	11.4	PRE 32 X 038
44	33.0	290.8		8.8	436.3	13.2	PRE 32 X 044			
51	27.7	282.9		10.2	424.5	15.3	PRE 32 X 051			
64	21.6	276.7		12.8	415.1	19.2	PRE 32 X 064			
76	17.5	266.6		15.2	400.0	22.8	PRE 32 X 076			
89	14.4	256.0		17.8	384.0	26.7	PRE 32 X 089			
102	12.4	253.8		20.4	380.8	30.6	PRE 32 X 102			
115	10.9	250.9		23.0	376.6	34.5	PRE 32 X 115			
127	9.5	240.8		25.4	361.4	38.1	PRE 32 X 127			
139	8.8	243.8		27.8	368.4	42.0	PRE 32 X 139			
152	8.0	241.7		30.4	362.8	45.6	PRE 32 X 152			
178	6.9	243.9		35.6	366.0	53.4	PRE 32 X 178			
203	6.0	244.4		40.6	367.1	60.9	PRE 32 X 203			
254	4.7	240.3		50.8	360.7	76.2	PRE 32 X 254			
305	3.9	236.1		61.0	354.7	91.5	PRE 32 X 305			
40	20	51	35.7	364.1	10.2	546.2	15.3	PRE 40 X 051		
		64	27.4	351.1	12.8	526.8	19.2	PRE 40 X 064		
		76	22.3	339.4	15.2	509.3	22.8	PRE 40 X 076		
		89	19.4	345.0	17.8	517.4	26.7	PRE 40 X 089		
		102	16.6	339.0	20.4	508.8	30.6	PRE 40 X 102		
		115	14.5	333.0	23.0	499.7	34.5	PRE 40 X 115		
		127	13.1	331.5	25.4	497.5	38.1	PRE 40 X 127		
		139	11.7	326.1	27.8	492.7	42.0	PRE 40 X 139		
		152	10.7	325.6	30.4	488.4	45.6	PRE 40 X 152		
		178	9.1	322.9	35.6	484.8	53.4	PRE 40 X 178		
		203	7.9	318.7	40.6	478.3	60.9	PRE 40 X 203		
		254	6.2	316.0	50.8	474.0	76.2	PRE 40 X 254		
		305	5.2	317.2	61.0	476.0	91.5	PRE 40 X 305		
		50	25	64	42.1	539.0	12.8	808.0	19.2	PRE 50 X 064
76	34.6			526.0	15.2	789.0	22.8	PRE 50 X 076		
89	29.4			523.0	17.8	785.0	26.7	PRE 50 X 089		
102	25.0			510.0	20.4	765.0	30.6	PRE 50 X 102		
115	21.9			504.0	23.0	756.0	34.5	PRE 50 X 115		
127	19.6			498.0	25.4	747.0	38.1	PRE 50 X 127		
139	17.1			475.0	27.8	718.0	42.0	PRE 50 X 139		
152	15.7			477.0	30.4	716.0	45.6	PRE 50 X 152		
178	13.7			488.0	35.6	732.0	53.4	PRE 50 X 178		
203	11.9			483.0	40.6	725.0	60.9	PRE 50 X 203		
254	9.1			462.0	50.8	693.0	76.2	PRE 50 X 254		
305	7.4			451.0	61.0	677.0	91.5	PRE 50 X 305		
63	38			76	63.0	958.0	15.2	1436.0	22.8	PRE 63 X 076
				89	52.5	935.0	17.8	1402.0	26.7	PRE 63 X 089
		102	44.7	912.0	20.4	1368.0	30.6	PRE 63 X 102		
		115	37.7	867.0	23.0	1301.0	34.5	PRE 63 X 115		
		127	34.0	864.0	25.4	1295.0	38.1	PRE 63 X 127		
		152	27.4	833.0	30.4	1249.0	45.6	PRE 63 X 152		
		178	23.1	822.0	35.6	1234.0	53.4	PRE 63 X 178		
		203	20.2	820.0	40.6	1230.0	60.9	PRE 63 X 203		
		254	15.8	803.0	50.8	1204.0	76.2	PRE 63 X 254		
		305	13.1	799.0	61.0	1199.0	91.5	PRE 63 X 305		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

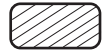


PYE

Extra Heavy Load Springs

Equivalent to ISO 10243

Colour - Yellow

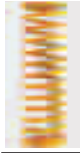


WIRE

Dh	Dd	Lo	C		Maximum Life		Average Life		Code	
			(mm)	(Kg/mm)	Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)		
10	5	25	3.8	16.1	4.3	23.7	6.3	PYE 10 X 025		
		32	2.8	15.3	5.4	22.7	8.0	PYE 10 X 032		
		38	2.4	15.7	6.5	23.0	9.5	PYE 10 X 038		
		44	2.0	14.6	7.5	23.0	11.0	PYE 10 X 044		
		51	1.7	14.6	8.7	21.5	12.8	PYE 10 X 051		
		64	1.3	14.6	10.9	21.5	16.0	PYE 10 X 064		
		76	1.1	14.3	12.9	21.1	19.0	PYE 10 X 076		
		305	0.3	13.5	51.9	20.2	76.3	PYE 10 X 305		
13	6.3	25	6.0	25.6	4.3	37.6	6.3	PYE 13 X 025		
		32	4.5	24.1	5.4	35.8	8.0	PYE 13 X 032		
		38	3.8	24.4	6.5	34.9	9.5	PYE 13 X 038		
		44	3.0	22.5	7.5	34.0	11.0	PYE 13 X 044		
		51	2.7	23.2	8.7	34.2	12.8	PYE 13 X 051		
		64	2.2	23.5	10.9	34.6	16.0	PYE 13 X 064		
		76	1.7	22.4	12.9	33.2	19.0	PYE 13 X 076		
		89	1.5	22.2	15.1	32.9	22.3	PYE 13 X 089		
		102	1.3	22.3	17.3	33.0	25.5	PYE 13 X 102		
				305	0.4	22.3	51.9	33.5	76.3	PYE 13 X 305
		16	8	25	12.0	51.7	4.3	75.8	6.3	PYE 16 X 025
32	9.1			49.0	5.4	72.6	8.0	PYE 16X 032		
38	7.4			47.8	6.5	69.9	9.5	PYE 16 X 038		
44	6.2			46.6	7.5	68.3	11.0	PYE 16 X 044		
51	5.3			46.4	8.7	68.2	12.8	PYE 16 X 051		
64	4.2			45.8	10.9	67.2	16.0	PYE 16 X 064		
76	3.5			44.8	12.9	66.1	19.0	PYE 16 X 076		
89	3.0			45.3	15.1	67.1	22.3	PYE 16 X 089		
102	2.6			45.2	17.3	66.6	25.5	PYE 16 X 102		
115	2.3			44.7	19.6	65.8	28.8	PYE 16 X 115		
				305	0.9	44.1	51.9	65.4	76.3	PYE 16 X 305
20	10			25	29.9	128.5	4.3	188.3	6.3	PYE 20 X 025
				32	22.8	123.3	5.4	182.8	8.0	PYE 20 X 032
		38	18.1	117.3	6.5	171.6	9.5	PYE 20 X 038		
		44	15.2	113.9	7.5	167.2	11.0	PYE 20 X 044		
		51	13.1	113.5	8.7	167.1	12.8	PYE 20 X 051		
		64	10.1	110.0	10.9	161.6	16.0	PYE 20 X 064		
		76	8.3	107.5	12.9	158.3	19.0	PYE 20 X 076		
		89	7.1	106.9	15.1	158.1	22.3	PYE 20 X 089		
		102	6.2	106.9	17.3	157.6	25.5	PYE 20 X 102		
		115	5.4	105.8	19.6	155.7	28.8	PYE 20 X 115		
		127	4.8	104.5	21.6	154.1	31.8	PYE 20 X 127		
		139	4.4	104.2	23.8	153.5	35.0	PYE 20 X 139		
		152	4.0	102.4	25.8	151.2	38.0	PYE 20 X 152		
				305	2.2	112.1	51.9	165.0	76.3	PYE 20 X 305
		25	12.5	25	46.8	201.3	4.3	295.0	6.3	PYE 25 X 025
32	38.2			206.2	5.4	305.5	8.0	PYE 25 X 032		
38	35.3			229.4	6.5	335.3	9.5	PYE 25 X 038		
44	24.9			186.6	7.5	273.8	11.0	PYE 25 X 044		
51	21.2			184.1	8.7	270.9	12.8	PYE 25 X 051		
64	16.4			179.0	10.9	262.8	16.0	PYE 25 X 064		
76	13.3			172.1	12.9	253.5	19.0	PYE 25 X 076		
89	11.3			170.2	15.1	251.3	22.3	PYE 25 X 089		
102	9.8			169.9	17.3	250.5	25.5	PYE 25 X 102		
115	8.7			171.3	19.6	251.7	28.8	PYE 25 X 115		
127	7.8			168.0	21.6	247.5	31.8	PYE 25 X 127		
139	7.0			167.1	23.8	246.0	35.0	PYE 25 X 139		
152	6.5			166.9	25.8	246.1	38.0	PYE 25 X 152		
178	5.5			166.3	30.3	244.7	44.5	PYE 25 X 178		
203	4.8			165.3	34.5	243.6	50.8	PYE 25 X 203		
				305	3.2	163.5	51.9	240.5	76.3	PYE 25 X 305
32	16			38	53.9	350.2	6.5	511.8	9.5	PYE 32 X 038

Dh	Dd	Lo	C		Maximum Life		Average Life		Code	
			(mm)	(Kg/mm)	Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)		
32	16	44	43.3	324.6	7.5	476.1	11.0	PYE 32 X 044		
		51	36.0	313.2	8.7	460.8	12.8	PYE 32 X 051		
		64	27.5	299.2	10.9	439.3	16.0	PYE 32 X 064		
		76	22.3	287.4	12.9	423.5	19.0	PYE 32 X 076		
		89	18.4	277.7	15.1	410.1	22.3	PYE 32 X 089		
		102	15.8	273.5	17.3	403.2	25.5	PYE 32 X 102		
		115	14.3	279.9	19.6	411.3	28.8	PYE 32 X 115		
		127	12.6	273.0	21.6	402.2	31.8	PYE 32 X 127		
		139	11.5	272.5	23.8	401.0	35.0	PYE 32 X 139		
		152	10.4	268.3	25.8	395.4	38.0	PYE 32 X 152		
		178	9.0	272.4	30.3	400.4	44.5	PYE 32 X 178		
		203	7.8	267.4	34.5	393.8	50.8	PYE 32 X 203		
				305	6.2	267.8	43.2	393.8	63.5	PYE 32 X 254
40	20	51	64.1	557.2	8.7	819.9	12.8	PYE 40 X 051		
		64	49.7	541.4	10.9	794.8	16.0	PYE 40 X 064		
		76	38.7	498.6	12.9	734.5	19.0	PYE 40 X 076		
		89	32.7	494.4	15.1	730.1	22.3	PYE 40 X 089		
		102	28.7	495.8	17.3	730.9	25.5	PYE 40 X 102		
		115	25.0	489.8	19.6	719.7	28.8	PYE 40 X 115		
		127	22.5	486.9	21.6	716.9	31.8	PYE 40 X 127		
		139	19.4	461.2	23.8	678.0	35.0	PYE 40 X 139		
		152	17.1	442.0	25.8	651.2	38.0	PYE 40 X 152		
		178	14.9	451.2	30.3	662.7	44.5	PYE 40 X 178		
		203	13.5	464.4	34.5	684.0	50.8	PYE 40 X 203		
				254	10.9	471.3	43.2	693.1	63.5	PYE 40 X 254
				305	9.0	464.5	51.9	683.3	76.3	PYE 40 X 305
50	25	64	72.3	788.1	10.9	1157.0	16.0	PYE 50 X 064		
		76	58.3	752.1	12.9	1108.0	19.0	PYE 50 X 076		
		89	48.5	732.4	15.1	1083.0	22.3	PYE 50 X 089		
		102	41.3	714.5	17.3	1053.0	25.5	PYE 50 X 102		
		115	35.9	703.6	19.6	1034.0	28.8	PYE 50 X 115		
		127	32.2	695.5	21.6	1024.0	31.8	PYE 50 X 127		
		139	27.9	664.0	23.8	977.0	35.0	PYE 50 X 139		
		152	24.4	629.5	25.8	927.0	38.0	PYE 50 X 152		
		178	21.9	663.6	30.3	975.0	44.5	PYE 50 X 178		
				203	19.1	659.0	34.5	970.0	50.8	PYE 50 X 203
63	38	254	15.6	673.9	43.2	991.0	63.5	PYE 50 X 254		
		305	13.0	674.7	51.9	992.0	76.3	PYE 50 X 305		
		76	97.1	1252.6	12.9	1554.0	19.0	PYE 63 X 076		
		89	83.5	1260.9	15.1	1587.0	22.3	PYE 63 X 089		
		102	71.4	1235.2	17.3	1821.0	25.5	PYE 63 X 102		
		115	63.2	1238.7	19.6	1820.0	28.8	PYE 63 X 115		
		127	57.6	1244.2	21.6	1832.0	31.8	PYE 63 X 127		
152	46.7	1204.9	25.8	1775.0	38.0	PYE 63 X 152				
178	39.2	1187.8	30.3	1744.0	44.5	PYE 63 X 178				
203	34.4	1186.8	34.5	1748.0	50.8	PYE 63 X 203				
254	26.8	1157.8	43.2	1702.0	63.5	PYE 63 X 254				
		305	22.2	1152.2	51.9	1694.0	76.3	PYE 63 X 305		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



PSF

Lightest Load Springs Equivalent to JIS B 5012 Colour - Yellow



Pawan

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
6	3	15	0.8	4.8	6	6	7.5	PSF 06 x 15
		20	0.6	4.8	8	6	10.0	PSF 06 x 20
		25	0.5	4.8	10	6	12.5	PSF 06 x 25
		30	0.4	4.8	12	6	15.0	PSF 06 x 30
		35	0.3	4.8	14	6	17.5	PSF 06 x 35
		40	0.3	4.8	16	6	20.0	PSF 06 x 40
8	4	10	1.6	6.4	4	8	5.0	PSF 08 x 10
		15	1.1	6.4	6	8	7.5	PSF 08 x 15
		20	0.8	6.4	8	8	10.0	PSF 08 x 20
		25	0.6	6.4	10	8	12.5	PSF 08 x 25
		30	0.5	6.4	12	8	15.0	PSF 08 x 30
		35	0.5	6.4	14	8	17.5	PSF 08 x 35
		40	0.4	6.4	16	8	20.0	PSF 08 x 40
		45	0.4	6.4	18	8	22.5	PSF 08 x 45
		50	0.3	6.4	20	8	25.0	PSF 08 x 50
		55	0.3	6.4	22	8	27.5	PSF 08 x 55
		60	0.3	6.4	24	8	30.0	PSF 08 x 60
		65	0.3	6.4	26	8	32.5	PSF 08 x 65
		70	0.2	6.4	28	8	35.0	PSF 08 x 70
		75	0.2	6.4	30	8	37.5	PSF 08 x 75
80	0.2	6.4	32	8	40.0	PSF 08 x 80		
10	5	10	2.0	8	4	10	5.0	PSF 10 x 010
		15	1.3	8	6	10	7.5	PSF 10 x 015
		20	1.0	8	8	10	10.0	PSF 10 x 020
		25	0.8	8	10	10	12.5	PSF 10 x 025
		30	0.7	8	12	10	15.0	PSF 10 x 030
		35	0.6	8	14	10	17.5	PSF 10 x 035
		40	0.5	8	16	10	20.0	PSF 10 x 040
		45	0.4	8	18	10	22.5	PSF 10 x 045
		50	0.4	8	20	10	25.0	PSF 10 x 050
		55	0.4	8	22	10	27.5	PSF 10 x 055
		60	0.3	8	24	10	30.0	PSF 10 x 060
		65	0.3	8	26	10	32.5	PSF 10 x 065
		70	0.3	8	28	10	35.0	PSF 10 x 070
		75	0.3	8	30	10	37.5	PSF 10 x 075
80	0.3	8	32	10	40.0	PSF 10 x 080		
90	0.2	8	36	10	45.0	PSF 10 x 090		
12	6	15	1.9	11	6	14	7.5	PSF 12 X 015
		20	1.4	11	8	14	10.0	PSF 12 x 020
		25	1.1	11	10	14	12.5	PSF 12 x 025
		30	0.9	11	12	14	15.0	PSF 12 x 030
		35	0.8	11	14	14	17.5	PSF 12 x 035
		40	0.7	11	16	14	20.0	PSF 12 x 040
		45	0.6	11	18	14	22.5	PSF 12 x 045
		50	0.6	11	20	14	25.0	PSF 12 x 050
		55	0.5	11	22	14	27.5	PSF 12 x 055
		60	0.5	11	24	14	30.0	PSF 12 x 060
		65	0.4	11	26	14	32.5	PSF 12 x 065
		70	0.4	11	28	14	35.0	PSF 12 x 070
		75	0.4	11	30	14	37.5	PSF 12 x 075
		80	0.4	11	32	14	40.0	PSF 12 x 080
90	0.3	11	36	14	45.0	PSF 12 x 090		
14	7	20	1.8	14.5	8	18	10.0	PSF 14 x 020
		25	1.4	14.5	10	18	12.5	PSF 14 x 025
		30	1.2	14.5	12	18	15.0	PSF 14 x 030
		35	1.0	14.5	14	18	17.5	PSF 14 x 035
		40	0.9	14.5	16	18	20.0	PSF 14 x 040
		45	0.8	14.5	18	18	22.5	PSF 14 x 045
		50	0.7	14.5	20	18	25.0	PSF 14 x 050
		55	0.7	14.5	22	18	27.5	PSF 14 x 055
		60	0.6	14.5	24	18	30.0	PSF 14 x 060
		65	0.6	14.5	26	18	32.5	PSF 14 x 065
		70	0.5	14.5	28	18	35.0	PSF 14 x 070
		75	0.5	14.5	30	18	37.5	PSF 14 x 075
		80	0.5	14.5	32	18	40.0	PSF 14 x 080
		90	0.4	14.5	36	18	45.0	PSF 14 x 090
100	0.4	14.5	40	18	50.0	PSF 14 x 100		

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
16	8	20	2.1	17	8	21	10.0	PSF 16 x 020
		25	1.7	17	10	21	12.5	PSF 16 x 025
		30	1.4	17	12	21	15.0	PSF 16 x 030
		35	1.2	17	14	21	17.5	PSF 16 x 035
		40	1.1	17	16	21	20.0	PSF 16 x 040
		45	0.9	17	18	21	22.5	PSF 16 x 045
		50	0.8	17	20	21	25.0	PSF 16 x 050
		55	0.8	17	22	21	27.5	PSF 16 x 055
		60	0.7	17	24	21	30.0	PSF 16 x 060
		65	0.7	17	26	21	32.5	PSF 16 x 065
		70	0.6	17	28	21	35.0	PSF 16 x 070
		75	0.6	17	30	21	37.5	PSF 16 x 075
		80	0.5	17	32	21	40.0	PSF 16 x 080
		90	0.5	17	36	21	45.0	PSF 16 x 090
100	0.4	17	40	21	50.0	PSF 16 x 100		
18	9	20	2.6	21	8	26	10.0	PSF 18 x 020
		25	2.1	21	10	26	12.5	PSF 18 x 025
		30	1.7	21	12	26	15.0	PSF 18 x 030
		35	1.5	21	14	26	17.5	PSF 18 x 035
		40	1.3	21	16	26	20.0	PSF 18 x 040
		45	1.2	21	18	26	22.5	PSF 18 x 045
		50	1.0	21	20	26	25.0	PSF 18 x 050
		55	1.0	21	22	26	27.5	PSF 18 x 055
		60	0.9	21	24	26	30.0	PSF 18 x 060
		65	0.8	21	26	26	32.5	PSF 18 x 065
		70	0.7	21	28	26	35.0	PSF 18 x 070
		75	0.7	21	30	26	37.5	PSF 18 x 075
		80	0.7	21	32	26	40.0	PSF 18 x 080
		90	0.6	21	36	26	45.0	PSF 18 x 090
100	0.5	21	40	26	50.0	PSF 18 x 100		
125	0.4	21	50	26	62.5	PSF 18 x 125		
20	11	20	3.2	26	8	32	10.0	PSF 20 x 020
		25	2.6	26	10	32	12.5	PSF 20 x 025
		30	2.1	26	12	32	15.0	PSF 20 x 030
		35	1.8	26	14	32	17.5	PSF 20 x 035
		40	1.6	26	16	32	20.0	PSF 20 x 040
		45	1.4	26	18	32	22.5	PSF 20 x 045
		50	1.3	26	20	32	25.0	PSF 20 x 050
		55	1.2	26	22	32	27.5	PSF 20 x 055
		60	1.1	26	24	32	30.0	PSF 20 x 060
		65	1.0	26	26	32	32.5	PSF 20 x 065
		70	0.9	26	28	32	35.0	PSF 20 x 070
		75	0.9	26	30	32	37.5	PSF 20 x 075
		80	0.8	26	32	32	40.0	PSF 20 x 080
		90	0.7	26	36	32	45.0	PSF 20 x 090
100	0.6	26	40	32	50.0	PSF 20 x 100		
125	0.5	26	50	32	62.5	PSF 20 x 125		
150	0.4	26	60	32	75.0	PSF 20 x 150		
22	11	25	3.2	32	10	40	12.5	PSF 22 x 025
		30	2.7	32	12	40	15.0	PSF 22 x 030
		35	2.3	32	14	40	17.5	PSF 22 x 035
		40	2.0	32	16	40	20.0	PSF 22 x 040
		45	1.8	32	18	40	22.5	PSF 22 x 045
		50	1.6	32	20	40	25.0	PSF 22 x 050
		55	1.5	32	22	40	27.5	PSF 22 x 055
		60	1.3	32	24	40	30.0	PSF 22 x 060
		65	1.2	32	26	40	32.5	PSF 22 x 065
		70	1.1	32	28	40	35.0	PSF 22 x 070
		75	1.8	32	30	40	37.5	PSF 22 x 075
		80	1.0	32	32	40	40.0	PSF 22 x 080
		90	0.9	32	36	40	45.0	PSF 22 x 090
		100	0.8	32	40	40	50.0	PSF 22 x 100
125	0.6	32	50	40	62.5	PSF 22 x 125		
150	0.5	32	60	40	75.0	PSF 22 x 150		
25	12.5	25	4.0	40	10	50	12.5	PSF 25 x 025
		30	3.3	40	12	50	15.0	PSF 25 x 030

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Lightest Load Springs

Equivalent to JIS B 5012

Colour - Yellow

PSF



Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
25	12.5	35	2.9	40	14	50	17.5	PSF 25 x 035		
		40	2.5	40	16	50	20.0	PSF 25 x 040		
		45	2.2	40	18	50	22.5	PSF 25 x 045		
		50	2.0	40	20	50	25.0	PSF 25 x 050		
		55	1.8	40	22	50	27.5	PSF 25 x 055		
		60	1.7	40	24	50	30.0	PSF 25 x 060		
		65	1.5	40	26	50	32.5	PSF 25 x 065		
		70	1.4	40	28	50	35.0	PSF 25 x 070		
		75	1.3	40	30	50	37.5	PSF 25 x 075		
		80	1.3	40	32	50	40.0	PSF 25 x 080		
		90	1.1	40	36	50	45.0	PSF 25 x 090		
		100	1.0	40	40	50	50.0	PSF 25 x 100		
		125	0.8	40	50	50	62.5	PSF 25 x 125		
		150	0.7	40	60	50	75.0	PSF 25 x 150		
		175	0.6	40	70	50	87.5	PSF 25 x 175		
		200	0.5	40	80	50	100.0	PSF 25 x 200		
		27	13.5	25	4.8	48	10	60	12.5	PSF 27 x 025
				30	4.0	48	12	60	15.0	PSF 27 x 030
35	3.4			48	14	60	17.5	PSF 27 x 035		
40	3.0			48	16	60	20.0	PSF 27 x 040		
45	2.7			48	18	60	22.5	PSF 27 x 045		
50	2.4			48	20	60	25.0	PSF 27 x 050		
55	2.2			48	22	60	27.5	PSF 27 x 055		
60	2.0			48	24	60	30.0	PSF 27 x 060		
65	1.9			48	26	60	32.5	PSF 27 x 065		
70	1.7			48	28	60	35.0	PSF 27 x 070		
75	1.6			48	30	60	37.5	PSF 27 x 075		
80	1.5			48	32	60	40.0	PSF 27 x 080		
90	1.3			48	36	60	45.0	PSF 27 x 090		
100	1.2			48	40	60	50.0	PSF 27 x 100		
125	1.0			48	50	60	62.5	PSF 27 x 125		
150	0.8			48	60	60	75.0	PSF 27 x 150		
175	0.7			48	70	60	87.5	PSF 27 x 175		
200	0.6			48	80	60	100.0	PSF 27 x 200		
30	16	25	5.8	58	10	72	12.5	PSF 30 x 025		
		30	4.8	58	12	72	15.0	PSF 30 x 030		
		35	4.1	58	14	72	17.5	PSF 30 x 035		
		40	3.6	58	16	72	20.0	PSF 30 x 040		
		45	3.2	58	18	72	22.5	PSF 30 x 045		
		50	2.9	58	20	72	25.0	PSF 30 x 050		
		55	2.6	58	22	72	27.5	PSF 30 x 055		
		60	2.4	58	24	72	30.0	PSF 30 x 060		
		65	2.2	58	26	72	32.5	PSF 30 x 065		
		70	2.1	58	28	72	35.0	PSF 30 x 070		
		75	1.9	58	30	72	37.5	PSF 30 x 075		
		80	1.8	58	32	72	40.0	PSF 30 x 080		
		90	1.6	58	36	72	45.0	PSF 30 x 090		
		100	1.4	58	40	72	50.0	PSF 30 x 100		
		125	1.6	58	50	72	62.5	PSF 30 x 125		
		150	1.0	58	60	72	75.0	PSF 30 x 150		
		175	0.8	58	70	72	87.5	PSF 30 x 175		
		200	0.7	58	80	72	100.0	PSF 30 x 200		
35	19	40	4.9	78.4	16	98	20.0	PSF 35 x 040		
		45	4.4	78.4	18	98	22.5	PSF 35 x 045		
		50	3.9	78.4	20	98	25.0	PSF 35 x 050		
		55	3.6	78.4	22	98	27.5	PSF 35 x 055		
		60	3.3	78.4	24	98	30.0	PSF 35 x 060		
		65	3.0	78.4	26	98	32.5	PSF 35 x 065		
		70	2.8	78.4	28	98	35.0	PSF 35 x 070		
		75	2.6	78.4	30	98	37.5	PSF 35 x 075		
		80	2.5	78.4	32	98	40.0	PSF 35 x 080		
		90	2.2	78.4	36	98	45.0	PSF 35 x 090		
		100	2.0	78.4	40	98	50.0	PSF 35 x 100		
		125	1.6	78.4	50	98	62.5	PSF 35 x 125		
		150	1.3	78.4	60	98	75.0	PSF 35 x 150		
		175	1.1	78.4	70	98	87.5	PSF 35 x 175		
		200	0.9	78.4	80	98	100.0	PSF 35 x 200		
		40	22	40	6.4	102	16	128	20.0	PSF 40 x 040

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
40	22	50	5.1	102	20	128	25.0	PSF 40 x 050		
		60	4.3	102	24	128	30.0	PSF 40 x 060		
		70	3.7	102	28	128	35.0	PSF 40 x 070		
		80	3.2	102	32	128	40.0	PSF 40 x 080		
		90	2.8	102	36	128	45.0	PSF 40 x 090		
		100	2.6	102	40	128	50.0	PSF 40 x 100		
		125	2.0	102	50	128	62.5	PSF 40 x 125		
		150	1.7	102	60	128	75.0	PSF 40 x 150		
		175	1.5	102	70	128	87.5	PSF 40 x 175		
		200	1.3	102	80	128	100.0	PSF 40 x 200		
		250	1.0	102	100	128	125.0	PSF 40 x 250		
		275	1.0	102	110	128	137.5	PSF 40 x 275		
		300	0.9	102	120	128	150	PSF 40 x 300		
		40	26	40	4.0	52	16	65	20.0	PSFR 40 x 040
				50	3.2	52	20	65	25.0	PSFR 40 x 050
				60	2.6	52	24	65	30.0	PSFR 40 x 060
				70	2.4	52	28	65	35.0	PSFR 40 x 070
				80	2.1	52	32	65	40.0	PSFR 40 x 080
90	1.8			52	36	65	45.0	PSFR 40 x 090		
100	1.5			52	40	65	50.0	PSFR 40 x 100		
125	1.6			52	50	65	62.5	PSFR 40 x 125		
150	0.9			52	60	65	75.0	PSFR 40 x 150		
175	0.8			52	70	65	87.5	PSFR 40 x 175		
200	0.6			52	80	65	100.0	PSFR 40 x 200		
250	0.4			52	100	65	125.0	PSFR 40 x 250		
50	27.5	50	8.0	160	20	200	25.0	PSF 50 x 050		
		60	6.7	160	24	200	30.0	PSF 50 x 060		
		70	5.7	160	28	200	35.0	PSF 50 x 070		
		80	5.0	160	32	200	40.0	PSF 50 x 080		
		90	4.4	160	36	200	45.0	PSF 50 x 090		
		100	4.0	160	40	200	50.0	PSF 50 x 100		
		125	3.2	160	50	200	62.5	PSF 50 x 125		
		150	2.7	160	60	200	75.0	PSF 50 x 150		
		175	2.3	160	70	200	87.5	PSF 50 x 175		
		200	2.0	160	80	200	100.0	PSF 50 x 200		
		250	1.6	160	100	200	125.0	PSF 50 x 250		
		300	1.3	160	120	200	150.0	PSF 50 x 300		
		350	1.1	160	140	200	175.0	PSF 50 x 350		
		400	1.0	160	160	200	200.0	PSF 50 x 400		
		450	0.9	160	180	200	225.0	PSF 50 x 450		
		500	0.8	160	200	200	250.0	PSF 50 x 500		
		50	31	50	5.4	99	20	123.3	25.0	PSFR 50 x 050
				60	4.5	99	24	123.3	30.0	PSFR 50 x 060
70	3.6			99	28	123.3	35.0	PSFR 50 x 070		
80	3.0			99	32	123.3	40.0	PSFR 50 x 080		
90	2.7			99	36	123.3	45.0	PSFR 50 x 090		
100	2.4			99	40	123.3	50.0	PSFR 50 x 100		
125	1.9			99	50	123.3	62.5	PSFR 50 x 125		
150	1.6			99	60	123.3	75.0	PSFR 50 x 150		
175	1.3			99	70	123.3	87.5	PSFR 50 x 175		
200	1.1			99	80	123.3	100.0	PSFR 50 x 200		
250	0.9			99	100	123.3	125.0	PSFR 50 x 250		
300	0.8			99	120	123.3	150.0	PSFR 50 x 300		
60	33	60	10.0	230	24	288	30.0	PSF 60 x 060		
		70	8.2	230	28	288	35.0	PSF 60 x 070		
		80	7.2	230	32	288	40.0	PSF 60 x 080		
		90	6.4	230	36	288	45.0	PSF 60 x 090		
		100	5.8	230	40	288	50.0	PSF 60 x 100		
		125	4.6	230	50	288	62.5	PSF 60 x 125		
		150	3.8	230	60	288	75.0	PSF 60 x 150		
		175	3.3	230	70	288	87.5	PSF 60 x 175		
		200	2.9	230	80	288	100.0	PSF 60 x 200		
		250	2.3	230	100	288	125.0	PSF 60 x 250		
		300	1.9	230	120	288	150.0	PSF 60 x 300		
		350	1.6	230	140	288	175.0	PSF 60 x 350		
		400	1.4	230	160	288	200.0	PSF 60 x 400		
		450	1.3	230	180	288	225.0	PSF 60 x 450		
		500	1.2	230	200	288	250.0	PSF 60 x 500		
		60	36	60	7.4	148.8	24	186	30.0	PSFR 60 x 060
				70	6.3	148.8	28	186	35.0	PSFR 60 x 070
				80	5.3	148.8	32	186	40.0	PSFR 60 x 080
90	4.2			148.8	36	186	45.0	PSFR 60 x 090		
100	3.1			148.8	40	186	50.0	PSFR 60 x 100		
125	2.4			148.8	50	186	62.5	PSFR 60 x 125		
150	2.1			148.8	60	186	75.0	PSFR 60 x 150		
175	1.9			148.8	70	186	87.5	PSFR 60 x 175		
200	1.6			148.8	80	186	100.0	PSFR 60 x 200		
250	1.3			148.8	100	186	125.0	PSFR 60 x 250		
300	1.0			148.8	120	186	150.0	PSFR 60 x 300		
70	38.5			70	11.4	320	28	400	35.0	PSF 70 x 070
		80	10.0	320	32	400	40.0	PSF 70 x 080		
		90	8.9	320	36	400	45.0	PSF 70 x 090		
		100	8.0	320	40	400	50.0			



PSL

Light Load Springs Equivalent to JIS B 5012 Colour - Sky Blue



Pawan
CORPORATION

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
6	3	15	1.3	6.4	4.8	8	6.0	PSL 06 x 015
		20	1.0	6.4	6.4	8	8.0	PSL 06 x 020
		25	0.8	6.4	8.0	8	10.0	PSL 06 x 025
		30	0.7	6.4	9.6	8	12.0	PSL 06 x 030
		35	0.6	6.4	11.2	8	14.0	PSL 06 x 035
		40	0.5	6.4	12.8	8	16.0	PSL 06 x 040
8	4	10	2.5	8.0	3.2	10	4.0	PSL 08 x 010
		15	1.7	8.0	4.8	10	6.0	PSL 08 x 015
		20	1.3	8.0	6.4	10	8.0	PSL 08 x 020
		25	1.0	8.0	8.0	10	10.0	PSL 08 x 025
		30	0.8	8.0	9.6	10	12.0	PSL 08 x 030
		35	0.7	8.0	11.2	10	14.0	PSL 08 x 035
		40	0.6	8.0	12.8	10	16.0	PSL 08 x 040
		45	0.6	8.0	14.4	10	18.0	PSL 08 x 045
		50	0.5	8.0	16.0	10	20.0	PSL 08 x 050
		55	0.5	8.0	17.6	10	22.0	PSL 08 x 055
		60	0.4	8.0	19.2	10	24.0	PSL 08 x 060
		65	0.4	8.0	20.8	10	26.0	PSL 08 x 065
		70	0.4	8.0	22.4	10	28.0	PSL 08 x 070
		75	0.3	8.0	24.0	10	30.0	PSL 08 x 075
80	0.3	8.0	25.6	10	32.0	PSL 08 x 080		
10	5	10	3.6	11.5	3.2	14.5	4.0	PSL 10 x 010
		15	2.4	11.5	4.8	14.5	6.0	PSL 10 x 015
		20	1.8	11.5	6.4	14.5	8.0	PSL 10 x 020
		25	1.5	11.5	8.0	14.5	10.0	PSL 10 x 025
		30	1.2	11.5	9.6	14.5	12.0	PSL 10 x 030
		35	1.0	11.5	11.2	14.5	14.0	PSL 10 x 035
		40	0.9	11.5	12.8	14.5	16.0	PSL 10 x 040
		45	0.8	11.5	14.4	14.5	18.0	PSL 10 x 045
		50	0.7	11.5	16.0	14.5	20.0	PSL 10 x 050
		55	0.7	11.5	17.6	14.5	22.0	PSL 10 x 055
		60	0.6	11.5	19.2	14.5	24.0	PSL 10 x 060
		65	0.6	11.5	20.8	14.5	26.0	PSL 10 x 065
		70	0.5	11.5	22.4	14.5	28.0	PSL 10 x 070
		75	0.5	11.5	24.0	14.5	30.0	PSL 10 x 075
80	0.5	11.5	25.6	14.5	32.0	PSL 10 x 080		
90	0.4	11.5	28.8	14.5	36.0	PSL 10 x 090		
12	6	15	3.5	17.0	4.8	21	6.0	PSL 12 x 015
		20	2.6	17.0	6.4	21	8.0	PSL 12 x 020
		25	2.1	17.0	8.0	21	10.0	PSL 12 x 025
		30	1.8	17.0	9.6	21	12.0	PSL 12 x 030
		35	1.5	17.0	11.2	21	14.0	PSL 12 x 035
		40	1.3	17.0	12.8	21	16.0	PSL 12 x 040
		45	1.2	17.0	14.4	21	18.0	PSL 12 x 045
		50	1.1	17.0	16.0	21	20.0	PSL 12 x 050
		55	1.0	17.0	17.6	21	22.0	PSL 12 x 055
		60	0.9	17.0	19.2	21	24.0	PSL 12 x 060
		65	0.8	17.0	20.8	21	26.0	PSL 12 x 065
		70	0.8	17.0	22.4	21	28.0	PSL 12 x 070
		75	0.7	17.0	24.0	21	30.0	PSL 12 x 075
		80	0.7	17.0	25.6	21	32.0	PSL 12 x 080
90	0.6	17.0	28.8	21	36.0	PSL 12 x 090		
14	7	20	3.5	22.0	6.4	28	8.0	PSL 14 x 020
		25	2.8	22.0	8.0	28	10.0	PSL 14 x 025
		30	2.3	22.0	9.6	28	12.0	PSL 14 x 030
		35	2.0	22.0	11.2	28	14.0	PSL 14 x 035
		40	1.8	22.0	12.8	28	16.0	PSL 14 x 040
		45	1.6	22.0	14.4	28	18.0	PSL 14 x 045
		50	1.4	22.0	16.0	28	20.0	PSL 14 x 050
		55	1.3	22.0	17.6	28	22.0	PSL 14 x 055
		60	1.2	22.0	19.2	28	24.0	PSL 14 x 060
		65	1.1	22.0	20.8	28	26.0	PSL 14 x 065
		70	1.0	22.0	22.4	28	28.0	PSL 14 x 070
		75	0.9	22.0	24.0	28	30.0	PSL 14 x 075
		80	0.9	22.0	25.6	28	32.0	PSL 14 x 080
		90	0.8	22.0	28.8	28	36.0	PSL 14 x 090
100	0.7	22.0	32.0	28	40.0	PSL 14 x 100		
16	8	20	4.4	28.0	6.4	35	8.0	PSL 16 x 020
		25	3.5	28.0	8.0	35	10.0	PSL 16 x 025
		30	2.9	28.0	9.6	35	12.0	PSL 16 x 030
		35	2.5	28.0	11.2	35	14.0	PSL 16 x 035
		40	2.2	28.0	12.8	35	16.0	PSL 16 x 040
		45	2.0	28.0	14.4	35	18.0	PSL 16 x 045
		50	1.8	28.0	16.0	35	20.0	PSL 16 x 050
		55	1.6	28.0	17.6	35	22.0	PSL 16 x 055

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
16	8	60	1.5	28.0	19.2	35	24.0	PSL 16 x 060		
		65	1.4	28	20.8	35	26.0	PSL 16 x 065		
		70	1.3	28	22.4	35	28.0	PSL 16 x 070		
		75	1.2	28	24.0	35	30.0	PSL 16 x 075		
		80	1.1	28	25.6	35	32.0	PSL 16 x 080		
		90	1.0	28	28.8	35	36.0	PSL 16 x 090		
		100	0.9	28	32.0	35	40.0	PSL 16 x 100		
		125	0.7	28	40.0	35	50.0	PSL 16 x 125		
		18	9	20	5.4	34	6.4	43	8.0	PSL 18 x 020
				25	4.3	34	8.0	43	10.0	PSL 18 x 025
30	3.6			34	9.6	43	12.0	PSL 18 x 030		
35	3.1			34	11.2	43	14.0	PSL 18 x 035		
40	2.7			34	12.8	43	16.0	PSL 18 x 040		
45	2.4			34	14.4	43	18.0	PSL 18 x 045		
50	2.2			34	16.0	43	20.0	PSL 18 x 050		
55	2.0			34	17.6	43	22.0	PSL 18 x 055		
60	1.8			34	19.2	43	24.0	PSL 18 x 060		
65	1.7			34	20.8	43	26.0	PSL 18 x 065		
70	1.5			34	22.4	43	28.0	PSL 18 x 070		
75	1.4			34	24.0	43	30.0	PSL 18 x 075		
80	1.4			34	25.6	43	32.0	PSL 18 x 080		
90	1.2			34	28.8	43	36.0	PSL 18 x 090		
100	1.1	34	32.0	43	40.0	PSL 18 x 100				
125	0.9	34	40.0	43	50.0	PSL 18 x 125				
20	10	20	6.4	43	6.4	54	8.0	PSL 20 x 020		
		25	5.4	43	8.0	54	10.0	PSL 20 x 025		
		30	4.5	43	9.6	54	12.0	PSL 20 x 030		
		35	3.9	43	11.2	54	14.0	PSL 20 x 035		
		40	3.4	43	12.8	54	16.0	PSL 20 x 040		
		45	3.0	43	14.4	54	18.0	PSL 20 x 045		
		50	2.7	43	16.0	54	20.0	PSL 20 x 050		
		55	2.5	43	17.6	54	22.0	PSL 20 x 055		
		60	2.3	43	19.2	54	24.0	PSL 20 x 060		
		65	2.1	43	20.8	54	26.0	PSL 20 x 065		
		70	1.9	43	22.4	54	28.0	PSL 20 x 070		
		75	1.8	43	24.0	54	30.0	PSL 20 x 075		
		80	1.7	43	25.6	54	32.0	PSL 20 x 080		
		90	1.5	43	28.8	54	36.0	PSL 20 x 090		
100	1.4	43	32.0	54	40.0	PSL 20 x 100				
125	1.1	43	40.0	54	50.0	PSL 20 x 125				
150	0.9	43	48.0	54	60.0	PSL 20 x 150				
22	11	25	6.7	54	8.0	67	10.0	PSL 22 x 025		
		30	5.6	54	9.6	67	12.0	PSL 22 x 030		
		35	4.8	54	11.2	67	14.0	PSL 22 x 035		
		40	4.2	54	12.8	67	16.0	PSL 22 x 040		
		45	3.7	54	14.4	67	18.0	PSL 22 x 045		
		50	3.4	54	16.0	67	20.0	PSL 22 x 050		
		55	3.1	54	17.6	67	22.0	PSL 22 x 055		
		60	2.8	54	19.2	67	24.0	PSL 22 x 060		
		65	2.6	54	20.8	67	26.0	PSL 22 x 065		
		70	2.4	54	22.4	67	28.0	PSL 22 x 070		
		75	2.2	54	24.0	67	30.0	PSL 22 x 075		
		80	2.1	54	25.6	67	32.0	PSL 22 x 080		
		90	1.9	54	28.8	67	36.0	PSL 22 x 090		
		100	1.7	54	32.0	67	40.0	PSL 22 x 100		
125	1.3	54	40.0	67	50.0	PSL 22 x 125				
150	1.1	54	48.0	67	60.0	PSL 22 x 150				
25	12.5	25	8.4	67	8.0	84	10.0	PSL 25 x 025		
		30	7.0	67	9.6	84	12.0	PSL 25 x 030		
		35	6.0	67	11.2	84	14.0	PSL 25 x 035		
		40	5.3	67	12.8	84	16.0	PSL 25 x 040		
		45	4.7	67	14.4	84	18.0	PSL 25 x 045		
		50	4.2	67	16.0	84	20.0	PSL 25 x 050		
		55	3.8	67	17.6	84	22.0	PSL 25 x 055		
		60	3.5	67	19.2	84	24.0	PSL 25 x 060		
		65	3.2	67	20.8	84	26.0	PSL 25 x 065		
		70	3.0	67	22.4	84	28.0	PSL 25 x 070		
		75	2.8	67	24.0	84	30.0	PSL 25 x 075		
		80	2.6	67	25.6	84	32.0	PSL 25 x 080		
		90	2.3	67	28.8	84	36.0	PSL 25 x 090		
		100	2.1	67	32.0	84	40.0	PSL 25 x 100		
125	1.7	67	40.0	84	50.0	PSL 25 x 125				
150	1.4	67	48.0	84	60.0	PSL 25 x 150				
175	1.2	67	56.0	84	70.0	PSL 25 x 175				
200	1.1	67	64.0	84	80.0	PSL 25 x 200				

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Light Load Springs

Equivalent to JIS B 5012
Colour - Sky Blue



Do (mm)	DI (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
27	13.5	25	10.0	80	8.0	100	10.0	PSL 27 x 025		
		30	8.3	80	9.6	100	12.0	PSL 27 x 030		
		35	7.1	80	11.2	100	14.0	PSL 27 x 035		
		40	6.3	80	12.8	100	16.0	PSL 27 x 040		
		45	5.6	80	14.4	100	18.0	PSL 27 x 045		
		50	5.0	80	16.0	100	20.0	PSL 27 x 050		
		55	4.6	80	17.6	100	22.0	PSL 27 x 055		
		60	4.2	80	19.2	100	24.0	PSL 27 x 060		
		65	3.9	80	20.8	100	26.0	PSL 27 x 065		
		70	3.6	80	22.4	100	28.0	PSL 27 x 070		
		75	3.3	80	24.0	100	30.0	PSL 27 x 075		
		80	3.1	80	25.6	100	32.0	PSL 27 x 080		
		90	2.8	80	28.8	100	36.0	PSL 27 x 090		
		100	2.5	80	32.0	100	40.0	PSL 27 x 100		
		125	2.0	80	40.0	100	50.0	PSL 27 x 125		
		150	1.7	80	48.0	100	60.0	PSL 27 x 150		
		175	1.4	80	56.0	100	70.0	PSL 27 x 175		
		200	1.3	80	64.0	100	80.0	PSL 27 x 200		
		30	15	25	12.1	91.2	8.0	114	10.0	PSL 30 x 025
				30	10.1	91.2	9.6	114	12.0	PSL 30 x 030
35	8.7			91.2	11.2	114	14.0	PSL 30 x 035		
40	7.6			91.2	12.8	114	16.0	PSL 30 x 040		
45	6.7			91.2	14.4	114	18.0	PSL 30 x 045		
50	6.1			91.2	16.0	114	20.0	PSL 30 x 050		
55	5.5			91.2	17.6	114	22.0	PSL 30 x 055		
60	5.0			91.2	19.2	114	24.0	PSL 30 x 060		
65	4.7			91.2	20.8	114	26.0	PSL 30 x 065		
70	4.3			91.2	22.4	114	28.0	PSL 30 x 070		
75	4.0			91.2	24.0	114	30.0	PSL 30 x 075		
80	3.8			91.2	25.6	114	32.0	PSL 30 x 080		
90	3.4			91.2	28.8	114	36.0	PSL 30 x 090		
100	3.0			91.2	32.0	114	40.0	PSL 30 x 100		
125	2.4			91.2	40.0	114	50.0	PSL 30 x 125		
150	2.0			91.2	48.0	114	60.0	PSL 30 x 150		
175	1.7			91.2	56.0	114	70.0	PSL 30 x 175		
200	1.5			91.2	64.0	114	80.0	PSL 30 x 200		
35	17.5			40	10.3	132	12.8	165	16.0	PSL 35 x 040
				45	9.2	132	14.4	165	18.0	PSL 35 x 045
		50	8.3	132	16.0	165	20.0	PSL 35 x 050		
		55	7.5	132	17.6	165	22.0	PSL 35 x 055		
		60	6.9	132	19.2	165	24.0	PSL 35 x 060		
		65	6.4	132	20.8	165	26.0	PSL 35 x 065		
		70	5.9	132	22.4	165	28.0	PSL 35 x 070		
		75	5.5	132	24.0	165	30.0	PSL 35 x 075		
		80	5.2	132	25.6	165	32.0	PSL 35 x 080		
		90	4.6	132	28.8	165	36.0	PSL 35 x 090		
		100	4.1	132	32.0	165	40.0	PSL 35 x 100		
		125	3.3	132	40.0	165	50.0	PSL 35 x 125		
		150	2.8	132	48.0	165	60.0	PSL 35 x 150		
		175	2.4	132	56.0	165	70.0	PSL 35 x 175		
		200	2.1	132	64.0	165	80.0	PSL 35 x 200		
		35	20.5	40	9.2	114.6	12.8	143.2	16.0	PSLR 35 x 040
				45	8.4	114.6	14.4	143.2	18.0	PSLR 35 x 045
				50	7.9	114.6	16.0	143.2	20.0	PSLR 35 x 050
				55	7.4	114.6	17.6	143.2	22.0	PSLR 35 x 055
				60	6.7	114.6	19.2	143.2	24.0	PSLR 35 x 060
65	6.3			114.6	20.8	143.2	26.0	PSLR 35 x 065		
70	5.5			114.6	22.4	143.2	28.0	PSLR 35 x 070		
75	5.3			114.6	24.0	143.2	30.0	PSLR 35 x 075		
80	4.9			114.6	25.6	143.2	32.0	PSLR 35 x 080		
90	4.2			114.6	28.8	143.2	36.0	PSLR 35 x 090		
100	3.8			114.6	32.0	143.2	40.0	PSLR 35 x 100		
125	3.0			114.6	40.0	143.2	50.0	PSLR 35 x 125		
150	2.4			114.6	48.0	143.2	60.0	PSLR 35 x 150		
175	2.2			114.6	56.0	143.2	70.0	PSLR 35 x 175		
200	1.8			114.6	64.0	143.2	80.0	PSLR 35 x 200		
40	20			40	13.5	173	12.8	216	16.0	PSL 40 x 040
				50	10.8	173	16.0	216	20.0	PSL 40 x 050
				60	9.0	173	19.2	216	24.0	PSL 40 x 060
				70	7.7	173	22.4	216	28.0	PSL 40 x 070
				80	6.8	173	25.6	216	32.0	PSL 40 x 080
		90	6.0	173	28.8	216	36.0	PSL 40 x 090		
		100	5.4	173	32.0	216	40.0	PSL 40 x 100		
		125	4.3	173	40.0	216	50.0	PSL 40 x 125		
		150	3.6	173	48.0	216	60.0	PSL 40 x 150		

Do (mm)	DI (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
40	20	175	3.1	173	56.0	216	70.0	PSL 40 x 175		
		200	2.7	173	64.0	216	80.0	PSL 40 x 200		
		250	2.2	173	80.0	216	100.0	PSL 40 x 250		
		275	2.00	173	88	216	110	PSL 40 x 275		
		300	1.8	173	96	216	120	PSL 40 x 300		
		40	25.5	40	9.3	111.5	12.8	139.4	16.0	PSLR 40 x 040
50	7.7	111.5		16.0	139.4	20.0	PSLR 40 x 050			
60	6.2	111.5		19.2	139.4	24.0	PSLR 40 x 060			
70	5.0	111.5		22.4	139.4	28.0	PSLR 40 x 070			
80	4.4	111.5		25.6	139.4	32.0	PSLR 40 x 080			
90	3.9	111.5		28.8	139.4	36.0	PSLR 40 x 090			
100	3.5	111.5		32.0	139.4	40.0	PSLR 40 x 100			
125	2.8	111.5		40.0	139.4	50.0	PSLR 40 x 125			
150	2.3	111.5		48.0	139.4	60.0	PSLR 40 x 150			
175	2.0	111.5		56.0	139.4	70.0	PSLR 40 x 175			
200	1.7	111.5		64.0	139.4	80.0	PSLR 40 x 200			
250	1.5	111.5		80.0	139.4	100.0	PSLR 40 x 250			
50	25	50	16.9	270	16.0	338	20.0	PSL 50 x 050		
		60	14.1	270	19.2	338	24.0	PSL 50 x 060		
		70	12.1	270	22.4	338	28.0	PSL 50 x 070		
		80	10.6	270	25.6	338	32.0	PSL 50 x 080		
		90	9.4	270	28.8	338	36.0	PSL 50 x 090		
		100	8.5	270	32.0	338	40.0	PSL 50 x 100		
		125	6.8	270	40.0	338	50.0	PSL 50 x 125		
		150	5.6	270	48.0	338	60.0	PSL 50 x 150		
		175	4.8	270	56.0	338	70.0	PSL 50 x 175		
		200	4.2	270	64.0	338	80.0	PSL 50 x 200		
		250	3.4	270	80.0	338	100.0	PSL 50 x 250		
		300	2.8	270	96.0	338	120.0	PSL 50 x 300		
		350	2.4	270	112.0	338	140.0	PSL 50 x 350		
		400	2.1	270	128.0	338	160.0	PSL 50 x 400		
		450	1.9	270	144.0	338	180.0	PSL 50 x 450		
500	1.7	270	160.0	338	200.0	PSL 50 x 500				
50	30.5	50	11.9	200.8	16.0	251	20.0	PSLR 50 x 050		
		60	10.6	200.8	19.2	251	24.0	PSLR 50 x 060		
		70	9.0	200.8	22.4	251	28.0	PSLR 50 x 070		
		80	7.7	200.8	25.6	251	32.0	PSLR 50 x 080		
		90	6.8	200.8	28.8	251	36.0	PSLR 50 x 090		
		100	5.9	200.8	32.0	251	40.0	PSLR 50 x 100		
		125	4.9	200.8	40.0	251	50.0	PSLR 50 x 125		
		150	3.6	200.8	48.0	251	60.0	PSLR 50 x 150		
		175	3.0	200.8	56.0	251	70.0	PSLR 50 x 175		
		200	2.7	200.8	64.0	251	80.0	PSLR 50 x 200		
		250	2.4	200.8	80.0	251	100.0	PSLR 50 x 250		
		300	2.2	200.8	96.0	251	120.0	PSLR 50 x 300		
		60	30	60	20.3	389	19.2	486	24.0	PSL 60 x 060
				70	17.4	389	22.4	486	28.0	PSL 60 x 070
				80	15.2	389	25.6	486	32.0	PSL 60 x 080
90	13.5			389	28.8	486	36.0	PSL 60 x 090		
100	12.2			389	32.0	486	40.0	PSL 60 x 100		
125	9.7			389	40.0	486	50.0	PSL 60 x 125		
150	8.1			389	48.0	486	60.0	PSL 60 x 150		
175	6.9			389	56.0	486	70.0	PSL 60 x 175		
200	6.1			389	64.0	486	80.0	PSL 60 x 200		
250	4.9			389	80.0	486	100.0	PSL 60 x 250		
300	4.1			389	96.0	486	120.0	PSL 60 x 300		
350	3.5			389	112.0	486	140.0	PSL 60 x 350		
400	3.0			389	128.0	486	160.0	PSL 60 x 400		
450	2.7			389	144.0	486	180.0	PSL 60 x 450		
500	2.4			389	160.0	486	200.0	PSL 60 x 500		
60	35.5	60	16.8	310	19.2	388	24.0	PSLR 60 x 060		
		70	14.4	310	22.4	388	28.0	PSLR 60 x 070		
		80	12.1	310	25.6	388	32.0	PSLR 60 x 080		
		90	10.7	310	28.8	388	36.0	PSLR 60 x 090		
		100	9.8	310	32.0	388	40.0	PSLR 60 x 100		
		125	8.5	310	40.0	388	50.0	PSLR 60 x 125		
		150	6.8	310	48.0	388	60.0	PSLR 60 x 150		
		175	6.0	310	56.0	388	70.0	PSLR 60 x 175		
		200	5.2	310	64.0	388	80.0	PSLR 60 x 200		
		250	3.9	310	80.0	388	100.0	PSLR 60 x 250		
		300	3.1	310	96.0	388	120.0	PSLR 60 x 300		
		70	38.5	70	21.8	488	22.4	610	28.0	PSL 70 x 070
				80	19.0	488	25.6	610	32.0	PSL 70 x 080
				90	16.9	488	28.8	610	36.0	PSL 70 x 090
				100	15.2	488	32.0	610	40.0	PSL 70 x 100
125	12.2			488	40.0	610	50.0	PSL 70 x 125		
150	10.2			488	48.0	610	60.0	PSL 70 x 150		
175	8.71			488	56.0	610	70.0	PSL 70 x 175		
200	7.62			488	64.0	610	80.0	PSL 70 x 200		
250	6.1			488	80.0	610	100.0	PSL 70 x 250		
300	5.08			488	96.0	610	120.0	PSL 70 x 300		
350	4.35			488	112	610	140.0	PSL 70 x 350		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

PSM

Medium Load Springs Equivalent to JIS B 5012 Colour - Red



Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
6	3	15	2.1	8	3.8	10	4.8	PSM 06 x 015
		20	1.6	8	5.1	10	6.4	PSM 06 x 020
		25	1.3	8	6.4	10	8.0	PSM 06 x 025
		30	1.0	8	7.7	10	9.6	PSM 06 x 030
		35	0.9	8	9.0	10	11.2	PSM 06 x 035
		40	0.8	8	10.2	10	12.8	PSM 06 x 040
		45	0.7	8	11.5	10	14.4	PSM 06 x 045
		50	0.6	8	12.8	10	16.0	PSM 06 x 050
		55	0.6	8	14.1	10	17.6	PSM 06 x 055
		60	0.5	8	15.4	10	19.2	PSM 06 x 060
8	4	10	4.4	11	2.6	14	3.2	PSM 08 x 010
		15	2.9	11	3.8	14	4.8	PSM 08 x 015
		20	2.2	11	5.1	14	6.4	PSM 08 x 020
		25	1.8	11	6.4	14	8.0	PSM 08 x 025
		30	1.5	11	7.7	14	9.6	PSM 08 x 030
		35	1.3	11	9.0	14	11.2	PSM 08 x 035
		40	1.1	11	10.2	14	12.8	PSM 08 x 040
		45	1.0	11	11.5	14	14.4	PSM 08 x 045
		50	0.9	11	12.8	14	16.0	PSM 08 x 050
		55	0.8	11	14.1	14	17.6	PSM 08 x 055
		60	0.7	11	15.4	14	19.2	PSM 08 x 060
		65	0.7	11	16.6	14	20.8	PSM 08 x 065
		70	0.6	11	17.9	14	22.4	PSM 08 x 070
		75	0.6	11	19.2	14	24.0	PSM 08 x 075
80	0.6	11	20.5	14	25.6	PSM 08 x 080		
10	5	10	6.3	16	2.6	20	3.2	PSM 10 x 010
		15	4.2	16	3.8	20	4.8	PSM 10 x 015
		20	3.1	16	5.1	20	6.4	PSM 10 x 020
		25	2.5	16	6.4	20	8.0	PSM 10 x 025
		30	2.1	16	7.7	20	9.6	PSM 10 x 030
		35	1.8	16	9.0	20	11.2	PSM 10 x 035
		40	1.6	16	10.2	20	12.8	PSM 10 x 040
		45	1.4	16	11.5	20	14.4	PSM 10 x 045
		50	1.3	16	12.8	20	16.0	PSM 10 x 050
		55	1.1	16	14.1	20	17.6	PSM 10 x 055
		60	1.0	16	15.4	20	19.2	PSM 10 x 060
		65	1.0	16	16.6	20	20.8	PSM 10 x 065
		70	0.9	16	17.9	20	22.4	PSM 10 x 070
		75	0.8	16	19.2	20	24.0	PSM 10 x 075
80	0.8	16	20.5	20	25.6	PSM 10 x 080		
90	0.7	16	23	20	28.8	PSM 10 x 090		
12	6	15	6.0	23	3.8	29	4.8	PSM 12 x 015
		20	4.5	23	5.1	29	6.4	PSM 12 x 020
		25	3.6	23	6.4	29	8.0	PSM 12 x 025
		30	3.0	23	7.7	29	9.6	PSM 12 x 030
		35	2.6	23	9.0	29	11.2	PSM 12 x 035
		40	2.3	23	10.2	29	12.8	PSM 12 x 040
		45	2.0	23	11.5	29	14.4	PSM 12 x 045
		50	1.8	23	12.8	29	16.0	PSM 12 x 050
		55	1.6	23	14.1	29	17.6	PSM 12 x 055
		60	1.5	23	15.4	29	19.2	PSM 12 x 060
		65	1.4	23	16.6	29	20.8	PSM 12 x 065
		70	1.3	23	17.9	29	22.4	PSM 12 x 070
		75	1.2	23	19.2	29	24.0	PSM 12 x 075
		80	1.1	23	20.5	29	25.6	PSM 12 x 080
90	1.0	23	23	29	28.8	PSM 12 x 090		
14	7	20	6.1	31	5.1	39	6.4	PSM 14 x 020
		25	4.9	31	6.4	39	8.0	PSM 14 x 025
		30	4.1	31	7.7	39	9.6	PSM 14 x 030
		35	3.5	31	9.0	39	11.2	PSM 14 x 035
		40	3.0	31	10.2	39	12.8	PSM 14 x 040
		45	2.7	31	11.5	39	14.4	PSM 14 x 045
		50	2.4	31	12.8	39	16.0	PSM 14 x 050

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
14	7	55	2.2	31	14.1	39	17.6	PSM 14 x 055		
		60	2.0	31	15.4	39	19.2	PSM 14 x 060		
		65	1.9	31	16.6	39	20.8	PSM 14 x 065		
		70	1.7	31	17.9	39	22.4	PSM 14 x 070		
		75	1.6	31	19.2	39	24.0	PSM 14 x 075		
		80	1.5	31	20.5	39	25.6	PSM 14 x 080		
		90	1.4	31	23.0	39	28.8	PSM 14 x 090		
		100	1.2	31	25.6	39	32.0	PSM 14 x 100		
		16	8	20	8.0	41	5.1	51	6.4	PSM 16 x 020
				25	6.4	41	6.4	51	8.0	PSM 16 x 025
30	5.3			41	7.7	51	9.6	PSM 16 x 030		
35	4.6			41	9.0	51	11.2	PSM 16 x 035		
40	4.0			41	10.2	51	12.8	PSM 16 x 040		
45	3.5			41	11.5	51	14.4	PSM 16 x 045		
50	3.2			41	12.8	51	16.0	PSM 16 x 050		
55	2.9			41	14.1	51	17.6	PSM 16 x 055		
60	2.7			41	15.4	51	19.2	PSM 16 x 060		
65	2.5			41	16.6	51	20.8	PSM 16 x 065		
70	2.3			41	17.9	51	22.4	PSM 16 x 070		
75	2.1			41	19.2	51	24.0	PSM 16 x 075		
18	9	20	10.2	52	5.1	65	6.4	PSM 18 x 020		
		25	8.1	52	6.4	65	8.0	PSM 18 x 025		
		30	6.8	52	7.7	65	9.6	PSM 18 x 030		
		35	5.8	52	9.0	65	11.2	PSM 18 x 035		
		40	5.1	52	10.2	65	12.8	PSM 18 x 040		
		45	4.5	52	11.5	65	14.4	PSM 18 x 045		
		50	4.1	52	12.8	65	16.0	PSM 18 x 050		
		55	3.7	52	14.1	65	17.6	PSM 18 x 055		
		60	3.4	52	15.4	65	19.2	PSM 18 x 060		
		65	3.1	52	16.6	65	20.8	PSM 18 x 065		
		70	2.9	52	17.9	65	22.4	PSM 18 x 070		
		75	2.7	52	19.2	65	24.0	PSM 18 x 075		
20	10	20	12.5	64	5.1	80	6.4	PSM 20 x 020		
		25	10.0	64	6.4	80	8.0	PSM 20 x 025		
		30	8.3	64	7.7	80	9.6	PSM 20 x 030		
		35	7.1	64	9.0	80	11.2	PSM 20 x 035		
		40	6.3	64	10.2	80	12.8	PSM 20 x 040		
		45	5.6	64	11.5	80	14.4	PSM 20 x 045		
		50	5.0	64	12.8	80	16.0	PSM 20 x 050		
		55	4.5	64	14.1	80	17.6	PSM 20 x 055		
		60	4.2	64	15.4	80	19.2	PSM 20 x 060		
		65	3.8	64	16.6	80	20.8	PSM 20 x 065		
		70	3.6	64	17.9	80	22.4	PSM 20 x 070		
		75	3.3	64	19.2	80	24.0	PSM 20 x 075		
22	11	25	12.1	78	6.4	97	8.0	PSM 22 x 025		
		30	10.1	78	7.7	97	9.6	PSM 22 x 030		
		35	8.7	78	9.0	97	11.2	PSM 22 x 035		
		40	7.6	78	10.2	97	12.8	PSM 22 x 040		
		45	6.7	78	11.5	97	14.4	PSM 22 x 045		
		50	6.1	78	12.8	97	16.0	PSM 22 x 050		
		55	5.5	78	14.1	97	17.6	PSM 22 x 055		
		60	5.1	78	15.4	97	19.2	PSM 22 x 060		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Medium Load Springs

Equivalent to JIS B 5012
Colour - Red

PSM



Do	Di	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
22	11	65	4.7	78	16.6	97	20.8	PSM 22 x 065
		70	4.3	78	17.9	97	22.4	PSM 22 x 070
		75	4.0	78	19.2	97	24.0	PSM 22 x 075
		80	3.8	78	20.5	97	25.6	PSM 22 x 080
		90	3.4	78	23.0	97	28.8	PSM 22 x 090
		100	3.0	78	25.6	97	32.0	PSM 22 x 100
		125	2.4	78	32.0	97	40.0	PSM 22 x 125
		150	2.0	78	38.4	97	48.0	PSM 22 x 150
25	12.5	25	15.6	100	6.4	125	8.0	PSM 25 x 025
		30	13.0	100	7.7	125	9.6	PSM 25 x 030
		35	11.2	100	9.0	125	11.2	PSM 25 x 035
		40	9.8	100	10.2	125	12.8	PSM 25 x 040
		45	8.7	100	11.5	125	14.4	PSM 25 x 045
		50	7.8	100	12.8	125	16.0	PSM 25 x 050
		55	7.1	100	14.1	125	17.6	PSM 25 x 055
		60	6.5	100	15.4	125	19.2	PSM 25 x 060
		65	6.0	100	16.6	125	20.8	PSM 25 x 065
		70	5.6	100	17.9	125	22.4	PSM 25 x 070
		75	5.2	100	19.2	125	24.0	PSM 25 x 075
		80	4.9	100	20.5	125	25.6	PSM 25 x 080
		90	4.3	100	23.0	125	28.8	PSM 25 x 090
		100	3.9	100	25.6	125	32.0	PSM 25 x 100
		125	3.1	100	32.0	125	40.0	PSM 25 x 125
		150	2.6	100	38.4	125	48.0	PSM 25 x 150
		175	2.2	100	44.8	125	56.0	PSM 25 x 175
27	13.5	25	18.3	117	6.4	146	8.0	PSM 27 x 025
		30	15.2	117	7.7	146	9.6	PSM 27 x 030
		35	13.0	117	9.0	146	11.2	PSM 27 x 035
		40	11.4	117	10.2	146	12.8	PSM 27 x 040
		45	10.1	117	11.5	146	14.4	PSM 27 x 045
		50	9.1	117	12.8	146	16.0	PSM 27 x 050
		55	8.3	117	14.1	146	17.6	PSM 27 x 055
		60	7.6	117	15.4	146	19.2	PSM 27 x 060
		65	7.0	117	16.6	146	20.8	PSM 27 x 065
		70	6.5	117	17.9	146	22.4	PSM 27 x 070
		75	6.1	117	19.2	146	24.0	PSM 27 x 075
		80	5.7	117	20.5	146	25.6	PSM 27 x 080
		90	5.1	117	23.0	146	28.8	PSM 27 x 090
		100	4.6	117	25.6	146	32.0	PSM 27 x 100
		125	3.6	117	32.0	146	40.0	PSM 27 x 125
		150	3.0	117	38.4	146	48.0	PSM 27 x 150
		175	2.6	117	44.8	146	56.0	PSM 27 x 175
30	15	25	22.5	144	6.4	180	8.0	PSM 30 x 025
		30	18.8	144	7.7	180	9.6	PSM 30 x 030
		35	16.1	144	9.0	180	11.2	PSM 30 x 035
		40	14.1	144	10.2	180	12.8	PSM 30 x 040
		45	12.5	144	11.5	180	14.4	PSM 30 x 045
		50	11.3	144	12.8	180	16.0	PSM 30 x 050
		55	10.2	144	14.1	180	17.6	PSM 30 x 055
		60	9.4	144	15.4	180	19.2	PSM 30 x 060
		65	8.7	144	16.6	180	20.8	PSM 30 x 065
		70	8.0	144	17.9	180	22.4	PSM 30 x 070
		75	7.5	144	19.2	180	24.0	PSM 30 x 075
		80	7.0	144	20.5	180	25.6	PSM 30 x 080
		90	6.3	144	23.0	180	28.8	PSM 30 x 090
		100	5.6	144	25.6	180	32.0	PSM 30 x 100
		125	4.5	144	32.0	180	40.0	PSM 30 x 125
		150	3.8	144	38.4	180	48.0	PSM 30 x 150
		175	3.2	144	44.8	180	56.0	PSM 30 x 175
200	2.8	144	51.2	180	64.0	PSM 30 x 200		
35	17.5	40	19.1	195	10.2	245	12.8	PSM 35 x 040
		45	17.0	195	11.5	245	14.4	PSM 35 x 045
		50	15.3	195	12.8	245	16.0	PSM 35 x 050

Do	Di	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
35	17.5	55	13.9	195	14	245	17.6	PSM 35 x 055
		60	12.8	195	15.4	245	19.2	PSM 35 x 060
		65	11.8	195	16.6	245	20.8	PSM 35 x 065
		70	10.9	195	17.9	245	22.4	PSM 35 x 070
		75	10.2	195	19.2	245	24.0	PSM 35 x 075
		80	9.6	195	20.5	245	25.6	PSM 35 x 080
		90	8.5	195	23.0	245	28.8	PSM 35 x 090
		100	7.7	195	25.6	245	32.0	PSM 35 x 100
		125	6.1	195	32.0	245	40.0	PSM 35 x 125
		150	5.1	195	38.4	245	48.0	PSM 35 x 150
		175	4.4	195	44.8	245	56.0	PSM 35 x 175
		200	3.8	195	51.2	245	64.0	PSM 35 x 200
40	20	40	25.0	256	10.2	320	12.8	PSM 40 x 040
		50	20.0	256	12.8	320	16.0	PSM 40 x 050
		60	16.6	256	15.4	320	19.2	PSM 40 x 060
		70	14.3	256	17.9	320	22.4	PSM 40 x 070
		80	12.5	256	20.5	320	25.6	PSM 40 x 080
		90	11.1	256	23.0	320	28.8	PSM 40 x 090
		100	10.0	256	25.6	320	32.0	PSM 40 x 100
		125	8.0	256	32.0	320	40.0	PSM 40 x 125
		150	6.7	256	38.4	320	48.0	PSM 40 x 150
		175	5.7	256	44.8	320	56.0	PSM 40 x 175
		200	5.0	256	51.2	320	64.0	PSM 40 x 200
		250	4.0	256	64.0	320	80.0	PSM 40 x 250
275	3.6	256	70.4	320	88.0	PSM 40 x 275		
300	3.3	256	76.8	320	96.0	PSM 40 x 300		
50	25	50	31.3	400	12.8	500	16.0	PSM 50 x 050
		60	26.0	400	15.4	500	19.2	PSM 50 x 060
		70	22.3	400	17.9	500	22.4	PSM 50 x 070
		80	19.5	400	20.5	500	25.6	PSM 50 x 080
		90	17.4	400	23.0	500	28.8	PSM 50 x 090
		100	15.6	400	25.6	500	32.0	PSM 50 x 100
		125	12.5	400	32.0	500	40.0	PSM 50 x 125
		150	10.4	400	38.4	500	48.0	PSM 50 x 150
		175	8.9	400	44.8	500	56.0	PSM 50 x 175
		200	7.8	400	51.2	500	64.0	PSM 50 x 200
		250	6.3	400	64.0	500	80.0	PSM 50 x 250
		300	5.2	400	76.8	500	96.0	PSM 50 x 300
350	4.5	400	89.6	500	112.0	PSM 50 x 350		
60	30	60	37.4	575	15.4	720	19.2	PSM 60 x 060
		70	32.1	575	17.9	720	22.4	PSM 60 x 070
		80	28.1	575	20.5	720	25.6	PSM 60 x 080
		90	25.0	575	23.0	720	28.8	PSM 60 x 090
		100	22.5	575	25.6	720	32.0	PSM 60 x 100
		125	18.0	575	32.0	720	40.0	PSM 60 x 125
		150	15.0	575	38.4	720	48.0	PSM 60 x 150
		175	12.9	575	44.8	720	56.0	PSM 60 x 175
70	38.5	200	11.3	575	51.2	720	64.0	PSM 60 x 200
		250	9.0	575	64.0	720	80.0	PSM 60 x 250
		300	7.5	575	76.8	720	96.0	PSM 60 x 300
		350	6.4	575	89.6	720	112.0	PSM 60 x 350
		70	37.9	680	17.9	850	22.4	PSM 70 x 070
		80	33.2	680	20.5	850	25.6	PSM 70 x 080
		90	29.5	680	23.0	850	28.8	PSM 70 x 090
		100	26.5	680	25.6	850	32.0	PSM 70 x 100
125	21.2	680	32.0	850	40.0	PSM 70 x 125		
150	17.7	680	38.4	850	48.0	PSM 70 x 150		
175	15.2	680	44.8	850	56.0	PSM 70 x 175		
200	13.3	680	51.2	850	64.0	PSM 70 x 200		
250	10.6	680	64.0	850	80.0	PSM 70 x 250		
300	8.8	680	76.8	850	96.0	PSM 70 x 300		
350	7.9	680	89.6	850	112.0	PSM 70 x 350		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



PSH

Heavy Load Springs Equivalent to JIS B 5012 Colour - Dark Green



Pawan
CORPORATION

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
6	3	15	3.9	11	2.9	14	3.6	PSH 06 x 015
		20	2.9	11	3.8	14	4.8	PSH 06 x 020
		25	2.3	11	4.8	14	6.0	PSH 06 x 025
		30	1.9	11	5.8	14	7.2	PSH 06 x 030
		35	1.7	11	6.7	14	8.4	PSH 06 x 035
		40	1.5	11	7.7	14	9.6	PSH 06 x 040
		45	1.3	11	8.6	14	10.8	PSH 06 x 045
		50	1.2	11	9.6	14	12.0	PSH 06 x 050
		55	1.1	11	10.6	14	13.2	PSH 06 x 055
		60	1.0	11	11.5	14	14.4	PSH 06 x 060
8	4	10	8.8	17	1.9	21	2.4	PSH 08 x 010
		15	5.8	17	2.9	21	3.6	PSH 08 x 015
		20	4.4	17	3.8	21	4.8	PSH 08 x 020
		25	3.5	17	4.8	21	6.0	PSH 08 x 025
		30	2.9	17	5.8	21	7.2	PSH 08 x 030
		35	2.5	17	6.7	21	8.4	PSH 08 x 035
		40	2.2	17	7.7	21	9.6	PSH 08 x 040
		45	1.9	17	8.6	21	10.8	PSH 08 x 045
		50	1.8	17	9.6	21	12.0	PSH 08 x 050
		55	1.6	17	10.6	21	13.2	PSH 08 x 055
		60	1.5	17	11.5	21	14.4	PSH 08 x 060
		65	1.3	17	12.5	21	15.6	PSH 08 x 065
		70	1.3	17	13.4	21	16.8	PSH 08 x 070
		75	1.2	17	14.4	21	18.0	PSH 08 x 075
80	1.1	17	15.4	21	19.2	PSH 08 x 080		
10	5	10	12.5	24	1.9	30	2.4	PSH 10 x 010
		15	8.3	24	2.9	30	3.6	PSH 10 x 015
		20	6.3	24	3.8	30	4.8	PSH 10 x 020
		25	5.0	24	4.8	30	6.0	PSH 10 x 025
		30	4.2	24	5.8	30	7.2	PSH 10 x 030
		35	3.6	24	6.7	30	8.4	PSH 10 x 035
		40	3.1	24	7.7	30	9.6	PSH 10 x 040
		45	2.8	24	8.6	30	10.8	PSH 10 x 045
		50	2.5	24	9.6	30	12.0	PSH 10 x 050
		55	2.3	24	10.6	30	13.2	PSH 10 x 055
		60	2.1	24	11.5	30	14.4	PSH 10 x 060
		65	2.0	24	12.5	30	15.6	PSH 10 x 065
		70	1.8	24	13.4	30	16.8	PSH 10 x 070
		75	1.7	24	14.4	30	18.0	PSH 10 x 075
80	1.6	24	15.4	30	19.2	PSH 10 x 080		
90	1.4	24	17.3	30	21.6	PSH 10 x 090		
12	6	15	11.9	34	2.9	43	3.6	PSH 12 x 015
		20	8.9	34	3.8	43	4.8	PSH 12 x 020
		25	7.1	34	4.8	43	6.0	PSH 12 x 025
		30	6.0	34	5.8	43	7.2	PSH 12 x 030
		35	5.1	34	6.7	43	8.4	PSH 12 x 035
		40	4.5	34	7.7	43	9.6	PSH 12 x 040
		45	4.0	34	8.6	43	10.8	PSH 12 x 045
		50	3.6	34	9.6	43	12.0	PSH 12 x 050
		55	3.3	34	10.6	43	13.2	PSH 12 x 055
		60	3.0	34	11.5	43	14.4	PSH 12 x 060
		65	2.7	34	12.5	43	15.6	PSH 12 x 065
		70	2.5	34	13.4	43	16.8	PSH 12 x 070
		75	2.4	34	14.4	43	18.0	PSH 12 x 075
		80	2.2	34	15.4	43	19.2	PSH 12 x 080
90	2.0	34	17.3	43	21.6	PSH 12 x 090		
14	7	20	12.3	47	3.8	59	4.8	PSH 14 x 020
		25	9.8	47	4.8	59	6.0	PSH 14 x 025
		30	8.2	47	5.8	59	7.2	PSH 14 x 030
		35	7.0	47	6.7	59	8.4	PSH 14 x 035
		40	6.1	47	7.7	59	9.6	PSH 14 x 040
		45	5.5	47	8.6	59	10.8	PSH 14 x 045
		50	4.9	47	9.6	59	12.0	PSH 14 x 050
		55	4.5	47	10.6	59	13.2	PSH 14 x 055
		60	4.1	47	11.5	59	14.4	PSH 14 x 060

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
14	7	65	3.8	47	12.5	59	15.6	PSH 14 x 65
		70	3.5	47	13.4	59	16.8	PSH 14 x 070
		75	3.3	47	14.4	59	18.0	PSH 14 x 075
		80	3.1	47	15.4	59	19.2	PSH 14 x 080
		90	2.7	47	17.3	59	21.6	PSH 14 x 090
		100	2.5	47	19.2	59	24	PSH 14 x 100
		16	8	20	16.0	62	3.8	77	4.8	PSH 16 x 020
25	12.8			62	4.8	77	6.0	PSH 16 x 025
30	10.7			62	5.8	77	7.2	PSH 16 x 030
35	9.2			62	6.7	77	8.4	PSH 16 x 035
40	8.0			62	7.7	77	9.6	PSH 16 x 040
45	7.1			62	8.6	77	10.8	PSH 16 x 045
50	6.4			62	9.6	77	12.0	PSH 16 x 050
55	5.8			62	10.6	77	13.2	PSH 16 x 055
60	5.3			62	11.5	77	14.4	PSH 16 x 060
65	4.9			62	12.5	77	15.6	PSH 16 x 065
70	4.6			62	13.4	77	16.8	PSH 16 x 070
75	4.3			62	14.4	77	18.0	PSH 16 x 075
80	4.0			62	15.4	77	19.2	PSH 16 x 080
90	3.6	62	17.3	77	21.6	PSH 16 x 090		
100	3.2	62	19.2	77	24.0	PSH 16 x 100		
18	9	20	20.2	78	3.8	97	4.8	PSH 18 x 020
		25	16.2	78	4.8	97	6.0	PSH 18 x 025
		30	13.5	78	5.8	97	7.2	PSH 18 x 030
		35	11.5	78	6.7	97	8.4	PSH 18 x 035
		40	10.1	78	7.7	97	9.6	PSH 18 x 040
		45	9.0	78	8.6	97	10.8	PSH 18 x 045
		50	8.1	78	9.6	97	12.0	PSH 18 x 050
		55	7.3	78	10.6	97	13.2	PSH 18 x 055
		60	6.7	78	11.5	97	14.4	PSH 18 x 060
		65	6.2	78	12.5	97	15.6	PSH 18 x 065
		70	5.8	78	13.4	97	16.8	PSH 18 x 070
		75	5.4	78	14.4	97	18.0	PSH 18 x 075
		80	5.0	78	15.4	97	19.2	PSH 18 x 080
90	4.5	78	17.3	97	21.6	PSH 18 x 090		
100	4.0	78	19.2	97	24.0	PSH 18 x 100		
20	10	20	25.0	96	3.8	120	4.8	PSH 20 x 020
		25	20.0	96	4.8	120	6.0	PSH 20 x 025
		30	16.7	96	5.8	120	7.2	PSH 20 x 030
		35	14.3	96	6.7	120	8.4	PSH 20 x 035
		40	12.5	96	7.7	120	9.6	PSH 20 x 040
		45	11.1	96	8.6	120	10.8	PSH 20 x 045
		50	10.0	96	9.6	120	12.0	PSH 20 x 050
		55	9.1	96	10.6	120	13.2	PSH 20 x 055
		60	8.3	96	11.5	120	14.4	PSH 20 x 060
		65	7.7	96	12.5	120	15.6	PSH 20 x 065
		70	7.1	96	13.4	120	16.8	PSH 20 x 070
		75	6.7	96	14.4	120	18.0	PSH 20 x 075
		80	6.3	96	15.4	120	19.2	PSH 20 x 080
90	5.6	96	17.3	120	21.6	PSH 20 x 090		
100	5.0	96	19.2	120	24.0	PSH 20 x 100		
125	4.0	96	24.0	120	30.0	PSH 20 x 125		
150	3.3	96	28.8	120	36.0	PSH 20 x 150		
22	11	25	24.2	116	4.8	145	6.0	PSH 22 x 025
		30	20.1	116	5.8	145	7.2	PSH 22 x 030
		35	17.3	116	6.7	145	8.4	PSH 22 x 035
		40	15.1	116	7.7	145	9.6	PSH 22 x 040
		45	13.4	116	8.6	145	10.8	PSH 22 x 045
		50	12.1	116	9.6	145	12.0	PSH 22 x 050
		55	10.9	116	10.6	145	13.2	PSH 22 x 055
		60	10.1	116	11.5	145	14.4	PSH 22 x 060
		65	9.3	116	12.5	145	15.6	PSH 22 x 065
		70	8.6	116	13.4	145	16.8	PSH 22 x 070
		75	8.0	116	14.4	145	18.0	PSH 22 x 075
		80	7.6	116	15.4	145	19.2	PSH 22 x 080

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Heavy Load Springs

Equivalent to JIS B 5012
Colour - Dark Green

PSH



Do	Di	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
22	11	90	6.7	116	17.3	145	21.6	PSH 22 x 090
		100	6.0	116	19.2	145	24.0	PSH 22 x 100
		125	4.8	116	24.0	145	30.0	PSH 22 x 125
		150	4.0	116	28.8	145	36.0	PSH 22 x 150
25	12.5	25	31.2	150	4.8	187	6.0	PSH 25 x 025
		30	26.0	150	5.8	187	7.2	PSH 25 x 030
		35	22.3	150	6.7	187	8.4	PSH 25 x 035
		40	19.5	150	7.7	187	9.6	PSH 25 x 040
		45	17.3	150	8.6	187	10.8	PSH 25 x 045
		50	15.6	150	9.6	187	12.0	PSH 25 x 050
		55	14.2	150	10.6	187	13.2	PSH 25 x 055
		60	13.0	150	11.5	187	14.4	PSH 25 x 060
		65	12.0	150	12.5	187	15.6	PSH 25 x 065
		70	11.1	150	13.4	187	16.8	PSH 25 x 070
		75	10.4	150	14.4	187	18.0	PSH 25 x 075
		80	9.7	150	15.4	187	19.2	PSH 25 x 080
		90	8.7	150	17.3	187	21.6	PSH 25 x 090
		100	7.8	150	19.2	187	24.0	PSH 25 x 100
		125	6.2	150	24.0	187	30.0	PSH 25 x 125
		150	5.2	150	28.8	187	36.0	PSH 25 x 150
175	4.5	150	33.6	187	42.0	PSH 25 x 175		
27	13.5	25	36.4	175	4.8	219	6.0	PSH 27 x 025
		30	30.4	175	5.8	219	7.2	PSH 27 x 030
		35	26.2	175	6.7	219	8.4	PSH 27 x 035
		40	22.8	175	7.7	219	9.6	PSH 27 x 040
		45	20.3	175	8.6	219	10.8	PSH 27 x 045
		50	18.3	175	9.6	219	12.0	PSH 27 x 050
		55	16.5	175	10.6	219	13.2	PSH 27 x 055
		60	15.2	175	11.5	219	14.4	PSH 27 x 060
		65	14.0	175	12.5	219	15.6	PSH 27 x 065
		70	13.0	175	13.4	219	16.8	PSH 27 x 070
		75	12.1	175	14.4	219	18.0	PSH 27 x 075
		80	11.4	175	15.4	219	19.2	PSH 27 x 080
		90	10.1	175	17.3	219	21.6	PSH 27 x 090
		100	9.1	175	19.2	219	24.0	PSH 27 x 100
		125	7.3	175	24.0	219	30.0	PSH 27 x 125
		150	6.1	175	28.8	219	36.0	PSH 27 x 150
175	5.2	175	33.6	219	42.0	PSH 27 x 175		
30	15	25	45.0	216	4.8	270	6.0	PSH 30 x 025
		30	37.5	216	5.8	270	7.2	PSH 30 x 030
		35	32.3	216	6.7	270	8.4	PSH 30 x 035
		40	28.1	216	7.7	270	9.6	PSH 30 x 040
		45	25.0	216	8.6	270	10.8	PSH 30 x 045
		50	22.5	216	9.6	270	12.0	PSH 30 x 050
		55	20.4	216	10.6	270	13.2	PSH 30 x 055
		60	18.8	216	11.5	270	14.4	PSH 30 x 060
		65	17.3	216	12.5	270	15.6	PSH 30 x 065
		70	16.1	216	13.4	270	16.8	PSH 30 x 070
		75	15.0	216	14.4	270	18.0	PSH 30 x 075
		80	14.1	216	15.4	270	19.2	PSH 30 x 080
		90	12.5	216	17.3	270	21.6	PSH 30 x 090
		100	11.3	216	19.2	270	24.0	PSH 30 x 100
		125	9.0	216	24.0	270	30.0	PSH 30 x 125
		150	7.5	216	28.8	270	36.0	PSH 30 x 150
175	6.4	216	33.6	270	42.0	PSH 30 x 175		
200	5.6	216	38.4	270	48.0	PSH 30 x 200		
35	17.5	40	38.2	293	7.7	367	9.6	PSH 35 x 040
		45	34.0	293	8.6	367	10.8	PSH 35 x 045
		50	30.6	293	9.6	367	12.0	PSH 35 x 050
		55	27.8	293	10.6	367	13.2	PSH 35 x 055
		60	25.5	293	11.5	367	14.4	PSH 35 x 060
		65	23.5	293	12.5	367	15.6	PSH 35 x 065
		70	21.8	293	13.4	367	16.8	PSH 35 x 070
		75	20.4	293	14.4	367	18.0	PSH 35 x 075
		80	19.1	293	15.4	367	19.2	PSH 35 x 080

Do	Di	Lo	C	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
35	17.5	90	17.0	293	17.3	367	21.6	PSH 35 x 090		
		100	15.3	293	19.2	367	24.0	PSH 35 x 100		
		125	12.2	293	24.0	367	30.0	PSH 35 x 125		
		150	10.2	293	28.8	367	36.0	PSH 35 x 150		
		175	8.7	293	33.6	367	42.0	PSH 35 x 175		
		200	7.6	293	38.4	367	48.0	PSH 35 x 200		
40	20	40	50.0	384	7.7	480	9.6	PSH 40 x 040		
		45	44.4	384	8.6	480	10.8	PSH 40 x 045		
		50	40.0	384	9.6	480	12.0	PSH 40 x 050		
		55	36.3	384	10.6	480	13.2	PSH 40 x 055		
		60	33.3	384	11.5	480	14.4	PSH 40 x 060		
		65	30.7	384	12.5	480	15.6	PSH 40 x 065		
		70	28.6	384	13.4	480	16.8	PSH 40 x 070		
		75	26.6	384	14.4	480	18.0	PSH 40 x 075		
		80	25.0	384	15.4	480	19.2	PSH 40 x 080		
		90	22.2	384	17.3	480	21.6	PSH 40 x 090		
		100	20.0	384	19.2	480	24.0	PSH 40 x 100		
		125	16.0	384	24.0	480	30.0	PSH 40 x 125		
		150	13.3	384	28.8	480	36.0	PSH 40 x 150		
		175	11.4	384	33.6	480	42.0	PSH 40 x 175		
50	25	200	10.0	384	38.4	480	48.0	PSH 40 x 200		
		225	8.9	384	43.2	480	54.0	PSH 40 x 225		
		250	8.0	384	48.0	480	60.0	PSH 40 x 250		
		275	7.3	384	52.8	480	66.0	PSH 40 x 275		
		300	6.7	384	57.6	480	72.0	PSH 40 x 300		
		50	25	50	62.5	600	9.6	750	12.0	PSH 50 x 050
				55	56.8	600	10.6	750	13.2	PSH 50 x 055
				60	52.1	600	11.5	750	14.4	PSH 50 x 060
				65	48.0	600	12.5	750	15.6	PSH 50 x 065
				70	44.6	600	13.4	750	16.8	PSH 50 x 070
				75	41.6	600	14.4	750	18.0	PSH 50 x 075
				80	39.1	600	15.4	750	19.2	PSH 50 x 080
				90	34.7	600	17.3	750	21.6	PSH 50 x 090
				100	31.2	600	19.2	750	24.0	PSH 50 x 100
125	25.0			600	24.0	750	30.0	PSH 50 x 125		
150	20.8			600	28.8	750	36.0	PSH 50 x 150		
175	17.8			600	33.6	750	42.0	PSH 50 x 175		
200	15.6			600	38.4	750	48.0	PSH 50 x 200		
225	13.9			600	43.2	750	54.0	PSH 50 x 225		
60	30	250	12.5	600	48.0	750	60.0	PSH 50 x 250		
		275	11.4	600	52.8	750	66.0	PSH 50 x 275		
		300	10.4	600	57.6	750	72.0	PSH 50 x 300		
		350	8.9	600	67.2	750	84.0	PSH 50 x 350		
		60	30	60	75.0	864	11.5	1080	14.4	PSH 60 x 060
				70	64.3	864	13.4	1080	16.8	PSH 60 x 070
80	56.3			864	15.4	1080	19.2	PSH 60 x 080		
90	50.0			864	17.3	1080	21.6	PSH 60 x 090		
100	45.0			864	19.2	1080	24.0	PSH 60 x 100		
125	36.0			864	24.0	1080	30.0	PSH 60 x 125		
150	30.0			864	28.8	1080	36.0	PSH 60 x 150		
175	25.7			864	33.6	1080	42.0	PSH 60 x 175		
200	22.5			864	38.4	1080	48.0	PSH 60 x 200		
225	20.0			864	43.2	1080	54.0	PSH 60 x 225		
250	18.0			864	48.0	1080	60.0	PSH 60 x 250		
275	16.4			864	52.8	1080	66.0	PSH 60 x 275		
300	15.0			864	57.6	1080	72.0	PSH 60 x 300		
350	12.8			864	67.2	1080	84.0	PSH 60 x 350		
70	38.5	70	76.2	1024	13.4	1280	16.8	PSH 70 x 070		
		80	66.7	1024	15.4	1280	19.2	PSH 70 x 080		
		90	59.3	1024	17.3	1280	21.6	PSH 70 x 090		
		100	53.4	1024	19.2	1280	24.0	PSH 70 x 100		
		125	42.7	1024	24.0	1280	30.0	PSH 70 x 125		
		150	35.6	1024	28.8	1280	36.0	PSH 70 x 150		
		175	30.5	1024	33.6	1280	42.0	PSH 70 x 175		
		200	26.7	1024	38.4	1280	48.0	PSH 70 x 200		
		250	21.3	1024	48.0	1280	60.0	PSH 70 x 250		
		300	17.8	1024	57.6	1280	72.0	PSH 70 x 300		
350	15.2	1024	67.2	1280	84.0	PSH 70 x 350				

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

PSB

Extra Heavy Load Springs Equivalent to JIS B 5012 Colour - Brown



Pawan
CORPORATION

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
6	3	15	6.0	14	2.4	18	3	PSB 06 x 015
		20	4.5	14	3.2	18	4	PSB 06 x 020
		25	3.6	14	4.0	18	5	PSB 06 x 025
		30	3.0	14	4.8	18	6	PSB 06 x 030
		35	2.6	14	5.6	18	7	PSB 06 x 035
		40	2.3	14	6.4	18	8	PSB 06 x 040
		45	2.0	14	7.2	18	9	PSB 06 x 045
		50	1.8	14	8.0	18	10	PSB 06 x 050
		55	1.6	14	8.8	18	11	PSB 06 x 055
60	1.5	14	9.6	18	12	PSB 06 x 060		
8	4	10	16.5	26	1.6	33	2	PSB 08 x 010
		15	11.0	26	2.4	33	3	PSB 08 x 015
		20	8.2	26	3.2	33	4	PSB 08 x 020
		25	6.6	26	4.0	33	5	PSB 08 x 025
		30	5.5	26	4.8	33	6	PSB 08 x 030
		35	4.7	26	5.6	33	7	PSB 08 x 035
		40	4.1	26	6.4	33	8	PSB 08 x 040
		45	3.7	26	7.2	33	9	PSB 08 x 045
		50	3.3	26	8.0	33	10	PSB 08 x 050
		55	3.0	26	8.8	33	11	PSB 08 x 055
		60	2.7	26	9.6	33	12	PSB 08 x 060
		65	2.5	26	10.4	33	13	PSB 08 x 065
		70	2.4	26	11.2	33	14	PSB 08 x 070
		75	2.2	26	12.0	33	15	PSB 08 x 075
		80	2.1	26	12.8	33	16	PSB 08 x 080
10	5	10	22.5	36	1.6	45	2	PSB 10 x 010
		15	15.0	36	2.4	45	3	PSB 10 x 015
		20	11.2	36	3.2	45	4	PSB 10 x 020
		25	9.0	36	4.0	45	5	PSB 10 x 025
		30	7.5	36	4.8	45	6	PSB 10 x 030
		35	6.4	36	5.6	45	7	PSB 10 x 035
		40	5.6	36	6.4	45	8	PSB 10 x 040
		45	5.0	36	7.2	45	9	PSB 10 x 045
		50	4.5	36	8.0	45	10	PSB 10 x 050
		55	4.1	36	8.8	45	11	PSB 10 x 055
		60	3.8	36	9.6	45	12	PSB 10 x 060
		65	3.5	36	10.4	45	13	PSB 10 x 065
		70	3.2	36	11.2	45	14	PSB 10 x 070
		75	3.0	36	12.0	45	15	PSB 10 x 075
		80	2.8	36	12.8	45	16	PSB 10 x 080
90	2.5	36	14.4	45	18	PSB 10 x 090		
12	6	15	19.3	46	2.4	58	3	PSB 12 x 015
		20	14.5	46	3.2	58	4	PSB 12 x 020
		25	11.6	46	4.0	58	5	PSB 12 x 025
		30	9.7	46	4.8	58	6	PSB 12 x 030
		35	8.3	46	5.6	58	7	PSB 12 x 035
		40	7.3	46	6.4	58	8	PSB 12 x 040
		45	6.4	46	7.2	58	9	PSB 12 x 045
		50	5.8	46	8.0	58	10	PSB 12 x 050
		55	5.3	46	8.8	58	11	PSB 12 x 055
		60	4.8	46	9.6	58	12	PSB 12 x 060
		65	4.4	46	10.4	58	13	PSB 12 x 065
		70	4.1	46	11.2	58	14	PSB 12 x 070
		75	3.9	46	12.0	58	15	PSB 12 x 075
		80	3.6	46	12.8	58	16	PSB 12 x 080
		90	3.2	46	14.4	58	18	PSB 12 x 090
14	7	20	18.8	60	3.2	75	4	PSB 14 x 020
		25	15.0	60	4.0	75	5	PSB 14 x 025
		30	12.5	60	4.8	75	6	PSB 14 x 030
		35	10.7	60	5.6	75	7	PSB 14 x 035
		40	9.4	60	6.4	75	8	PSB 14 x 040
		45	8.3	60	7.2	75	9	PSB 14 x 045
		50	7.5	60	8.0	75	10	PSB 14 x 050
		55	6.8	60	8.8	75	11	PSB 14 x 055
		60	6.3	60	9.6	75	12	PSB 14 x 060

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
14	7	65	5.8	60	10.4	75	13	PSB 14 x 065
		70	5.4	60	11.2	75	14	PSB 14 x 070
		75	5.0	60	12.0	75	15	PSB 14 x 075
		80	4.7	60	12.8	75	16	PSB 14 x 080
		90	4.2	60	14.4	75	18	PSB 14 x 090
		100	3.8	60	16.0	75	20	PSB 14 x 100
		16	8	20	25.0	80	3.2	100	4	PSB 16 x 020
25	20.0			80	4.0	100	5	PSB 16 x 025
30	16.7			80	4.8	100	6	PSB 16 x 030
35	14.3			80	5.6	100	7	PSB 16 x 035
40	12.5			80	6.4	100	8	PSB 16 x 040
45	11.1			80	7.2	100	9	PSB 16 x 045
50	10.0			80	8.0	100	10	PSB 16 x 050
55	9.1			80	8.8	100	11	PSB 16 x 055
60	8.3			80	9.6	100	12	PSB 16 x 060
65	7.7			80	10.4	100	13	PSB 16 x 065
70	7.1			80	11.2	100	14	PSB 16 x 070
75	6.7			80	12.0	100	15	PSB 16 x 075
80	6.3	80	12.8	100	16	PSB 16 x 080		
90	5.6	80	14.4	100	18	PSB 16 x 090		
100	5.0	80	16.0	100	20	PSB 16 x 100		
18	9	20	31.2	100	3.2	125	4	PSB 18 x 020
		25	25.0	100	4.0	125	5	PSB 18 x 025
		30	20.8	100	4.8	125	6	PSB 18 x 030
		35	17.9	100	5.6	125	7	PSB 18 x 035
		40	15.6	100	6.4	125	8	PSB 18 x 040
		45	13.9	100	7.2	125	9	PSB 18 x 045
		50	12.5	100	8.0	125	10	PSB 18 x 050
		55	11.4	100	8.8	125	11	PSB 18 x 055
		60	10.4	100	9.6	125	12	PSB 18 x 060
		65	9.6	100	10.4	125	13	PSB 18 x 065
		70	8.9	100	11.2	125	14	PSB 18 x 070
		75	8.3	100	12.0	125	15	PSB 18 x 075
80	7.8	100	12.8	125	16	PSB 18 x 080		
90	7.0	100	14.4	125	18	PSB 18 x 090		
100	6.3	100	16.0	125	20	PSB 18 x 100		
20	10	20	40.0	128	3.2	160	4	PSB 20 x 020
		25	32.0	128	4.0	160	5	PSB 20 x 025
		30	26.7	128	4.8	160	6	PSB 20 x 030
		35	22.9	128	5.6	160	7	PSB 20 x 035
		40	20.0	128	6.4	160	8	PSB 20 x 040
		45	17.8	128	7.2	160	9	PSB 20 x 045
		50	16.0	128	8.0	160	10	PSB 20 x 050
		55	14.6	128	8.8	160	11	PSB 20 x 055
		60	13.3	128	9.6	160	12	PSB 20 x 060
		65	12.3	128	10.4	160	13	PSB 20 x 065
		70	11.4	128	11.2	160	14	PSB 20 x 070
		75	10.7	128	12.0	160	15	PSB 20 x 075
80	10.0	128	12.8	160	16	PSB 20 x 080		
90	8.9	128	14.4	160	18	PSB 20 x 090		
100	8.0	128	16.0	160	20	PSB 20 x 100		
125	6.4	128	20.0	160	25	PSB 20 x 125		
150	5.3	128	24.0	160	30	PSB 20 x 150		
22	11	25	39.0	156	4.0	195	5	PSB 22 x 025
		30	32.5	156	4.8	195	6	PSB 22 x 030
		35	27.9	156	5.6	195	7	PSB 22 x 035
		40	24.4	156	6.4	195	8	PSB 22 x 040
		45	21.7	156	7.2	195	9	PSB 22 x 045
		50	19.5	156	8.0	195	10	PSB 22 x 050
		55	17.7	156	8.8	195	11	PSB 22 x 055
		60	16.2	156	9.6	195	12	PSB 22 x 060
		65	15.0	156	10.4	195	13	PSB 22 x 065
		70	13.9	156	11.2	195	14	PSB 22 x 070
75	13.0	156	12.0	195	15	PSB 22 x 075		
80	12.2	156	12.8	195	16	PSB 22 x 080		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Extra Heavy Load Springs

Equivalent to JIS B 5012

Colour - Brown

PSB



Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
22	11	90	10.8	156	14.4	195	18	PSB 22 x 090
		100	9.7	156	16.0	195	20	PSB 22 x 100
		125	7.8	156	20.0	195	25	PSB 22 x 125
		150	6.5	156	24.0	195	30	PSB 22 x 150
25	12.5	25	49.0	196	4.0	245	5	PSB 25 x 025
		30	40.8	196	4.8	245	6	PSB 25 x 030
		35	35.0	196	5.6	245	7	PSB 25 x 035
		40	30.6	196	6.4	245	8	PSB 25 x 040
		45	27.2	196	7.2	245	9	PSB 25 x 045
		50	24.5	196	8.0	245	10	PSB 25 x 050
		55	22.3	196	8.8	245	11	PSB 25 x 055
		60	20.4	196	9.6	245	12	PSB 25 x 060
		65	18.8	196	10.4	245	13	PSB 25 x 065
		70	17.5	196	11.2	245	14	PSB 25 x 070
		75	16.3	196	12.0	245	15	PSB 25 x 075
		80	15.3	196	12.8	245	16	PSB 25 x 080
		90	13.6	196	14.4	245	18	PSB 25 x 090
		100	12.3	196	16.0	245	20	PSB 25 x 100
		125	9.8	196	20.0	245	25	PSB 25 x 125
		150	8.2	196	24.0	245	30	PSB 25 x 150
175	7.0	196	28.0	245	35	PSB 25 x 175		
27	13.5	25	58.0	232	4.0	290	5	PSB 27 x 025
		30	48.3	232	4.8	290	6	PSB 27 x 030
		35	41.4	232	5.6	290	7	PSB 27 x 035
		40	36.3	232	6.4	290	8	PSB 27 x 040
		45	32.2	232	7.2	290	9	PSB 27 x 045
		50	29.0	232	8.0	290	10	PSB 27 x 050
		55	26.4	232	8.8	290	11	PSB 27 x 055
		60	24.2	232	9.6	290	12	PSB 27 x 060
		65	22.3	232	10.4	290	13	PSB 27 x 065
		70	20.7	232	11.2	290	14	PSB 27 x 070
		75	19.3	232	12.0	290	15	PSB 27 x 075
		80	18.1	232	12.8	290	16	PSB 27 x 080
		90	16.1	232	14.4	290	18	PSB 27 x 090
		100	14.5	232	16.0	290	20	PSB 27 x 100
		125	11.6	232	20.0	290	25	PSB 27 x 125
		150	9.7	232	24.0	290	30	PSB 27 x 150
175	8.3	232	28.0	290	35	PSB 27 x 175		
30	15	25	72.0	288	4.0	360	5	PSB 30 x 025
		30	60.0	288	4.8	360	6	PSB 30 x 030
		35	51.4	288	5.6	360	7	PSB 30 x 035
		40	45.0	288	6.4	360	8	PSB 30 x 040
		45	40.0	288	7.2	360	9	PSB 30 x 045
		50	36.0	288	8.0	360	10	PSB 30 x 050
		55	32.7	288	8.8	360	11	PSB 30 x 055
		60	30.0	288	9.6	360	12	PSB 30 x 060
		65	27.7	288	10.4	360	13	PSB 30 x 065
		70	25.7	288	11.2	360	14	PSB 30 x 070
		75	24.0	288	12.0	360	15	PSB 30 x 075
		80	22.5	288	12.8	360	16	PSB 30 x 080
		90	20.0	288	14.4	360	18	PSB 30 x 090
		100	18.0	288	16.0	360	20	PSB 30 x 100
		125	14.4	288	20.0	360	25	PSB 30 x 125
		150	12.0	288	24.0	360	30	PSB 30 x 150
175	10.3	288	28.0	360	35	PSB 30 x 175		
200	9.0	288	32.0	360	40	PSB 30 x 200		
35	17.5	40	61.3	392	6.4	490	8	PSB 35 x 040
		45	54.4	392	7.2	490	9	PSB 35 x 045
		50	49.0	392	8.0	490	10	PSB 35 x 050
		55	44.5	392	8.8	490	11	PSB 35 x 055
		60	40.8	392	9.6	490	12	PSB 35 x 060
		65	37.7	392	10.4	490	13	PSB 35 x 065
		70	35.0	392	11.2	490	14	PSB 35 x 070
		75	32.7	392	12.0	490	15	PSB 35 x 075
		80	30.6	392	12.8	490	16	PSB 35 x 080

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
35	17.5	90	27.2	392	14.4	490	18	PSB 35 x 090
		100	24.5	392	16.0	490	20	PSB 35 x 100
		125	19.6	392	20.0	490	25	PSB 35 x 125
		150	16.3	392	24.0	490	30	PSB 35 x 150
		175	14.0	392	28.0	490	35	PSB 35 x 175
		200	12.3	392	32.0	490	40	PSB 35 x 200
40	20	40	80.0	512	6.4	640	8	PSB 40 x 040
		45	71.1	512	7.2	640	9	PSB 40 x 045
		50	64.0	512	8.0	640	10	PSB 40 x 050
		55	58.1	512	8.8	640	11	PSB 40 x 055
		60	53.3	512	9.6	640	12	PSB 40 x 060
		65	49.2	512	10.4	640	13	PSB 40 x 065
		70	45.7	512	11.2	640	14	PSB 40 x 070
		75	42.6	512	12.0	640	15	PSB 40 x 075
		80	40.0	512	12.8	640	16	PSB 40 x 080
		90	35.5	512	14.4	640	18	PSB 40 x 090
		100	32.0	512	16.0	640	20	PSB 40 x 100
		125	25.6	512	20.0	640	25	PSB 40 x 125
		150	21.3	512	24.0	640	30	PSB 40 x 150
		175	18.3	512	28.0	640	35	PSB 40 x 175
		200	16.0	512	32.0	640	40	PSB 40 x 200
		225	14.2	512	36.0	640	45	PSB 40 x 225
		250	12.8	512	40.0	640	50	PSB 40 x 250
		275	11.6	512	44.0	640	55	PSB 40 x 275
300	10.7	512	48.0	640	60	PSB 40 x 300		
50	25	50	100.0	800	8.0	1000	10	PSB 50 x 050
		55	90.9	800	8.8	1000	11	PSB 50 x 055
		60	83.3	800	9.6	1000	12	PSB 50 x 060
		65	76.9	800	10.4	1000	13	PSB 50 x 065
		70	71.4	800	11.2	1000	14	PSB 50 x 070
		75	66.7	800	12.0	1000	15	PSB 50 x 075
		80	62.5	800	12.8	1000	16	PSB 50 x 080
		90	55.6	800	14.4	1000	18	PSB 50 x 090
		100	50.0	800	16.0	1000	20	PSB 50 x 100
		125	40.0	800	20.0	1000	25	PSB 50 x 125
		150	33.3	800	24.0	1000	30	PSB 50 x 150
		175	28.6	800	28.0	1000	35	PSB 50 x 175
		200	25.0	800	32.0	1000	40	PSB 50 x 200
		225	22.2	800	36.0	1000	45	PSB 50 x 225
		250	20.0	800	40.0	1000	50	PSB 50 x 250
		275	18.2	800	44.0	1000	55	PSB 50 x 275
		300	16.7	800	48.0	1000	60	PSB 50 x 300
		350	14.3	800	56.0	1000	70	PSB 50 x 350
60	30	60	120.0	1152	9.6	1440	12	PSB 60 x 060
		70	102.9	1152	11.2	1440	14	PSB 60 x 070
		80	90.0	1152	12.8	1440	16	PSB 60 x 080
		90	80.0	1152	14.4	1440	18	PSB 60 x 090
		100	72.0	1152	16.0	1440	20	PSB 60 x 100
		125	57.6	1152	20.0	1440	25	PSB 60 x 125
		150	48.0	1152	24.0	1440	30	PSB 60 x 150
		175	41.1	1152	28.0	1440	35	PSB 60 x 175
		200	36.0	1152	32.0	1440	40	PSB 60 x 200
		250	28.8	1152	40.0	1440	50	PSB 60 x 250
		300	24.0	1152	48.0	1440	60	PSB 60 x 300
		350	20.6	1152	56.0	1440	70	PSB 60 x 350
70	38.5	70	124.3	1392	11.2	1740	14	PSB 70 x 070
		80	108.8	1392	12.8	1740	16	PSB 70 x 080
		90	96.7	1392	14.4	1740	18	PSB 70 x 090
		100	87.0	1392	16.0	1740	20	PSB 70 x 100
		125	69.6	1392	20.0	1740	25	PSB 70 x 125
		150	58.0	1392	24.0	1740	30	PSB 70 x 150
		175	49.7	1392	28.0	1740	35	PSB 70 x 175
		200	43.5	1392	32.0	1740	40	PSB 70 x 200
		250	34.8	1392	40.0	1740	50	PSB 70 x 250
		300	29.0	1392	48.0	1740	60	PSB 70 x 300
		350	24.9	1392	56.0	1740	70	PSB 70 x 350

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



High Compression Springs

Colour - Pista

PGL



Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
20	10	25	3.0	22.5	7.5	37.5	12.5	PGL 20 X 025
		32	2.3	22.2	9.6	37.0	16.0	PGL 20 X 032
		38	1.9	21.7	11.4	36.1	19.0	PGL 20 X 038
		44	1.6	21.1	13.2	35.2	22.0	PGL 20 X 044
		51	1.4	21.4	15.3	35.7	25.5	PGL 20 X 051
		64	1.2	22.1	19.2	36.8	32.0	PGL 20 X 064
		76	1.0	22.8	22.8	38.0	38.0	PGL 20 X 076
		89	0.9	22.7	26.7	37.8	44.5	PGL 20 X 089
		102	0.8	23.0	30.6	38.3	51.0	PGL 20 X 102
		115	0.7	22.4	34.5	37.4	57.5	PGL 20 X 115
		127	0.6	22.9	38.1	38.1	63.5	PGL 20 X 127
		139	0.6	22.9	41.7	38.2	69.5	PGL 20 X 139
		152	0.5	22.8	45.6	38.0	76.0	PGL 20 X 152
		305	0.3	23.8	91.5	39.7	152.5	PGL 20 X 305
25	12.5	25	5.5	41.3	7.5	68.8	12.5	PGL 25 X 025
		32	4.3	41.3	9.6	68.8	16.0	PGL 25 X 032
		38	3.7	41.6	11.4	69.4	19.0	PGL 25 X 038
		44	3.2	42.2	13.2	70.4	22.0	PGL 25 X 044
		51	2.8	42.1	15.3	70.1	25.5	PGL 25 X 051
		64	2.2	42.2	19.2	70.4	32.0	PGL 25 X 064
		76	1.9	42.2	22.8	70.3	38.0	PGL 25 X 076
		89	1.6	41.4	26.7	69.0	44.5	PGL 25 X 089
		102	1.4	41.3	30.6	68.9	51.0	PGL 25 X 102
		115	1.2	41.4	34.5	69.0	57.5	PGL 25 X 115
		127	1.1	41.1	38.1	68.6	63.5	PGL 25 X 127
		139	1.0	40.9	41.7	68.1	69.5	PGL 25 X 139
		152	0.9	41.0	45.6	68.4	76.0	PGL 25 X 152
		178	0.8	41.7	53.4	69.4	89.0	PGL 25 X 178
203	0.7	41.4	60.9	69.0	101.5	PGL 25 X 203		
305	0.5	41.2	91.5	68.6	152.5	PGL 25 X 305		
32	16	38	4.4	50.2	11.4	83.6	19.0	PGL 32 X 038
		44	3.8	50.2	13.2	83.6	22.0	PGL 32 X 044
		51	3.3	50.5	15.3	84.2	25.5	PGL 32 X 051
		64	2.6	49.9	19.2	83.2	32.0	PGL 32 X 064
		76	2.2	50.2	22.8	83.6	38.0	PGL 32 X 076
		89	1.9	49.4	26.7	82.3	44.5	PGL 32 X 089
		102	1.6	49.0	30.6	81.6	51.0	PGL 32 X 102
		115	1.5	50.0	34.5	83.4	57.5	PGL 32 X 115
		127	1.3	49.5	38.1	82.6	63.5	PGL 32 X 127
		139	1.2	49.2	41.7	82.0	69.5	PGL 32 X 139
		152	1.1	49.2	45.6	82.1	76.0	PGL 32 X 152
		178	0.9	49.1	53.4	81.9	89.0	PGL 32 X 178
		203	0.8	48.7	60.9	81.2	101.5	PGL 32 X 203
		254	0.7	49.5	76.2	82.6	127.0	PGL 32 X 254
305	0.5	49.4	91.5	82.4	152.5	PGL 32 X 305		
40	20	51	4.9	75.1	15.3	125.2	25.5	PGL 40 X 051
		64	4.0	76.8	19.2	128.0	32.0	PGL 40 X 064
		76	3.4	77.5	22.8	129.2	38.0	PGL 40 X 076
		89	2.9	77.4	26.7	129.1	44.5	PGL 40 X 089
		102	2.5	76.5	30.6	127.5	51.0	PGL 40 X 102
		115	2.3	77.6	34.5	129.4	57.5	PGL 40 X 115
		127	2.0	76.2	38.1	127.0	63.5	PGL 40 X 127

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
40	20	139	1.8	75.5	41.7	125.8	69.5	PGL 40 X 139
		152	1.7	75.2	45.6	125.4	76.0	PGL 40 X 152
		178	1.4	74.8	53.4	124.6	89.0	PGL 40 X 178
		203	1.3	76.1	60.9	126.9	101.5	PGL 40 X 203
		254	1.0	76.2	76.2	127.0	127.0	PGL 40 X 254
		305	0.9	77.8	91.5	129.6	152.5	PGL 40 X 305
		50	25	64	8.8	169.0	19.2	281.6	32.0	PGL 50 X 064
76	7.2			164.2	22.8	273.6	38.0	PGL 50 X 076
89	6.1			162.9	26.7	271.5	44.5	PGL 50 X 089
102	5.3			162.2	30.6	270.0	51.0	PGL 50 X 102
115	4.7			162.2	34.5	270.0	57.5	PGL 50 X 115
127	4.3			163.8	38.1	273.1	63.5	PGL 50 X 127
139	3.9			162.6	41.7	271.1	69.5	PGL 50 X 139
152	3.5			159.6	45.6	266.0	76.0	PGL 50 X 152
178	3.0			160.2	53.4	267.0	89.0	PGL 50 X 178
203	2.6			158.3	60.9	263.9	101.5	PGL 50 X 203
254	2.1	160.0	76.2	266.7	127.0	PGL 50 X 254		
305	1.8	160.1	91.5	266.9	152.5	PGL 50 X 305		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



High Compression Springs

Colour - Ivory

PSR



Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	40% x Length Maximum Life		50% x Length Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
14.5	9	20	1.1	9	8	11	10.0	PSR 14.5 X 020
		25	0.9	9	10	11	12.5	PSR 14.5 X 025
		30	0.7	9	12	11	15.0	PSR 14.5 X 030
		35	0.6	9	14	11	17.5	PSR 14.5 X 035
		40	0.6	9	16	11	20.0	PSR 14.5 X 040
		45	0.5	9	18	11	22.5	PSR 14.5 X 045
		50	0.4	9	20	11	25.0	PSR 14.5 X 050
		55	0.4	9	22	11	27.5	PSR 14.5 X 055
		60	0.4	9	24	11	30.0	PSR 14.5 X 060
		65	0.3	9	26	11	32.5	PSR 14.5 X 065
		70	0.3	9	28	11	35.0	PSR 14.5 X 070
		75	0.3	9	30	11	37.5	PSR 14.5 X 075
		80	0.3	9	32	11	40.0	PSR 14.5 X 080
		90	0.3	9	36	11	45.0	PSR 14.5 X 090
100	0.2	9	40	11	50.0	PSR 14.5 X 100		
125	0.2	9	50	11	62.5	PSR 14.5 X 125		
17	11	25	1.5	15	10	19	12.5	PSR 17 X 025
		30	1.3	15	12	19	15.0	PSR 17 X 030
		35	1.1	15	14	19	17.5	PSR 17 X 035
		40	0.9	15	16	19	20.0	PSR 17 X 040
		45	0.8	15	18	19	22.5	PSR 17 X 045
		50	0.8	15	20	19	25.0	PSR 17 X 050
		55	0.7	15	22	19	27.5	PSR 17 X 055
		60	0.6	15	24	19	30.0	PSR 17 X 060
		65	0.6	15	26	19	32.5	PSR 17 X 065
		70	0.5	15	28	19	35.0	PSR 17 X 070
		75	0.5	15	30	19	37.5	PSR 17 X 075
		80	0.5	15	32	19	40.0	PSR 17 X 080
		90	0.4	15	36	19	45.0	PSR 17 X 090
		100	0.4	15	40	19	50.0	PSR 17 X 100
125	0.3	15	50	19	62.5	PSR 17 X 125		
150	0.3	15	60	19	75.0	PSR 17 X 150		
21	13	30	1.4	17	12	21	15.0	PSR 21 X 030
		35	1.2	17	14	21	17.5	PSR 21 X 035
		40	1.1	17	16	21	20.0	PSR 21 X 040
		45	0.9	17	18	21	22.5	PSR 21 X 045
		50	0.8	17	20	21	25.0	PSR 21 X 050
		55	0.8	17	22	21	27.5	PSR 21 X 055
		60	0.7	17	24	21	30.0	PSR 21 X 060
		65	0.7	17	26	21	32.5	PSR 21 X 065
		70	0.6	17	28	21	35.0	PSR 21 X 070
		75	0.6	17	30	21	37.5	PSR 21 X 075
		80	0.5	17	32	21	40.0	PSR 21 X 080
		90	0.5	17	36	21	45.0	PSR 21 X 090
		100	0.4	17	40	21	50.0	PSR 21 X 100
		125	0.3	17	50	21	62.5	PSR 21 X 125
150	0.3	17	60	21	75.0	PSR 21 X 150		
26	16.5	30	2.7	33	12	41	15.0	PSR 26 X 030
		35	2.4	33	14	41	17.5	PSR 26 X 035
		40	2.1	33	16	41	20.0	PSR 26 X 040
		45	1.8	33	18	41	22.5	PSR 26 X 045
		50	1.6	33	20	41	25.0	PSR 26 X 050
		55	1.5	33	22	41	27.5	PSR 26 X 055
		60	1.4	33	24	41	30.0	PSR 26 X 060

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	40% x Length Maximum Life		50% x Length Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
26	16.5	65	1.3	33	26	41	32.5	PSR 26 X 065
		70	1.2	33	28	41	35.0	PSR 26 X 070
		75	1.1	33	30	41	37.5	PSR 26 X 075
		80	1.0	33	32	41	40.0	PSR 26 X 080
		90	0.9	33	36	41	45.0	PSR 26 X 090
		100	0.8	33	40	41	50.0	PSR 26 X 100
		110	0.8	33	44	41	55.0	PSR 26 X 110
		125	0.7	33	50	41	62.5	PSR 26 X 125
		150	0.6	33	60	41	75.0	PSR 26 X 150
		175	0.5	33	70	41	87.5	PSR 26 X 175
		200	0.4	33	80	41	100.0	PSR 26 X 200
		32	21	40	2.6	41	16	51	20.0	PSR 32 X 040
45	2.3			41	18	51	22.5	PSR 32 X 045
50	2.0			41	20	51	25.0	PSR 32 X 050
60	1.7			41	24	51	30.0	PSR 32 X 060
70	1.5			41	28	51	35.0	PSR 32 X 070
80	1.3			41	32	51	40.0	PSR 32 X 080
90	1.1			41	36	51	45.0	PSR 32 X 090
100	1.0			41	40	51	50.0	PSR 32 X 100
110	0.9			41	44	51	55.0	PSR 32 X 110
125	0.8			41	50	51	62.5	PSR 32 X 125
150	0.7			41	60	51	75.0	PSR 32 X 150
175	0.6			41	70	51	87.5	PSR 32 X 175
39	26	40	2.8	44	16	55	20.0	PSR 39 X 040
		45	2.5	44	18	55	22.5	PSR 39 X 045
		50	2.2	44	20	55	25.0	PSR 39 X 050
		60	1.9	44	24	55	30.0	PSR 39 X 060
		70	1.6	44	28	55	35.0	PSR 39 X 070
		80	1.4	44	32	55	40.0	PSR 39 X 080
		90	1.2	44	36	55	45.0	PSR 39 X 090
		100	1.1	44	40	55	50.0	PSR 39 X 100
46	32	50	2.5	50	20	62	25.0	PSR 46 X 050
		60	2.1	50	24	62	30.0	PSR 46 X 060
		70	1.8	50	28	62	35.0	PSR 46 X 070
		80	1.6	50	32	62	40.0	PSR 46 X 080
		90	1.4	50	36	62	45.0	PSR 46 X 090
		100	1.2	50	40	62	50.0	PSR 46 X 100
		110	1.1	50	44	62	55.0	PSR 46 X 110
		125	1.0	50	50	62	62.5	PSR 46 X 125
46	32	150	0.8	50	60	62	75.0	PSR 46 X 150
		175	0.7	50	70	62	87.5	PSR 46 X 175
		200	0.6	50	80	62	100.0	PSR 46 X 200
		250	0.4	50	100	62	125.0	PSR 46 X 250
		300	0.4	50	120	62	150.0	PSR 46 X 300

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



High Compression Springs Colour - Violet

PTY



Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	40% x Length Maximum Life		50% x Length Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
14.5	8.5	20	1.9	15	8	19	10.0	PTY 14.5 X 020
		25	1.5	15	10	19	12.5	PTY 14.5 X 025
		30	1.3	15	12	19	15.0	PTY 14.5 X 030
		35	1.1	15	14	19	17.5	PTY 14.5 X 035
		40	0.9	15	16	19	20.0	PTY 14.5 X 040
		45	0.8	15	18	19	22.5	PTY 14.5 X 045
		50	0.8	15	20	19	25.0	PTY 14.5 X 050
		55	0.7	15	22	19	27.5	PTY 14.5 X 055
		60	0.6	15	24	19	30.0	PTY 14.5 X 060
		65	0.6	15	26	19	32.5	PTY 14.5 X 065
		70	0.5	15	28	19	35.0	PTY 14.5 X 070
		75	0.5	15	30	19	37.5	PTY 14.5 X 075
		80	0.5	15	32	19	40.0	PTY 14.5 X 080
		90	0.4	15	36	19	45.0	PTY 14.5 X 090
		100	0.4	15	40	19	50.0	PTY 14.5 X 100
125	0.3	15	50	19	62.5	PTY 14.5 X 125		
17	10.5	25	2.2	22	10	28	12.5	PTY 17 X 025
		30	1.9	22	12	28	15.0	PTY 17 X 030
		35	1.6	22	14	28	17.5	PTY 17 X 035
		40	1.4	22	16	28	20.0	PTY 17 X 040
		45	1.2	22	18	28	22.5	PTY 17 X 045
		50	1.1	22	20	28	25.0	PTY 17 X 050
		55	1.0	22	22	28	27.5	PTY 17 X 055
		60	0.9	22	24	28	30.0	PTY 17 X 060
		65	0.9	22	26	28	32.5	PTY 17 X 065
		70	0.8	22	28	28	35.0	PTY 17 X 070
		75	0.7	22	30	28	37.5	PTY 17 X 075
		80	0.7	22	32	28	40.0	PTY 17 X 080
		90	0.6	22	36	28	45.0	PTY 17 X 090
		100	0.6	22	40	28	50.0	PTY 17 X 100
		125	0.4	22	50	28	62.5	PTY 17 X 125
150	0.4	22	60	28	75.0	PTY 17 X 150		
21	13	30	2.4	29	12	36	15.0	PTY 21 X 030
		35	2.0	29	14	36	17.5	PTY 21 X 035
		40	1.8	29	16	36	20.0	PTY 21 X 040
		45	1.6	29	18	36	22.5	PTY 21 X 045
		50	1.4	29	20	36	25.0	PTY 21 X 050
		55	1.3	29	22	36	27.5	PTY 21 X 055
		60	1.2	29	24	36	30.0	PTY 21 X 060
		65	1.1	29	26	36	32.5	PTY 21 X 065
		70	1.0	29	28	36	35.0	PTY 21 X 070
		75	1.0	29	30	36	37.5	PTY 21 X 075
		80	0.9	29	32	36	40.0	PTY 21 X 080
		90	0.8	29	36	36	45.0	PTY 21 X 090
		100	0.7	29	40	36	50.0	PTY 21 X 100
		125	0.6	29	50	36	62.5	PTY 21 X 125
		150	0.5	29	60	36	75.0	PTY 21 X 150
26	16.5	30	3.6	42	12	53	15.0	PTY 26 X 030
		35	3.1	42	14	53	17.5	PTY 26 X 035
		40	2.7	42	16	53	20.0	PTY 26 X 040
		45	2.4	42	18	53	22.5	PTY 26 X 045
		50	2.1	42	20	53	25.0	PTY 26 X 050
		55	1.9	42	22	53	27.5	PTY 26 X 055

Do (mm)	Di (mm)	Lo (mm)	C (Kg/mm)	40% x Length Maximum Life		50% x Length Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
26	16.5	60	1.8	42	24	53	30.0	PTY 26 X 060
		65	1.6	42	26	53	32.5	PTY 26 X 065
		70	1.5	42	28	53	35.0	PTY 26 X 070
		75	1.4	42	30	53	37.5	PTY 26 X 075
		80	1.3	42	32	53	40.0	PTY 26 X 080
		90	1.2	42	36	53	45.0	PTY 26 X 090
		100	1.1	42	40	53	50.0	PTY 26 X 100
		110	1.0	42	44	53	55.0	PTY 26 X 110
		125	0.9	42	50	53	62.5	PTY 26 X 125
		150	0.7	42	60	53	75.0	PTY 26 X 150
		175	0.6	42	70	53	87.5	PTY 26 X 175
		200	0.5	42	80	53	100.0	PTY 26 X 200
32	21	40	3.6	57	16	71	20.0	PTY 32 X 040
		45	3.2	57	18	71	22.5	PTY 32 X 045
		50	2.8	57	20	71	25.0	PTY 32 X 050
		60	2.4	57	24	71	30.0	PTY 32 X 060
		70	2.0	57	28	71	35.0	PTY 32 X 070
		80	1.8	57	32	71	40.0	PTY 32 X 080
		90	1.6	57	36	71	45.0	PTY 32 X 090
		100	1.4	57	40	71	50.0	PTY 32 X 100
		110	1.3	57	44	71	55.0	PTY 32 X 110
		125	1.1	57	50	71	62.5	PTY 32 X 125
		150	1.0	57	60	71	75.0	PTY 32 X 150
		175	0.8	57	70	71	87.5	PTY 32 X 175
200	0.7	57	80	71	100.0	PTY 32 X 200		
250	0.6	57	100	71	125.0	PTY 32 X 250		
300	0.5	57	120	71	150.0	PTY 32 X 300		
39	26	40	4.7	74	16	93	20.0	PTY 39 X 040
		45	4.2	74	18	93	22.5	PTY 39 X 045
		50	3.7	74	20	93	25.0	PTY 39 X 050
		60	3.1	74	24	93	30.0	PTY 39 X 060
		70	2.7	74	28	93	35.0	PTY 39 X 070
		80	2.3	74	32	93	40.0	PTY 39 X 080
		90	2.1	74	36	93	45.0	PTY 39 X 090
		100	1.9	74	40	93	50.0	PTY 39 X 100
		110	1.7	74	44	93	55.0	PTY 39 X 110
		125	1.5	74	50	93	62.5	PTY 39 X 125
		150	1.2	74	60	93	75.0	PTY 39 X 150
		175	1.1	74	70	93	87.5	PTY 39 X 175
200	0.9	74	80	93	100.0	PTY 39 X 200		
250	0.8	74	100	93	125.0	PTY 39 X 250		
300	0.6	74	120	93	150.0	PTY 39 X 300		
46	32	50	5.0	99	20	124	25.0	PTY 46 X 050
		60	4.2	99	24	124	30.0	PTY 46 X 060
		70	3.6	99	28	124	35.0	PTY 46 X 070
		80	3.1	99	32	124	40.0	PTY 46 X 080
		90	2.8	99	36	124	45.0	PTY 46 X 090
		100	2.5	99	40	124	50.0	PTY 46 X 100
		110	2.3	99	44	124	55.0	PTY 46 X 110
		125	2.0	99	50	124	62.5	PTY 46 X 125
		150	1.7	99	60	124	75.0	PTY 46 X 150
		175	1.4	99	70	124	87.5	PTY 46 X 175
		200	1.2	99	80	124	100.0	PTY 46 X 200
		250	1.0	99	100	124	125.0	PTY 46 X 250
300	0.8	99	120	124	150.0	PTY 46 X 300		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



Ultra Load Springs

Colour - Silver

PUL

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
25	12.5	64	65.7	420	6.4	630	9.6	PUL 25 X 064
		76	56.7	431	7.6	646	11.4	PUL 25 X 076
		89	47.1	419	8.9	629	13.4	PUL 25 X 089
		102	39.8	406	10.2	608	15.3	PUL 25 X 102
		115	36.7	422	11.5	633	17.3	PUL 25 X 115
		127	33.3	423	12.7	633	19.1	PUL 25 X 127
		152	26.0	395	15.2	693	22.8	PUL 25 X 152
		178	23.5	418	17.8	626	26.7	PUL 25 X 178
		203	20.6	418	20.3	627	30.5	PUL 25 X 203
		305	13.9	424	30.5	634	45.8	PUL 25 X 305
32	16	64	109.9	703	6.4	1054	9.6	PUL 32 X 064
		76	89.1	677	7.6	1016	11.4	PUL 32 X 076
		89	73.5	654	8.9	982	13.4	PUL 32 X 089
		102	63.2	644	10.2	968	15.3	PUL 32 X 102
		115	57.1	656	11.5	985	17.3	PUL 32 X 115
		127	50.6	642	12.7	964	19.1	PUL 32 X 127
		152	41.6	632	15.2	949	22.8	PUL 32 X 152
		178	36.0	640	17.8	961	26.7	PUL 32 X 178
		203	31.0	629	20.3	944	30.5	PUL 32 X 203
		254	24.8	629	25.4	944	38.1	PUL 32 X 254
305	20.0	610	30.5	915	45.8	PUL 32 X 305		
40	20	89	89.8	799	8.9	1198	13.4	PUL 40 X 089
		102	77.7	793	10.2	1189	15.3	PUL 40 X 102
		115	69.3	797	11.5	1194	17.3	PUL 40 X 115
		127	63.4	805	12.7	1208	19.1	PUL 40 X 127
		152	51.9	788	15.2	1183	22.8	PUL 40 X 152
		178	43.8	780	17.8	1168	26.7	PUL 40 X 178
		203	38.1	773	20.3	1161	30.5	PUL 40 X 203
		254	30.2	767	25.4	1150	38.1	PUL 40 X 254
		305	25.1	766	30.5	1148	45.8	PUL 40 X 305
50	25	89	143.8	1280	8.9	1920	13.4	PUL 50 X 089
		102	123.9	1264	10.2	1896	15.3	PUL 50 X 102
		115	109.8	1263	11.5	1893	17.3	PUL 50 X 115
		127	98.7	1253	12.7	1880	19.1	PUL 50 X 127
		152	82.2	1249	15.2	1874	22.8	PUL 50 X 152
		178	71.2	1267	17.8	1900	26.7	PUL 50 X 178
		203	62.4	1267	20.3	1900	30.5	PUL 50 X 203
		254	48.1	1222	25.4	1834	38.1	PUL 50 X 254
		305	39.6	1208	30.5	1810	45.8	PUL 50 X 305



Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



High Compression Springs Colour - Black

PZZ



Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
30	15	20	120	384	480	3.2	4	PZZ 30 x 20
		25	96			4	5	PZZ 30 x 25
		30	80			4.8	6	PZZ 30 x 30
		35	68.6			5.6	7	PZZ 30 x 35
		40	60			6.4	8	PZZ 30 x 40
		45	53.3			7.2	9	PZZ 30 x 45
		50	48			8	10	PZZ 30 x 50
		55	43.6			8.8	11	PZZ 30 x 55
		60	40			9.6	12	PZZ 30 x 60
		65	36.9			10.4	13	PZZ 30 x 65
		70	34.3			11.2	14	PZZ 30 x 70
		75	32			12	15	PZZ 30 x 75
		80	30			12.8	16	PZZ 30 x 80
		90	26.7			14.4	18	PZZ 30 x 90
		100	24			16	20	PZZ 30 x 100
		125	19.2			20	25	PZZ 30 x 125
		150	16			24	30	PZZ 30 x 150
		175	13.7			28	35	PZZ 30 x 175
		200	12			32	40	PZZ 30 x 200
		35	17.5			30	105	504	630	4.8	6	PZZ 35 x 30
35	90			5.6	7	PZZ 35 x 35		
40	78.8			6.4	8	PZZ 35 x 40		
45	70			7.2	9	PZZ 35 x 45		
50	63			8	10	PZZ 35 x 50		
55	57.3			8.8	11	PZZ 35 x 55		
60	52.5			9.6	12	PZZ 35 x 60		
65	48.5			10.4	13	PZZ 35 x 65		
70	45			11.2	14	PZZ 35 x 70		
75	42			12	15	PZZ 35 x 75		
80	39.4			12.8	16	PZZ 35 x 80		
90	35			14.4	18	PZZ 35 x 90		
100	31.5			16	20	PZZ 35 x 100		
125	25.2			20	25	PZZ 35 x 125		
150	21	24	30	PZZ 35 x 150				
175	18	28	35	PZZ 35 x 175				
200	15.8	32	40	PZZ 35 x 200				
40	20	35	117.1	656	820	5.6	7	PZZ 40 x 35
		40	102.5			6.4	8	PZZ 40 x 40
		45	91.1			7.2	9	PZZ 40 x 45
		50	82			8	10	PZZ 40 x 50
		55	74.5			8.8	11	PZZ 40 x 55
		60	68.3			9.6	12	PZZ 40 x 60
		65	63.1			10.4	13	PZZ 40 x 65
		70	58.6			11.2	14	PZZ 40 x 70
		75	54.7			12	15	PZZ 40 x 75
		80	51.3			12.8	16	PZZ 40 x 80
		90	45.6			14.4	18	PZZ 40 x 90
		100	41			16	20	PZZ 40 x 100
		125	32.8			20	25	PZZ 40 x 125
		150	27.3			24	30	PZZ 40 x 150
175	23.4	28	35	PZZ 40 x 175				
200	20.5	32	40	PZZ 40 x 200				

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
50	25	50	125	1000	1250	8	10	PZZ 50 x 50
		55	113.6			8.8	11	PZZ 50 x 55
		60	104.2			9.6	12	PZZ 50 x 60
		65	96.2			10.4	13	PZZ 50 x 65
		70	89.3			11.2	14	PZZ 50 x 70
		75	83.3			12	15	PZZ 50 x 75
		80	78.1			12.8	16	PZZ 50 x 80
		90	69.4			14.4	18	PZZ 50 x 90
		100	62.5			16	20	PZZ 50 x 100
		125	50			20	25	PZZ 50 x 125
		150	41.7			24	30	PZZ 50 x 150
		175	35.7			28	35	PZZ 50 x 175
		200	31.3			32	40	PZZ 50 x 200

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

RGR Light Load Springs

Colour - Green



WIRE

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
10	5	25	0.5	2.84	6.3	4.5	10.0	RGR 10 X 025
		32	0.4	2.8	8.0	4.5	12.8	RGR 10 X 032
		38	0.3	2.75	9.5	4.4	15.2	RGR 10 X 038
		44	0.2	2.64	11.0	4.2	17.6	RGR 10 X 044
		51	0.2	2.68	12.8	4.3	20.4	RGR 10 X 051
		64	0.2	2.56	16.0	4.1	25.6	RGR 10 X 064
		76	0.1	2.47	19.0	4.0	30.4	RGR 10 X 076
		305	0.03	2.28	76.3	3.7	122.0	RGR 10 X 305
13	6.3	25	0.9	5.5	6.3	8.7	10.0	RGR 13 X 025
		32	0.7	5.3	8.0	8.5	12.8	RGR 13 X 032
		38	0.5	5.1	9.5	8.2	15.2	RGR 13 X 038
		44	0.5	5.0	11.0	7.9	17.6	RGR 13 X 044
		51	0.4	5.0	12.8	8.0	20.4	RGR 13 X 051
		64	0.3	4.8	16.0	7.7	25.6	RGR 13 X 064
		76	0.3	4.9	19.0	7.9	30.4	RGR 13 X 076
		89	0.2	4.7	22.3	7.5	35.6	RGR 13 X 089
		305	0.1	4.6	76.3	7.3	122.0	RGR 13 X 305
		16	8	25	1.8	11.5	6.3	18.3	10.0	RGR 16 X 025
32	1.4			11.0	8.0	17.7	12.8	RGR 16 X 032
38	1.1			10.2	9.5	16.3	15.2	RGR 16 X 038
44	0.9			9.9	11.0	15.8	17.6	RGR 16 X 044
51	0.8			10.0	12.8	15.9	20.4	RGR 16 X 051
64	0.6			9.6	16.0	15.4	25.6	RGR 16 X 064
76	0.5			9.3	19.0	14.9	30.4	RGR 16 X 076
89	0.4			9.1	22.3	14.6	35.6	RGR 16 X 089
102	0.4			9.2	25.5	14.7	40.8	RGR 16 X 102
305	0.1			8.4	76.3	13.4	122.0	RGR 16 X 305

RRE Heavy Load Springs

Colour - Red



WIRE

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
10	5	25	2.1	10.6	5.0	15.8	7.5	RRE 10 X 025
		32	1.6	10.7	6.4	15.7	9.6	RRE 10 X 032
		38	1.3	10.1	7.6	15.2	11.4	RRE 10 X 038
		44	1.1	9.8	8.8	14.7	13.2	RRE 10 X 044
		51	1.0	10.0	10.2	15.0	15.3	RRE 10 X 051
		64	0.8	10.1	12.8	15.2	19.2	RRE 10 X 064
		76	0.6	9.7	15.2	14.6	22.8	RRE 10 X 076
		305	0.2	9.2	61.0	13.7	91.5	RRE 10 X 305
13	6.3	25	3.8	19.2	5.0	28.7	7.5	RRE 13 X 025
		32	3.0	18.9	6.4	28.3	9.6	RRE 13 X 032
		38	2.4	18.2	7.6	27.4	11.4	RRE 13 X 038
		44	2.0	17.6	8.8	26.4	13.2	RRE 13 X 044
		51	1.8	18.0	10.2	26.9	15.3	RRE 13 X 051
		64	1.4	17.7	12.8	26.5	19.2	RRE 13 X 064
		76	1.1	17.3	15.2	26.0	22.8	RRE 13 X 076
		89	1.0	17.3	17.8	25.9	26.7	RRE 13 X 089
		305	0.3	17.1	61.0	25.6	91.5	RRE 13 X 305
		16	8	25	8.3	41.6	5.0	62.4	7.5	RRE 16 X 025
32	6.3			40.0	6.4	60.0	9.6	RRE 16 X 032
38	5.1			38.7	7.6	58.0	11.4	RRE 16 X 038
44	4.2			36.6	8.8	54.9	13.2	RRE 16 X 044
51	3.6			37.0	10.2	55.5	15.3	RRE 16 X 051
64	2.8			36.4	12.8	54.5	19.2	RRE 16 X 064
76	2.3			35.4	15.2	53.1	22.8	RRE 16 X 076
89	2.0			35.6	17.8	53.4	26.7	RRE 16 X 089
102	1.7			35.3	20.4	52.9	30.6	RRE 16 X 102
305	0.6			33.6	61.0	50.3	91.5	RRE 16 X 305



RBL Medium Load Springs

Colour - Blue



WIRE

Dh (mm)	Dd (mm)	Lo (mm)	C (Kg/mm)	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
10	5	25	1.3	7.9	6.3	11.8	9.4	RBL 10 X 025
		32	1.0	7.7	8.0	11.5	12.0	RBL 10 X 032
		38	0.8	7.1	9.5	10.7	14.3	RBL 10 X 038
		44	0.6	6.6	11.0	9.9	16.5	RBL 10 X 044
		51	0.6	7.3	12.8	10.9	19.1	RBL 10 X 051
		64	0.5	7.2	16.0	10.8	24.0	RBL 10 X 064
		76	0.4	7.0	19.0	10.5	28.5	RBL 10 X 076
		305	0.1	6.9	76.3	10.3	114.4	RBL 10 X 305
13	6.3	25	2.2	13.9	6.3	20.8	9.4	RBL 13 X 025
		32	1.7	13.7	8.0	20.5	12.0	RBL 13 X 032
		38	1.4	13.3	9.5	20.0	14.3	RBL 13 X 038
		44	1.2	13.0	11.0	19.5	16.5	RBL 13 X 044
		51	1.0	13.1	12.8	19.5	19.1	RBL 13 X 051
		64	0.8	12.6	16.0	19.0	24.0	RBL 13 X 064
		76	0.7	12.4	19.0	18.5	28.5	RBL 13 X 076
		89	0.6	12.7	22.3	19.0	33.4	RBL 13 X 089
		305	0.2	11.7	76.3	17.5	114.4	RBL 13 X 305
		16	8	25	3.3	20.5	6.3	30.6	9.4	RBL 16 X 025
32	2.4			19.5	8.0	29.3	12.0	RBL 16 X 032
38	2.0			18.7	9.5	28.2	14.3	RBL 16 X 038
44	1.6			18.0	11.0	27.1	16.5	RBL 16 X 044
51	1.4			17.9	12.8	26.7	19.1	RBL 16 X 051
64	1.1			17.4	16.0	26.2	24.0	RBL 16 X 064
76	0.9			16.9	19.0	24.9	28.0	RBL 16 X 076
89	0.8			17.0	22.3	25.4	33.4	RBL 16 X 089
102	0.7			16.8	25.5	25.3	38.3	RBL 16 X 102
305	0.2			16.0	76.3	24.0	114.4	RBL 16 X 305

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)



R

Round Wire Coil Springs Colour - Natural / Black



Dh	Dd	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
3	2	10	0.3	0.5	1.6	0.7	2.4	R3 X 010
		15	0.2	0.5	2.4	0.7	3.6	R3 X 015
		20	0.1	0.5	3.2	0.7	4.8	R3 X 020
		25	0.1	0.5	4.0	0.7	6.0	R3 X 025
4	2.6	10	0.5	0.8	1.6	1.2	2.4	R4 X 010
		15	0.3	0.8	2.4	1.2	3.6	R4 X 015
		20	0.3	0.8	3.2	1.2	4.8	R4 X 020
		25	0.2	0.8	4.0	1.2	6.0	R4 X 025
		30	0.2	0.8	4.8	1.2	7.2	R4 X 030
6	4	15	0.8	1.8	2.4	2.7	3.6	R6 X 015
		20	0.6	1.8	3.2	2.7	4.8	R6 X 020
		25	0.5	1.8	4.0	2.7	6.0	R6 X 025
		30	0.4	1.8	4.8	2.7	7.2	R6 X 030
		35	0.3	1.8	5.6	2.7	8.4	R6 X 035
8	5.4	15	1.3	3.2	2.4	4.8	3.6	R8 X 015
		20	1.0	3.2	3.2	4.8	4.8	R8 X 020
		25	0.8	3.2	4.0	4.8	6.0	R8 X 025
		30	0.7	3.2	4.8	4.8	7.2	R8 X 030
		35	0.6	3.2	5.6	4.8	8.4	R8 X 035
		40	0.5	3.2	6.4	4.8	9.6	R8 X 040
10	6.5	25	1.3	5.0	4.0	7.5	6.0	R10 X 025
		30	1.0	5.0	4.8	7.5	7.2	R10 X 030
		35	0.9	5.0	5.6	7.5	8.4	R10 X 035
		40	0.8	5.0	6.4	7.5	9.6	R10 X 040
		45	0.7	5.0	7.2	7.5	10.8	R10 X 045
12	8	25	1.8	7.2	4.0	10.8	6.0	R12 X 025
		30	1.5	7.2	4.8	10.8	7.2	R12 X 030
		35	1.3	7.2	5.6	10.8	8.4	R12 X 035
		40	1.1	7.2	6.4	10.8	9.6	R12 X 040
		45	1.0	7.2	7.2	10.8	10.8	R12 X 045
14	9.3	25	2.5	9.8	4.0	14.7	6.0	R14 X 025
		30	2.0	9.8	4.8	14.7	7.2	R14 X 030
		35	1.8	9.8	5.6	14.7	8.4	R14 X 035
		40	1.5	9.8	6.4	14.7	9.6	R14 X 040
		45	1.4	9.8	7.2	14.7	10.8	R14 X 045
		50	1.2	9.8	8.0	14.7	12.0	R14 X 050
		55	1.1	9.8	8.8	14.7	13.2	R14 X 055
		60	1.0	9.8	9.6	14.7	14.4	R14 X 060
16	10.7	25	3.2	12.8	4.0	19.2	6.0	R16 X 025
		30	2.7	12.8	4.8	19.2	7.2	R16 X 030
		35	2.3	12.8	5.6	19.2	8.4	R16 X 035
		40	2.0	12.8	6.4	19.2	9.6	R16 X 040
		45	1.8	12.8	7.2	19.2	10.8	R16 X 045
		50	1.6	12.8	8.0	19.2	12.0	R16 X 050
		55	1.5	12.8	8.8	19.2	13.2	R16 X 055
		60	1.3	12.8	9.6	19.2	14.4	R16 X 060
		65	1.2	12.8	10.4	19.2	15.6	R16 X 065
		70	1.1	12.8	11.2	19.2	16.8	R16 X 070
		75	1.1	12.8	12.0	19.2	18.0	R16 X 075
		80	1.0	12.8	12.8	19.2	19.2	R16 X 080
18	12	25	4.1	16.2	4.0	24.3	6.0	R18 X 025
		30	3.4	16.2	4.8	24.3	7.2	R18 X 030
		35	2.9	16.2	5.6	24.3	8.4	R18 X 035
		40	2.5	16.2	6.4	24.3	9.6	R18 X 040
		45	2.3	16.2	7.2	24.3	10.8	R18 X 045

Dh	Dd	Lo	C	Maximum Life		Average Life		Code		
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)			
18	12	50	2.0	16.2	8.0	24.3	12.0	R18 X 050		
		55	1.8	16.2	8.8	24.3	13.2	R18 X 055		
		60	1.7	16.2	9.6	24.3	14.4	R18 X 060		
		65	1.6	16.2	10.4	24.3	15.6	R18 X 065		
		70	1.5	16.2	11.2	24.3	16.8	R18 X 070		
		75	1.4	16.2	12.0	24.3	18.0	R18 X 075		
		80	1.3	16.2	12.8	24.3	19.2	R18 X 080		
		90	1.1	16.2	14.4	24.3	21.6	R18 X 090		
		20	13.5	25	5.0	20	4.0	30	6.0	R20 X 025
				30	4.2	20	4.8	30	7.2	R20 X 030
35	3.6			20	5.6	30	8.4	R20 X 035		
40	3.1			20	6.4	30	9.6	R20 X 040		
45	2.8			20	7.2	30	10.8	R20 X 045		
50	2.5			20	8.0	30	12.0	R20 X 050		
55	2.3			20	8.8	30	13.2	R20 X 055		
60	2.1			20	9.6	30	14.4	R20 X 060		
65	1.9			20	10.4	30	15.6	R20 X 065		
70	1.8			20	11.2	30	16.8	R20 X 070		
22	14.7	25	6.1	24	4.0	36	6.0	R22 X 025		
		30	5.0	24	4.8	36	7.2	R22 X 030		
		35	4.3	24	5.6	36	8.4	R22 X 035		
		40	3.8	24	6.4	36	9.6	R22 X 040		
		45	3.4	24	7.2	36	10.8	R22 X 045		
		50	3.0	24	8.0	36	12.0	R22 X 050		
		55	2.8	24	8.8	36	13.2	R22 X 055		
		60	2.5	24	9.6	36	14.4	R22 X 060		
		65	2.3	24	10.4	36	15.6	R22 X 065		
		70	2.2	24	11.2	36	16.8	R22 X 070		
25	17	25	7.8	31	4.0	47	6.0	R25 X 025		
		30	6.5	31	4.8	47	7.2	R25 X 030		
		35	5.6	31	5.6	47	8.4	R25 X 035		
		40	4.9	31	6.4	47	9.6	R25 X 040		
		45	4.3	31	7.2	47	10.8	R25 X 045		
		50	3.9	31	8.0	47	12.0	R25 X 050		
		55	3.6	31	8.8	47	13.2	R25 X 055		
		60	3.3	31	9.6	47	14.4	R25 X 060		
		65	3.0	31	10.4	47	15.6	R25 X 065		
		70	2.8	31	11.2	47	16.8	R25 X 070		
30	20	25	2.6	31	12.0	47	18.0	R25 X 075		
		30	2.4	31	12.8	47	19.2	R25 X 080		
		35	2.2	31	13.6	47	20.4	R25 X 085		
		40	2.0	31	14.4	47	21.6	R25 X 090		
		45	1.9	31	15.2	47	22.8	R25 X 095		
		50	1.8	31	16.0	47	24.0	R25 X 100		
		55	1.7	31	16.8	47	25.2	R25 X 105		
		60	1.6	31	17.6	47	26.4	R25 X 110		
		65	1.5	31	18.4	47	27.6	R25 X 115		
		70	1.4	31	19.2	47	28.8	R25 X 120		
30	20	50	5.6	42	8.0	63	12.0	R30 X 050		
		60	4.5	42	9.6	63	14.4	R30 X 060		
		70	3.8	42	11.2	63	16.8	R30 X 070		
		80	3.3	42	12.8	63	19.2	R30 X 075		
		90	2.9	42	14.4	63	21.6	R30 X 080		
		100	2.6	42	16.0	63	24.0	R30 X 090		
		125	2.1	42	20.0	63	30.0	R30 X 100		

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

RHD

Heavy Duty Load Springs

Colour - Natural / Black Finish



WIRE

Dh	Dd	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
11	6.5	40	0.8	9.3	11.3	11.2	13.7	RHD 11 X 040
13	8.5	55	0.4	8.1	20.8	9.7	25.2	RHD 13 X 055
15	9.5	40	1.2	14.9	12.3	18.2	15.0	RHD 15 X 040
15	9.5	50	1.0	17.9	17.5	21.6	21.2	RHD 15 X 050
16	10.5	40	1.1	15.7	14.0	19.1	17.0	RHD 16 X 040
18	12.0	85	0.6	18.6	30.8	22.5	37.4	RHD 18 X 085
19	11.0	45	3.6	35.0	9.8	42.4	11.9	RHD 19 X 045
19	11.0	50	3.1	34.3	11.2	41.6	13.6	RHD 19 X 050
19.5	9.0	83	7.7	96.4	12.6	117.0	15.3	RHD 19 X 083
20.5	10.0	35	17.3	97.1	5.6	117.9	6.8	RHD 20 X 035
20.5	9.0	90	10.0	122.6	12.3	149.6	15.0	RHD 20 X 090
21	13.5	35	1.4	14.2	10.5	17.2	12.7	RHD 21 X 035
21	12.0	40	3.3	32.0	9.8	38.9	11.9	RHD 21 X 040
22	14.5	95	0.4	14.3	34.2	17.3	41.5	RHD 22 X 095
22.5	12.0	40	10.8	82.8	7.7	100.1	9.3	RHD 22 X 040
23	14.5	45	2.6	39.3	15.0	47.6	18.2	RHD 23 X 045
23	12.5	50	7.6	83.3	11.0	100.8	13.3	RHD 23 X 050
26.5	16.0	24	13.6	67.9	5.0	82.8	6.1	RHD 26 X 024
30	13.0	70	34.8	267.8	7.7	323.4	9.3	RHD 30 X 070
32	21.0	70	2.5	58.7	23.8	71.4	28.9	RHD 32 X 070
32	16.0	150	10.6	207.1	19.6	251.4	23.8	RHD 32 X 150
34	19.0	125	6.9	153.5	22.4	186.4	27.2	RHD 34 X 125
44	25.0	130	11.0	278.1	25.2	337.6	30.6	RHD 44 X 130
44	25.0	200	6.4	277.5	43.4	337.0	52.7	RHD 44 X 200

RLD

Light Duty Load Springs

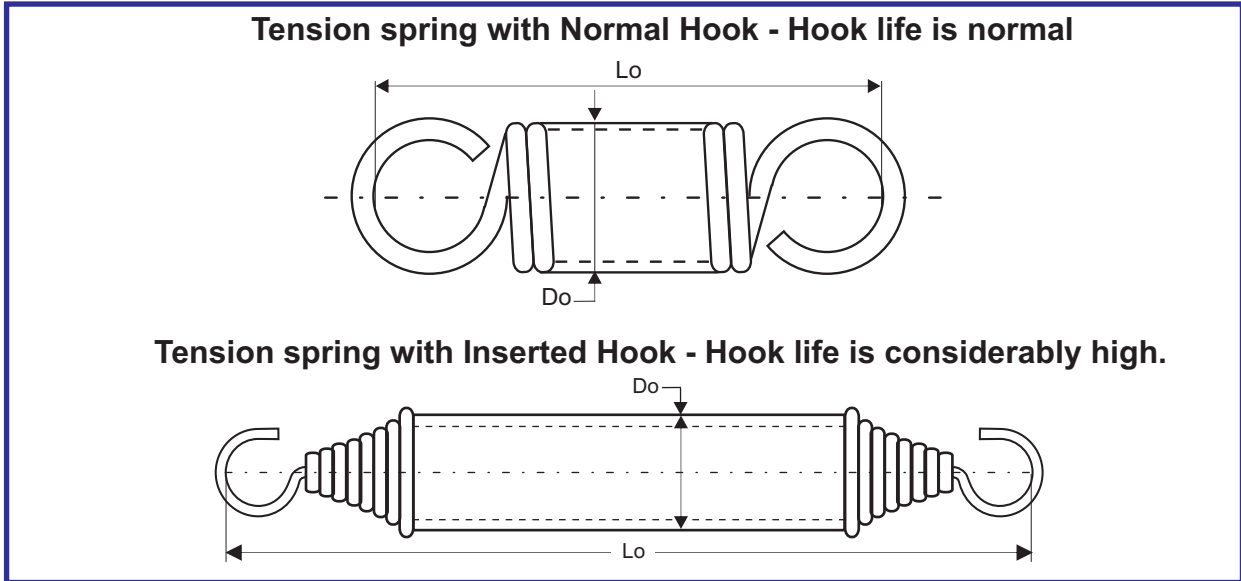
Colour - Natural / Black Finish



Dh	Dd	Lo	C	Maximum Life		Average Life		Code
				Pm (Kg)	Lm (mm)	Pa (Kg)	La (mm)	
11	6.5	40	0.8	9.3	11.3	11.2	13.7	RLD 11 X 040
13	8.5	55	0.4	8.1	20.8	9.7	25.2	RLD 13 X 055
15	9.5	40	1.2	14.9	12.3	18.2	15.0	RLD 15 X 040
15	9.5	50	1.0	17.9	17.5	21.6	21.2	RLD 15 X 050
16	10.5	40	1.1	15.7	14.0	19.1	17.0	RLD 16 X 040
18	12.0	85	0.6	18.6	30.8	22.5	37.4	RLD 18 X 085
19	11.0	45	3.6	35.0	9.8	42.4	11.9	RLD 19 X 045
19	11.0	50	3.1	34.3	11.2	41.6	13.6	RLD 19 X 050
19.5	9.0	83	7.7	96.4	12.6	117.0	15.3	RLD 19 X 083
20.5	10.0	35	17.3	97.1	5.6	117.9	6.8	RLD 20 X 035
20.5	9.0	90	10.0	122.6	12.3	149.6	15.0	RLD 20 X 090
21	13.5	35	1.4	14.2	10.5	17.2	12.7	RLD 21 X 035
21	12.0	40	3.3	32.0	9.8	38.9	11.9	RLD 21 X 040
22	14.5	95	0.4	14.3	34.2	17.3	41.5	RLD 22 X 095
22.5	12.0	40	10.8	82.8	7.7	100.1	9.3	RLD 22 X 040
23	14.5	45	2.6	39.3	15.0	47.6	18.2	RLD 23 X 045
23	12.5	50	7.6	83.3	11.0	100.8	13.3	RLD 23 X 050
26.5	16.0	24	13.6	67.9	5.0	82.8	6.1	RLD 26 X 024
30	13.0	70	34.8	267.8	7.7	323.4	9.3	RLD 30 X 070
32	21.0	70	2.5	58.7	23.8	71.4	28.9	RLD 32 X 070
32	16.0	150	10.6	207.1	19.6	251.4	23.8	RLD 32 X 150
34	19.0	125	6.9	153.5	22.4	186.4	27.2	RLD 34 X 125
44	25.0	130	11.0	278.1	25.2	337.6	30.6	RLD 44 X 130
44	25.0	200	6.4	277.5	43.4	337.0	52.7	RLD 44 X 200
48	25.0	67	65.3	411.3	6.3	496.1	7.6	RLD 48 X 067
49	29.0	50	34.4	264.6	7.7	319.6	9.3	RLD 49 X 050
55	30.0	200	16.0	482.0	30.1	586.0	36.6	RLD 55 X 200
58	39.0	50	15.4	151.1	9.8	183.5	11.9	RLD 58 X 050
63	38.0	180	12.3	371.5	30.1	451.6	36.6	RLD 63 X 180

Note : Spring beyond standard OD, ID & Length can also be manufactured (Refer Page No. 38-39)

Tension & torsion springs are normally close coiled with ends in the form of various types of hooks & loops. Tension springs are normally give lesser life on the account of hook breakage. Inserted hook type tension springs gives better life. These springs are made as per customers specification.



Total Length (Hook to Hook)				150	175	200	225	250	275	300	325	350	375	400
OD	d	Hook W/d	Hook id											
12	2	3	10	*	*	*	*	*	*	*	*	*	*	
14	2	3	12	*	*	*	*	*	*	*	*	*	*	
16	2.5	4	14	*	*	*	*	*	*	*	*	*	*	
18	2.5	4	16	*	*	*	*	*	*	*	*	*	*	
22	3	4	18		*	*	*	*	*	*	*	*	*	*
25	3.5	4.5	20			*	*	*	*	*	*	*	*	*

Custom Made Springs

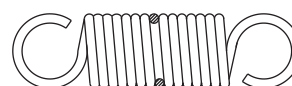


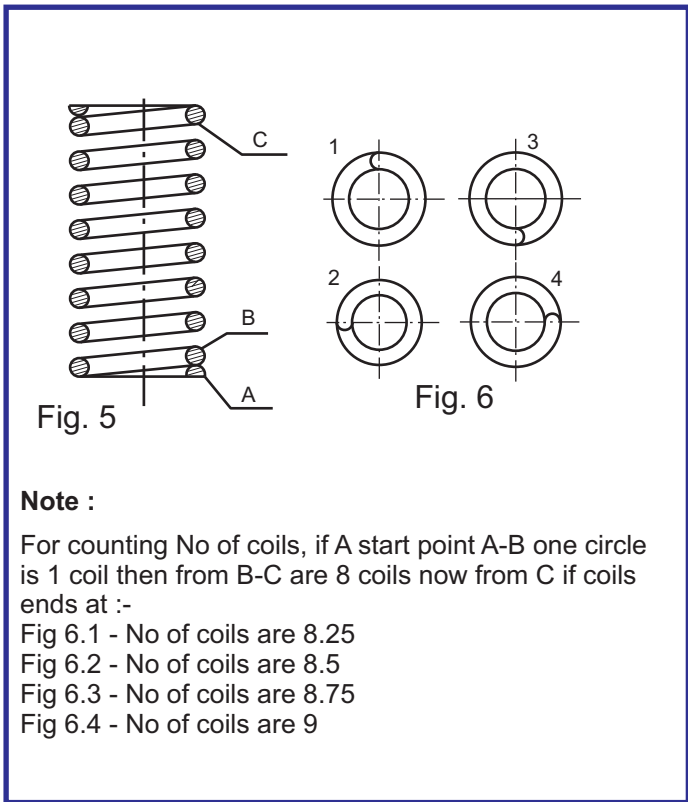
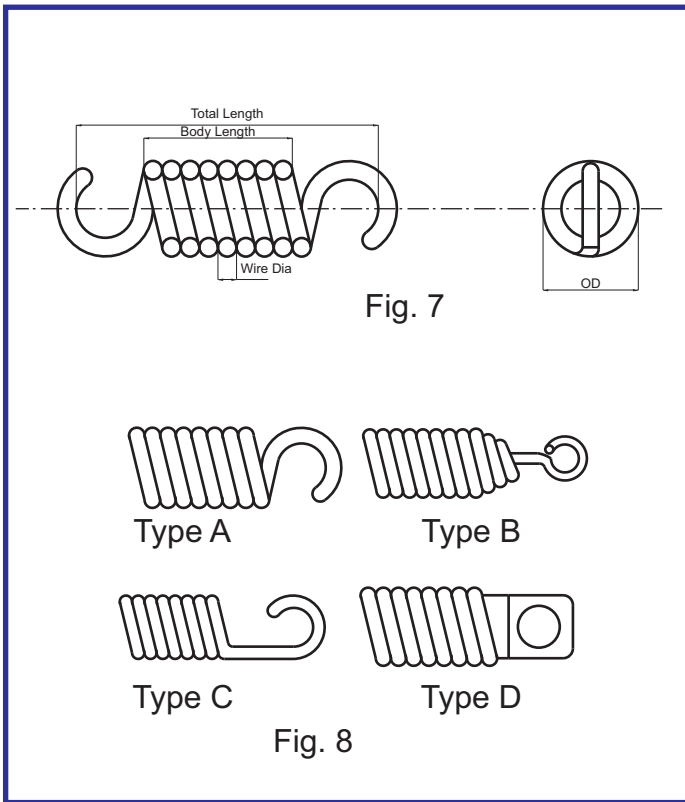
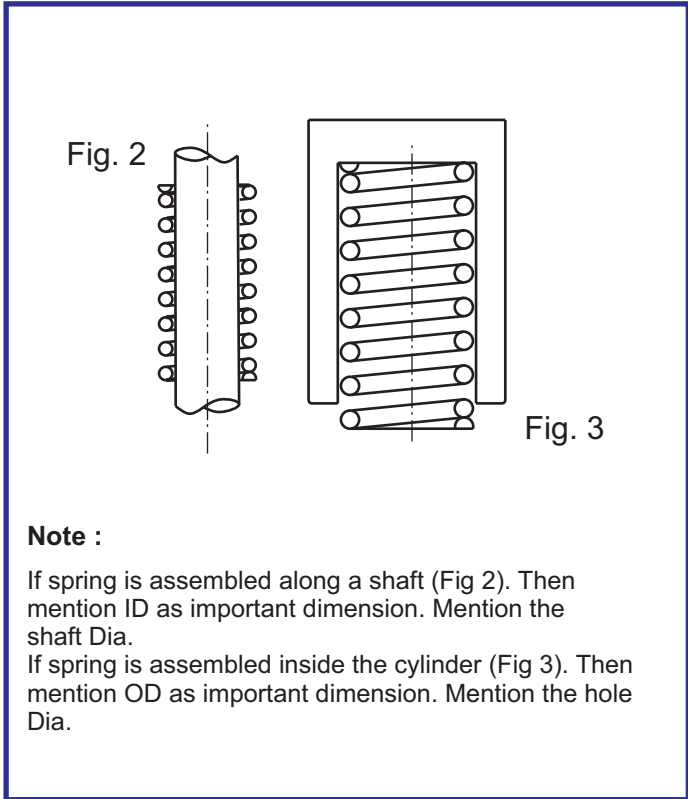
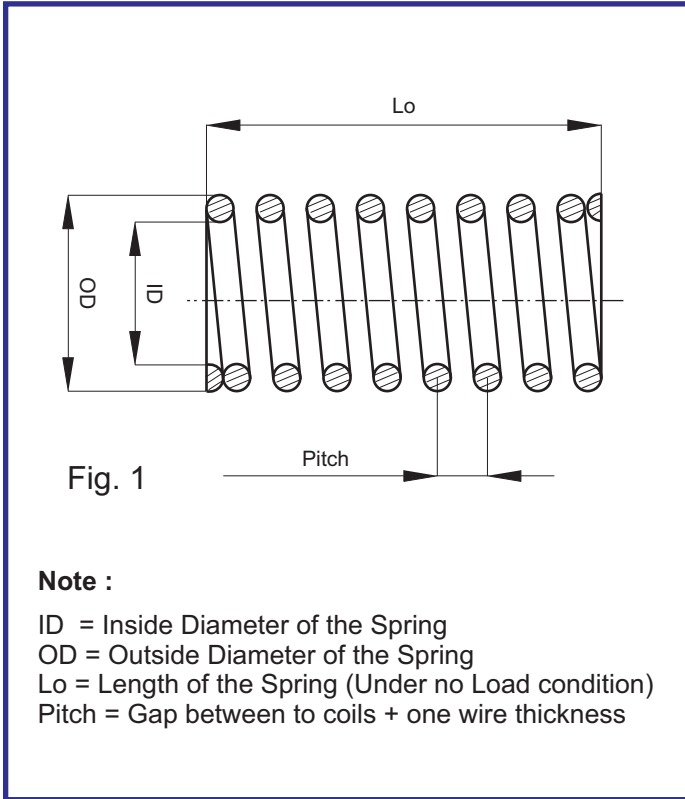
- Spring made as per customers specification.
- Compression / Tension made from wires and spring steel sheets.
- Springs dimension with important fitments, tolerance, compression / extension & load properties are required to make such springs.
- If existing customers springs are not giving required life, then such springs can be studied, Re-Designed and newly made to give satisfactory performance.

Compression Spring



Tension Spring





Selection of Material : -
 Plane Carbon Steel (Grade2 and Grade3) - For Static and General Application
 Alloy Steel Oil tempered wire (Grade 2D and Grade 1D) - For Dynamic and High Temperature Application
 Stainless Steel (Grade 301 and Grade 304) - For Corrosion Resistance Spring

► Sheet for Customized Spring

Customer Name:- _____

Contact Person:- _____

Phone No:- _____

Qty:- _____

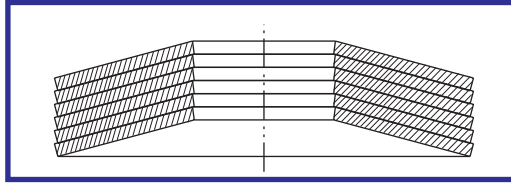
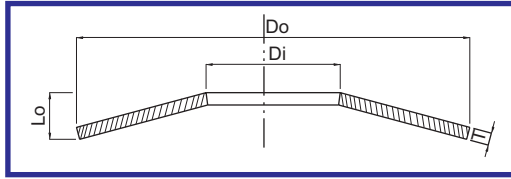
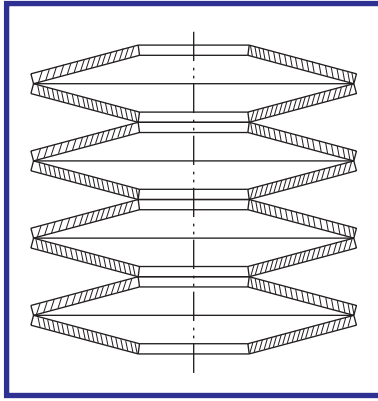
Specification:-

Type :-	Compression	Tension
*Wire Size :-	Rectangular (T x W) :-	Round (Dia):-
*Diameter :- (Ref. Fig.1)	Outer Dia (Od) :-	Inner Dia (Id) :-
Main Dimension :- (Mention Assembly Size in which spring is fitted (Ref. Pg. 28 Fig. 2 & 3))	Hole Size -	Rode Size -
*Length :-	Total Length (Lo) :-	Body Length (Lo) :- (For Tension Spring)
*No of Coil(Nt) :- (Ref Pg 28 Fig. 5 & 6)		
Gap between coil :-		
Compression Of Spring :-		
Hook Type :- For Tension Spring. (Ref Fig. 8)		
Material :- (Ref Page No.28)		
*Color :-		
Operating Temperature :- (If spring operating beyond 100°C specify the Temperature.)		
Referance No :- (Mention if there is any Ref No spring in your company Data)		

Note : “ * ” Marked Specification are compulsory

Note : Request this sheet through mail or download from (www.pawangroup.co.in)

► Disc Springs (PDS)



Material :- En47
Hardness :- 47 - 48 HRC

Do :- Outer Diameter Di :- Inner Diameter Lo :- Height T :- Thickness

Sr No	Outside Diameter mm (Do)	Inside dia (Di)	Thickness mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness of (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at $s=0.75h_o$) (Kg)
1	8	3.2	0.2	0.2	-	-	0.4	25.79
2	8	4.2	0.2	0.25	-	-	0.45	39.19
3	10	5.2	0.25	0.3	-	-	0.55	57.51
4	6	3.2	0.3	0.15	-	-	0.45	119.14
5	8	3.2	0.3	0.25	-	-	0.55	104.31
6	8	4.2	0.3	0.25	-	-	0.55	117.85
7	10	3.2	0.3	0.35	-	-	0.65	98.26
8	12.5	6.2	0.35	0.45	-	-	0.8	151.2
9	14	7.2	0.35	0.45	-	-	0.8	123.18
10	8	3.2	0.4	0.2	-	-	0.6	185.41
11	8	4.2	0.4	0.2	-	-	0.6	209.48
12	10	3.2	0.4	0.3	-	-	0.7	179.09
13	10	4.2	0.4	0.3	-	-	0.7	189.08
14	10	5.2	0.4	0.3	-	-	0.7	209.21
15	12	4.2	0.4	0.4	-	-	0.8	178.28
16	15	5.2	0.4	0.55	-	-	0.95	175.51
17	16	8.2	0.4	0.5	-	-	0.9	154.32
18	18	6.2	0.4	0.6	-	-	1	138.59
19	20	10.2	0.4	0.5	-	-	0.9	98.46
20	18	9.2	0.45	0.6	-	-	1.05	213.6
21	8	3.2	0.5	0.2	-	-	0.7	357.22
22	10	3.2	0.5	0.35	-	-	0.85	403.83
23	10	4.2	0.5	0.25	-	-	0.75	293.93
24	10	5.2	0.5	0.25	-	-	0.75	325.23
25	12	4.2	0.5	0.4	-	-	0.9	331
26	12	5.2	0.5	0.4	-	-	0.9	349.46
27	12	6.2	0.5	0.35	-	-	0.85	326.24
28	12.5	5.2	0.5	0.35	-	-	0.85	272.04
29	12.5	6.2	0.5	0.35	-	-	0.85	293.33
30	14	7.2	0.5	0.4	-	-	0.9	279.06
31	15	5.2	0.5	0.5	-	-	1	278.15

Sr No	Outside Diameter mm (Do)	Inside dia (Di)	Thickness mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at s=0.75ho) (Kg)
32	15	6.2	0.5	0.5			1	289.28
33	18	6.2	0.5	0.6	-	-	1.1	245.34
34	18	8.2	0.5	0.6			1.1	264.6
35	20	8.2	0.5	0.65	-	-	1.15	230.7
36	20	10.2	0.5	0.85			1.15	254.01
37	10	4.2	0.6	0.25	-	-	0.85	502.08
38	12	4.2	0.6	0.4			1	556.52
39	12	5.2	0.6	0.35	-	-	0.95	505.89
40	12	6.2	0.6	0.35			0.95	551.48
41	15	5.2	0.6	0.45	-	-	1.05	407
42	15	6.2	0.6	0.45			1.05	423.29
43	16	8.2	0.6	0.45	-	-	1.2	400.15
44	20	8.2	0.6	0.7			1.2	400
45	20	8.2	0.6	0.7	-	-	1.3	411.85
46	22.5	11.2	0.6	0.8			1.4	425.28
47	12.5	6.2	0.7	0.3	-	-	1	659.24
48	12.5	6.2	0.7	0.3			1	659.24
49	15	5.2	0.7	0.55	-	-	1.25	796.15
50	15	6.2	0.7	0.4			1.1	577.23
51	15	8.2	0.7	0.4	-	-	1.1	665.31
52	16	8.2	0.7	0.45			1.15	636.91
53	18	8.2	0.7	0.7	-	-	1.4	741.33
54	18	8.2	0.7	0.55			1.25	595.72
55	18	9.2	0.7	0.5	-	-	1.2	566.15
56	20	8.2	0.7	0.65			1.35	568.26
57	23	8.2	0.7	0.8	-	-	0.5	543.35
58	25	12.2	0.7	0.9			1.6	599.39
59	12	5.2	0.8	0.3	-	-	1.1	997.39
60	12	6.2	0.8	0.3			1.1	1087.29
61	14	7.2	0.8	0.3	-	-	1.1	796.46
62	15	8.2	0.8	0.4			1.2	981.82
63	16	8.2	0.8	0.4	-	-	1.2	824.84
64	18	6.2	0.8	0.7			1.5	1071.54
65	18	8.2	0.8	0.5	-	-	1.3	782.28
66	20	8.2	0.8	0.6			1.4	750
67	20	10.2	0.8	0.55	-	-	1.35	747.88
68	22.5	11.2	0.8	0.65			1.45	707.13
69	23	8.2	0.8	0.75	-	-	1.55	718.22
70	28	10.2	0.8	0.95			1.75	661.2
71	28	14.2	0.8	1	-	-	1.8	801.01
72	31.5	16.3	0.8	1.05			1.85	686.54
73	14	6.2	0.9	0.35	-	-	1.25	1229.18
74	16	8.2	0.9	0.35			1.25	1012.36
75	20	8.2	0.9	0.6	-	-	1.5	1050.71
76	20	10.2	0.9	0.55			1.45	1049.48
77	23	8.2	0.9	0.8	-	-	1.7	1077.48

Sr No	Outside mm (Do)	Inside dia (Di)	Thickness mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at s=0.75ho) (Kg)
78	23	10.2	0.9	0.75			1.65	1057.41
79	25	12.2	0.9	0.7	-	-	1.6	861.88
80	35.5	18.3	0.9	1.15			2.05	831.56
81	12.5	6.2	1	0.2	-	-	1.2	1253.36
82	18	8.2	1	0.5			1.5	1496.26
83	18	9.2	1	0.4	-	-	1.4	1223.54
84	20	8.2	1	0.6			1.6	1423.52
85	20	10.2	1	0.55	-	-	1.55	1424.53
86	23	0.2	1	0.7			1.7	1239.29
87	23	10.2	1	0.7	-	-	1.7	1314.78
88	25	10.2	1	0.75			1.75	1171.24
89	25	12.2	1	0.8	-	-	1.8	1357.93
90	28	10.2	1	1			2	1287.99
91	28	12.2	1	0.95	-	-	1.95	1267.55
92	28	14.2	1	0.8			1.8	1106.58
93	31.5	12.2	1	1.1	-	-	2.1	1166.4
94	34	12.2	1	1.25			2.25	1171.66
95	34	12.3	1	1.2	-	-	2.2	1109.12
96	40	20.4	1	1.3			2.3	1016.02
97	20	10.2	1.1	0.45	-	-	1.55	1520.03
98	22.5	11.2	1.25	0.5			1.75	1927.99
99	23	123.2	1.25	0.6	-	-	1.85	2330
100	25	12.2	1.25	0.7			1.95	2213.09
101	28	10.2	1.25	1	-	-	2.25	2393.23
102	28	12.2	1.25	0.85			2.1	2081.58
103	28	14.2	1.25	0.85	-	-	2.1	2238.44
104	31.5	12.2	1.25	0.95			2.2	1803.97
105	31.5	16.3	1.25	0.9	-	-	2.15	1911.98
106	34	12.3	1.25	1.2			2.45	2023
107	34	14.3	1.25	1.15	-	-	2.4	1992.34
108	35.5	18.3	1.25	1			2.25	1697.88
109	40	14.3	1.25	1.4	-	-	2.65	1778.97
110	45	22.4	1.25	1.6			2.85	1889.99
111	50	25.4	1.25	1.6	-	-	2.85	1549.4
112	20	10.2	1.5	0.3			1.8	2519.72
113	22.5	11.2	1.5	0.55	-	-	2.05	2924.56
114	28	10.2	1.5	0.7			2.2	2721.23
115	25	12.2	1.5	0.55	-	-	2.05	2924.56
116	28	10.2	1.5	0.7			2.2	2721.23
117	28	12.2	1.5	0.75	-	-	2.25	3075.57
118	28	14.2	1.5	0.65			2.15	2839.53
119	31.5	12.2	1.5	0.85	-	-	2.35	2686.59
120	31.5	16.3	1.5	0.9			2.4	3228.26
121	34	12.3	1.5	1.2	-	-	2.7	3361.3
122	34	14.3	1.5	1.05			2.55	2988.8
123	34	16.3	1.5	1.05	-	-	2.55	3153.58

Sr No	Outside Diameter mm (Do)	Inside dia (Di)	Thickness mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at s=0.75ho) (Kg)
124	40	14.3	1.5	1.3			2.8	2666.79
125	40	16.3	1.5	1.3	-	-	2.8	2748
126	40	20.4	1.5	1.15			2.65	2620.13
127	50	18.4	1.5	1.65	-	-	3.15	2317.65
128	50	25.4	1.5	1.6			3.1	2510.61
129	58	28.5	1.5	1.95	-	-	3.45	2620.89
130	28	10.2	1.75	0.9			2.65	5595.06
131	31.5	16.3	1.75	0.7	-	-	2.45	3869.21
132	34	16.3	1.75	0.9			2.65	4151.89
133	40	16.3	1.75	1.35	-	-	3.1	4432.69
134	45	22.4	1.75	1.3			3.05	3644.16
135	63	31	1.8	2.35	-	-	4.15	4236.24
136	31.5	16.3	2	0.75			2.75	6169.88
137	34	16.3	2	0.85	-	-	2.85	5779.6
138	35.5	18.3	2	0.8			2.8	5184.27
139	40	14.3	2	1.05	-	-	3.05	4766.17
140	40	16.3	2	1.1			3.1	5165.89
141	40	18.3	2	1.15	-	-	3.15	5653
142	40	20.4	2	1.1			3.1	5698.12
143	50	18.4	2	1.65	-	-	3.65	5111.53
144	50	20.4	2	1.5			3.5	4684.97
145	50	22.4	2	1.6	-	-	3.6	5218.96
146	50	25.4	2	1.4			3.4	4759.7
147	56	28.5	2	1.6	-	-	3.6	4435.83
148	60	20.5	2	2.2			4.2	5023.64
149	71	36	2	2.6			4.6	5141.37
150	45	22.4	2.2	1.15	-	-	3.35	6140.13
151	40	20.4	2.25	0.9			3.15	6496.89
152	50	25.4	2.25	1.5	-	-	3.75	7213.06
153	80	41	2.25	2.95			5.2	6609.2
154	40	20.4	2.5	0.95	-	-	3.45	9384.8
155	45	22.4	2.5	1			3.5	7711.94
156	50	18.3	2.5	1.35	-	-	3.85	7711.33
157	50	18.4	2.5	1.65			4.15	9637.98
158	50	20.4	2.5	1.35	-	-	3.85	7914.88
159	50	22.4	2.5	1.4			3.9	8505.6
160	50	25.4	2.5	1.4	-	-	3	9058
161	56	28.5	2.5	1.7			4.2	8973
162	60	20.5	2.5	2.2	-	-	4.7	9250.16
163	60	25.5	2.5	1.9			4.4	8170.54
164	60	30.5	2.5	2	-	-	4.5	9427
165	63	31	2.5	1.75			4.25	7185.34
166	70	30.5	2.5	2.4	-	-	4.9	8026.49
167	71	36	2.5	2			4.5	6721.86
168	80	31	2.5	2.8	-	-	5.3	7235.23
169	90	46	2.5	3.2			5.7	7680.21

Sr No	Outside Diameter of Disc Spring mm (Do)	Inside dia of Disc Spring (Di)	Thickness of Disc Spring mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness of Disc Spring (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at s=0.75ho) (Kg)
170	100	51	2.7	3.5	-	-	6.2	8604.45
171	60	30.5	2.75	2	-	-	4.75	12349.47
172	50	18.3	3	1	-	-	4	9604.27
173	50	18.4	3	1.2	-	-	4.2	11623.96
174	50	25.4	3	1.1	-	-	4.1	11970.38
175	56	28.5	3	1.3	-	-	4.3	11382.53
176	60	20.5	3	2.2	-	-	5.2	15457.1
177	60	25.5	3	1.65	-	-	4.65	11777.57
178	60	30.5	3	1.7	-	-	4.7	13219.29
179	63	31	3	1.7	-	-	4.7	11765.87
180	70	30.5	3	2.1	-	-	5.1	11420.65
181	70	35.5	3	2.1	-	-	5.1	12281.24
182	80	31	3	2.5	-	-	5.5	10346.31
183	80	36	3	2.7	-	-	5.7	11912.75
184	80	41	3	2.3	-	-	5.3	10512.25
185	112	57	3	3.9	-	-	6.9	10483.58
186	60	30.5	3.5	1.5	-	-	5	18143.38
187	63	31	3.5	1.4	-	-	4.9	15017.79
188	70	35.5	3.5	1.8	-	-	5.3	16169.01
189	90	46	3.5	2.5	-	-	6	14153.65
190	100	51	3.5	2.8	-	-	6.3	13063.71
191	125	64	3.5	4.5	-	-	8	15408.05
192	140	72	3.8	4.9	-	-	8.7	17186.38
193	70	35.5	4	1.8	-	-	5.8	23911.17
194	71	36	4	1.6	-	-	5.6	20524.42
195	80	41	4	2.2	-	-	6.2	22862.07
196	100	41	4	3.2	-	-	7.2	20240.86
197	100	51	4	3	-	-	7	20663.23
198	112	57	4	3.2	-	-	7.2	17743.33
199	125	41	4	4.2	-	-	8.2	17336.88
200	125	51	4	4.5	-	-	8.5	19807.09
201	160	82	4.3	5.6	-	-	9.9	21831.46
202	180	92	4.8	6.2	-	-	11	26428.74
203	70	40.5	5	1.4	-	-	6.4	39390.43
204	80	41	5	1.7	-	-	6.7	33542.04
205	90	46	5	2	-	-	7	31338.44
206	100	41	5	2.75	-	-	7.75	32344.91
207	100	51	5	2.8	-	-	7.8	36320.79
208	125	51	5	3.9	-	-	8.9	30653.08
209	125	61	5	4	-	-	9	33948.26
210	125	64	5	3.5	-	-	8.5	29892.85
211	140	72	5	4	-	-	9	27906
212	150	61	5	5.3	-	-	10.3	31025.36
213	100	51	6	2.2	-	-	8.2	47997.31
214	112	57	6	2.5	-	-	8.5	43684.8
215	160	82	6	4.5	-	-	10.5	40987.14

Sr No	Outside Diameter mm (Do)	Inside dia (Di)	Thickness mm (T)	Free Height of cone frustum of unload Disc Spring mm (Lo)	Thickness (mm) (reduced) (t)	Free Height of cone frustum of unload Disc Spring with reduced Thickness mm (ho)	Overall Height (lo)	Load on each disc Spring n (at s=0.75ho) (Kg)
216	180	92	6	5			11	36602.92
217	225	112	6.5	7.1	6.2	7.4	13.6	44557.36
218	100	51	7	2.2	6.55	2.65	9.2	75801.9
219	125	64	7	3	6.55	3.45	10	677182
220	150	61	7	4.8	6.55	5.25	11.8	70406.1
221	250	127	7	7.8	6.7	8.1	14.8	50440.3
222	125	61	8	2.9	7.5	3.4	10.9	93529.68
223	125	64	8	2.6	7.5	3.1	10.6	85882.04
224	125	71	8	2.9	7.45	3.45	10.9	103911.5
225	140	72	8	3.2	7.5	3.7	11.2	85207.66
226	150	71	8	4.05	7.5	4.55	12.05	91014.28
227	150	81	8	4	7.5	4.5	12	97269.94
228	200	82	8	6.2	7.5	6.7	14.2	77994.65
229	200	102	8	5.6	7.5	6.1	13.6	76339.44
230	225	112	8	6.5	7.5	7	14.5	70712.71
231	250	127	8	8	7.5	8.5	16	74781.55
232	125	71	10	1.8	9.3	2.5	11.8	124060.78
233	150	81	10	3.4	9.4	4	13.4	158219.63
234	160	82	10	3.5	9.4	4	13.5	138260.54
235	180	92	10	4	9.4	4.6	14	125353.76
236	200	82	10	5.5	9.4	6.1	15.5	129379.62
237	200	92	10	5.6	9.4	6.2	15.6	137617.82
238	200	102	10	5.6	9.4	6.2	15.6	145283.15
239	250	102	10	8	9.4	8.6	18	126323.23
240	250	127	10	7	9.4	7.6	17	118992.62
241	160	82	11	3.5	10.2	4.3	14.5	183424.94
242	200	82	12	4.6	11.25	5.35	16.6	182644.5
243	200	92	12	4.8	11.25	5.55	16.8	199168.21
244	200	102	12	4.2	11.25	4.95	16.2	182927.45
245	200	112	12	4.2	11.25	4.95	16.2	195730.5
246	225	112	12	5	11.25	5.75	17	170929.73
247	250	102	12	7	11.25	7.75	19	182869.03
248	250	127	12	7.3	11.3	8	19.3	210699.01
249	180	92	13	3.5	12.1	4.4	16.5	237762.14
250	200	92	14	4.1	13.5	5.05	18.1	267091.7
251	200	102	14	4.2	13.05	5.15	18.2	289034.62
252	200	112	14	3.5	13.5	4.45	17.5	256628.03
253	250	127	14	5.6	13.1	6.5	19.6	248701.69
254	200	112	16	3.8	14.8	5	19.8	415514.11
255	225	112	16	4.5	14.9	5.6	20.5	359407.48
256	250	127	16	5.8	14.9	6.9	21.8	382822.46
257	250	127	16	5.8	14.9	6.9	21.8	382822.46

Order Type :- Disc Spring - Outer Diameter (Do) X Inner Diameter (Di) X Thickness (T) X Height (Lo)

Example :- Disc Spring - 10 X 3.2 X 0.3 X 0.35 - (Sr No. 7)

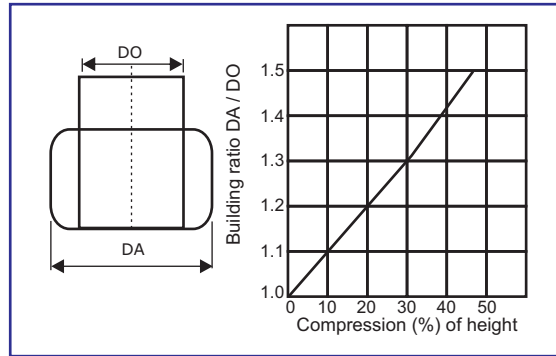
Polyurethane - Tube / Rod & Sheets (PPUT / PPUR)



APPLICATION - HINTS / INSTALLATION OF SPRINGS

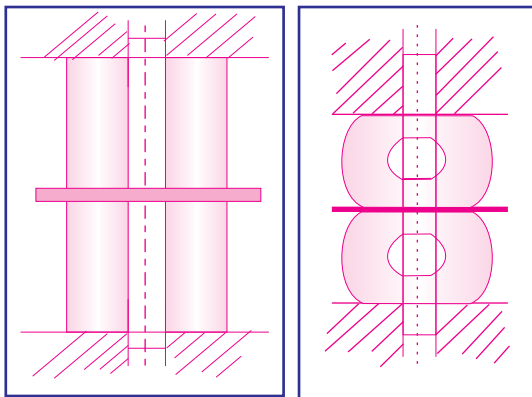
Space Requirements :

Elastomer springs cannot be compressed and therefore ample space should be kept to accommodate their natural bulging action. The volume of deformation of length equals the volume of the bulges. Add to this figure a safety margin.



Stacking :

To obtain extended stroke lengths the springs can be used in series (stacking). The individual springs used in the stack have to be separated by springs washers. If all in the stack are equal the individual stroke lengths are cumulative. Springs stacks have to be guided.



PU - Tube (PPUT)




OD mm	ID mm	Lo mm	
18	8	300	500
20	8	300	500
22	8	300	500
25	8,10	300	500
30	10,12	300	500
32	13	300	500
40	10,12	300	500
50	10,15	300	500
60	17	300	500
80	21	150	300
100	21	150	300


PU - Rod (PPUR)

OD	LO	
mm	mm	mm
6	100	150
8	100	150
10	100	150
12	150	300
16	150	300
18	150	300
20	150	300
22	300	300
25	300	300
30	300	300
32	300	300
40	150	300
50	150	300
60	150	300

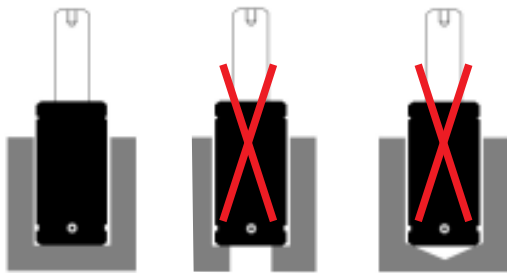
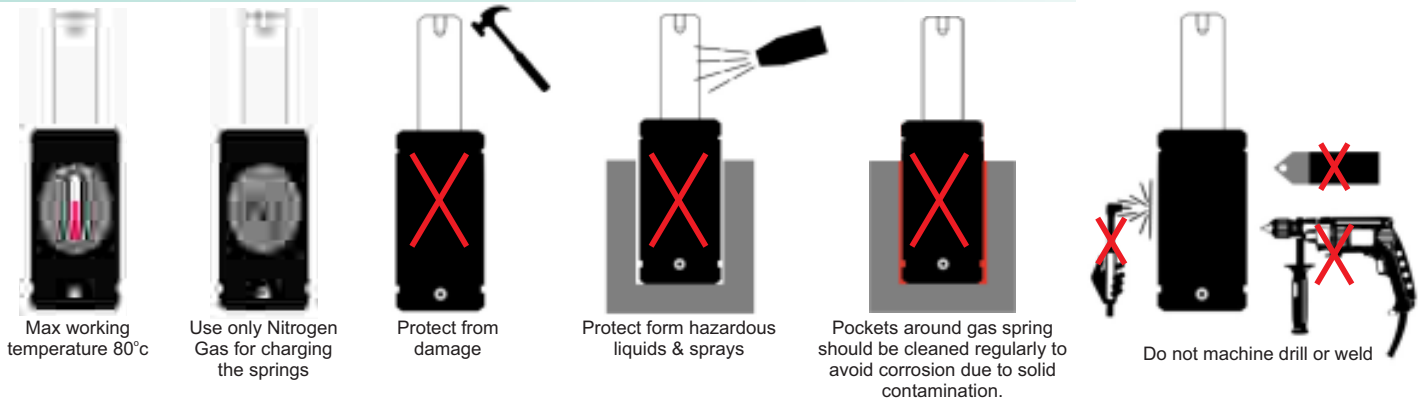
Gas Spring



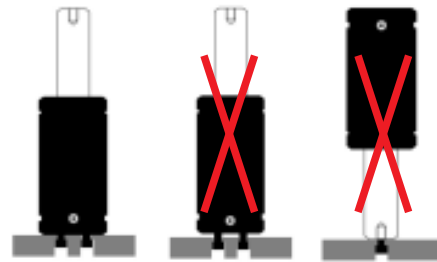
SERIES	DESCRIPTION	MODEL	STROKE LENGTH	INITIAL FORCE	Piston Diameter	Cylinder Diameter	Photo
NFS-S1	Rod sealed, high force, most compact gas spring available.	NFS-S1-0170	7 - 125	170	11	19	
		NFS-S1-0320	7 - 125	320	15	25	
		NFS-S1-0350	10 - 125	350	16	32	
		NFS-S1-0500	10 - 125	500	20	38	
		NFS-S1-0750	10 - 125	750	25	45	
		NFS-S1-1000	13 - 125	1000	28	50	
		NFS-S1-1500	13 - 125	1500	36	63	
		NFS-S1-2400	16 - 125	2400	45	75	
		NFS-S1-4200	16 - 125	4200	60	95	
		NFS-S1-6600	16 - 125	6600	75	120	
NFS-S2	Extended version of the NFS-S1, with a G1/8 port and deeper tapped holes in the base.	NFS-S2-0350	10 - 125	360	16	32	
		NFS-S2-0500	10 - 125	500	20	38	
		NFS-S2-0750	13 - 125	750	25	45	
		NFS-S2-1000	10 - 125	1000	28	50	
		NFS-S2-1500	10 - 125	1500	36	63	
		NFS-S2-2400	10 - 125	2400	45	75	
		NFS-S2-4200	16 - 125	4200	60	95	
		NFS-S2-6600	16 - 125	6600	75	120	
NFS-S3	Range of this series lies between NFS-S1 and NFS-S4 series for length.	NFS-S3-0300	10 - 125	300	16	38	
		NFS-S3-0500	10 - 125	500	20	45	
		NFS-S3-0750	10 - 125	750	25	50	
		NFS-S3-1500	10 - 200	1500	36	75	
		NFS-S3-3000	10 - 200	3000	50	95	
		NFS-S3-5000	10 - 200	5000	65	120	

SERIES	DESCRIPTION	MODEL	STROKE LENGTHS	INITIAL FORCE	Piston Diameter	Cylinder Diameter	Photo
NFS-S4 NFS-S4-B	Optimum design for gas spring durability conforming to ISO 11901 standard.	NFS-S4-0250	10 - 125	250	14	38	
		NFS-S4-0500	10 - 160	500	20	45	
		NFS-S4-0750	13 - 300	750	25	50	
		NFS-S4-1500	13 - 300	1500	36	75	
		NFS-S4-3000	13 - 300	3000	50	95	
		NFS-S4-5000	25 - 300	5000	65	120	
		NFS-S4-7500	25 - 300	7500	80	150	
		NFS-S4-10000	25 - 300	10000	95	195	
	NFS-S4-B Combines the power of the NFS-S1 range with standard size of the NFS-S4-B range	NFS-S4-B-1000	13 - 300	1000	28	50	
		NFS-S4-B-2400	25 - 300	2400	45	75	
		NFS-S4-B-4200	25 - 300	4200	60	95	
		NFS-S4-B-6600	25 - 300	6600	75	120	
		NFS-S4-B-9500	25 - 300	9500	90	150	
	NFS-S5	Ultra high force compact bore sealed gas spring.	NFS-S5-0042	6 - 50	420	12		24.9
NFS-S5-007			6 - 50	700	20	32	
NFS-S5-010			6 - 50	1000	20	38	
NFS-S5-018			6 - 50	1800	30	50	
NFS-S5-029			10 - 50	2900	38	63.2	
NFS-S5-047			10 - 50	4700	50	75	
NFS-S5-075			10 - 50	7500	65	95	
NFS-S5-118			10 - 50	11800	80	120	

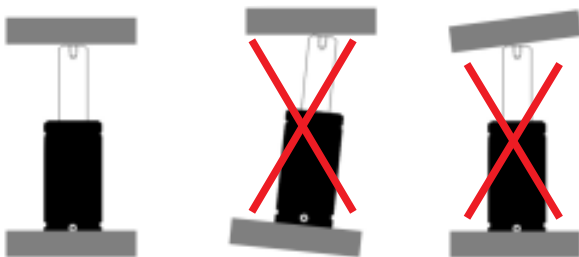
▶ Gas Spring - Safety Guidelines



Mount the gas spring on perfect flat surface. Mounting gas spring on uneven surface can cause side loading, leading to structural damage.



Mount the gas spring on perfect flat surface. Ensure the bolts are tight and spring cannot move during use. Do not use piston hole tapping for mounting the spring, it is only for maintenance purpose



Mount the gas spring between two perfectly parallel surface to ensure maximum life. Mounting gas spring in non parallel surfaces could lead to significant decrease in life.



The given stroke in catalog may be utilised fully. Though, it is strongly recommended that a minimum of 5 mm or 10% of the allowable stroke should not be used. This is to prevent over stroking.

Note :

- Maximum charge pressure in the gas spring should not be more than the specified limit
- While refiling, the gas spring should be completely discharged so as to avoid damage
- Maximum piston velocity is 1.6 m/sec.
- Use N-Force gas spring as it is, do not cut the piston or the cylinder
- With gas spring fully charged at high pressure gas, not following the above mentioned user guide may lead to accident, product damage, reduction in life, etc. Before using the gas spring, make sure to completely understand the user manual.

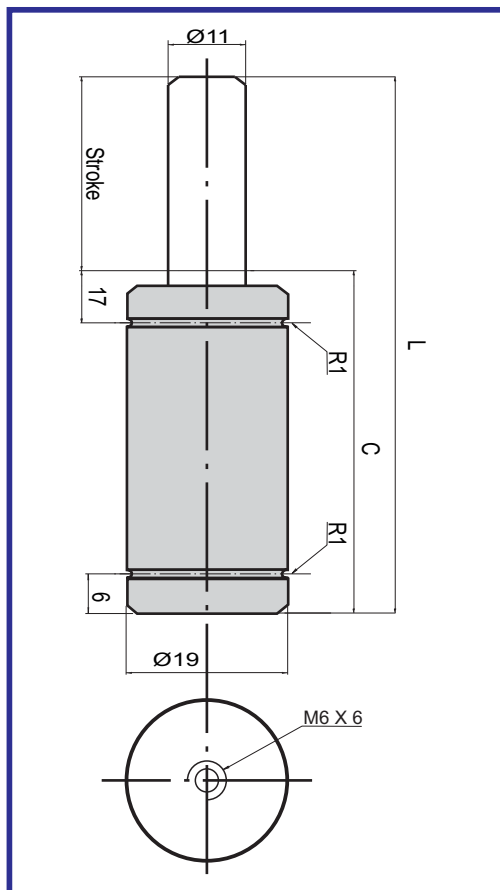
Order Example : Code - Stroke

NFS - S1 - 750 - 50

Code

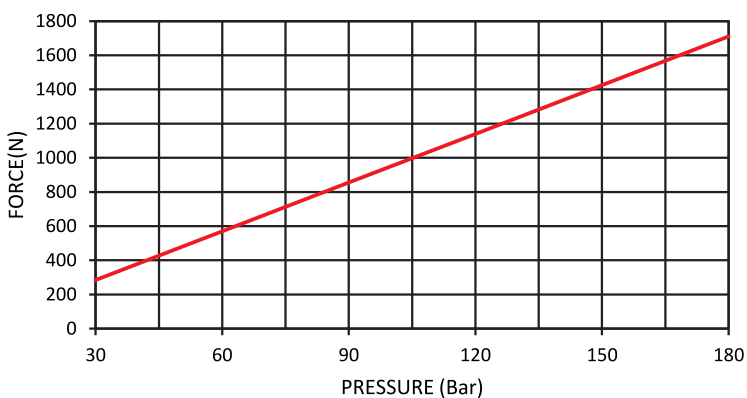
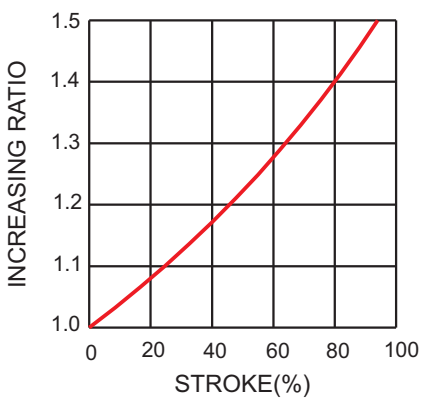
Stroke

▶ Gas Spring - NFS-S1-170 Series



Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S1-170	7	44	37	173 (1700)	286(2800)
	10	50	40		
	15	60	45		
	19	68	49		
	25	80	55		
	38	106	68		
	50	130	80		
	63	156	93		
	75	185	110		
	80	195	115		
	100	235	135		
	125	285	160		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



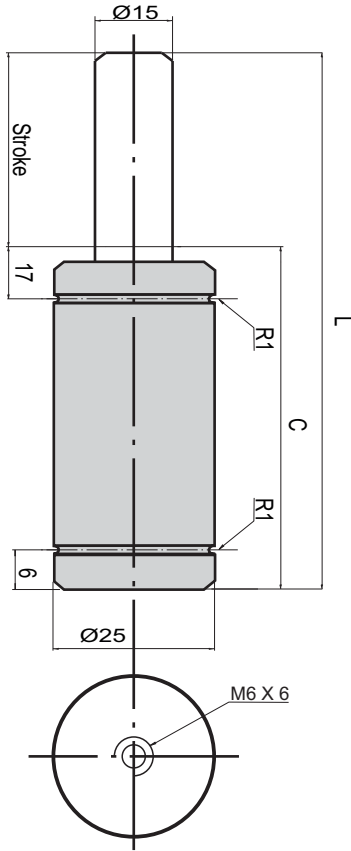
19 - BTCA
Ref Page No.96



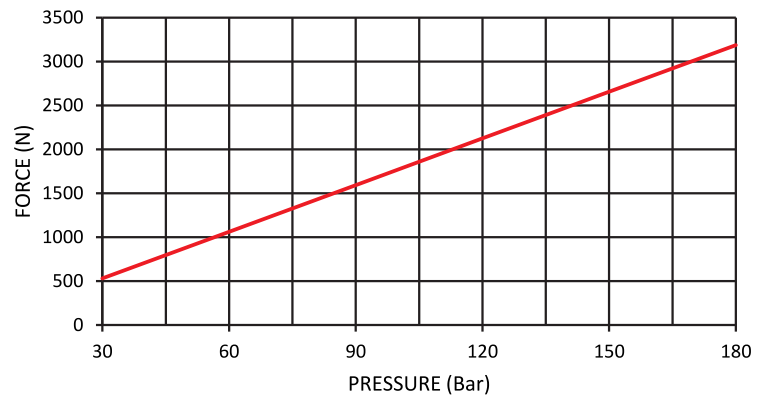
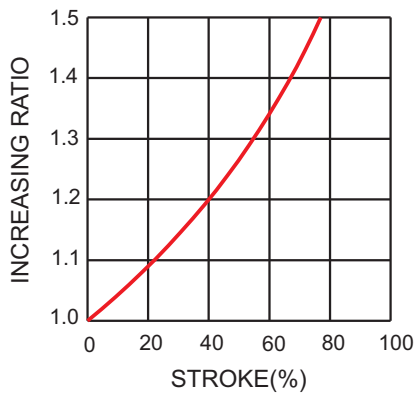
19 - TPC(A/B)
Ref Page No.96

▶ Gas Spring - NFS-S1-320 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S1-320	07	44	37	326 (3200)	489(4800)
	10	50	40		500(4900)
	15	60	45		520(5100)
	19	68	49		530(5200)
	25	80	55		540(5300)
	32	94	62		540(5300)
	38	106	68		540(5300)
	50	130	80		540(5300)
	63	156	93		540(5300)
	75	185	110		540(5300)
	80	195	115		540(5300)
	100	235	135		540(5300)
	125	285	160		540(5300)



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



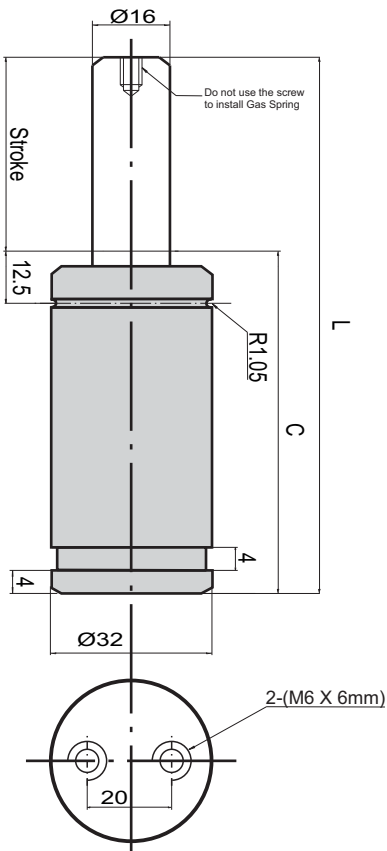
25 - BTCA
Ref Page No.96



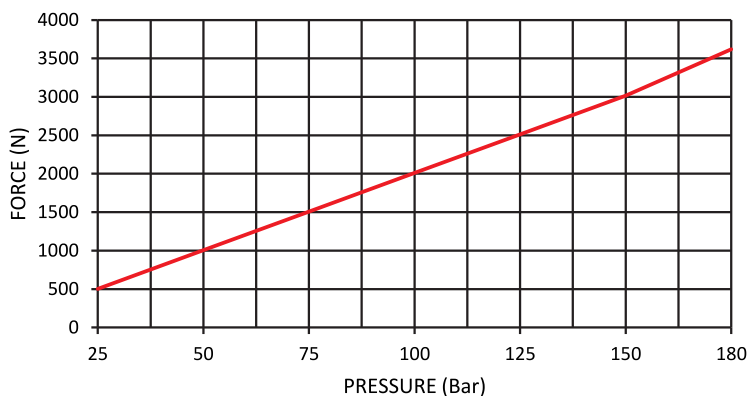
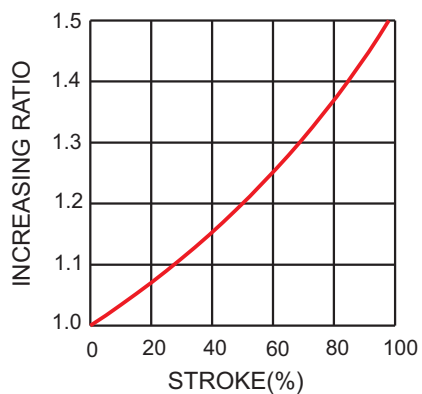
25 - TPC(A/B)
Ref Page No.96

▶ Gas Spring - NFS-S1-350 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Force	
				Kg (N)	Kg (N)
NFS-S1-350	10	50	40	366 (3600)	602(5900)
	13	56	43		530(5200)
	16	62	46		540(5300)
	20	70	50		571(5600)
	25	80	55		561(5500)
	30	90	60		561(5500)
	32	94	62		561(5500)
	35	100	65		561(5500)
	38	106	68		561(5500)
	40	110	70		561(5500)
	45	120	75		561(5500)
	50	130	80		561(5500)
	60	150	90		561(5500)
	63	156	93		561(5500)
	70	170	100		561(5500)
	75	180	105		561(5500)
	80	190	110		561(5500)
90	210	120	561(5500)		
100	230	130	561(5500)		
125	280	155	561(5500)		



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



32 - BTC
Ref Page No.97



32 - TPC
Ref Page No.99



32 - STPC
Ref Page No.98



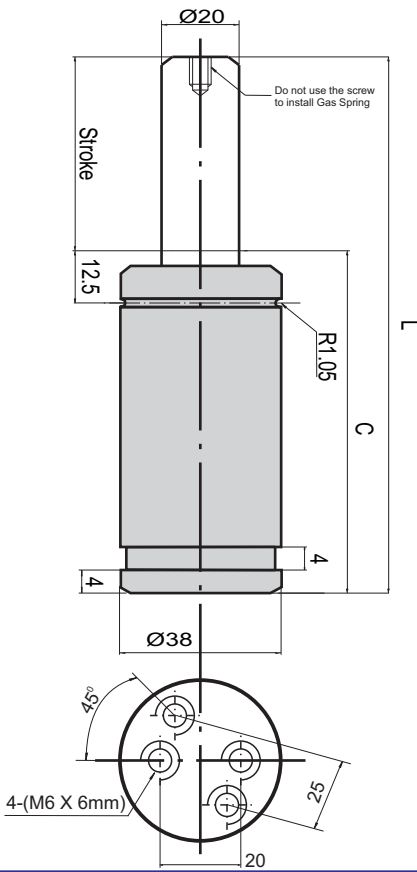
32 - FLC
Ref Page No.99



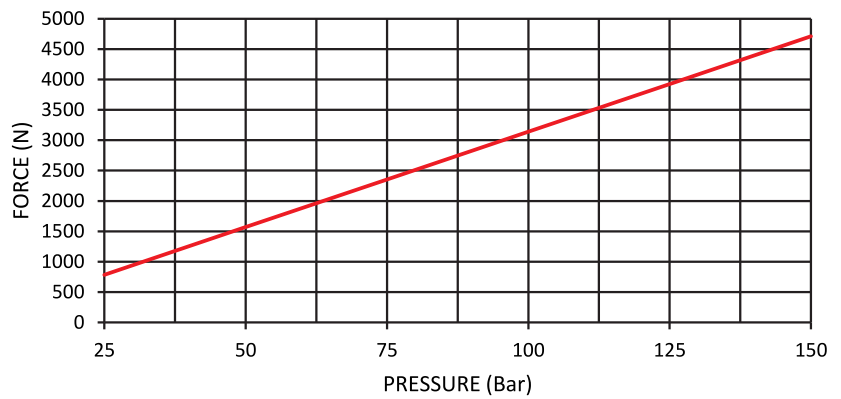
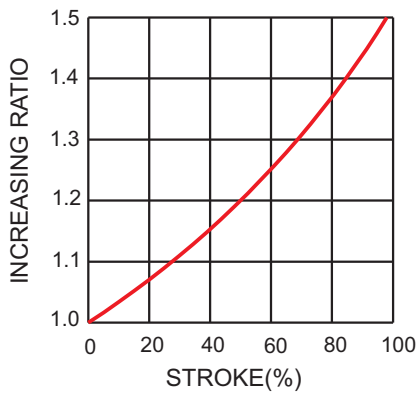
32 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-500 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
	10	50	40	479 (4700)	734(7200)
	13	56	43		724(7100)
	16	62	46		734(7200)
	20	70	50		755(7400)
	25	80	55		744(7300)
	30	90	60		734(7200)
	32	94	62		734(7200)
	35	100	65		734(7200)
	38	106	68		734(7200)
	40	110	70		734(7200)
	45	120	75		734(7200)
	50	130	80		734(7200)
	60	150	90		734(7200)
	63	156	93		734(7200)
	70	170	100		734(7200)
	75	180	105		734(7200)
	80	190	110		724(7100)
	90	210	120		724(7100)
	100	230	130		724(7100)
	125	280	155		724(7100)



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



38 - BTC
Ref Page No.97



38 - TPC
Ref Page No.99



38 - STPC
Ref Page No.98



38 - FLC
Ref Page No.99

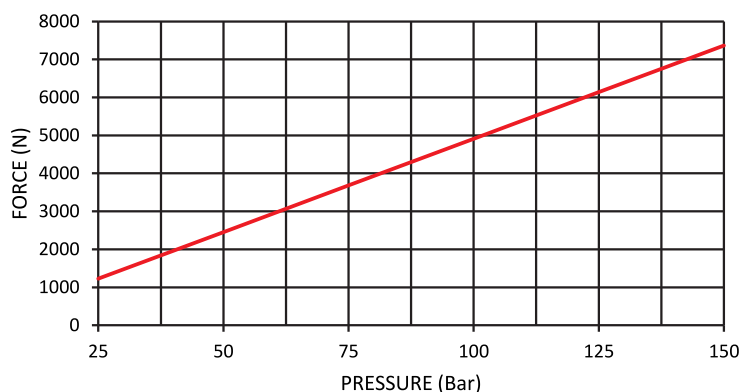
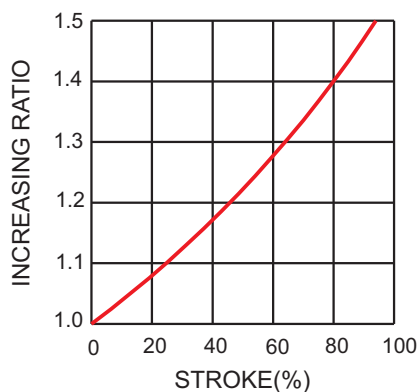


38 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-750 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S1-750	10	52	42	755 (7400)	1234(12100)
	13	58	45		1234(12100)
	16	64	48		1234(12100)
	20	72	52		1193(11700)
	25	82	57		1203(11800)
	30	92	62		1203(11800)
	32	96	64		1203(11800)
	35	102	67		1203(11800)
	38	108	70		1203(11800)
	40	112	72		1203(11800)
	45	122	77		1203(11800)
	50	132	82		1203(11800)
	60	152	92		1203(11800)
	63	158	95		1203(11800)
	70	172	102		1203(11800)
	75	182	107		1213(11900)
	80	192	112		1213(11900)
90	212	122	1213(11900)		
100	232	132	1213(11900)		
125	282	157	1213(11900)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



45 - BTC
Ref Page No.97



45 - BSP(A/B)
Ref Page No.97



45 - TPC
Ref Page No.99



45 - STPC
Ref Page No.98

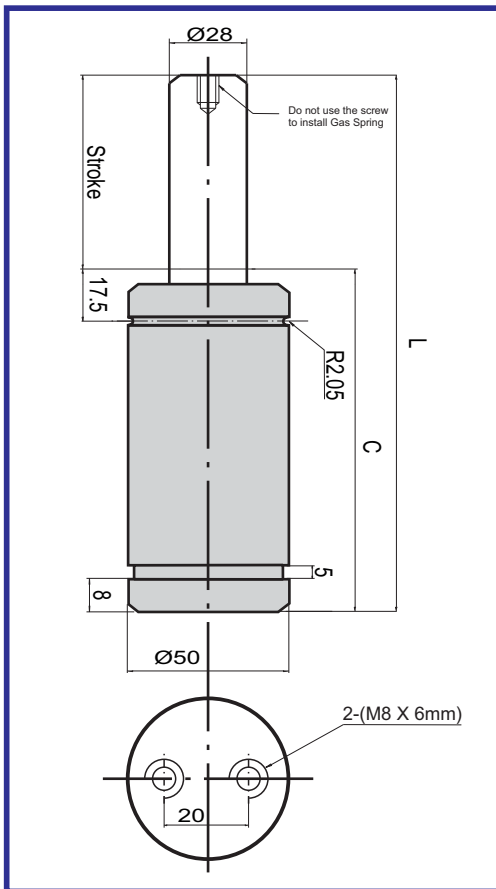


45 - FLC
Ref Page No.99



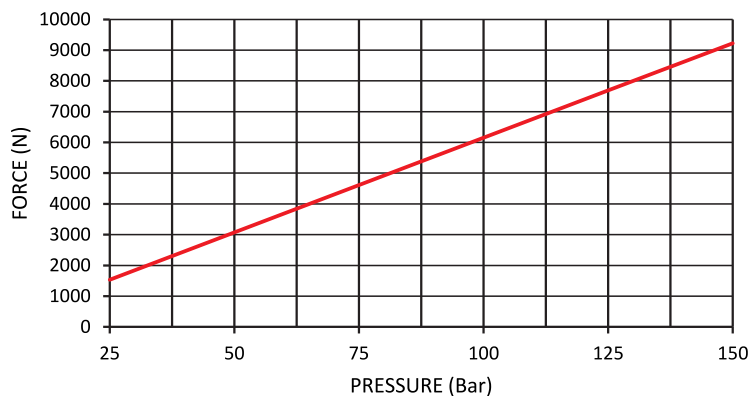
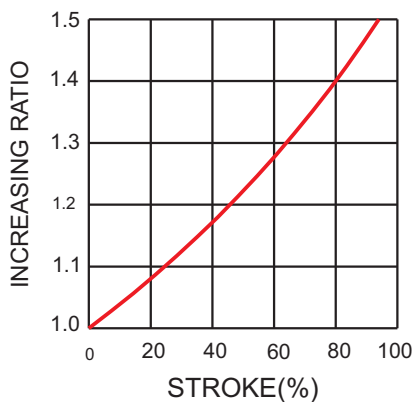
45 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-1000 Series



Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S1-1000	13	64	51	938 (9200)	1407(13800)
	16	70	54		1407(13800)
	20	78	58		1428(14000)
	25	88	63		1448(14200)
	30	98	68		1458(14300)
	32	102	70		1479(14500)
	35	108	73		1489(14600)
	38	114	76		1499(14700)
	40	118	78		1499(14700)
	45	128	83		1499(14700)
	50	138	88		1499(14700)
	60	158	98		1499(14700)
	63	164	101		1499(14700)
	70	178	108		1499(14700)
	75	188	113		1499(14700)
	80	198	118		1509(14800)
	90	218	128		1509(14800)
100	238	138	1509(14800)		
125	288	163	1509(14800)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



50 - BTC
Ref Page No.97



50 - BSP(A/B)
Ref Page No.97



50 - TPC
Ref Page No.99



50 - STPC
Ref Page No.98



50 - FLC
Ref Page No.99

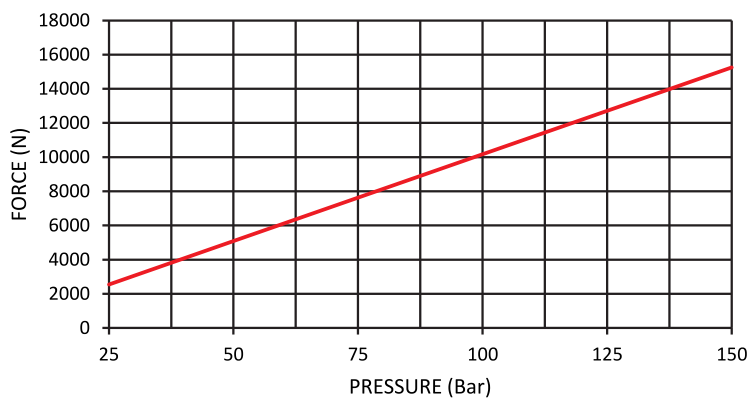
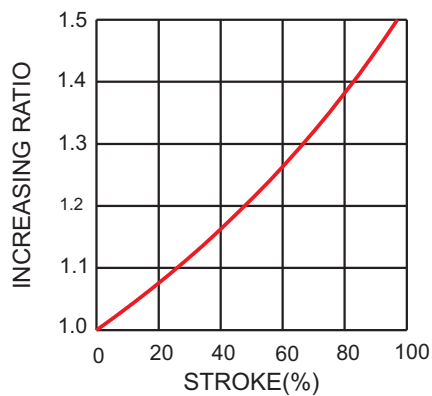


50 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-1500 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)					
						NFS-S1-1500				
						13	70	57	1530 (15000)	2447(24005)
						16	76	60		2458(24113)
						20	84	64		2468(24211)
						25	94	69		2478(24309)
						30	104	74		2427(23809)
						32	108	76		2437(23907)
						35	114	79		2447(24005)
						38	120	82		2447(24005)
						40	124	84		2447(24005)
						45	134	89		2447(24005)
						50	144	94		2447(24005)
						60	164	104		2447(24005)
						63	170	107		2447(24005)
						70	184	114		2447(24005)
						75	194	119		2447(24005)
						80	204	124		2447(24005)
						90	224	134		2447(24005)
						100	244	144		2478(24309)
125	294	169	2478(24309)							

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



63 - BTC
Ref Page No.97



63 - BSP(A/B)
Ref Page No.97



63 - TPC
Ref Page No.99



63 - STPC
Ref Page No.98



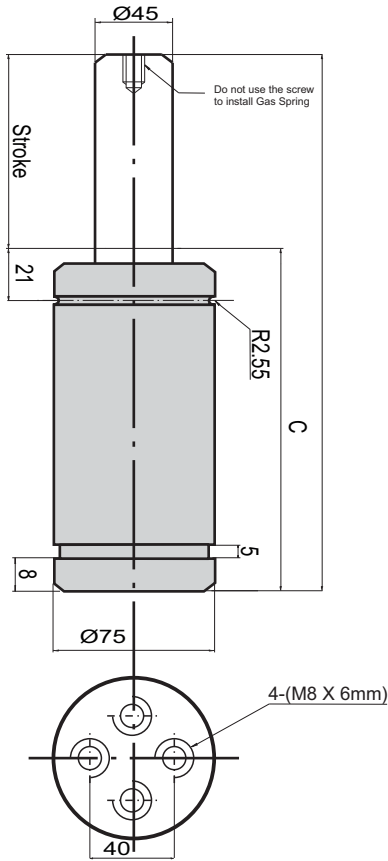
63 - FLC
Ref Page No.99



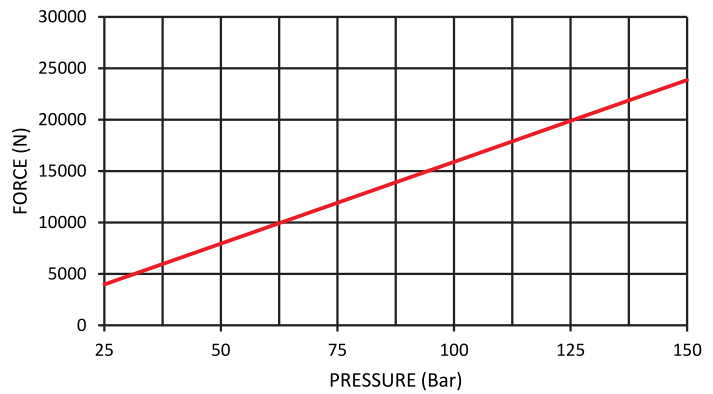
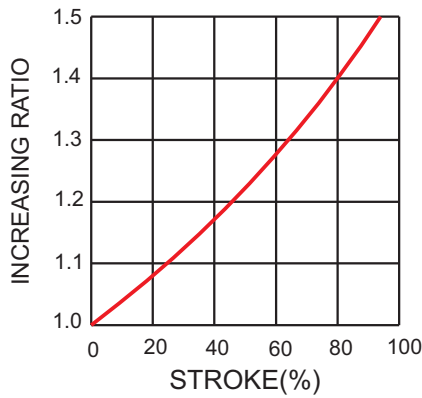
63 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-2400 Series

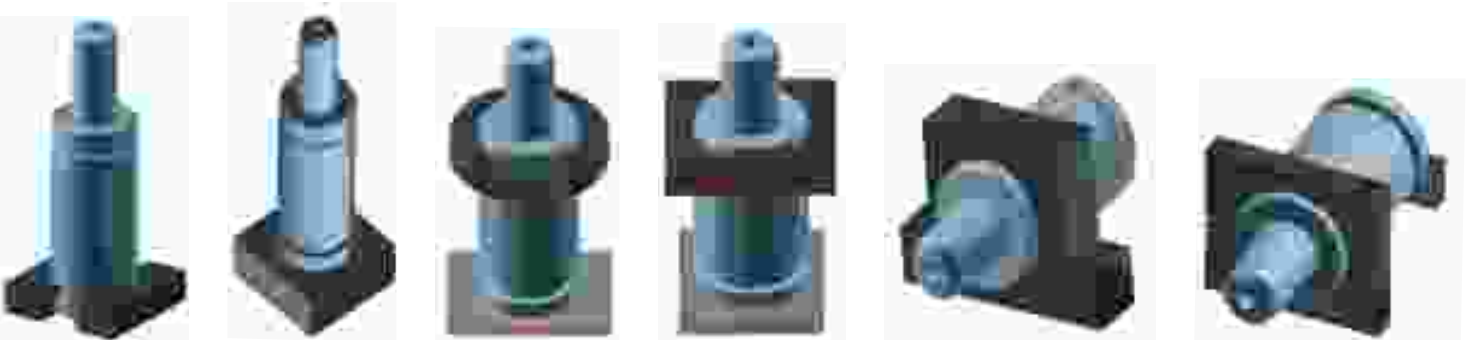
Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial	End Force
				Kg (N)	Kg (N)
NFS-S1-2400	16	77	61	2447 (24000)	3906(38318)
	20	85	65		3926(38514)
	25	95	70		3946(38710)
	30	105	75		3936(38612)
	32	109	77		3916(38416)
	35	115	80		3997(39211)
	38	121	83		3997(39211)
	40	125	85		3997(39211)
	45	135	90		3997(39211)
	50	145	95		3997(39211)
	60	165	105		3997(39211)
	63	171	108		3997(39211)
	70	185	115		3997(39211)
	75	195	120		3997(39211)
	80	205	125		3997(39211)
	90	225	135		3997(39211)
100	245	145	4007(39309)		
125	295	170	4007(39309)		



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - BTC
Ref Page No.97

75 - BSP(A/B)
Ref Page No.97

75 - TPC
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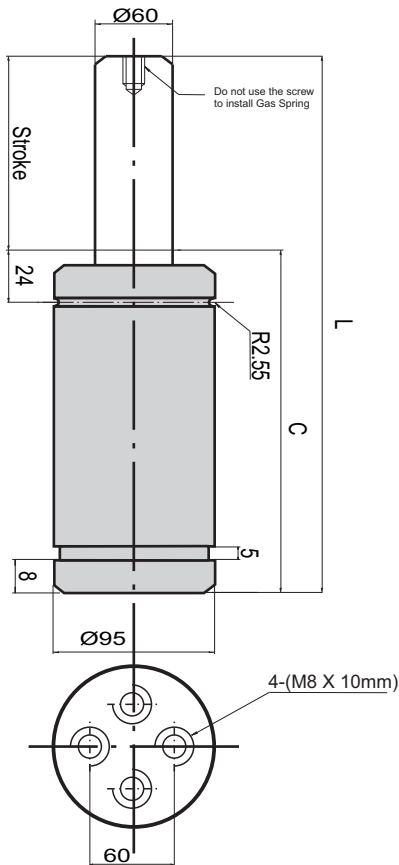
75 - STPC
Ref Page No.98

75 - FLC
Ref Page No.99

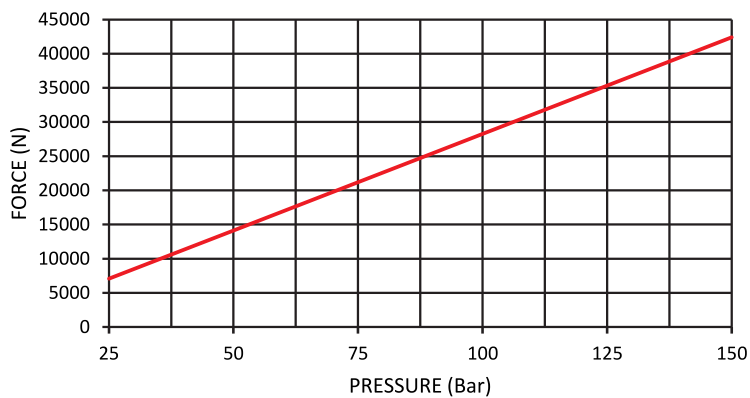
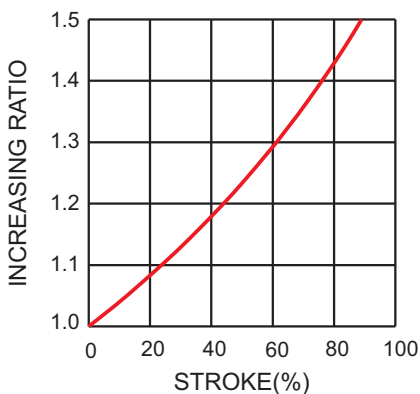
75 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-4200 Series

Code	Stroke mm	L mm (± 0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
	16	90	74	4283 (42000)	6292(61725)
	20	98	78		6496(63726)
	25	108	83		6200(60822)
	30	118	88		6557(64324)
	32	122	90		6710(65825)
	35	128	93		6832(67022)
	38	134	96		6914(67826)
	40	138	98		6934(68023)
	45	148	103		6995(68621)
	50	158	108		6995(68621)
	60	178	118		6995(68621)
	63	184	121		6995(68621)
	70	198	128		6995(68621)
	75	208	133		6995(68621)
	80	218	138		6995(68621)
	90	238	148		6995(68621)
	100	258	158		7046(69121)
	125	308	183	7097(69622)	



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



95 - BTC
Ref Page No.97



95 - BSP(A/B)
Ref Page No.97



95 - TPC
Ref Page No.99



95 - STPC
Ref Page No.98



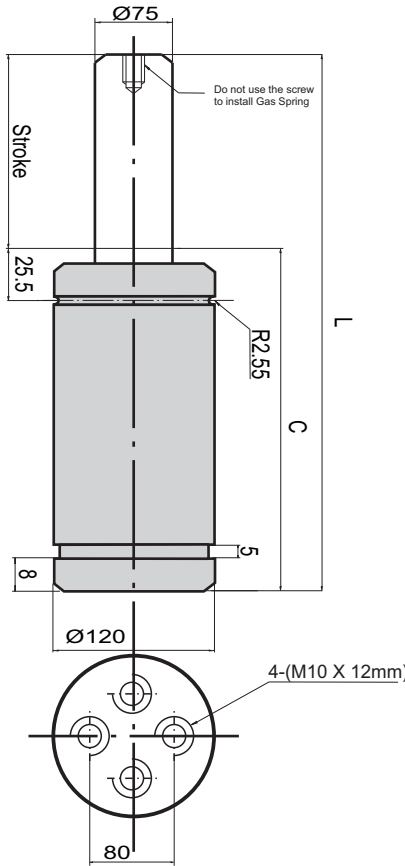
95 - FLC
Ref Page No.99



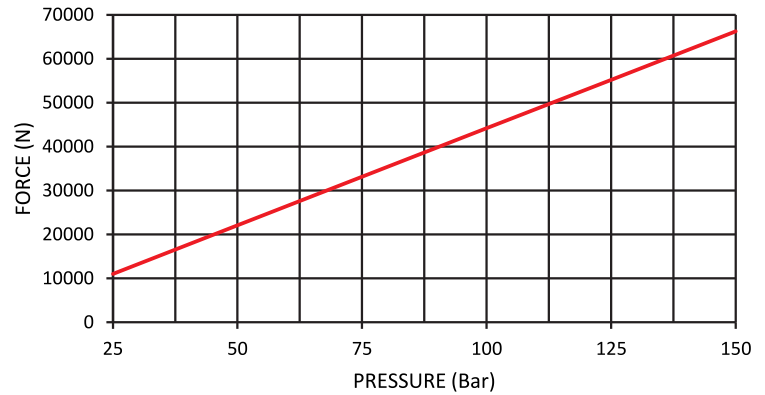
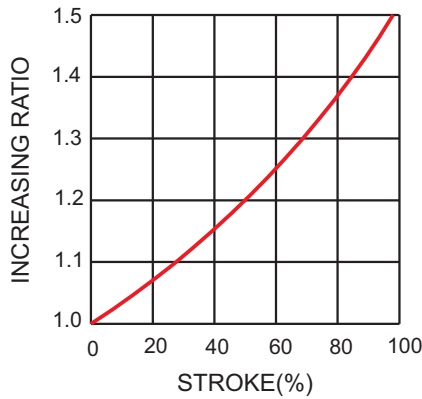
95 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S1-6600 Series

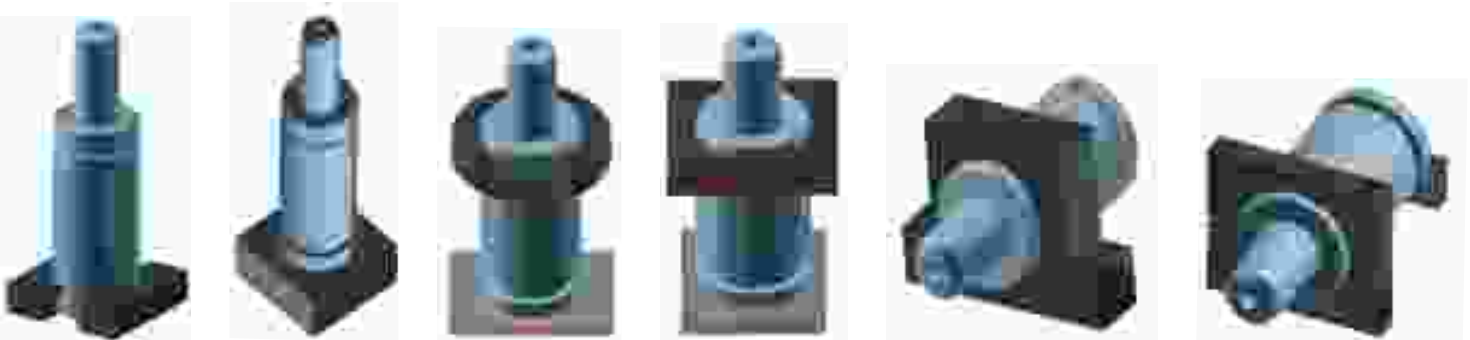
Code	Stroke mm	L mm (-0.2)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S1-6600	16	100	84	6730(66000)	9076(89036)
	20	108	88		9276(90998)
	25	118	93		9575(93931)
	30	128	98		9575(93931)
	32	132	100		9575(93931)
	35	138	103		9800(96138)
	38	144	106		9800(96138)
	40	148	108		9800(96138)
	45	158	113		10014(98237)
	50	168	118		10258(100631)
	60	188	128		10258(100631)
	63	194	131		10442(102436)
	70	208	138		10442(102436)
	75	218	143		10544(103437)
	80	228	148		10615(104133)
	90	248	158		10615(104133)
100	268	168	10748(105438)		
125	318	193	10860(106537)		



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



120 - BTC
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120 - BSP(A/B)
Ref Page No.97

120 - TPC
Ref Page No.99

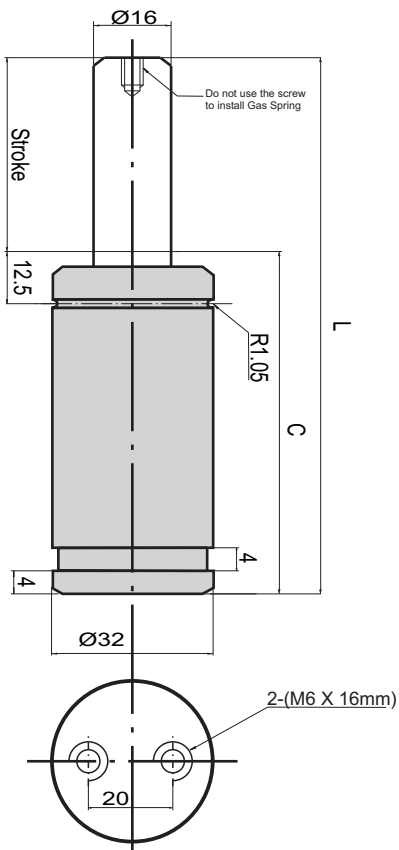
120 - STPC
Ref Page No.98

120 - FLC
Ref Page No.99

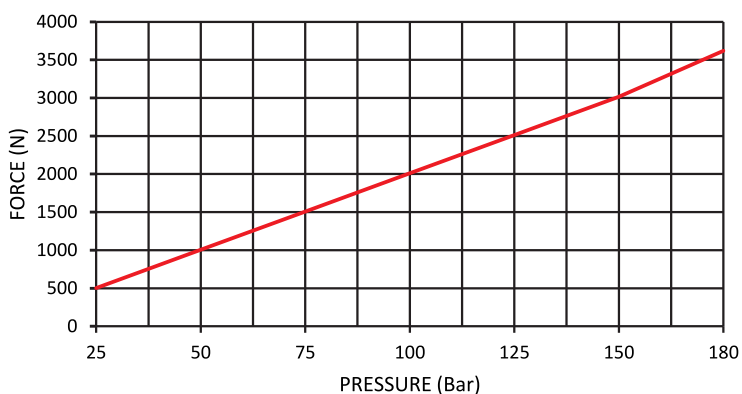
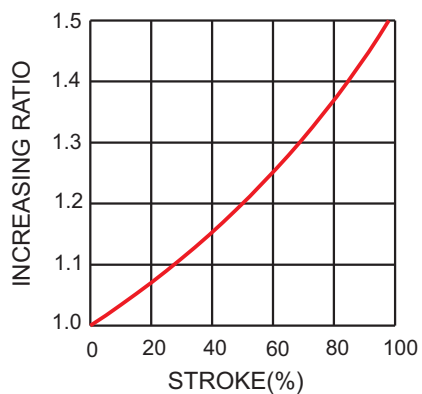
120 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-350 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial	
				Initial Kg (N)	End Force Kg (N)
NFS-S2-350	10	60	50	367 (3600)	602(5900)
	13	66	53		531(5200)
	16	72	56		541(5300)
	20	80	60		571(5600)
	25	90	65		561(5500)
	32	104	72		561(5500)
	38	116	78		561(5500)
	50	140	90		571(5600)
	63	166	103		561(5500)
	75	190	115		561(5500)
	80	200	120		561(5500)
	100	240	140		561(5500)
	125	290	165		561(5500)



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



32 - BTC
Ref Page No.97



32 - TPC
Ref Page No.99



32 - STPC
Ref Page No.98

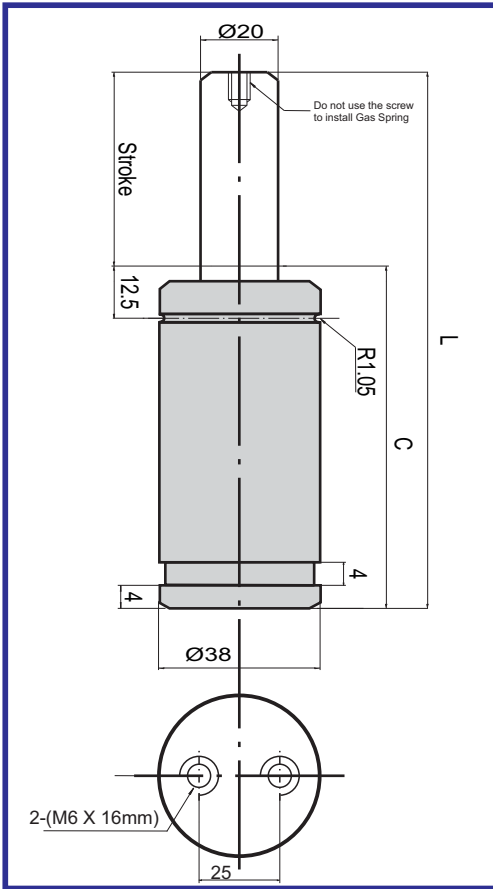


32 - FLC
Ref Page No.99



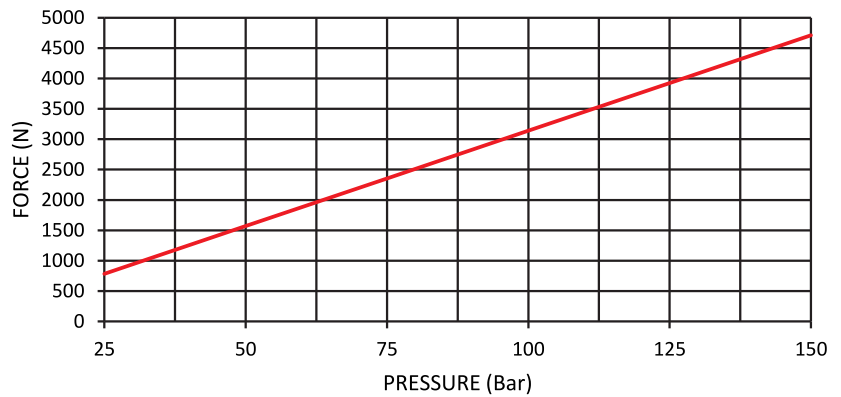
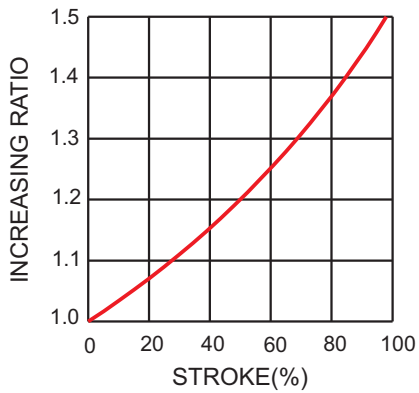
32 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-500 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S2-500	10	60	50	479 (4700)	735(7200)
	13	66	53		724(7100)
	16	72	56		735(7200)
	20	80	60		755(7400)
	25	90	65		745(7300)
	32	104	72		735(7200)
	38	116	78		735(7200)
	50	140	90		735(7200)
	63	166	103		735(7200)
	75	190	115		724(7100)
	80	200	120		724(7100)
	100	240	140		724(7100)
	125	290	165		724(7100)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



38 - BTC
Ref Page No.97



38 - TPC
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38 - STPC
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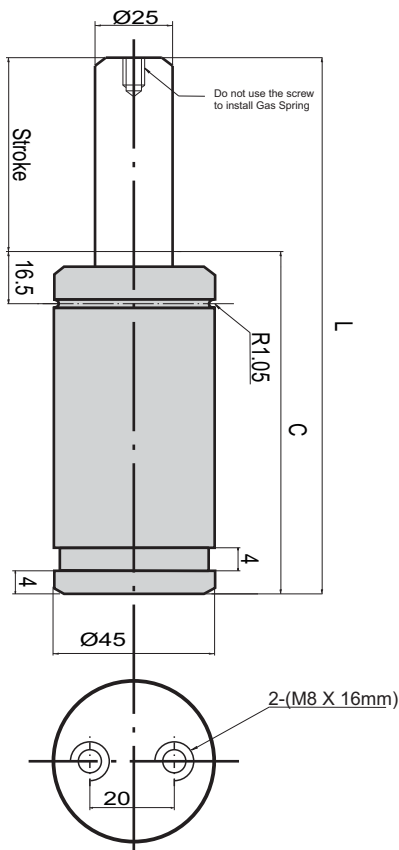
38 - FLC
Ref Page No.99



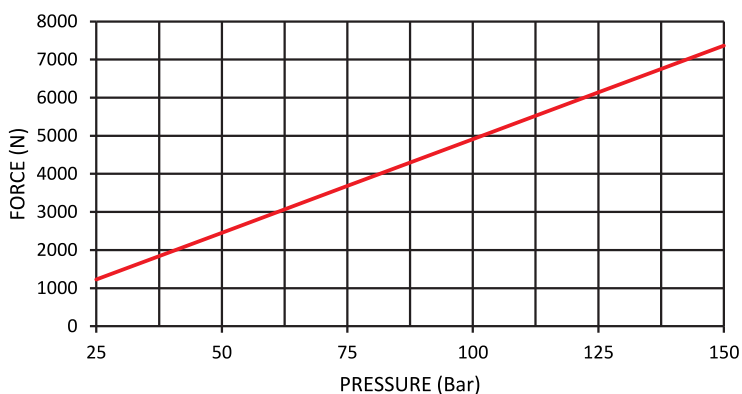
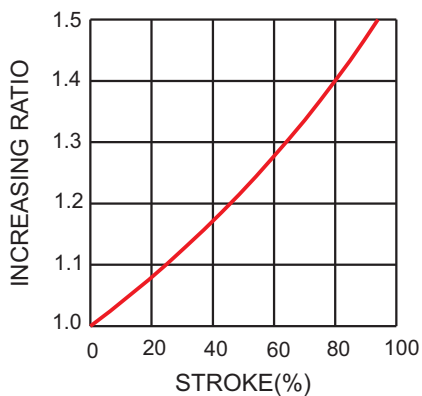
38 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-750 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial / End Force	
				Initial Kg (N)	End Force Kg (N)
NFS-S2-750	13	73	60	755 (7400)	1235(12100)
	16	79	63		1235(12100)
	20	87	67		1194(11700)
	25	97	72		1204(11800)
	32	111	79		1204(11800)
	38	123	85		1204(11800)
	50	147	97		1204(11800)
	63	173	110		1204(11800)
	75	197	122		1214(11900)
	80	207	127		1214(11900)
	100	247	147		1214(11900)
	125	297	172		1214(11900)



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



45 - BTC
Ref Page No.97



45 - BSP(A/B)
Ref Page No.97



45 - TPC
Ref Page No.99



45 - STPC
Ref Page No.98

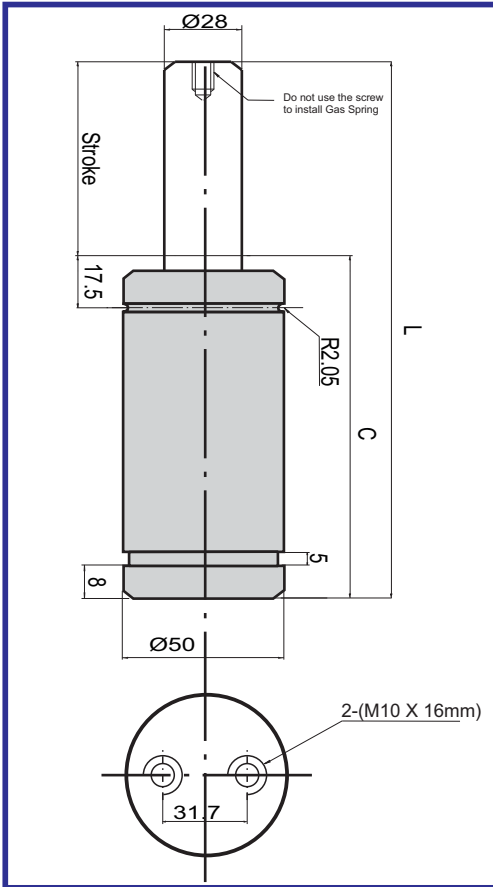


45 - FLC
Ref Page No.99



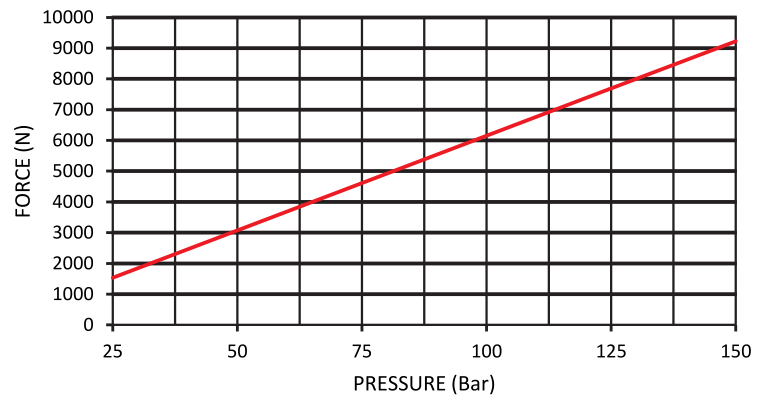
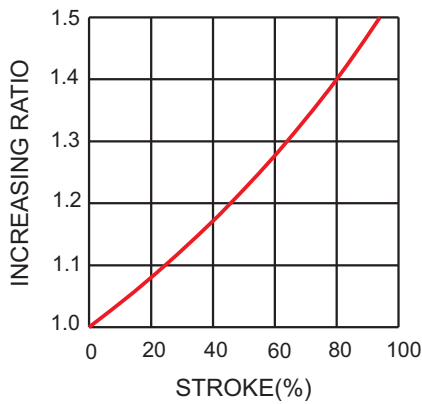
45 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-1000 Series

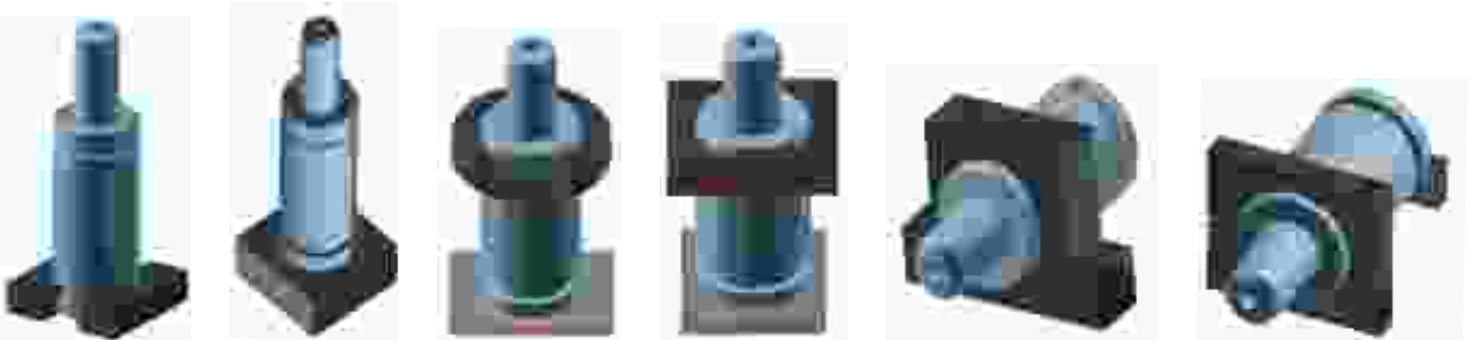


Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S2-1000	10	72	62	938 (9200)	1378(13500)
	13	78	65		1408(13800)
	16	84	68		1408(13800)
	20	92	72		1429(14000)
	25	102	77		1429(14200)
	32	116	84		1459(14300)
	38	128	90		1480(14500)
	50	152	102		1490(14600)
	63	178	115		1500(14700)
	75	202	127		1500(14700)
	80	212	132		1510(14800)
	100	252	152		1510(14800)
	125	302	177		1510(14800)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



50 - BTC
Ref Page No.97

50 - BSP(A/B)-S2
Ref Page No.97

50 - TPC
Ref Page No.99

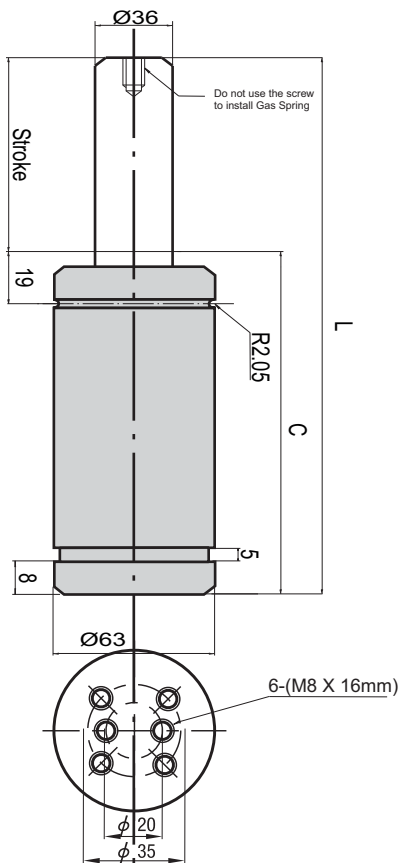
50 - STPC
Ref Page No.98

50 - FLC
Ref Page No.99

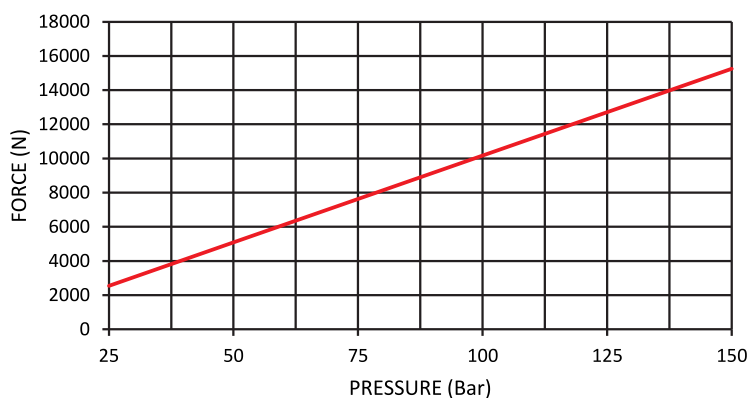
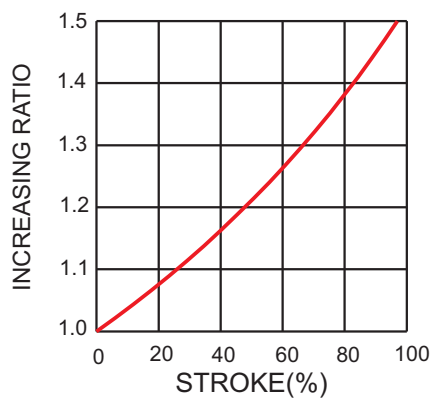
50 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-1500 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial	
				Force Kg (N)	Force Kg (N)
NFS-S2-1500	10	72	62	1559 (15300)	2418(23700)
	13	78	65		2449(24000)
	16	84	68		2459(24100)
	20	92	72		2469(24200)
	25	102	77		2480(24300)
	32	116	84		2429(23800)
	38	128	90		2439(23900)
	50	152	102		2449(24000)
	63	178	115		2459(24100)
	75	202	127		2469(24200)
	80	212	132		2469(24200)
	100	252	152		2480(24300)
	125	302	177		2480(24300)



▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



63 - BTC
Ref Page No.97



63 - BSP(A/B)
Ref Page No.97



63 - TPC
Ref Page No.99



63 - STPC
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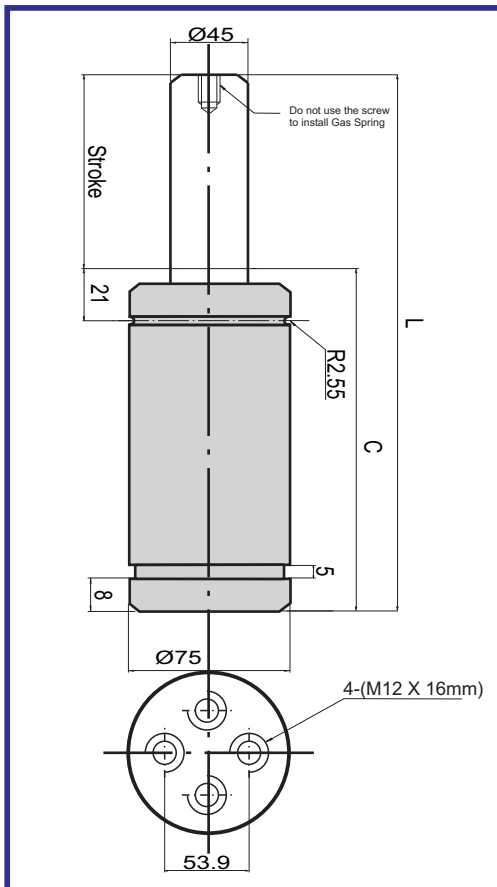


63 - FLC
Ref Page No.99



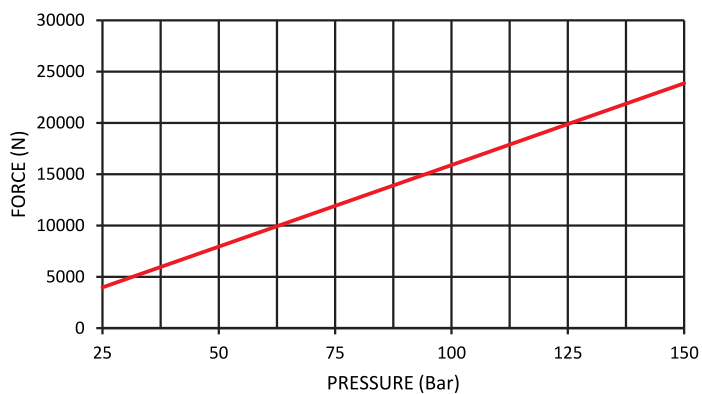
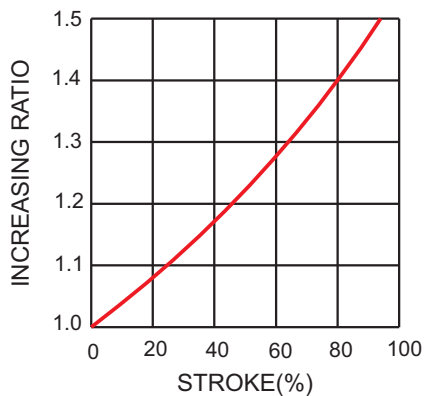
63 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-2400 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S2-2400	10	79	69	2431 (23850)	3888(38100)
	13	85	72		3898(38200)
	16	91	75		3908(38300)
	20	99	79		3929(38500)
	25	109	84		3949(38700)
	32	123	91		3939(38600)
	38	135	97		3918(38400)
	50	159	109		4000(39200)
	63	185	122		4000(39200)
	75	209	134		4000(39200)
	80	219	139		4000(39200)
	100	259	159		4010(39300)
125	309	184	4010(39300)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - BTC
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75 - BSP(A/B)-S2
Ref Page No.97



75 - TPC
Ref Page No.99



75 - STPC
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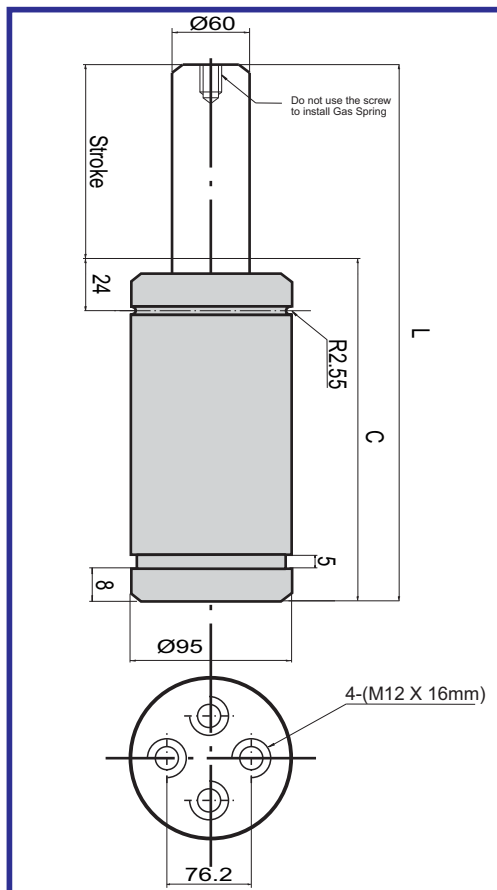


75 - FLC
Ref Page No.99



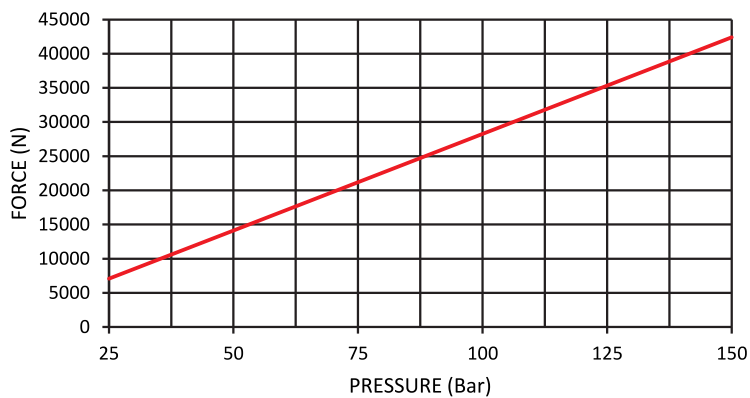
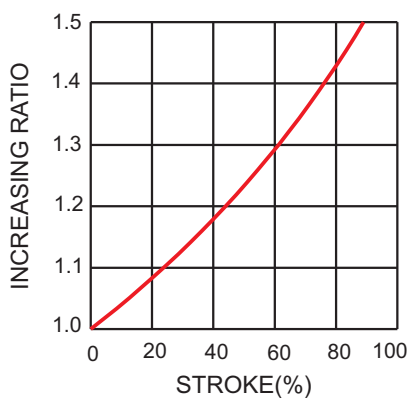
75 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-4200 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S2-4200	16	94	78	4321 (42400)	6296(61700)
	20	102	82		6500(63700)
	25	112	87		6204(60800)
	32	126	94		6561(64300)
	38	138	100		6714(65800)
	50	162	112		6837(67000)
	63	188	125		6918(67800)
	75	212	137		6939(68000)
	80	222	142		7000(68600)
	100	262	162		7051(69100)
	125	312	187		7102(69600)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



95 - BTC
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95 - BSP(A/B)-S2
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95 - TPC
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95 - STPC
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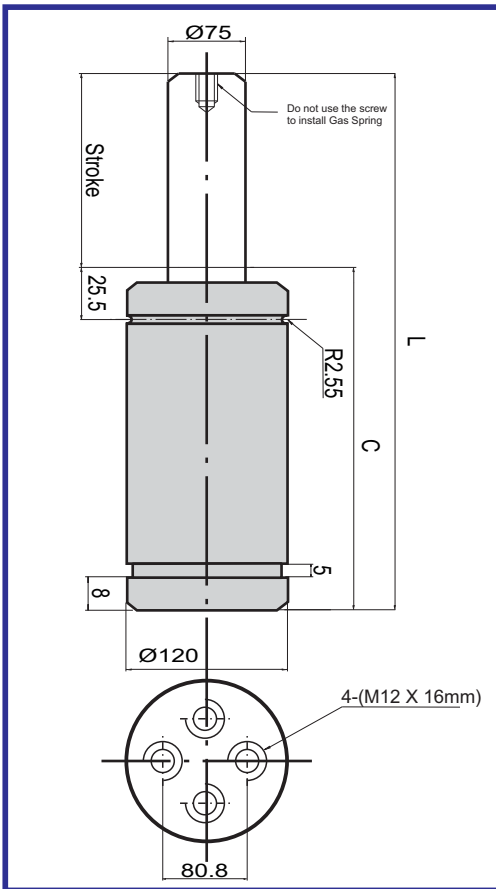


95 - FLC
Ref Page No.99



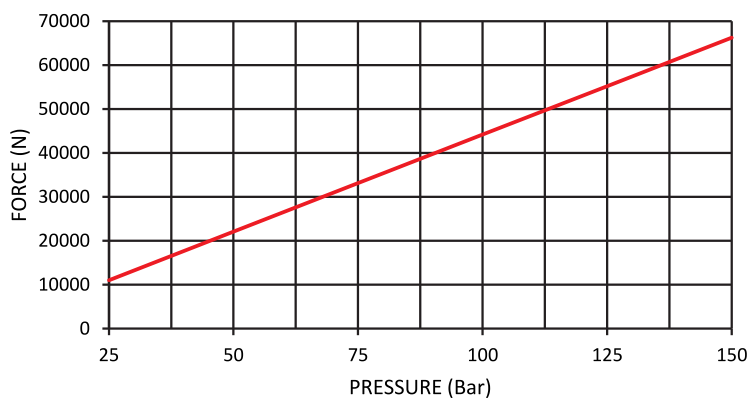
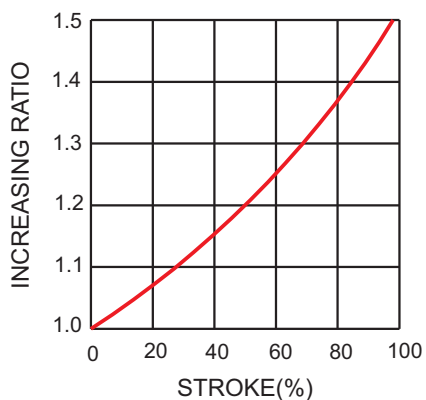
95 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S2-6600 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S2-6600	16	104	88	6761 (66300)	9082(89000)
	20	112	92		9286(91000)
	25	122	97		9582(93900)
	32	136	104		9806(96100)
	38	148	110		10020(98200)
	50	172	122		10265(100600)
	63	198	135		10449(102400)
	75	222	147		10551(103400)
	80	232	152		10622(104100)
	100	272	172		10755(105400)
	125	322	197		10867(106500)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



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Ref Page No.97



120 - BSP(A/B)
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120 - TPC
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120 - STPC
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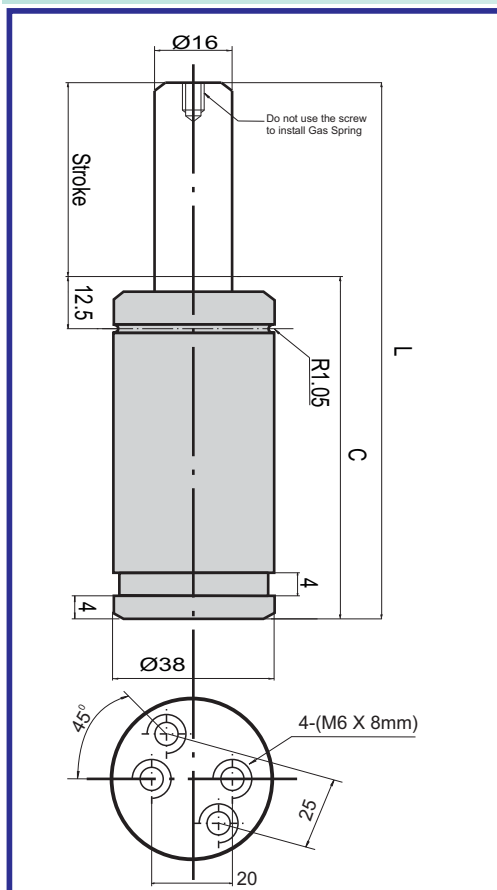


120 - FLC
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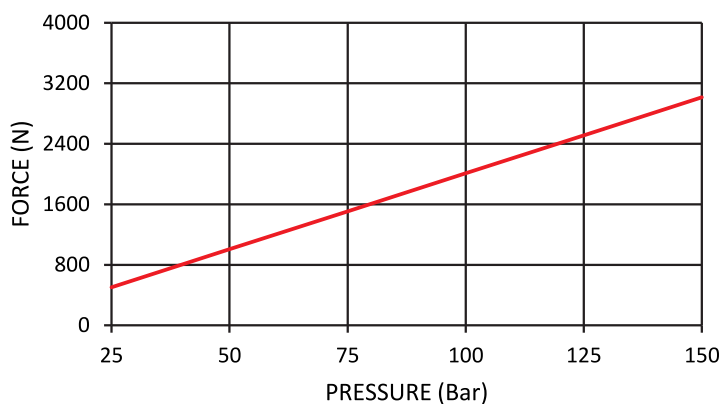
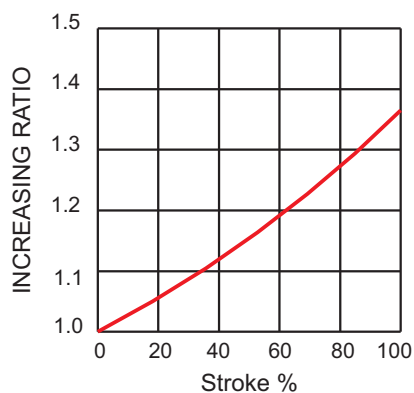
120 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S3-300 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S3-300	10	70	60	306 (3000)	397 (3900)
	15	80	65		408 (4000)
	20	90	70		408 (4000)
	25	100	75		418 (4100)
	30	110	80		418 (4100)
	35	120	85		418 (4100)
	38	126	88		418 (4100)
	40	130	90		418 (4100)
	45	140	95		418 (4100)
	50	150	100		418 (4100)
	60	170	110		418 (4100)
	63	176	113		418 (4100)
	70	190	120		418 (4100)
	80	210	130		418 (4100)
	90	230	140		418 (4100)
	100	250	150		428 (4200)
	110	270	160		428 (4200)
120	290	170	428 (4200)		
125	300	175	428 (4200)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



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Ref Page No.97



38 - TPC
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38 - STPC
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38 - FLC
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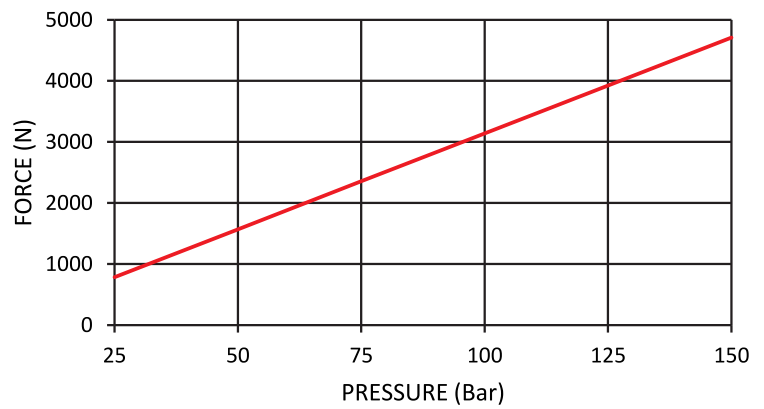
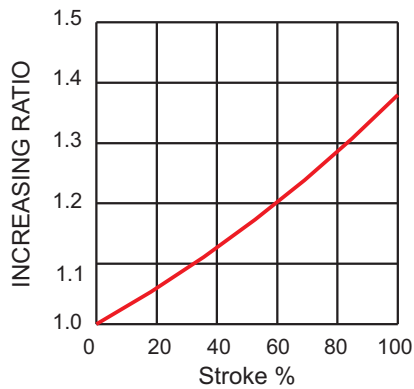


38 - FLCA
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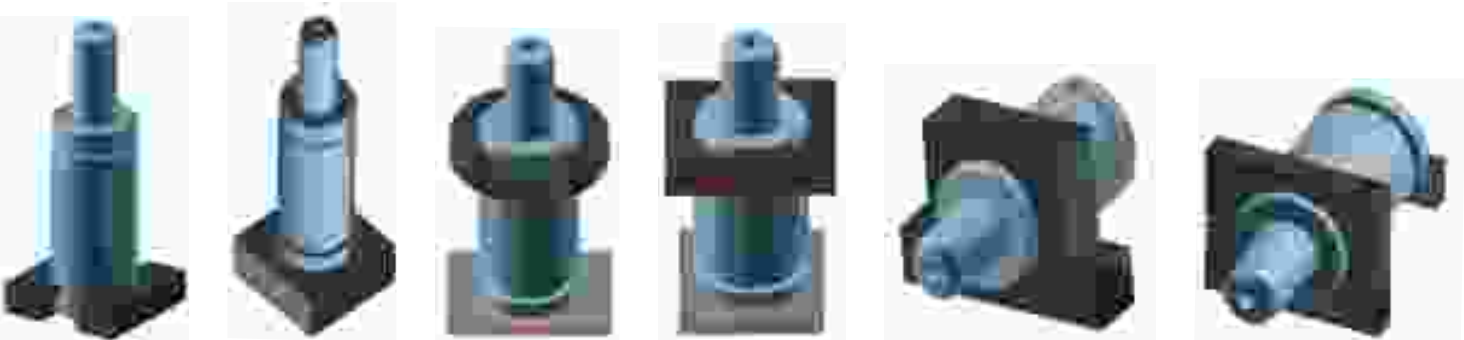
▶ Gas Spring - NFS-S3-500 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S3-500	10	70	60	474 (4650)	622 (6100)
	15	80	65		632 (6200)
	20	90	70		642 (6300)
	25	100	75		642 (6300)
	30	110	80		652 (6400)
	35	120	85		652 (6400)
	38	126	88		652 (6400)
	40	130	90		652 (6400)
	45	140	95		652 (6400)
	50	150	100		652 (6400)
	60	170	110		662 (6500)
	63	176	113		662 (6500)
	70	190	120		662 (6500)
	80	210	130		662 (6500)
	90	230	140		662 (6500)
	100	250	150		662 (6500)
	110	270	160		662 (6500)
120	290	170	662 (6500)		
125	300	175	662 (6500)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



45 - BTC
Ref Page No.97

45 - BSP(A/B)
Ref Page No.97

45 - TPC
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45 - STPC
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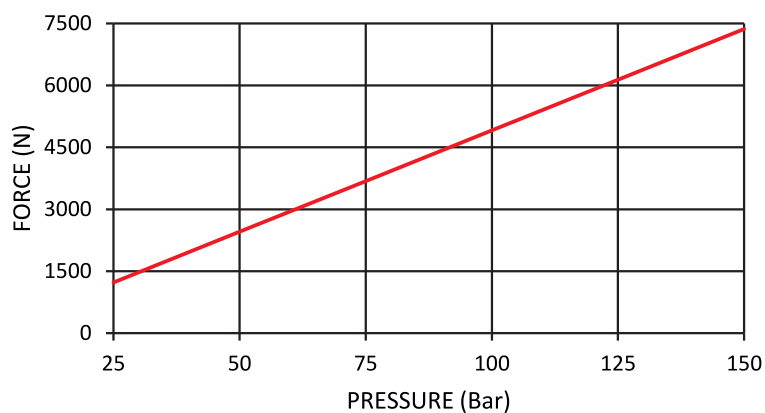
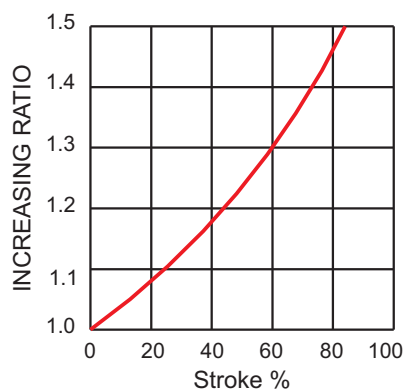
45 - FLC
Ref Page No.99

45 - FLCA
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▶ Gas Spring - NFS-S3-750 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S3-750	10	70	60	749 (7350)	1192 (11,700)
	13	76	63		1202 (11,800)
	15	80	65		1202 (11,800)
	20	90	70		1213 (11,900)
	25	100	75		1213 (11,900)
	30	110	80		1213 (11,900)
	35	120	85		1213 (11,900)
	38	126	88		1223 (12,000)
	40	130	90		1223 (12,000)
	45	140	95		1223 (12,000)
	50	150	100		1223 (12,000)
	60	170	110		1223 (12,000)
	63	176	113		1223 (12,000)
	70	190	120		1223 (12,000)
	75	200	125		1223 (12,000)
	80	210	130		1223 (12,000)
90	230	140	1223 (12,000)		
100	250	150	1223 (12,000)		
125	300	175	1223 (12,000)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



50 - BTC
Ref Page No.97



50 - BSP(A/B)
Ref Page No.97



50 - TPC
Ref Page No.99



50 - STPC
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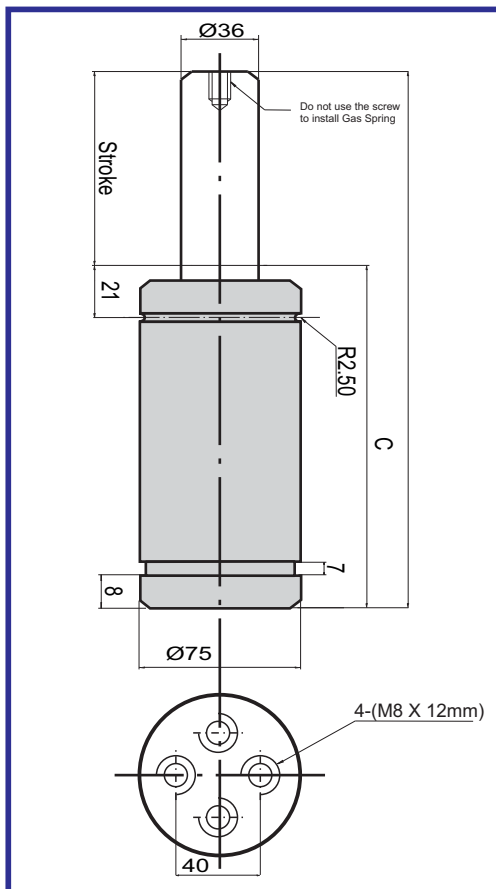


50 - FLC
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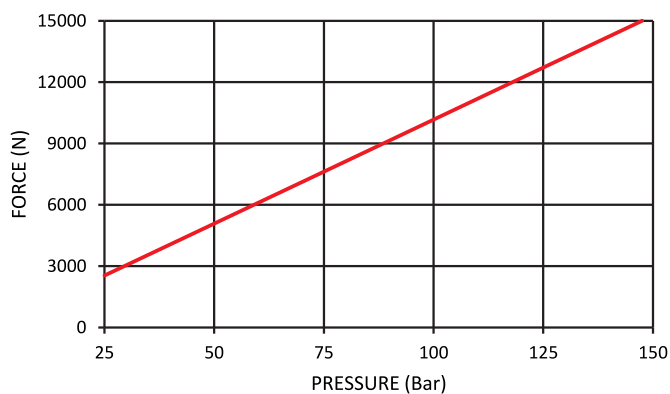
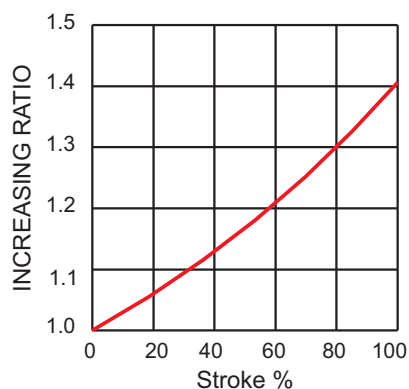
50 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S3-1500 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S3-1500	10	114	104	1544 (15,150)	1937 (19,000)
	13	120	107		1988 (19,500)
	15	124	109		2008 (19,700)
	20	134	114		2059 (20,200)
	25	144	119		2090 (20,500)
	30	154	124		2120 (20,800)
	35	164	129		2130 (20,900)
	38	170	132		2140 (21,000)
	40	174	134		2140 (21,000)
	45	184	139		2161 (21,200)
	50	194	144		2171 (21,300)
	60	214	154		2191 (21,500)
	63	220	157		2191 (21,500)
	70	234	164		2202 (21,600)
	75	244	169		2202 (21,600)
	80	254	174		2212 (21,700)
	90	274	184		2222 (21,800)
	100	294	194		2222 (21,800)
	125	344	219		2232 (21,900)
	150	394	244		2242 (22,000)
160	414	254	2242 (22,000)		
175	444	269	2253 (22,100)		
200	494	294	2253 (22,100)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - BTC
Ref Page No.97



75 - BSP(A/B)
Ref Page No.97



75 - TPC
Ref Page No.99



75 - STPC
Ref Page No.98

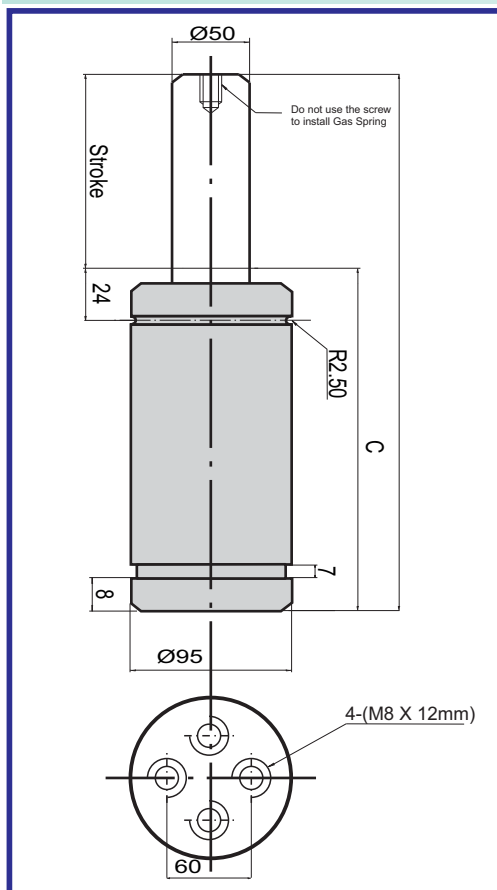


75 - FLC
Ref Page No.99



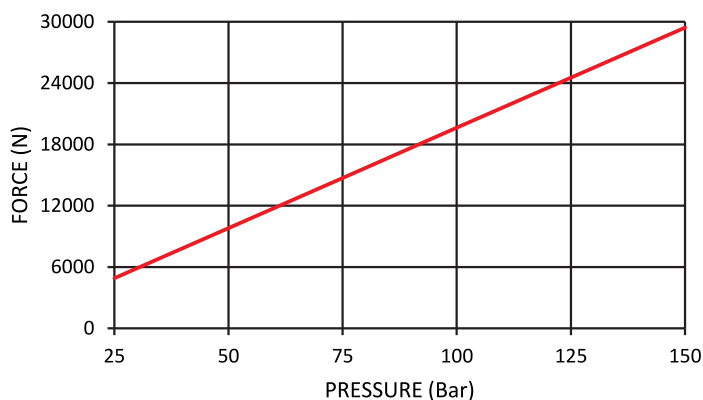
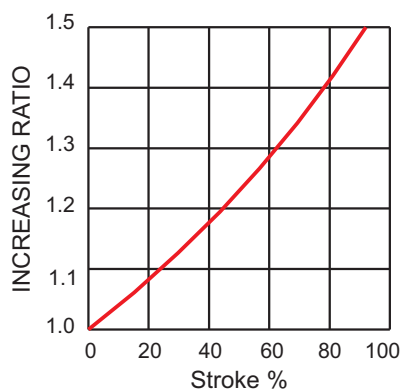
75 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S3-3000 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S3-3000	10	114	104	2997 (29,400)	4159 (40,800)
	13	120	107		4271 (41,900)
	15	124	109		4332 (42,500)
	20	134	114		4444 (43,600)
	25	144	119		4515 (44,300)
	30	154	124		4566 (44,800)
	35	164	129		4607 (45,200)
	38	170	132		4628 (45,400)
	40	174	134		4648 (45,600)
	45	184	139		4669 (45,800)
	50	194	144		4689 (46,000)
	60	214	154		4730 (46,400)
	63	220	157		4730 (46,400)
	70	234	164		4750 (46,600)
	75	244	169		4760 (46,700)
	80	254	174		4770 (46,800)
	90	274	184		4781 (46,900)
	100	294	194		4791 (47,000)
	125	344	219		4821 (47,300)
	150	394	244		4832 (47,400)
160	414	254	4842 (47,500)		
175	444	269	4842 (47,500)		
200	494	294	4852 (47,600)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



95 - BTC
Ref Page No.97



95 - BSP(A/B)
Ref Page No.97



95 - TPC
Ref Page No.99



95 - STPC
Ref Page No.98

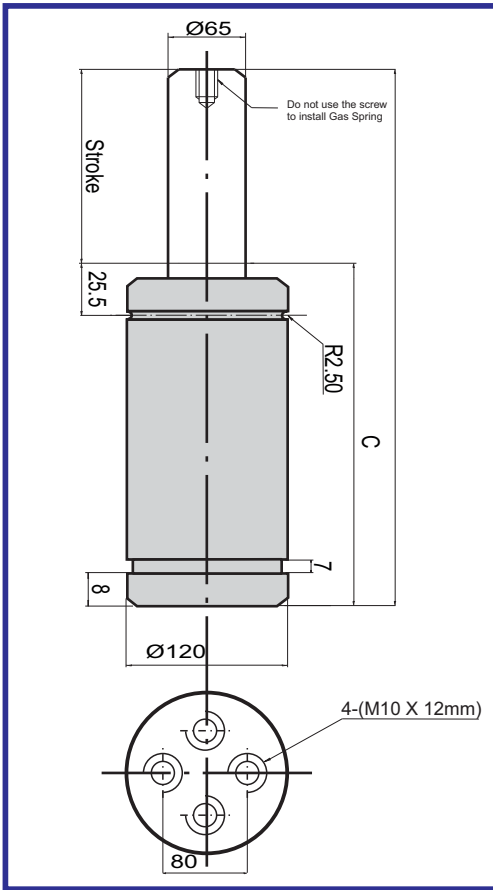


95 - FLC
Ref Page No.99



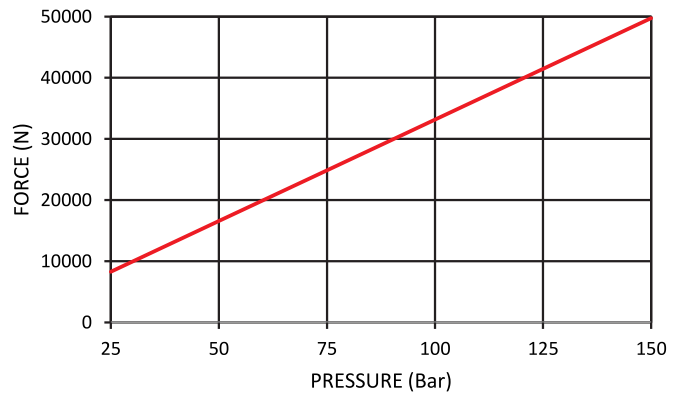
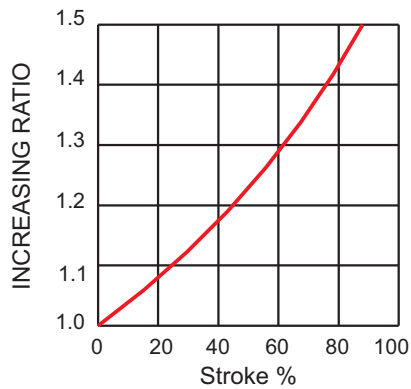
95 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S3-5000 Series

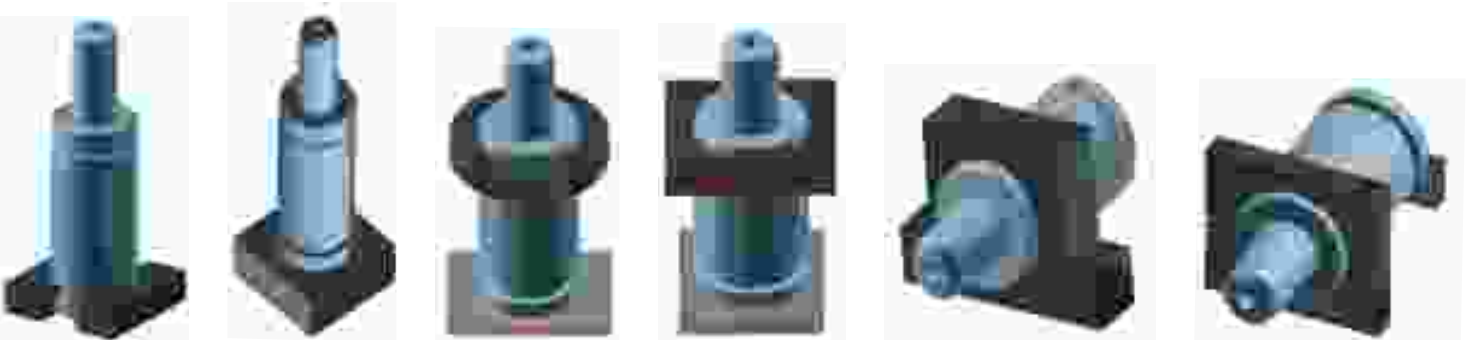


Code	Stroke mm	L mm (±0.2)	C mm (-0.2)	Initial Kg(N)	End Force Kg(N)
NFS-S3-5000	10	117	107	5061 (49,650)	6870 (67,400)
	13	123	110		7115 (69,800)
	15	127	112		7237 (71,000)
	20	137	117		7492 (73,500)
	25	147	122		7665 (75,200)
	30	157	127		7798 (76,500)
	35	167	132		7910 (77,600)
	38	173	135		7961 (78,100)
	40	177	137		7992 (78,400)
	45	187	142		8063 (79,100)
	50	197	147		8114 (79,600)
	60	217	157		8206 (80,500)
	63	223	160		8226 (80,700)
	70	237	167		8277 (81,200)
	75	247	172		8297 (81,400)
	80	257	177		8328 (81,700)
	90	277	187		8369 (82,100)
	100	297	197		8399 (82,400)
	125	347	222		8471 (83,100)
	150	397	247		8511 (83,500)
160	417	257	8522 (83,600)		
175	447	272	8542 (83,800)		
200	497	297	8572 (84,100)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



120 - BTC
Ref Page No.97

120 - BSP(A/B)
Ref Page No.97

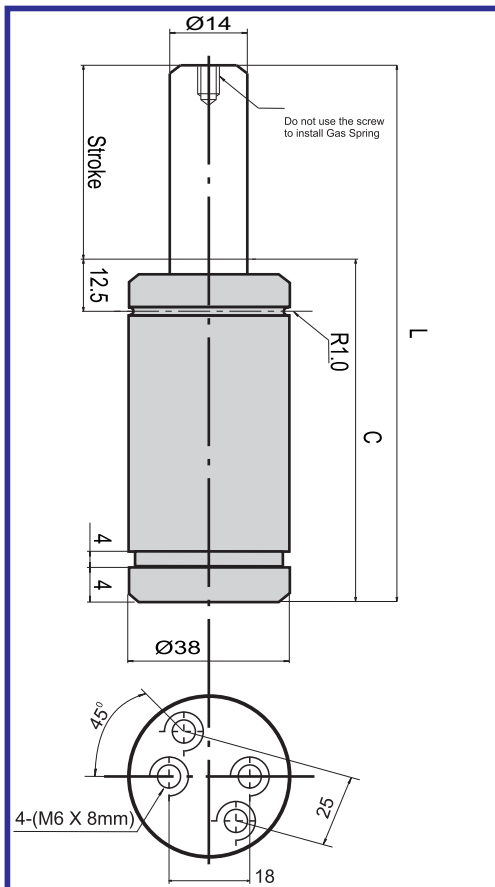
120 - TPC
Ref Page No.99

120 - STPC
Ref Page No.98

120 - FLC
Ref Page No.99

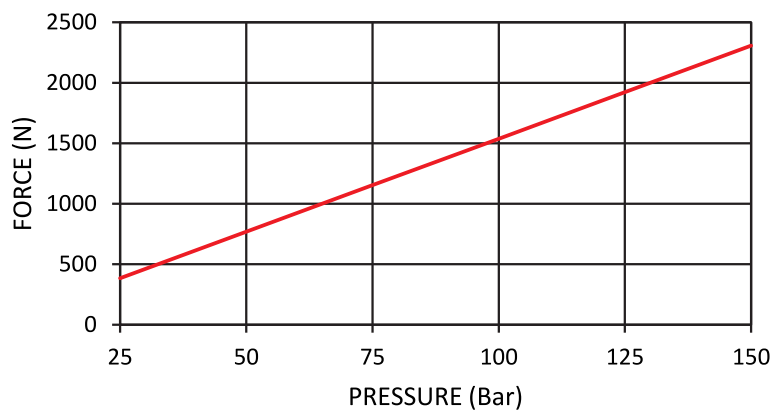
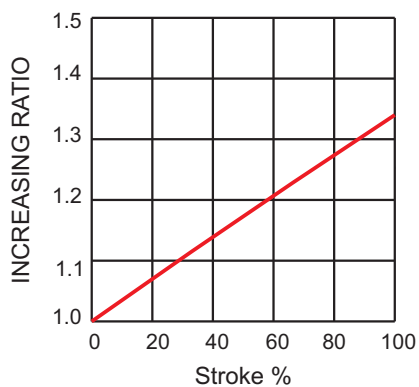
120 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-250 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-250	10	70	60	265 (2600)	357 (3500)
	13	76	63		357 (3500)
	16	82	66		357 (3500)
	20	90	70		357 (3500)
	25	100	75		357 (3500)
	30	110	80		357 (3500)
	32	114	82		357 (3500)
	35	120	85		357 (3500)
	38	126	88		357 (3500)
	40	130	90		357 (3500)
	45	140	95		357 (3500)
	50	150	100		357 (3500)
	60	170	110		357 (3500)
	63	176	113		357 (3500)
	70	190	120		357 (3500)
	75	200	125		357 (3500)
80	210	130	357 (3500)		
90	230	140	357 (3500)		
100	250	150	357 (3500)		
125	300	175	357 (3500)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



38 - BTC
Ref Page No.97



38 - TPC
Ref Page No.99



38 - STPC
Ref Page No.98

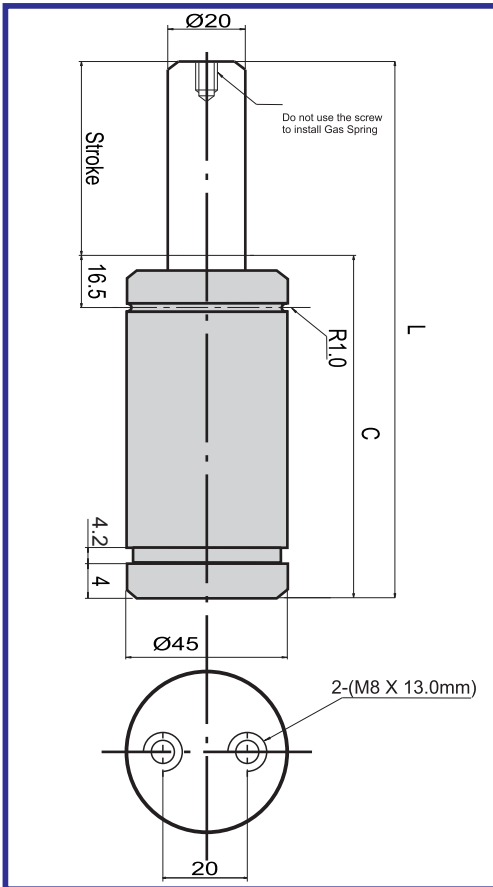


38 - FLC
Ref Page No.99



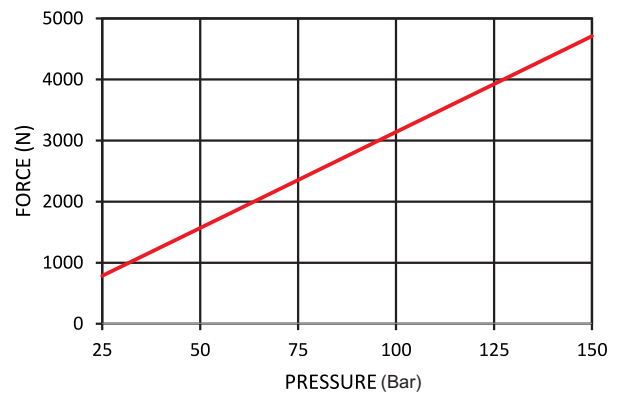
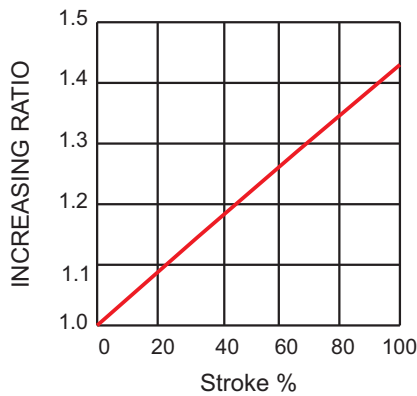
38 - FLCA
Ref Page No.100

► Gas Spring - NFS-S4-500 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-500	10	105	95	479 (4700)	612 (6000)
	13	111	98		622 (6100)
	16	117	101		632 (6200)
	20	125	105		642 (6300)
	25	135	110		653 (6400)
	30	145	115		653 (6400)
	32	149	117		653 (6400)
	35	155	120		653 (6400)
	38	161	123		663 (6500)
	40	165	125		663 (6500)
	45	175	130		663 (6500)
	50	185	135		673 (6600)
	60	205	145		673 (6600)
	63	211	148		673 (6600)
	70	225	155		673 (6600)
	75	235	160		673 (6600)
	80	245	165		683 (6700)
	90	265	175		683 (6700)
100	285	185	683 (6700)		
125	335	210	683 (6700)		
160	405	245	683 (6700)		

► Charging Pressure / Force Increase Factor



► Gas Spring Mountings



45 - BTC
Ref Page No.97



45 - BSP(A/B)
Ref Page No.97



45 - TPC
Ref Page No.99



45 - STPC
Ref Page No.98

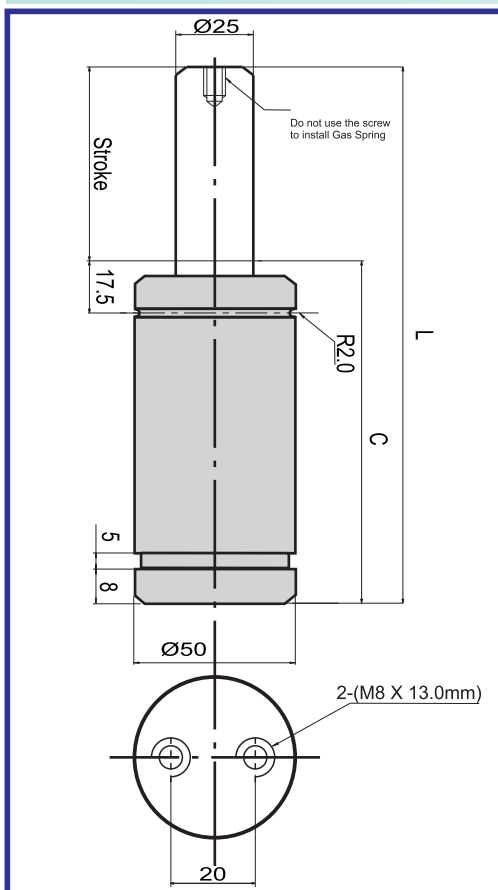


45 - FLC
Ref Page No.99



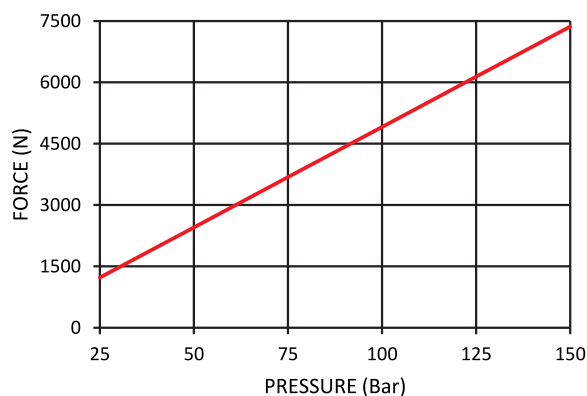
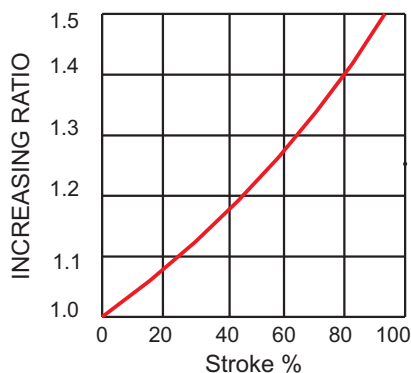
45 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-750 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-750	13	121	108	755 (7400)	1224 (12000)
	16	127	111		1224 (12000)
	20	135	115		1224 (12000)
	25	145	120		1224 (12000)
	30	155	125		1224 (12000)
	32	159	127		1224 (12000)
	35	165	130		1224 (12000)
	38	171	133		1224 (12000)
	40	175	135		1224 (12000)
	45	185	140		1224 (12000)
	50	195	145		1224 (12000)
	60	215	155		1224 (12000)
	63	221	158		1224 (12000)
	70	235	165		1224 (12000)
	75	245	170		1224 (12000)
	80	255	175		1224 (12000)
	90	275	185		1224 (12000)
	100	295	195		1224 (12000)
	125	345	220		1234 (12100)
	160	415	255		1234 (12100)
200	495	295	1234 (12100)		
250	595	345	1234 (12100)		
300	695	395	1234 (12100)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



50 - BTC
Ref Page No.97



50 - BSP(A/B)
Ref Page No.97



50 - TPC
Ref Page No.99



50 - STPC
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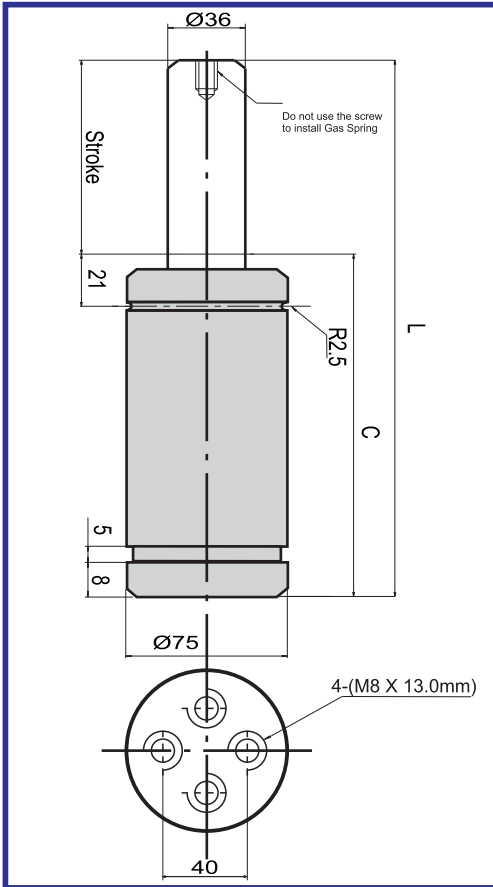


50 - FLC
Ref Page No.99



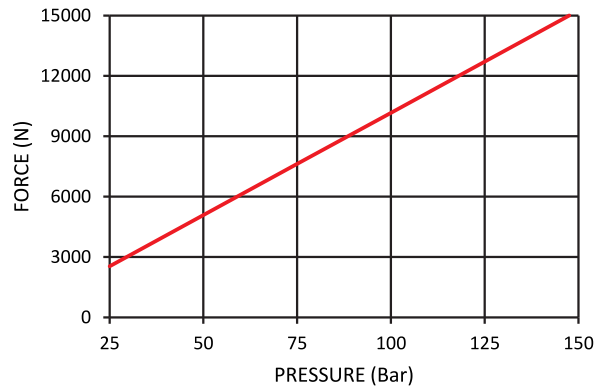
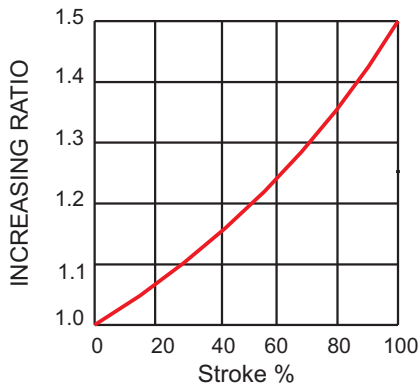
50 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-1500 Series



Code	Stroke mm	L mm (±0.2)	C mm (-0.2)	Initial Kg(N)	End Force Kg(N)
NFS-S4-1500	13	135	122	1560 (15300)	2345 (23000)
	16	142	126		2345 (23000)
	20	150	130		2345 (23000)
	25	160	135		2345 (23000)
	30	170	140		2345 (23000)
	32	174	142		2345 (23000)
	35	180	145		2345 (23000)
	38	186	148		2345 (23000)
	40	190	150		2345 (23000)
	45	200	155		2345 (23000)
	50	210	160		2345 (23000)
	60	230	170		2345 (23000)
	63	236	173		2345 (23000)
	70	250	180		2345 (23000)
	75	260	185		2345 (23000)
	80	270	190		2345 (23000)
	90	290	200		2345 (23000)
	100	310	210		2345 (23000)
	125	360	235		2345 (23000)
	160	430	270		2345 (23000)
200	510	310	2345 (23000)		
250	610	360	2345 (23000)		
300	710	410	2345 (23000)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - BTC
Ref Page No.97



75 - BSP(A/B)
Ref Page No.97



75 - TPC
Ref Page No.99



75 - STPC
Ref Page No.98

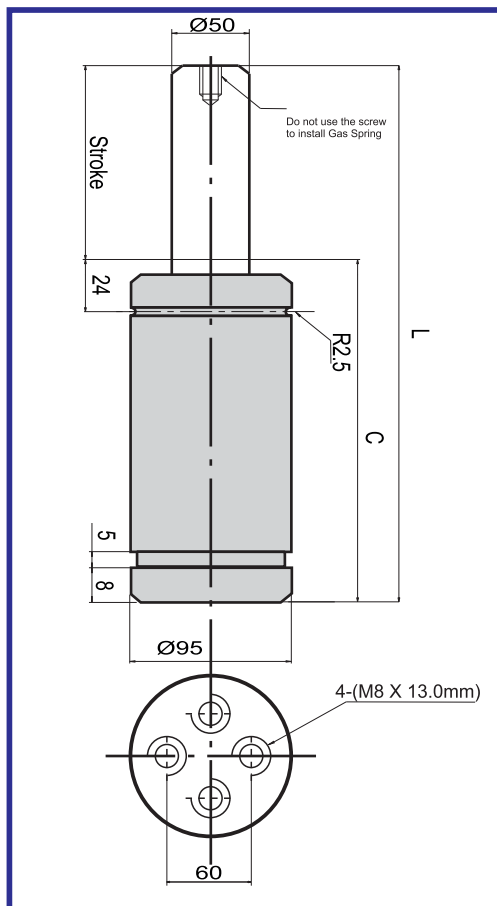


75 - FLC
Ref Page No.99



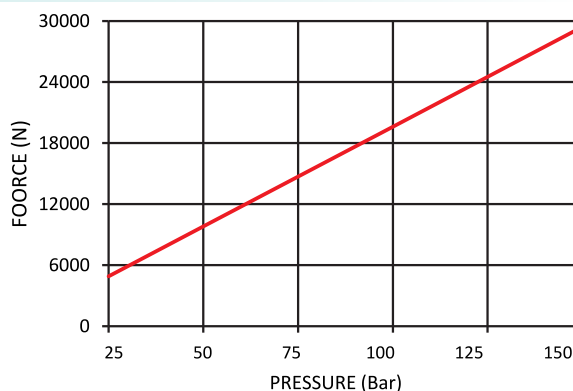
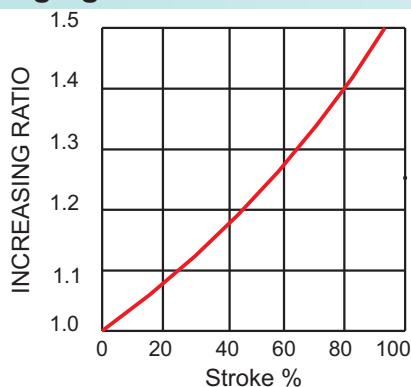
75 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-3000 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-3000	13	145	132	3003 (29450)	4283 (42000)
	16	152	136		4283 (42000)
	20	160	140		4283 (42000)
	25	170	145		4283 (42000)
	30	180	150		4283 (42000)
	32	184	152		4283 (42000)
	35	190	155		4283 (42000)
	38	196	158		4385 (43000)
	40	200	160		4385 (43000)
	45	210	165		4385 (43000)
	50	220	170		4487 (4400)
	60	240	180		4487 (4400)
	63	246	183		4589 (45000)
	70	260	190		4589 (45000)
	75	270	195		4589 (45000)
	80	280	200		4691 (46000)
	90	300	210		4691 (46000)
	100	320	220		4793 (47000)
	125	370	245		4793 (47000)
	160	440	280		4793 (47000)
200	520	320	4895 (48000)		
250	620	370	4895 (48000)		
300	720	420	4895 (48000)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



95 - BTC
Ref Page No.97



95 - BSP(A/B)
Ref Page No.97



95 - TPC
Ref Page No.99



95 - STPC
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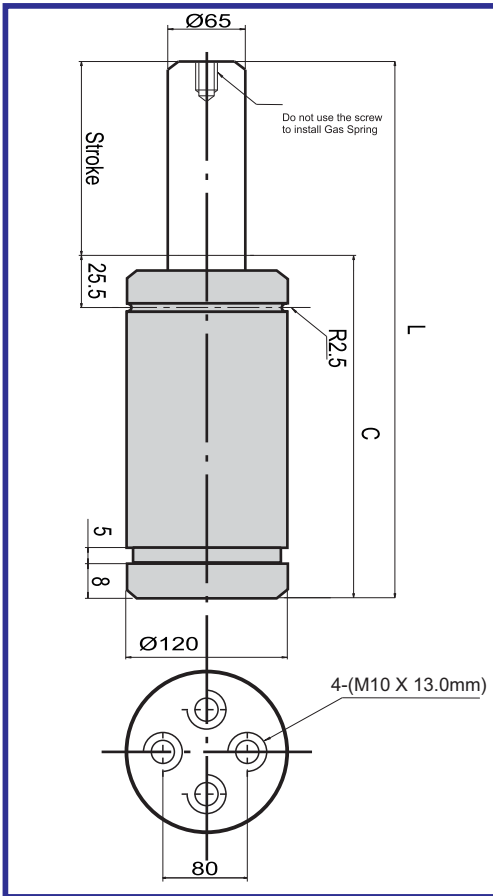


95 - FLC
Ref Page No.99



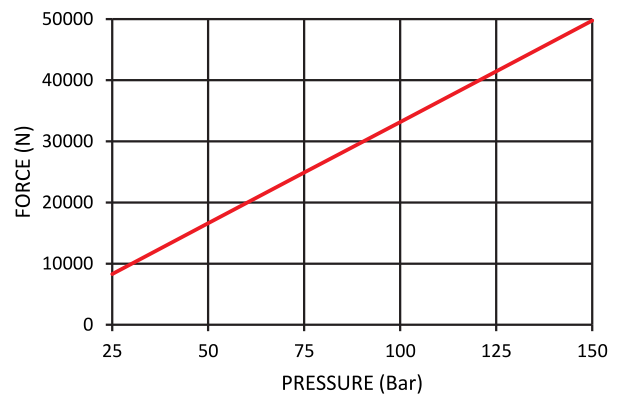
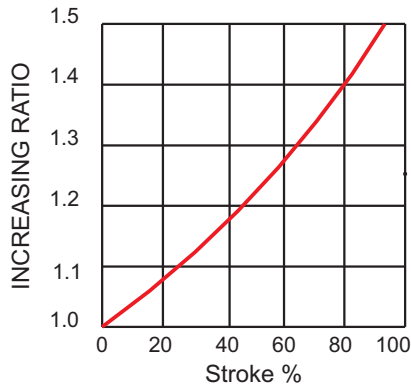
95 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-5000 Series

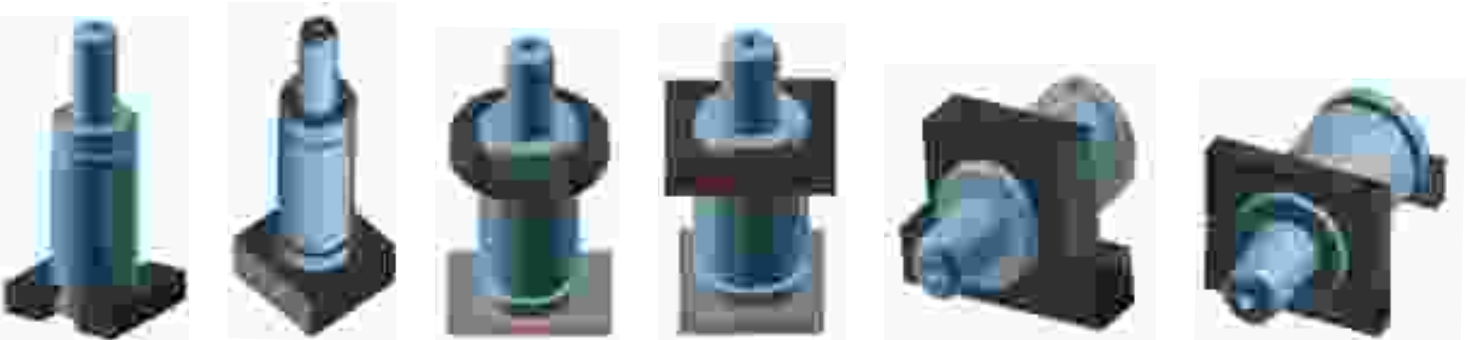


Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-5000	25	190	165	5078 (49800)	7240 (71000)
	30	200	170		7240 (71000)
	32	204	172		7240 (71000)
	35	210	175		7240 (71000)
	38	216	178		7648 (75000)
	40	220	180		7648 (75000)
	45	230	185		7648 (75000)
	50	240	190		7852 (77000)
	60	260	200		7852 (77000)
	63	266	203		8158 (80000)
	70	280	210		8158 (80000)
	75	290	215		8158 (80000)
	80	300	220		8260 (81000)
	90	320	230		8260 (81000)
	100	340	240		8362 (82000)
	125	390	265		8362 (82000)
	160	460	300		8464 (83000)
	200	540	340		8566 (84000)
	250	640	390		8566 (84000)
	300	740	440		8566 (84000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



120 - BTC
Ref Page No.97

120 - BSP(A/B)
Ref Page No.97

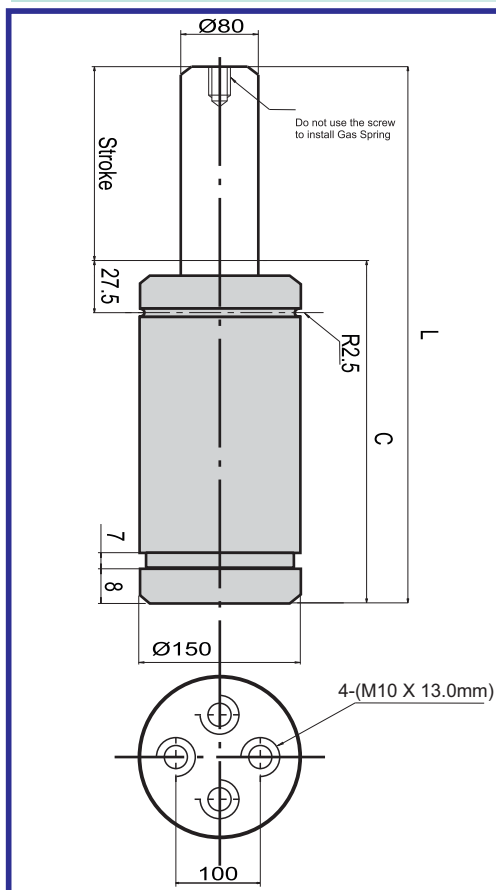
120 - TPC
Ref Page No.99

120 - STPC
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120 - FLC
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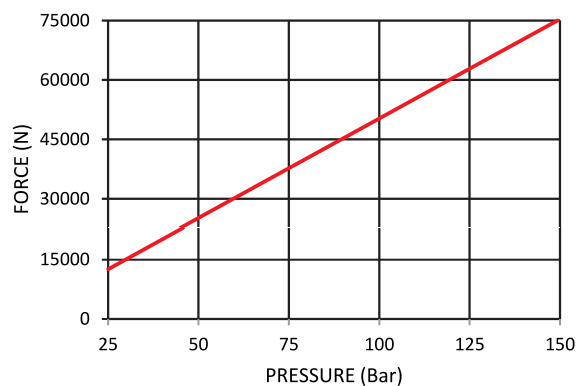
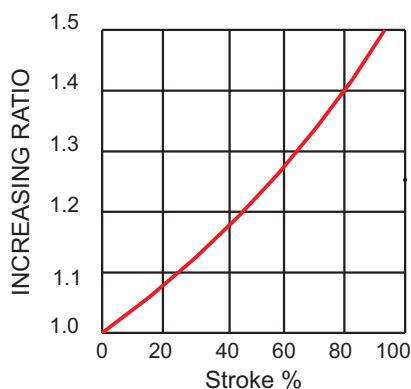
120 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-7500 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-7500	25	205	180	7689 (75400)	10714(105000)
	30	215	185		10714 (105000)
	32	219	187		10714 (105000)
	35	225	190		10714 (105000)
	38	231	193		11224 (110000)
	40	235	195		11224 (110000)
	45	245	200		11224 (110000)
	50	255	205		11531 (113000)
	60	275	215		11531 (113000)
	63	281	218		11735 (115000)
	70	295	225		11735 (115000)
	75	305	230		11735 (115000)
	80	315	235		11939 (117000)
	90	335	245		11939 (117000)
	100	355	255		12143 (119000)
	125	405	280		12347 (121000)
	160	475	315		12449 (122000)
	200	555	355		12551 (123000)
250	655	405	12653 (124000)		
300	755	455	12653 (124000)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



150 - BTC
Ref Page No.97



150 - BSP(A/B)
Ref Page No.97



150 - TPC
Ref Page No.99



150 - STPC
Ref Page No.98

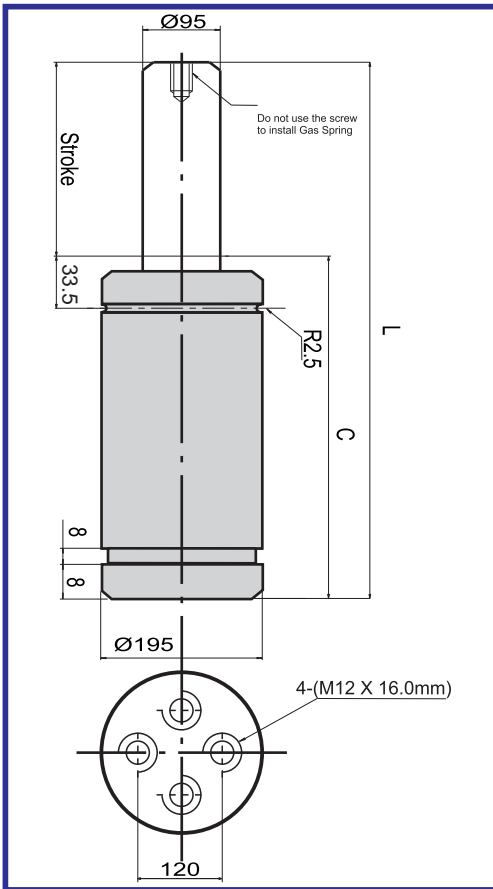


150 - FLC
Ref Page No.99



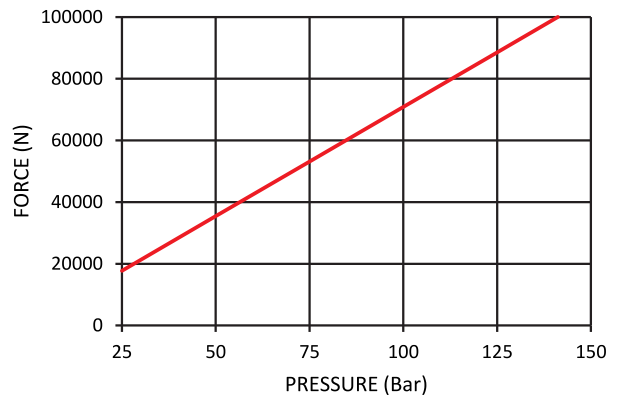
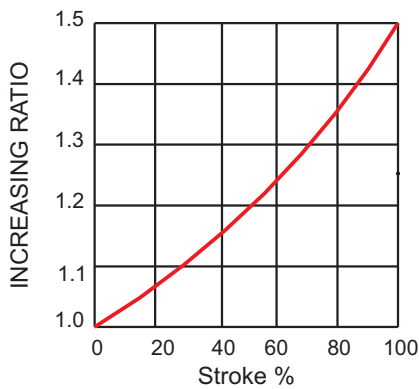
150 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-10000 Series

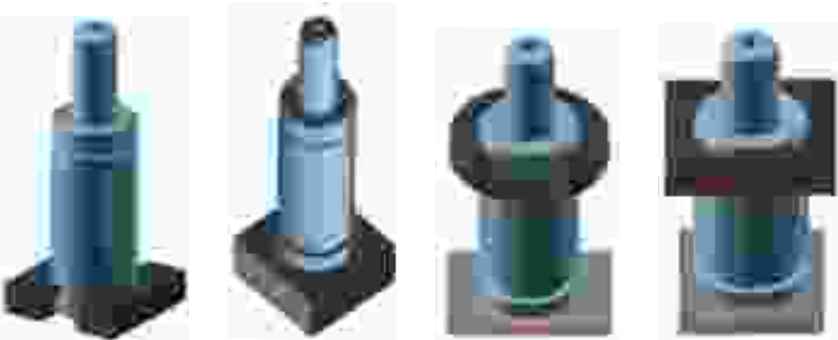


Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S4-10000	25	210	185	10809 (106000)	14082(138000)
	30	220	190		14082(138000)
	32	224	192		14082(138000)
	35	230	195		14082(138000)
	38	236	198		14592(143000)
	40	240	200		14592(143000)
	45	250	205		14592(143000)
	50	260	210		15000(147000)
	60	280	220		15000(147000)
	63	286	223		15306(150000)
	70	300	230		15306(150000)
	75	310	235		15306(150000)
	80	320	240		15510(152000)
	90	340	250		15510(152000)
	100	360	260		15918(156000)
	125	410	285		16020(157000)
	160	480	320		16122(158000)
	200	560	360		16327(160000)
250	660	410	16327(160000)		
300	760	460	16327(160000)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



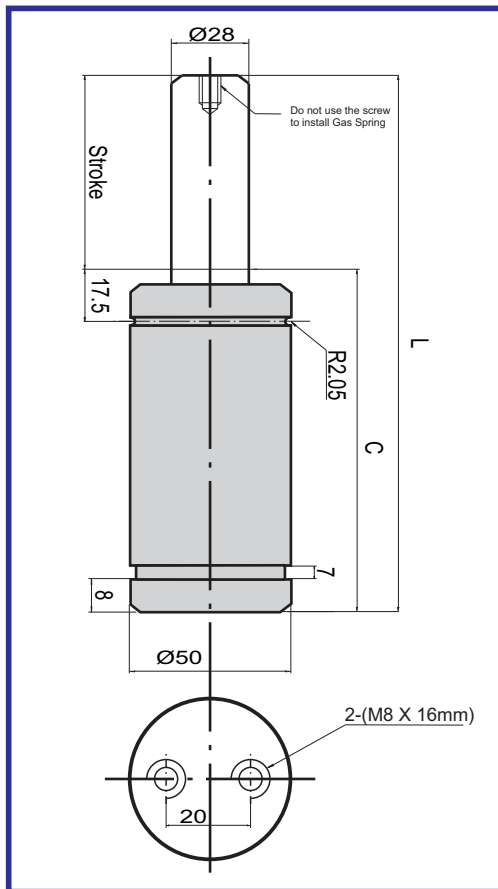
195 - BTC
Ref Page No.97

195 - BSP(A/B)
Ref Page No.97

195 - TPC
Ref Page No.99

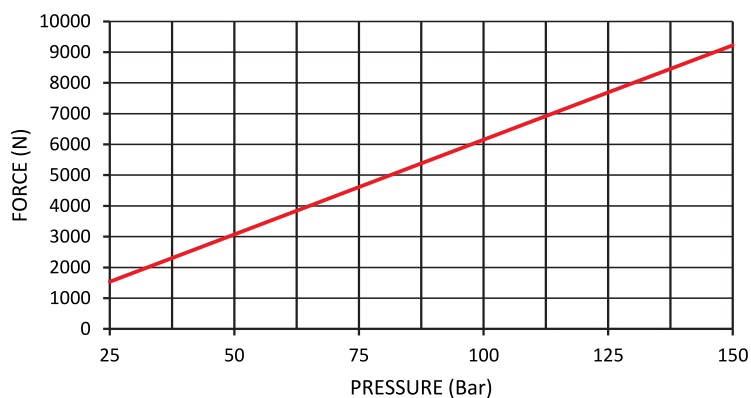
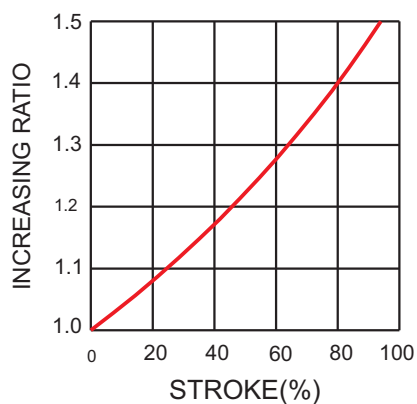
195 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S4-B-1000 Series



Code	Stroke	L	C	Initial Force	End Force
	mm	mm	mm	Kg (N)	Kg (N)
NFS-S4-B-1000		±0.2	-0.2		
	13	121	108	938(9200)	1142 (11200)
	25	145	120		1233 (12100)
	38	171	133		1304 (12800)
	50	195	145		1345 (13200)
	63	221	158		1376 (13500)
	75	245	170		1396 (13700)
	80	255	175		1406 (13800)
	100	295	195		1437 (14100)
	125	345	220		1457 (14300)
	150	395	245		1478 (14500)
	160	415	255		1478 (14500)
	175	445	270		1488 (14600)
	200	495	295		1498 (14700)
250	595	345	1508 (14800)		
300	695	395	1518 (14900)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



50 - BTC
Ref Page No.97



50 - BSP(A/B)
Ref Page No.97



50 - TPC
Ref Page No.99



50 - STPC
Ref Page No.98



50 - FLC
Ref Page No.99

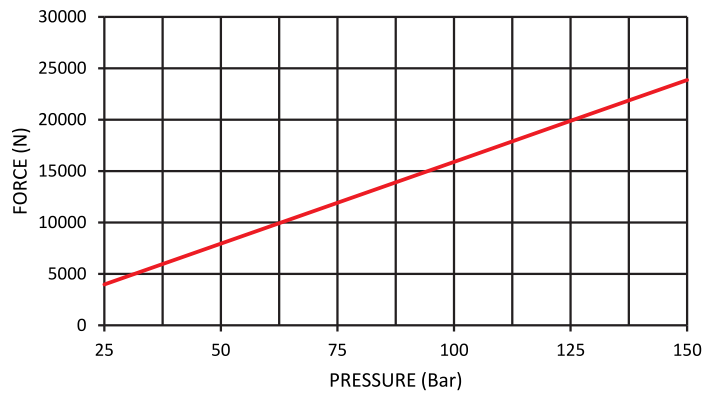
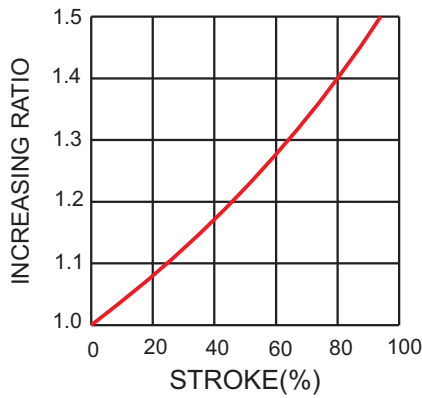


50 - FLCA
Ref Page No.100

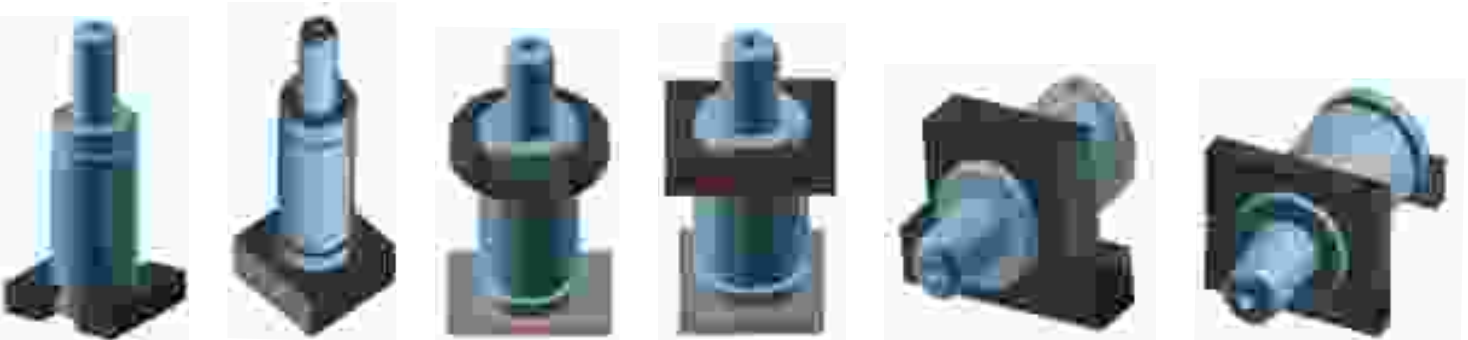
▶ Gas Spring - NFS-S4-B-2400 Series

Code	Stroke	L	C	Initial Force	End Force
	mm	mm	mm	Kg (N)	Kg (N)
		±0.2	-0.2		
NFS-S4-B-2400	25	160	135	2446 (24000)	3782 (37100)
	38	186	148		3833 (37600)
	50	210	160		3863 (37900)
	63	236	173		3884 (38100)
	75	260	185		3904 (38300)
	80	270	190		3904 (38300)
	100	310	210		3924 (38500)
	125	360	235		3945 (38700)
	150	410	260		3955 (38800)
	160	430	270		3955 (38800)
	175	460	285		3965 (38900)
	200	510	310		3965 (38900)
	250	610	360		3975 (39000)
300	710	410	3985 (39100)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - BTC
Ref Page No.97

75 - BSP(A/B)
Ref Page No.97

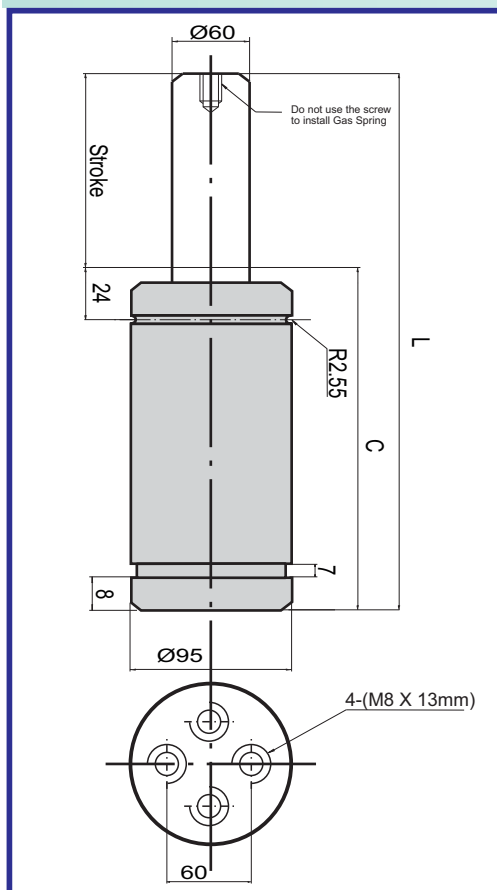
75 - TPC
Ref Page No.99

75 - STPC
Ref Page No.98

75 - FLC
Ref Page No.99

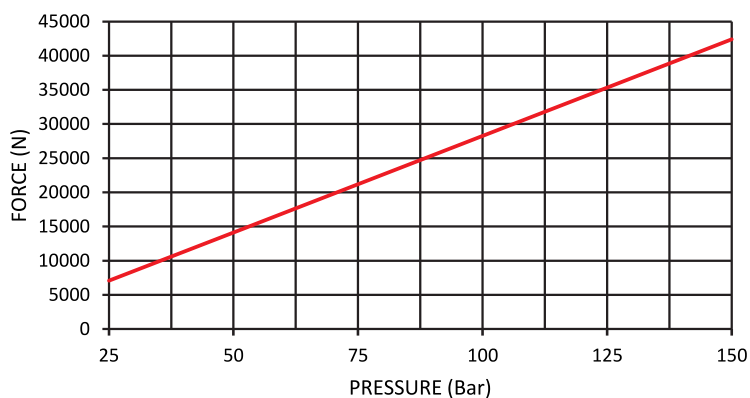
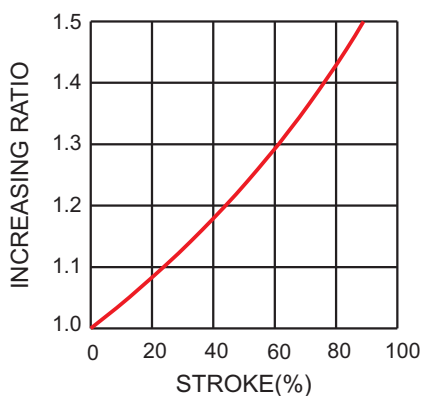
75 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-B-4200 Series



Code	Stroke	L	C	Initial Force	End Force
	mm	mm	mm	Kg (N)	Kg (N)
	±0.2	-0.2			
NFS-S4-B-4200	25	170	145	4281 (42000)	5311 (52100)
	38	196	158		5617 (55100)
	50	220	170		5831 (57200)
	63	246	183		6014 (59000)
	75	270	195		6147 (60300)
	80	280	200		6198 (60800)
	100	320	220		6371 (62500)
	125	370	245		6524 (64000)
	150	420	270		6636 (65100)
	160	440	280		6677 (65500)
	175	470	295		6728 (66000)
	200	520	320		6809 (66800)
	250	620	370		6921 (67900)
300	720	420	7003 (68700)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



95 - BTC
Ref Page No.97



95 - BSP(A/B)
Ref Page No.97



95 - TPC
Ref Page No.99



95 - STPC
Ref Page No.98

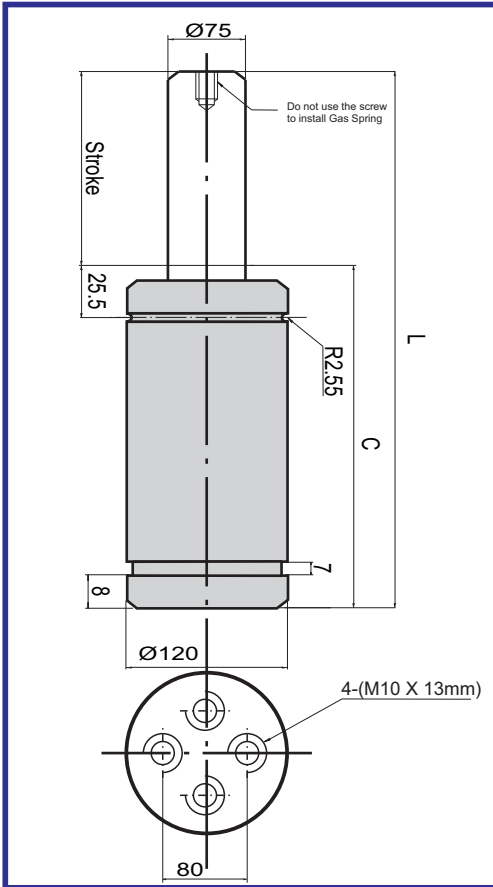


95 - FLC
Ref Page No.99



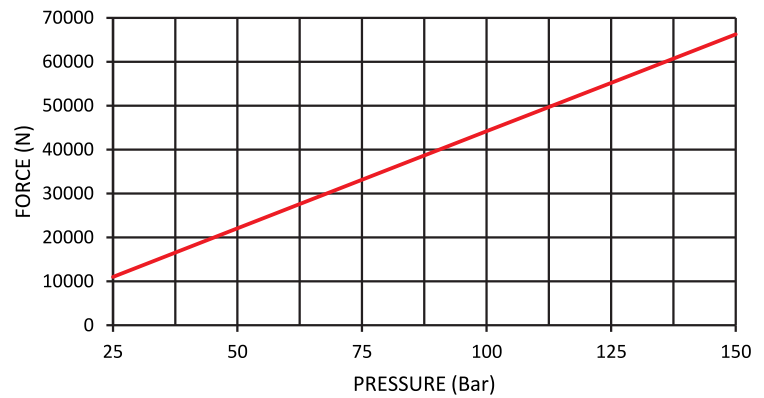
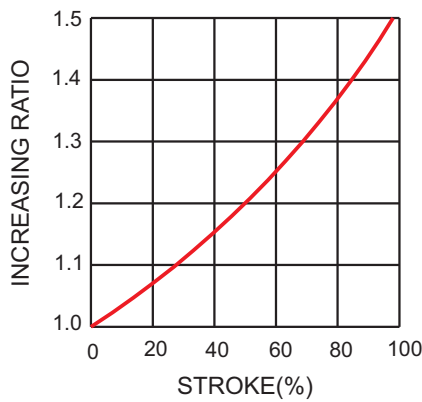
95 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-B-6600 Series

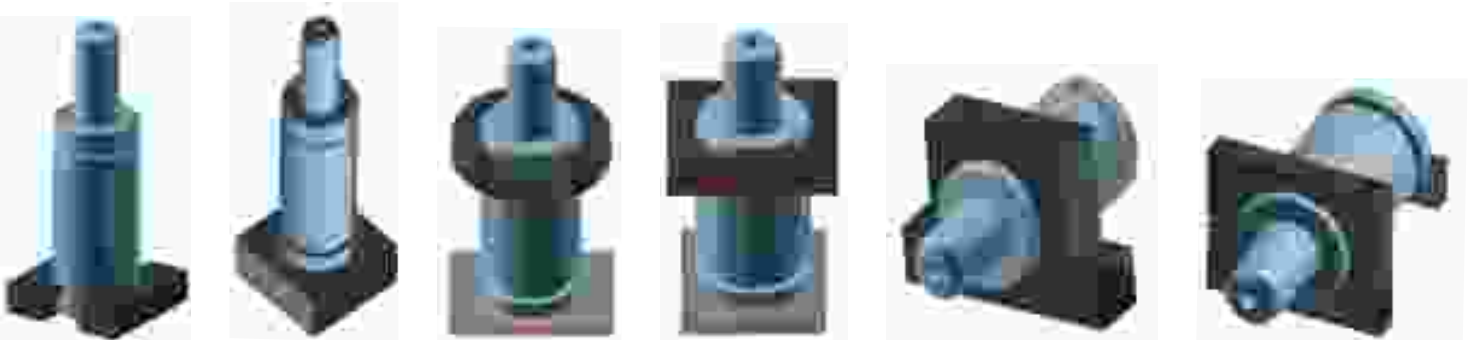


Code	Stroke	L	C	Initial Force	End Force
	mm	mm	mm	Kg (N)	Kg (N)
		±0.2	-0.2		
NFS-S4-B-6600	25	190	165	6758 (66300)	8104 (79500)
	38	216	178		8552 (83900)
	50	240	190		8868 (87000)
	63	266	203		9144 (89700)
	75	290	215		9358 (91800)
	80	300	220		9439 (92600)
	100	340	240		9694 (95100)
	125	390	265		9949 (97600)
	150	440	290		10143 (99500)
	160	460	300		10204 (100100)
	175	490	315		10296 (101000)
	200	540	340		10418 (102200)
	250	640	390		10601 (104000)
300	740	440	10734 (105300)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



120 - BTC
Ref Page No.97

120 - BSP(A/B)
Ref Page No.97

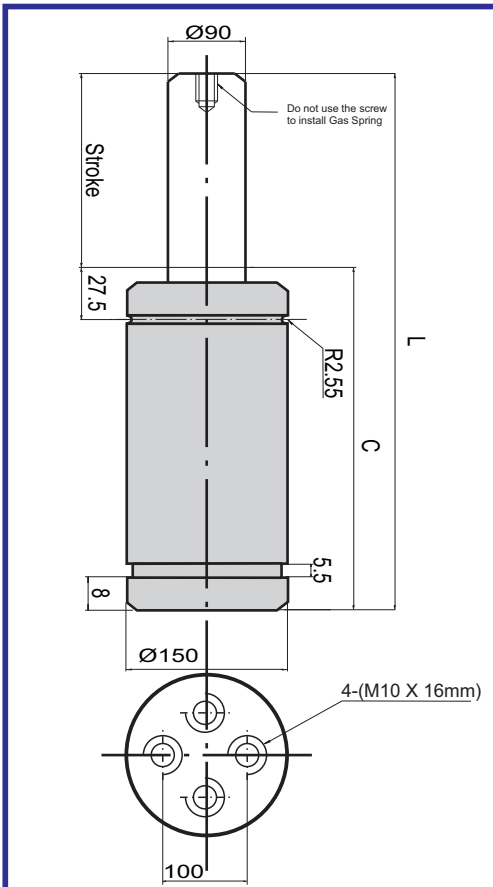
120 - TPC
Ref Page No.99

120 - STPC
Ref Page No.98

120 - FLC
Ref Page No.99

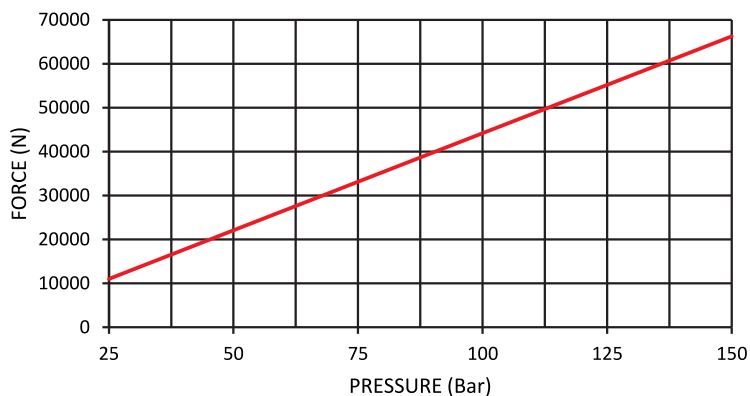
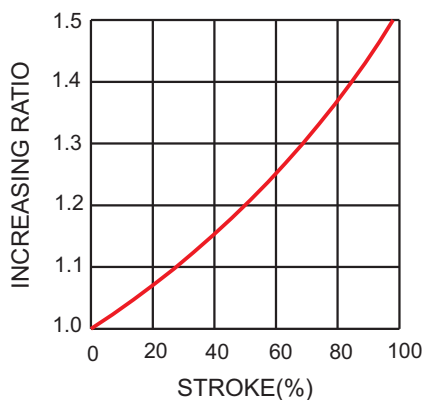
120 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S4-B-9500 Series



Code	Stroke	L	C	Initial Force	End Force
	mm	mm	mm	Kg (N)	Kg (N)
	±0.2	-0.2			
NFS-S4-B-9500	25	205	180	9684(95000)	11539 (113200)
	38	231	193		12130 (119000)
	50	255	205		12569 (123300)
	63	281	218		12946 (127000)
	75	305	230		13221 (129700)
	80	315	235		13333 (130800)
	100	355	255		13690 (134300)
	125	405	280		14026 (137600)
	150	455	305		14291 (140200)
	160	475	315		14373 (141000)
	175	505	330		14495 (142200)
	200	555	355		14658 (143800)
250	655	405	14913 (146300)		
300	755	455	15107 (148200)		

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



150 - BTC
Ref Page No.97



150 - BSP(A/B)
Ref Page No.97



150 - TPC
Ref Page No.99



150 - STPC
Ref Page No.98



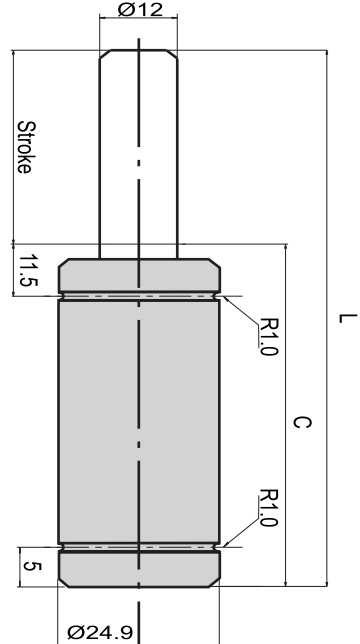
150 - FLC
Ref Page No.99



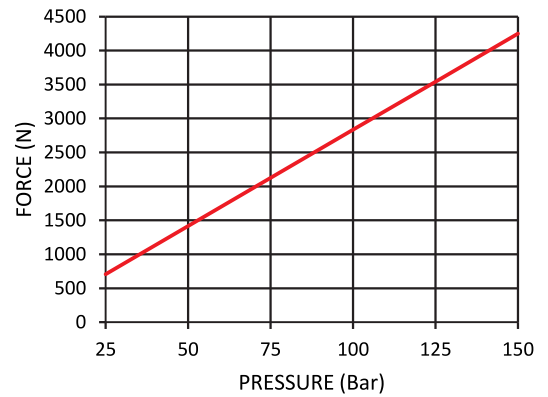
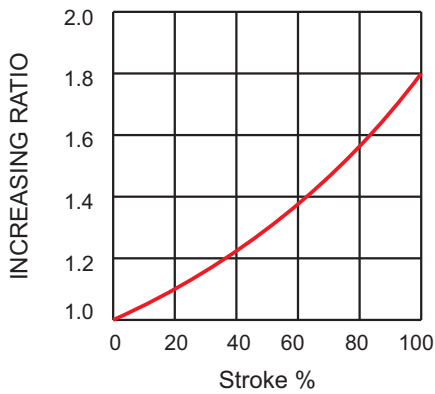
150 - FLCA
Ref Page No.100

▶ Gas Spring - NFS-S5-0042 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-0042	6	56	50	428 (4200)	713 (7000)
	10	70	60		703 (6900)
	16	91	75		703 (6900)
	25	120	95		703 (6900)
	32	140	108		774 (7600)
	40	165	125		774 (7600)
	50	195	145		774 (7600)



▶ Charging Pressure / Force Increase Factor

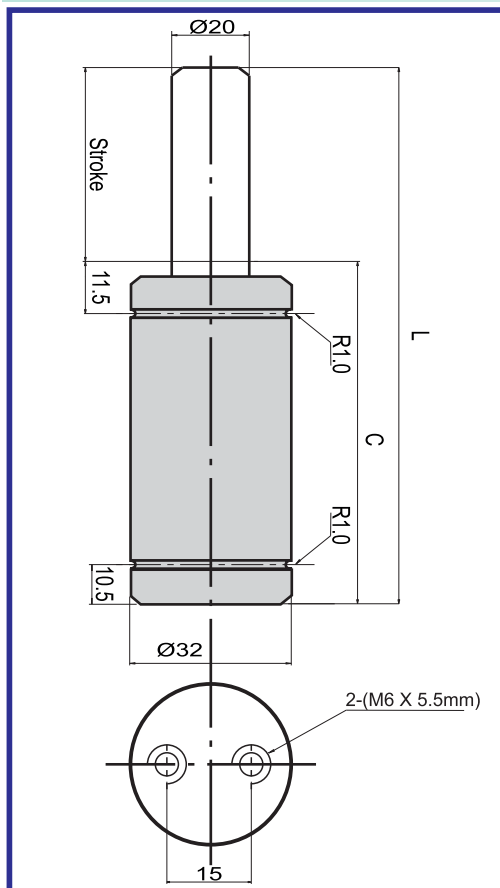


▶ Gas Spring Mountings



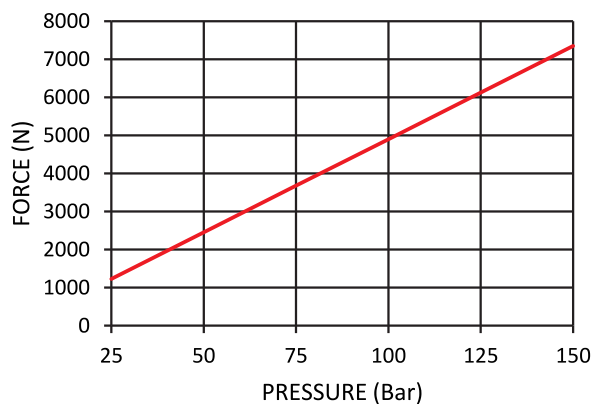
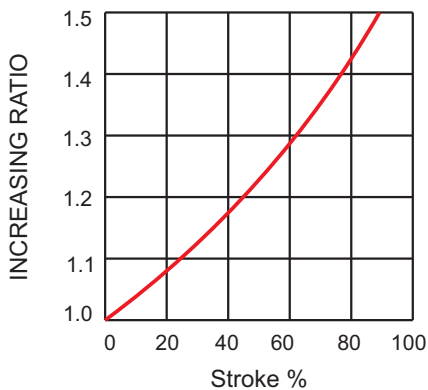
25 - TPC(A/B)
Ref Page No.96

▶ Gas Spring - NFS-S5-007 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-007	6	63	57	754 (7400)	998 (9800)
	10	75	65		1019 (10000)
	16	93	77		1121 (11000)
	25	120	95		1223 (12000)
	32	140	108		1223 (12000)
	40	165	125		1223 (12000)
	50	195	145		1223 (12000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

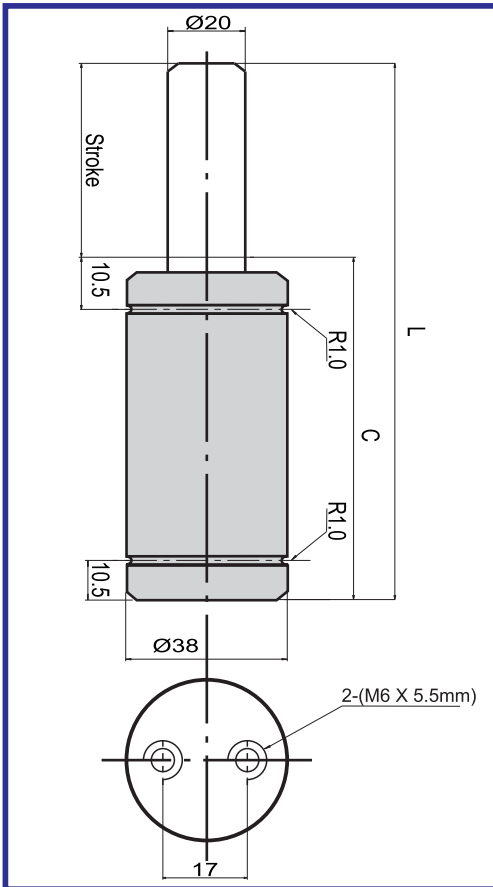


32 - TPC
Ref Page No.99



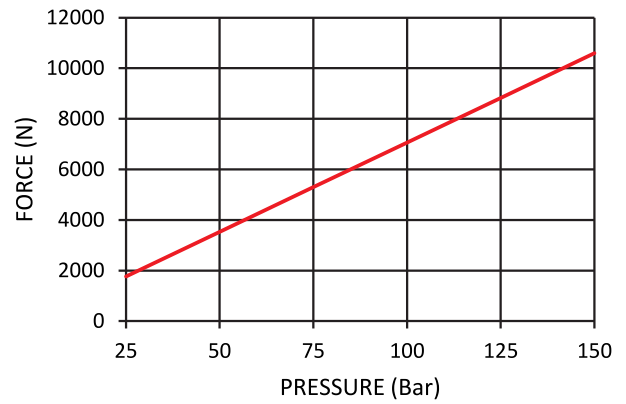
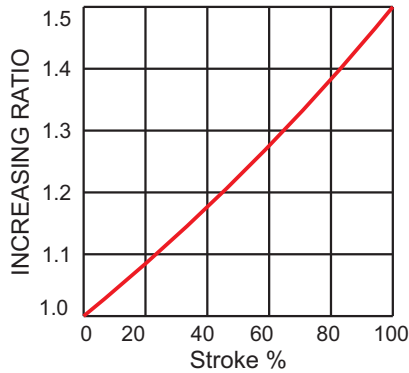
32 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-010 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-010	6	61	55	1080 (10600)	1631 (16000)
	10	78	68		1631 (16000)
	16	100	84		1631 (16000)
	25	135	110		1631 (16000)
	32	167	135		1631 (16000)
	40	195	155		1631 (16000)
	50	230	180		1631 (16000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

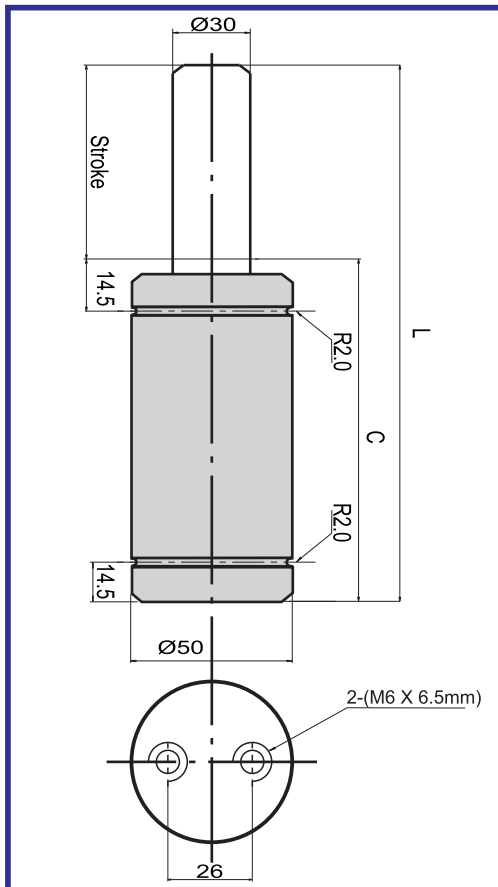


38 - TPC
Ref Page No.99



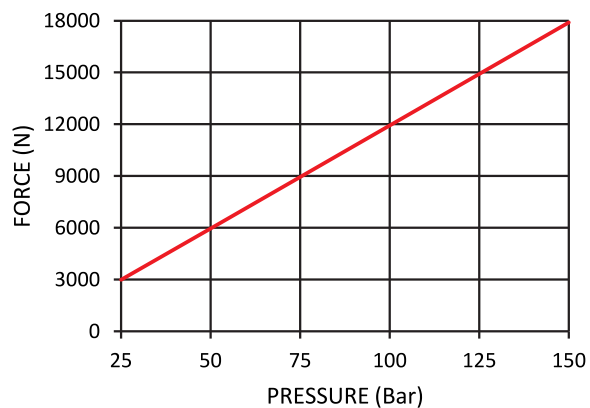
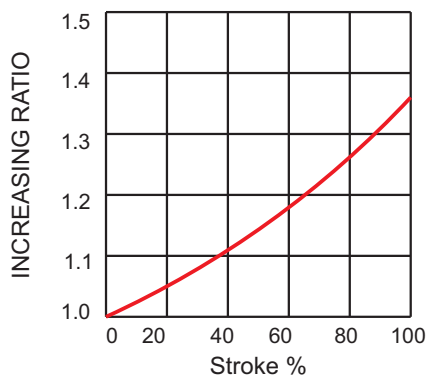
38 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-018 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-018	6	66	60	1835 (18000)	2548 (25000)
	10	80	70		2548 (25000)
	16	106	90		2548 (25000)
	25	135	110		2548 (25000)
	32	162	130		2548 (25000)
	40	190	150		2548 (25000)
	50	220	170		2548 (25000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

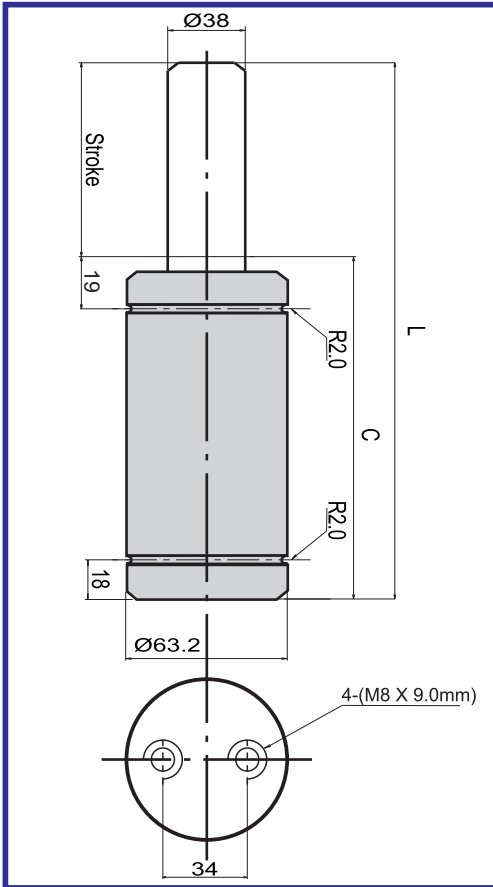


50 - TPC
Ref Page No.99



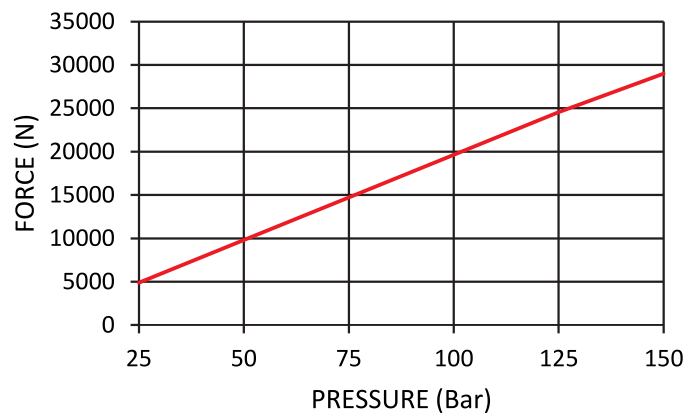
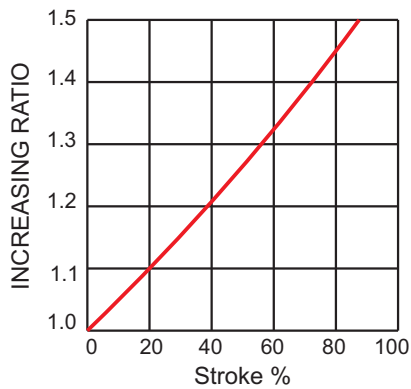
50 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-029 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-029	10	85	75	3007 (29500)	3924 (38500)
	16	103	87		4179 (41000)
	25	130	105		4383 (43000)
	32	150	118		4505 (44200)
	40	175	135		4607 (45200)
	50	205	155		4668 (45800)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

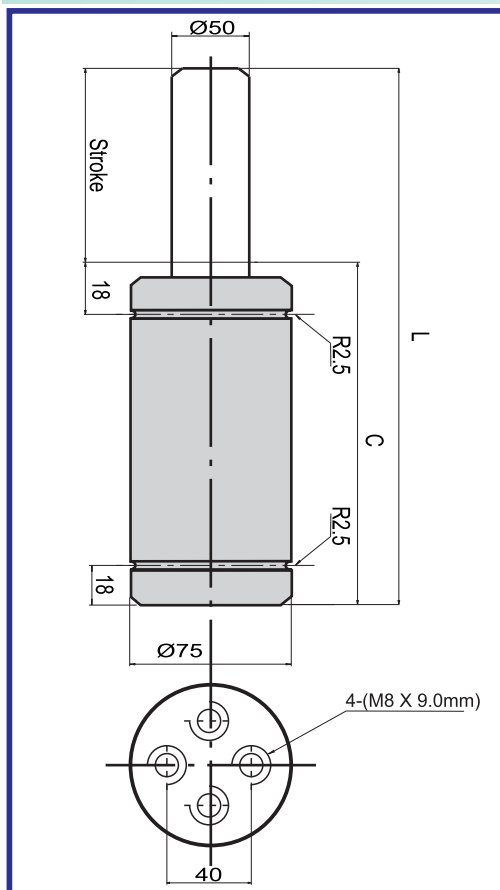


63 - TPC
Ref Page No.99



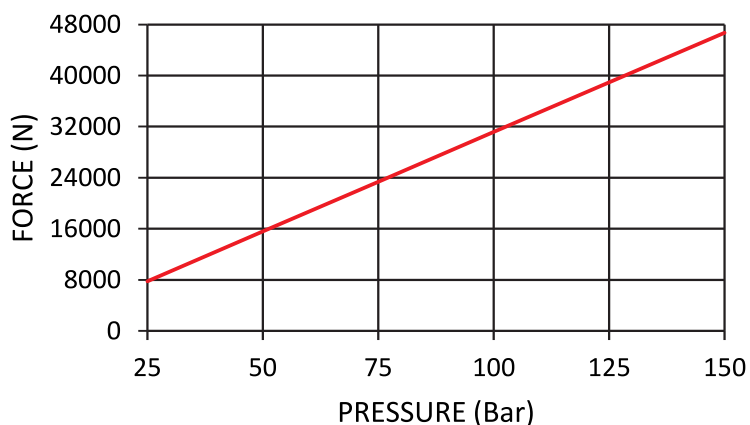
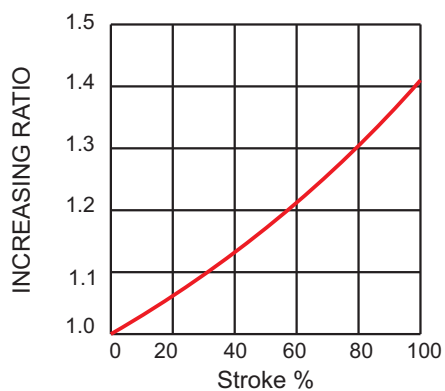
63 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-047 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-047	10	80	70	4791 (47000)	6829 (67000)
	16	106	90		6829 (67000)
	25	135	110		6829 (67000)
	32	167	135		6829 (67000)
	40	200	160		6829 (67000)
	50	240	190		6829 (67000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings



75 - TPC
Ref Page No.99

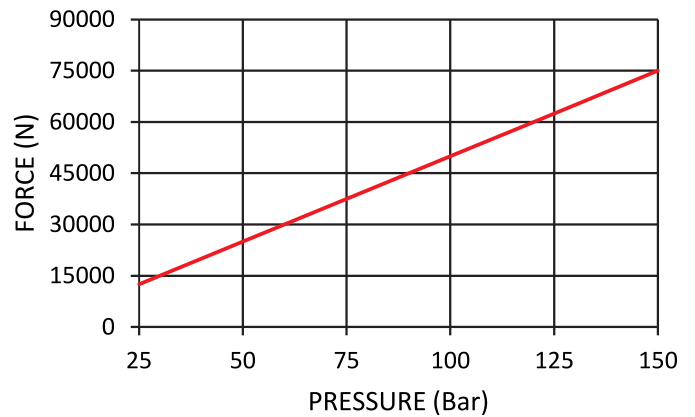
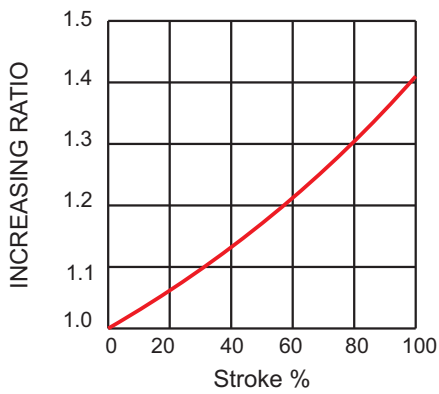


75 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-075 Series

Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-075	10	90	80	7645 (75000)	10601 (104000)
	16	116	100		10601 (104000)
	25	145	120		11111 (109000)
	32	182	150		10703 (105000)
	40	210	170		10907 (107000)
	50	255	205		10800 (106000)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

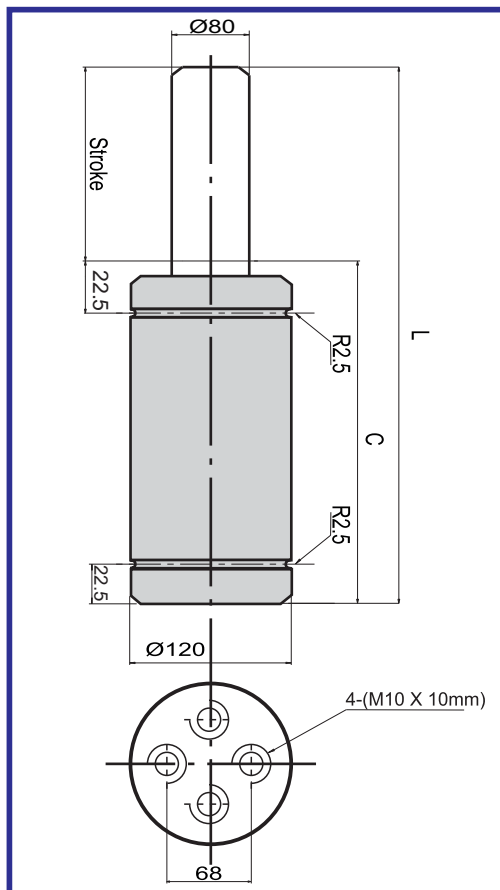


95 - TPC
Ref Page No.99



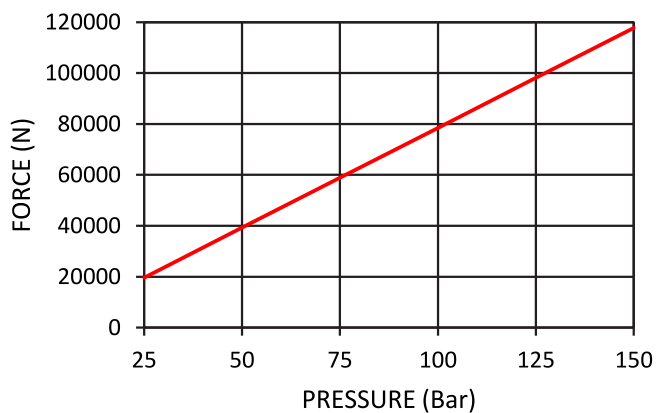
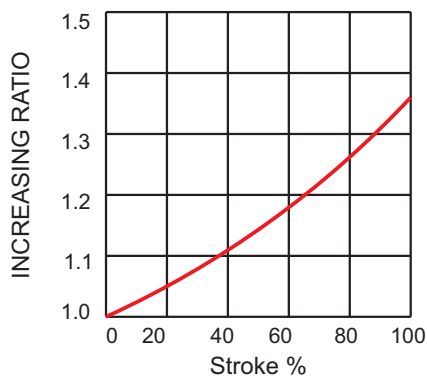
95 - STPC
Ref Page No.98

▶ Gas Spring - NFS-S5-118 Series



Code	Stroke mm	L mm (± 0.25)	C mm (-0.2)	Initial Kg (N)	End Force Kg (N)
NFS-S5-118	10	100	90	12028 (118000)	16361 (160500)
	16	126	110		15698 (154000)
	25	155	130		16412 (161000)
	32	187	155		16819 (165000)
	40	220	180		16412 (161000)
	50	260	210		16462 (161500)

▶ Charging Pressure / Force Increase Factor



▶ Gas Spring Mountings

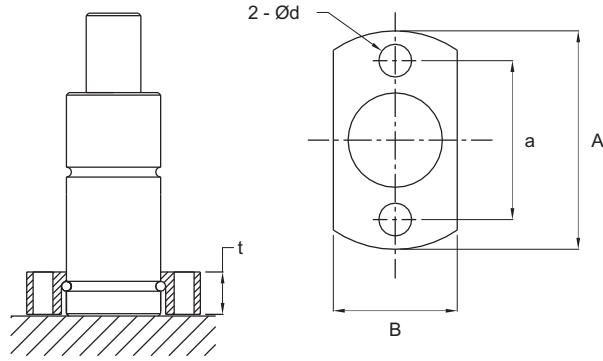


120 - TPC
Ref Page No.99



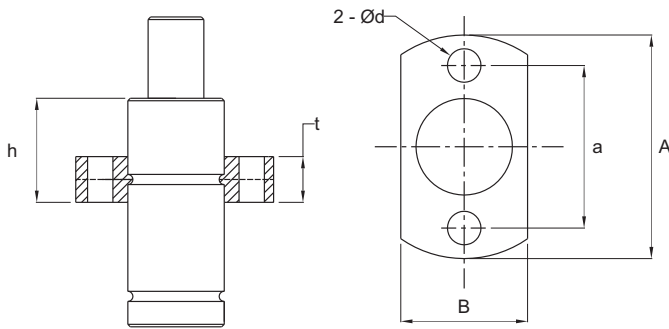
120 - STPC
Ref Page No.98

▶ BTCA



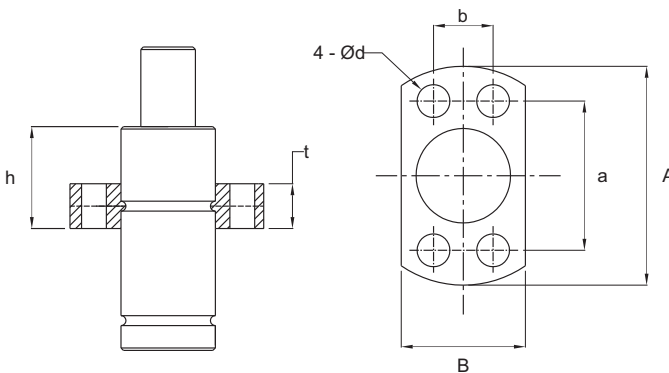
TYPE	A	a	B	d	t
19-BTCA	45	32	25	7	9.2
25-BTCA	50	38	30	7	9.2

▶ TPCA



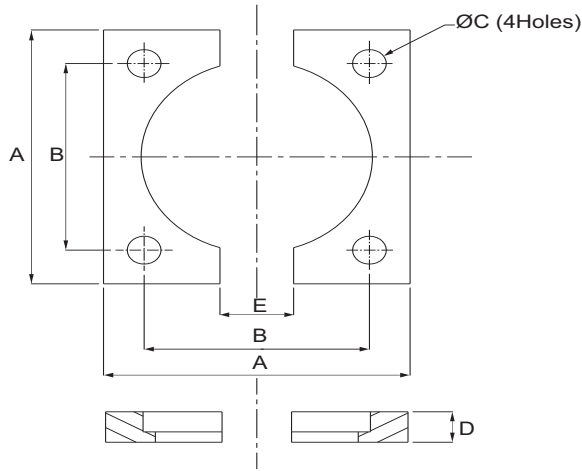
TYPE	A	a	B	d	t	h
19-TPCA	45	32	25	6.6	9	20.5
25-TPCA	50	38	30	6.6	9	20.5

▶ TPCB



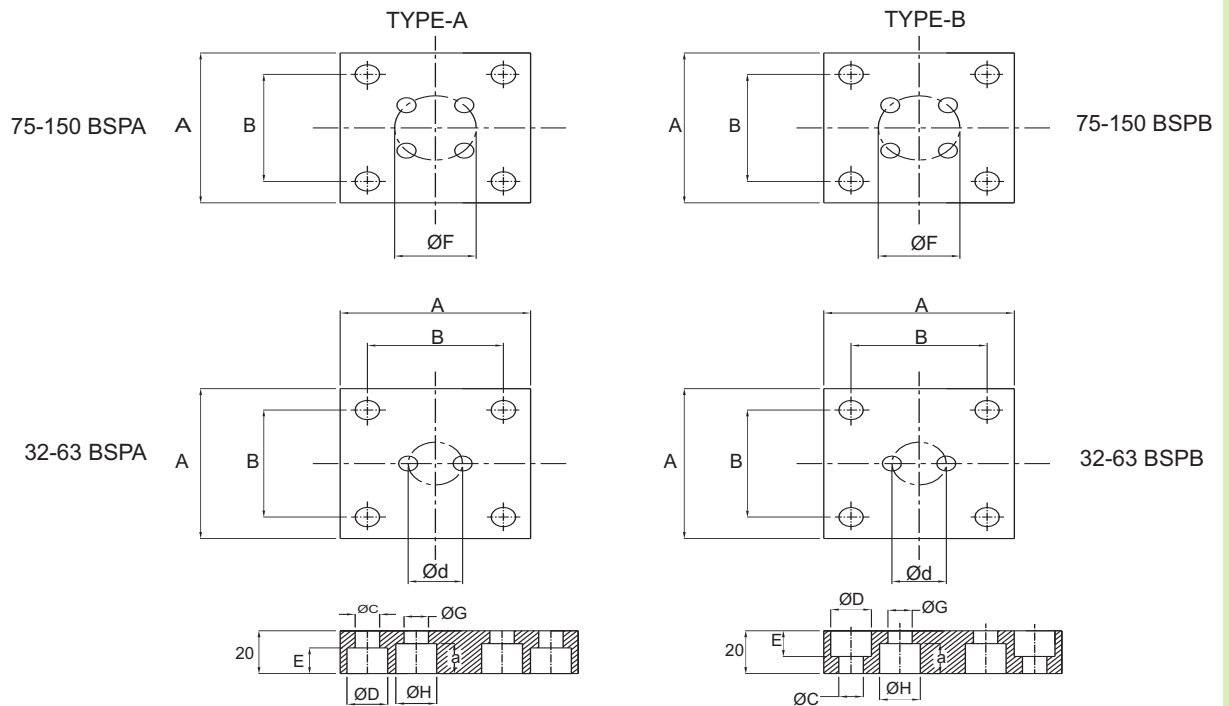
TYPE	A	a	B	b	d	t	h
19-TPCB	45	30	25	12	6.6	9	20.5
25-TPCB	50	34	30	18	6.6	9	20.5

▶ BTC



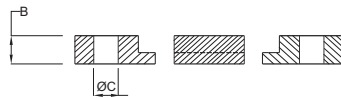
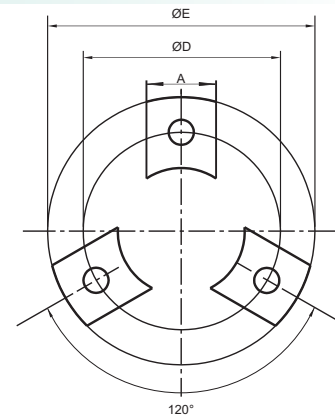
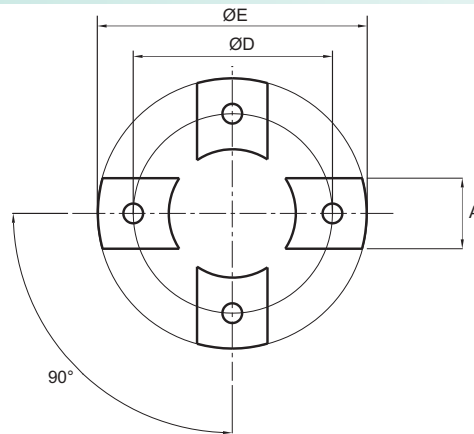
Type	A	B	ØC	D	E
32-BTC	50	35	7	7	12
38-BTC	55	40	7	7	12
45-BTC	70	50	9	7	20
50-BTC	75	56.5	9	12	24
63-BTC	100	73.5	11	12	24
75-BTC	100	73.5	11	12	24
95-BTC	120	92	13.5	12	24
120-BTC	140	109.5	13.5	12	24
150-BTC	190	138	17.5	12	24
195-BTC	210	170	17.5	13	24

▶ BSP



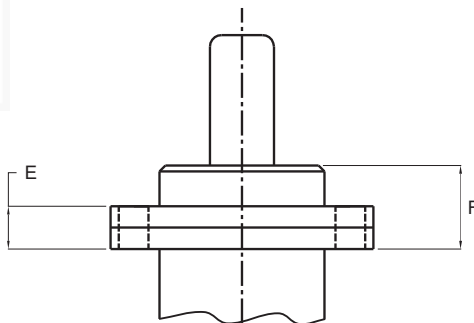
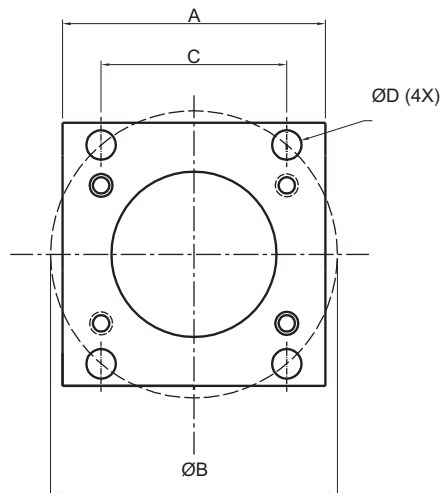
TYPE	A	B	ØC	ØD	E	Ød	ØF	ØG	ØH	a
45-BSP(A/B)	70	50	9	15	12	20	-	9	15	12
50-BSP(A/B)	75	56.5	9	15	12	20	-	9	15	12
50-BSP(A/B)-S2	75	56.5	9	15	12	31.7	-	9	15	12
63-BSP(A/B)	100	73.5	11	18	12	20	-	9	15	12
75-BSP(A/B)	100	73.5	11	18	14	-	40	9	15	12
75-BSP(A/B)-S2	100	73.5	11	18	14	-	53.9	9	15	12
95-BSP(A/B)	120	92	13.5	20	13	-	60	9	15	14
95-BSP(A/B)-S2	120	92	13.5	20	13	-	76.2	9	15	14
120-BSP(A/B)	140	109.5	13.5	20	13	-	80	11	18	15
150-BSP(A/B)	190	138	17.5	26	17	-	100	11	18	15
195-BSP(A/B)	210	170	17.5	26	17	-	120	13.5	20	15

► SPC



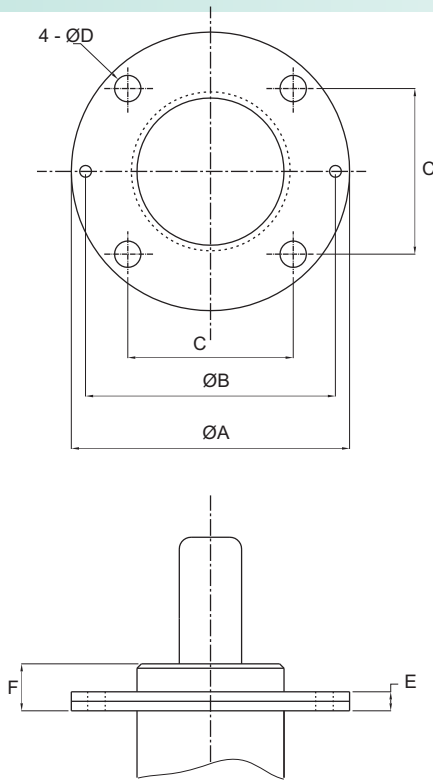
TYPE	A	B	ØC	ØD	E
38-SPC	20	7	7	56.6	76.6
45-SPC	25	7	9	70.7	95.8
50-SPC	30	12	9	80	110
63-SPC	30	12	11	92	122
75-SPC	30	12	11	104	134
95-SPC	40	12	13	130	170
120-SPC	50	12	13	155	195
150-SPC	50	12	17	195	220

► STPC



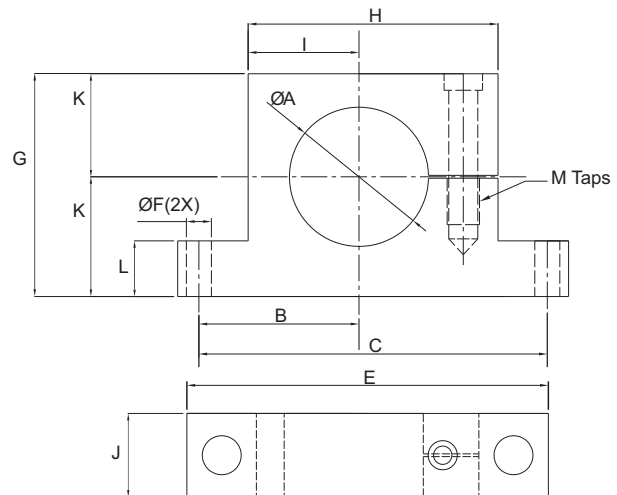
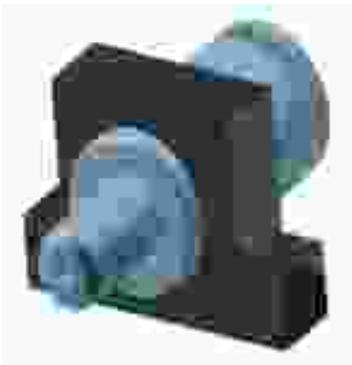
TYPE	A	ØB	C	ØD	E	F
32-STPC	45	49.5	35	7	9	15
38-STPC	52	56.5	40	7	9	15
45-STPC	64	70.7	50	9	13	21
50-STPC	70	80	56.5	9	13	21
63-STPC	90	104	73.5	11	16	24
75-STPC	90	104	73.5	11	16	26
95-STPC	110	130	92	13.5	18	30
120-STPC	130	155	109.5	13.5	21	33
150-STPC	162	195	138	17.5	27	38
195-STPC	210	240.4	170	17.5	27	44

▶ TPC



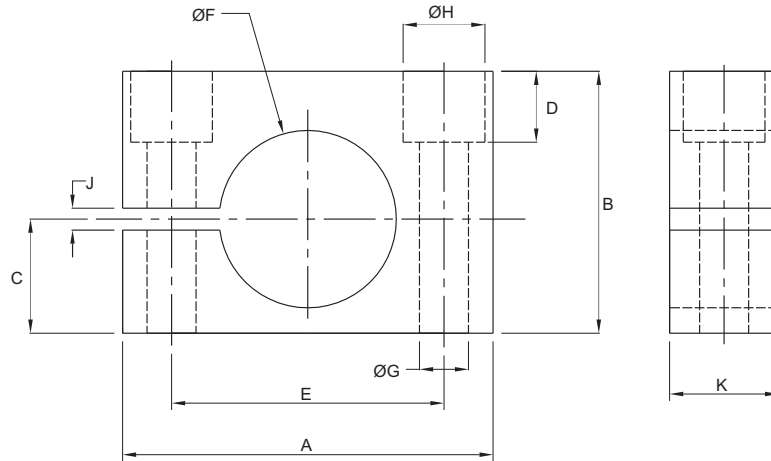
TYPE	ØA	ØB	C	ØD	E	F
32-TPC	60	49.5	35	7	9	15
38-TPC	68	56.5	40	7	9	15
45-TPC	86	70.7	50	9	13	21
50-TPC	95	80	56.5	9	13	21
63-TPC	122	104	73.5	11	16	24
75-TPC	122	104	73.5	11	16	26
95-TPC	150	130	92	13.5	18	30
120-TPC	175	155	109.5	13.5	21	33
150-TPC	220	195	138	17.5	27	38
195-TPC	290	240.4	170	17.5	27	44

▶ FLC



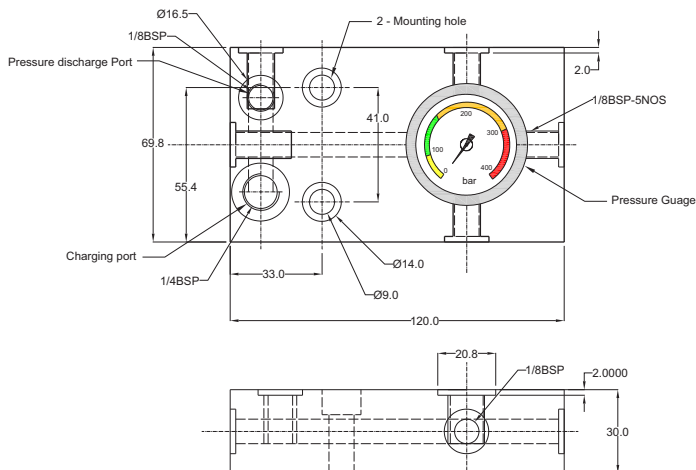
TYPE	ØA	B	C	E	ØF	G	H	I	J	K	L	M Taps
32-FLC	32	31	72	90	9	45	54	22	20	22.5	15	M8
38-FLC	38	34	77	95	9	55	59	25	20	27.5	15	M8
45-FLC	45	37	82	100	9	60	64	28	20	30	15	M8
50-FLC	50	50	110	130	9	80	90	40	30	40	20	M8
63-FLC	63	49.5	123	146	11	90	102	39	30	45	20	M8
75-FLC	75	63.5	137	160	11	105	115	52.5	30	52.5	20	M10
95-FLC	95	80	170	195	13.5	125	145	67.5	30	62.5	20	M12
120-FLC	120	92.5	195	220	13.5	148	165	77.5	30	74	20	M12
150-FLC	150	110	230	260	13.5	200	200	95	30	100	20	M12

FLCA



TYPE	A	B	C	D	E	F	G	H	J	K
32-FLCA	68	48	20.9	10	50	32.5	9	15	4	20
38-FLCA	74	54	23.9	16	54	38.5	9	15	4	20
45-FLCA	80	60	27.5	22	60	45.5	9	15	4	20
50-FLCA	90	70	30	25	68	50.5	11	18	5	30
63-FLCA	108	82	36.5	27	84	63.5	11	18	5	30
75-FLCA	125	94	42	32	100	75.5	13.5	20	5	30
95-FLCA	140	115	52.5	33	115	95.5	13.5	20	5	30
120-FLCA	170	140	65	58	145	120.5	13.5	20	7	30
150-FLCA	200	170	80	68	175	150.5	13.5	20	7	30

Standard Control Panel - NFS-CP1

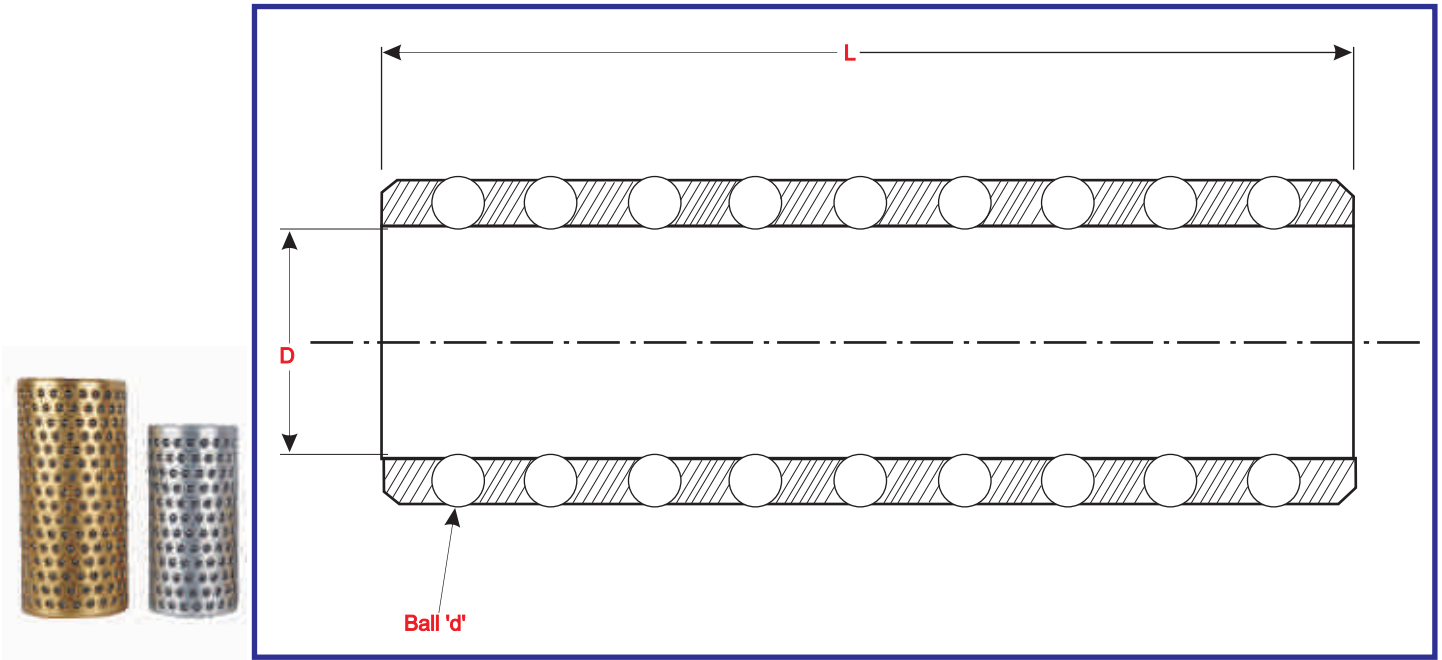


Order Code : Code
Example : NFS-CP1

Guiding Elements



► Ballcages



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

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

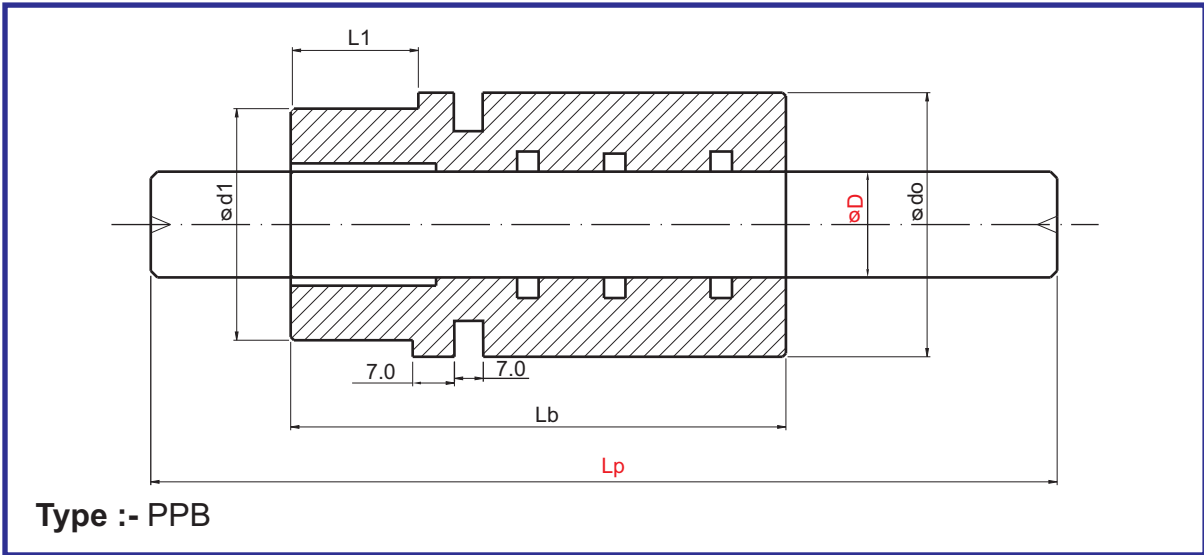
Pillar Dia (D)mm	Ball (d) mm	Length - (L) mm										
		20	30	40	50	60	70	80	90	100	125	150
10	2,3	*	*	*								
12	2,3	*	*	*								
14	2,3	*	*	*	*							
16	2,3	*	*	*	*	*						
18	2,3		*	*	*	*	*					
20	2,3,4		*	*	*	*	*	*	*	*		
24	3,4		*	*	*	*	*	*	*	*		
25	3,4		*	*	*	*	*	*	*	*		
28	3,4,5			*	*	*	*	*	*	*		
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.

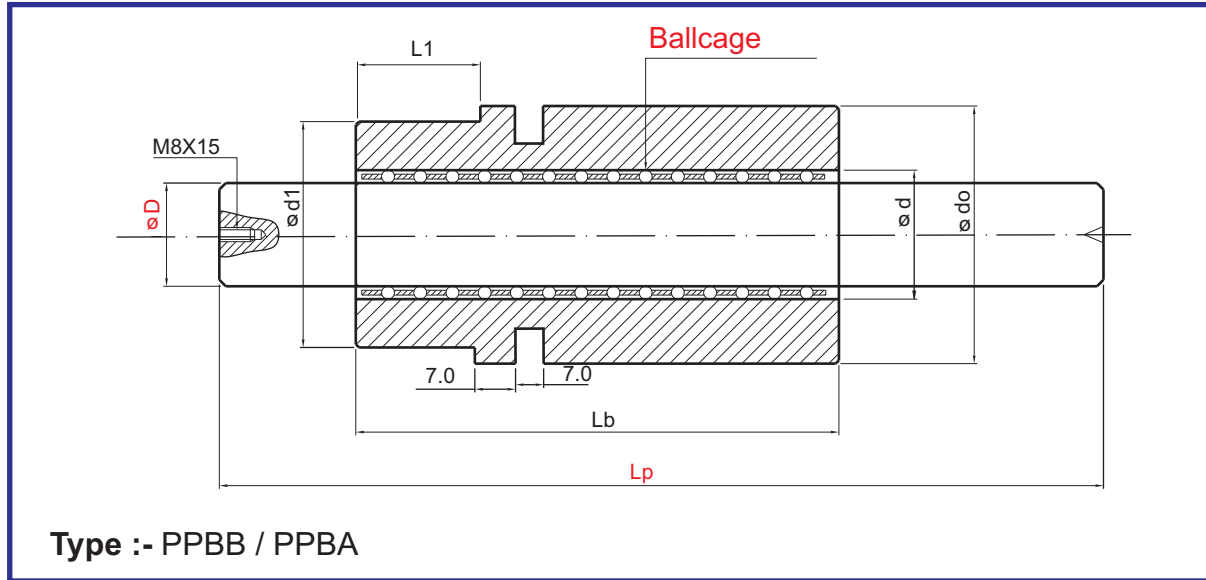


Dia D (mm)	Dia d1 (mm)	Dia do (mm)	Length Lp (mm)	Length L1 (mm)	Length Lb(mm)
H7/g6	p6		Increment of 25mm		
20	33.5	38	150-300	22.5	73
21	33.5	38	150-300	22.5	73
24	37	43	150-300	27.5	82
25	37	43	150-300	27.5	82
28	43.5	48	180-300	27.5	92
29	43.5	48	180-300	27.5	92
30	48.5	53	200-350	32	100
32	48.5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



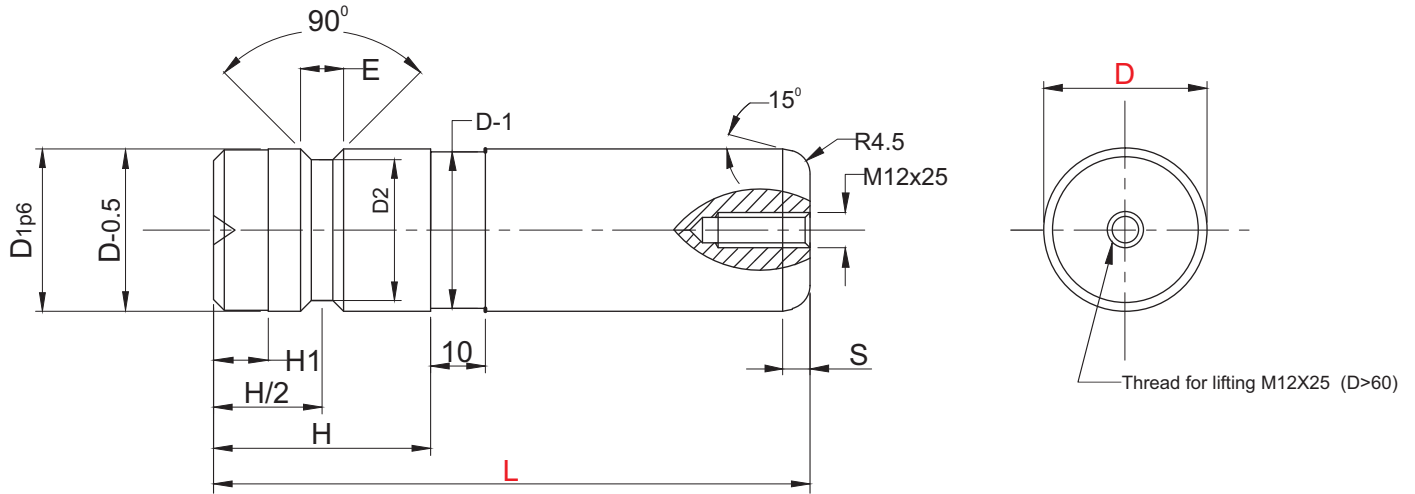
Note :- The set will consist of spring for Ballcage support & Locking Button as per standard.

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)



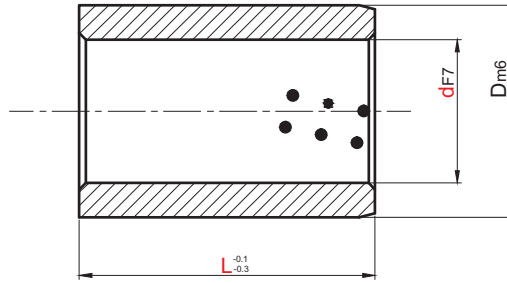
Material :- En353/20MnCr5
Hardness :- 55-60HRC



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	10	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	(-0.010) (-0.025)	80	(+0.051) (+0.032)	75	120	12	10	250, 300, 350, 400	
	100	(-0.010) (-0.025)	100	(+0.059) (+0.037)	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)



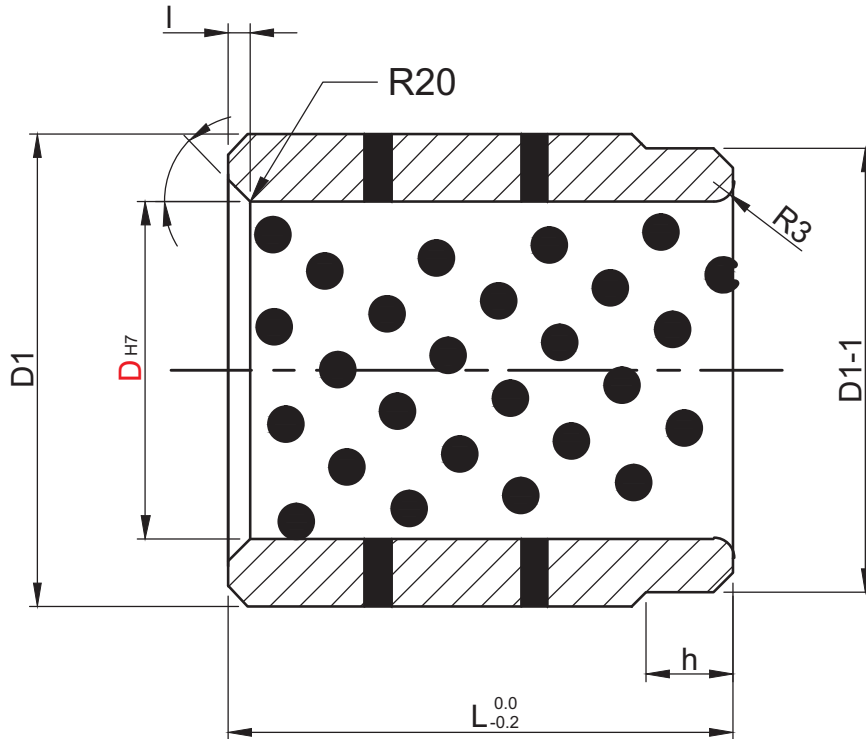
Material :- Phosphorus Bronze
Embedded with solid lubricant

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)	18	(±0.021)	12	8, 10, 12, 15, 16, 19, 20, 25, 30	
	13		19		(±0.008)	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		24		18	12, 15, 16, 20, 25, 30, 35, 40	
	19	(±0.041)	26	(±0.025)	19	15, 20	
	20		28		(±0.009)	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		35		25A	12, 15, 16, 20, 25, 30, 35, 40, 50	
	28		38		28	20, 25, 30, 40	
	30	(±0.050)	38	(±0.030)	30	12, 15, 20, 25, 30, 35, 40, 50, 60	
	30		40		(±0.011)	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		45		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	(±0.060)	55	(±0.035)	40A	15, 25, 30, 35, 40, 50, 60	
	45		55		(±0.013)	45	30, 35, 40, 50, 60
	45		56		45A	30, 35, 40, 50, 60	
	45		60		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	(±0.071)	70	(±0.040)	55	30, 35, 40, 50, 60, 70	
	60		74		(±0.015)	60	30, 35, 40, 50, 60, 70, 80, 100
	60		75		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	(±0.083)	90	(±0.043)	75	50, 60, 70, 80, 100	
	75		95		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	120		100		40, 50, 60, 70, 80, 90, 100, 120, 140		
110	(±0.083)	130	(±0.015)	110	50, 70, 80, 100, 120		
120		140		(±0.015)	120	70, 80, 90, 100, 120, 140	
125		145		125	100, 120		
130		150		130	80, 100, 130		
140		160		140	100, 140		
150		170		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)

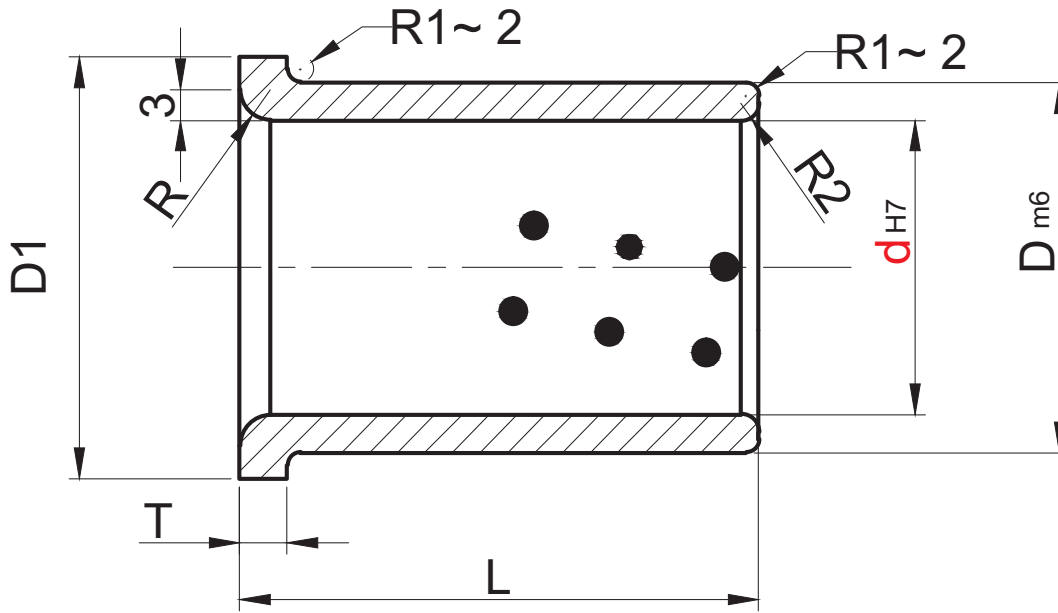


Material :- Phosphorus Bronze (PB) / Cast Iron (CI) Grade FG260
Embedded with solid lubricant

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	50	
	80	±0.011	60	(±0.030) (-0.0)	90	20	10	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

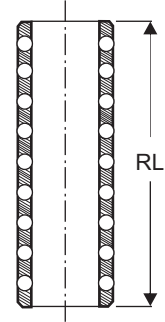
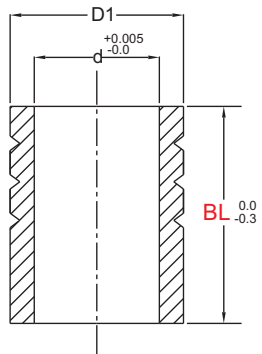
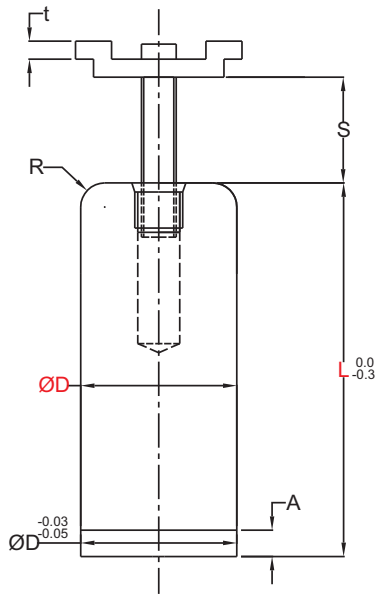
TYPE	d	dh7		Dm6		D1	T	R	L
PBOC	25	25	(+0.021) (-0.0)	35	(+0.025) (+0.009)	45	7	10	40
	30	30		40		50	50		
	40	40	(+0.025) (-0.0)	55	(+0.030) (+0.011)	65	10		70
	50	50		65		75		80	
	60	60	(+0.030) (-0.0)	75	(+0.035) (+0.013)	85		20	80
	65	65		80		90	120		
	65A	65	100	110	140				
	80	80	(+0.035) (-0.0)	120	130	100	140		
	80A							100	140
	100	100	(+0.035) (-0.0)	120	130	100	140		
	100A							100	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

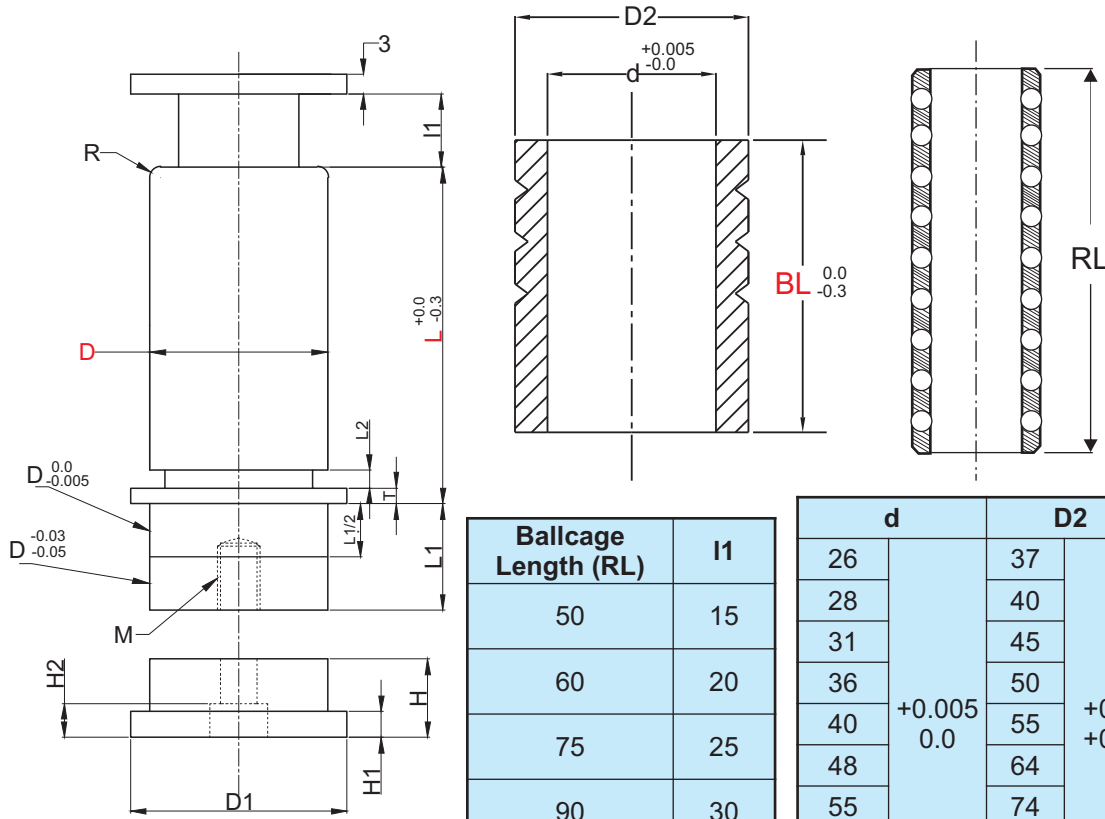
Pillar						
D		A	R	t	L	Ballcage Length (RL)
20	(+0.020) (+0.015)	4	2	1.6	100, 110, 120, 130, 140, 150, 160, 170, 180	50
22			3		120, 130, 140, 150, 160, 170, 180	50, 60
25		120, 130, 140, 150, 160, 170, 180			60, 75	
28	(+0.025) (+0.020)	5	3.5		140, 150, 160, 170, 180, 190, 200	60, 75
32				160, 170,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

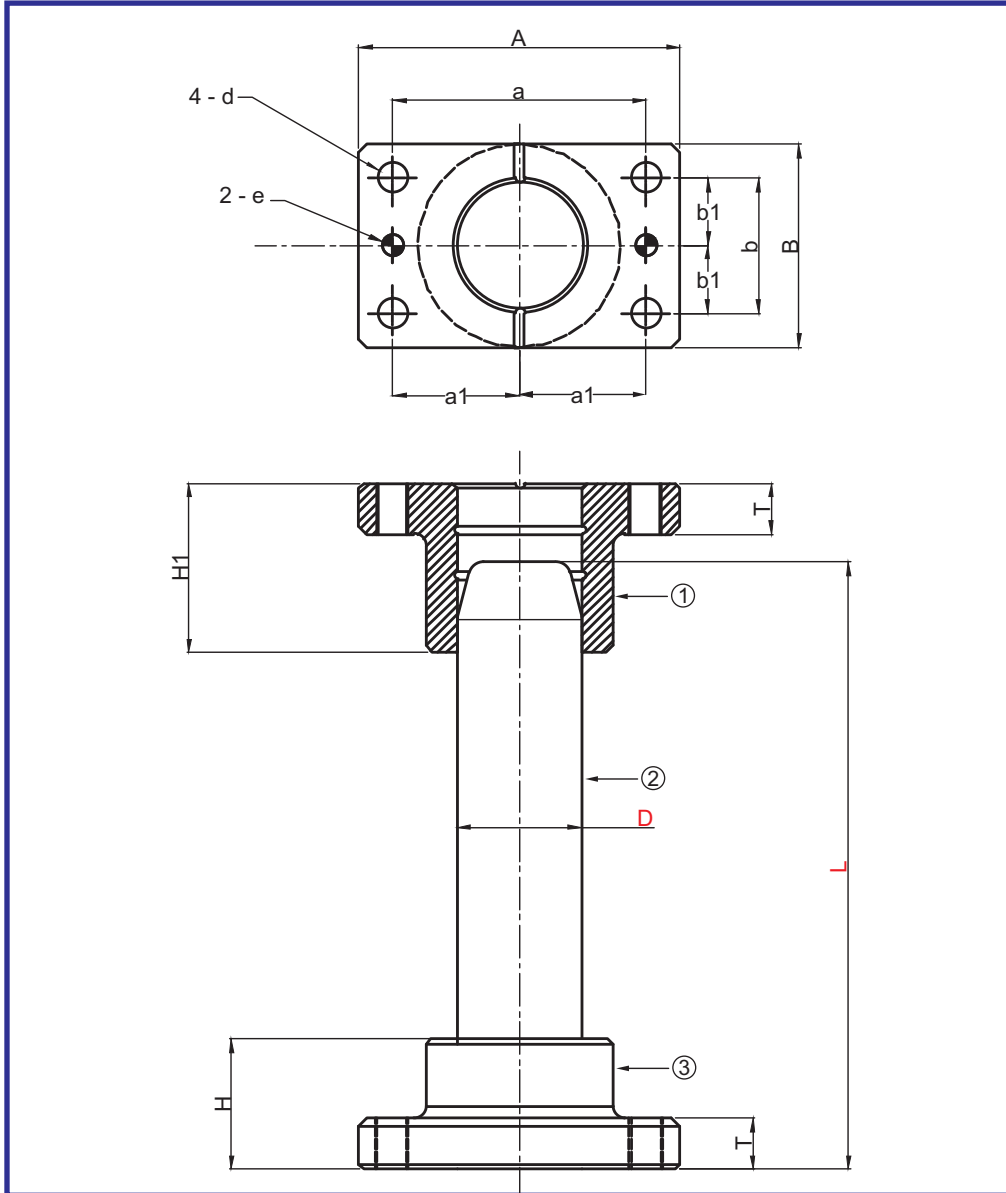
Ballcage Length (RL)	I1
50	15
60	20
75	25
90	30
110	35

d		D2		Bush Length
26	+0.005 0.0	37	+0.5 +0.3	50
28		40		50, 60
31		45		60, 80
36		50		60, 80
40		55		80, 100
48		64		80, 100
55		74		100, 120
60		83		100, 120
70		95		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	M8x18	2	80, 90, 100, 110, 120	50			
22		30	16								8	3	80, 90, 100, 110, 120	50, 60
25		35	18								10	3	80, 90, 100, 110, 120, 130	60, 75
28	(+0.025) (+0.020)	36	20	12	16	8	10.5	M10x22	3.5	100, 110, 120, 130, 140, 150, 160	60, 75			
32		40	23								4	120, 130, 140, 150, 160	75, 90	
38	(+0.030) (+0.025)	49	27	15	18	10	12.5	M12x27	4	140, 150, 160, 170, 180	75, 90			
45		55	32								4.5	140, 150, 160, 170, 180	90, 110	
50	(+0.035) (+0.030)	62	35	20	12	14.5	15	M14x31	4.5	160, 170, 180, 200	90, 110			
60		72	42								4.5	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

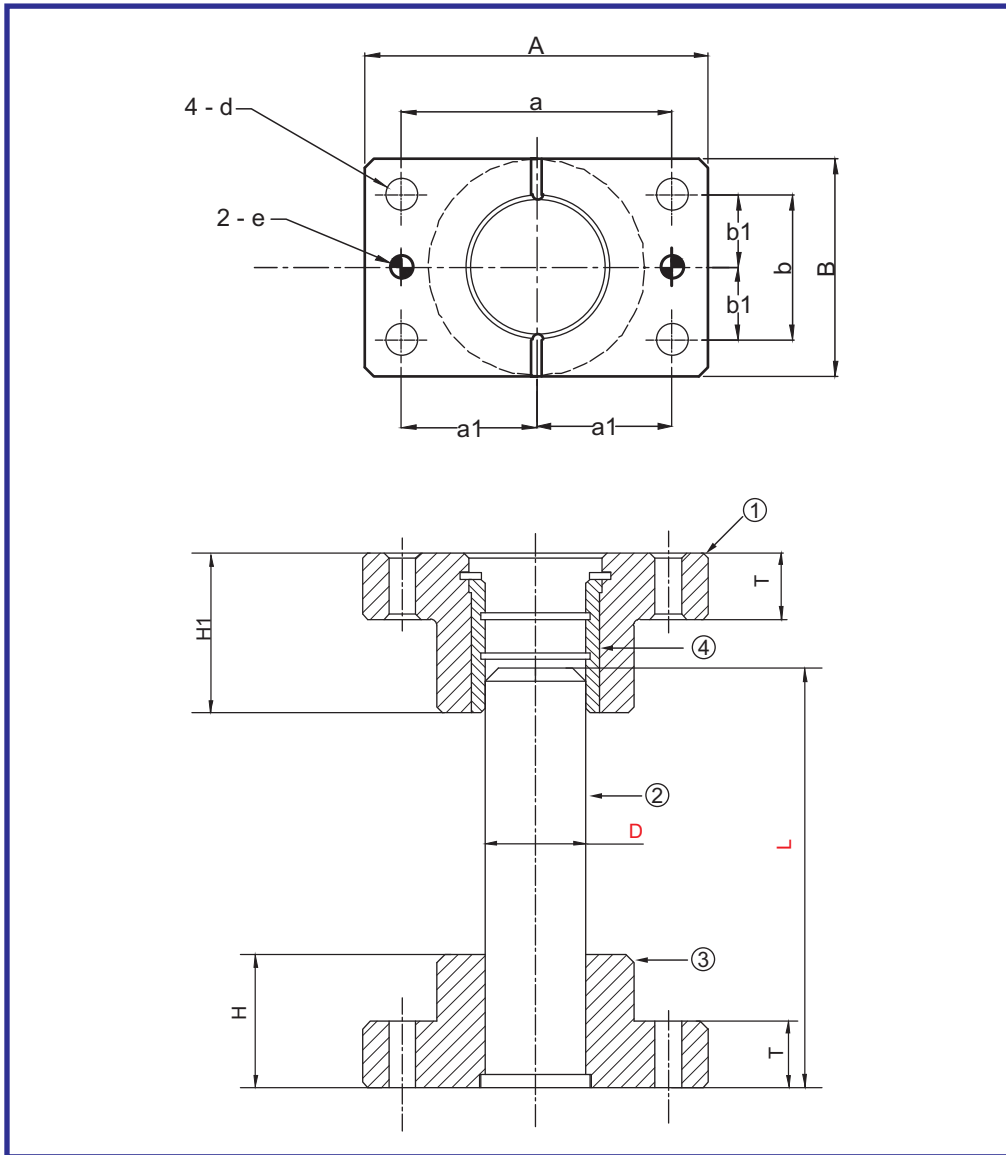
OL - Oilless Type

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 :-

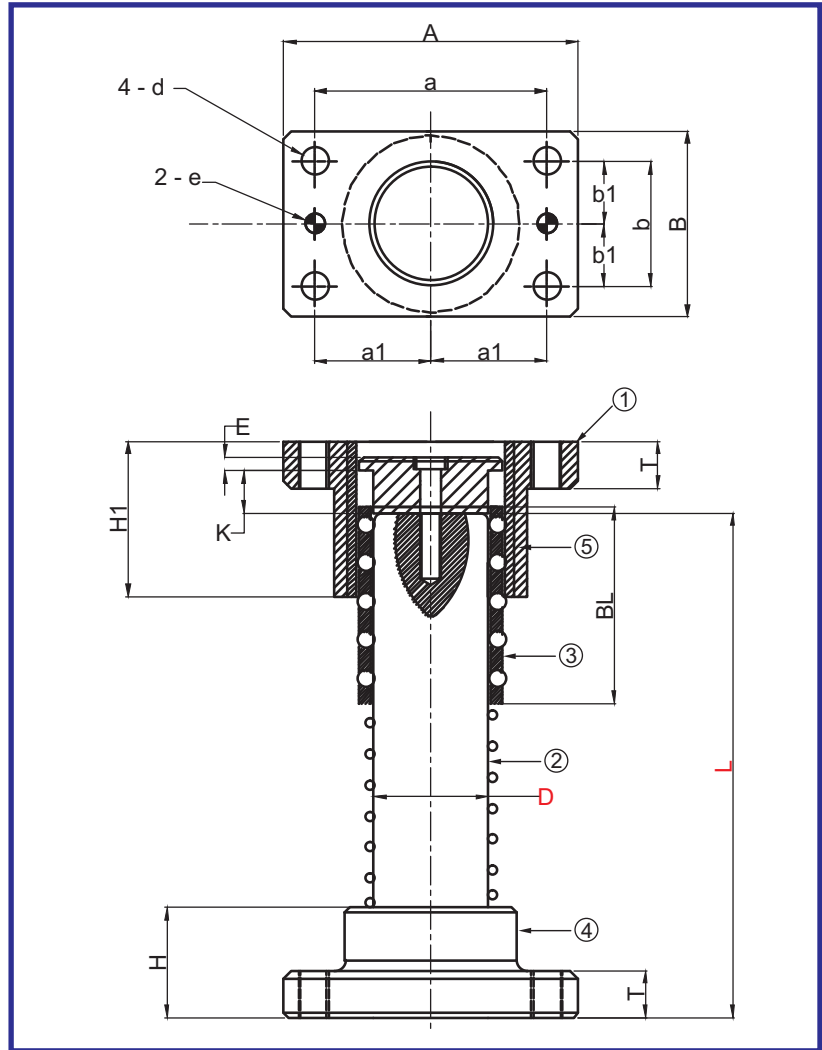
- Movable Stopper (M)
 Fixed Stopper (F)

Ballcage Type :-

DEMBB - With Aluminium 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
Type		±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

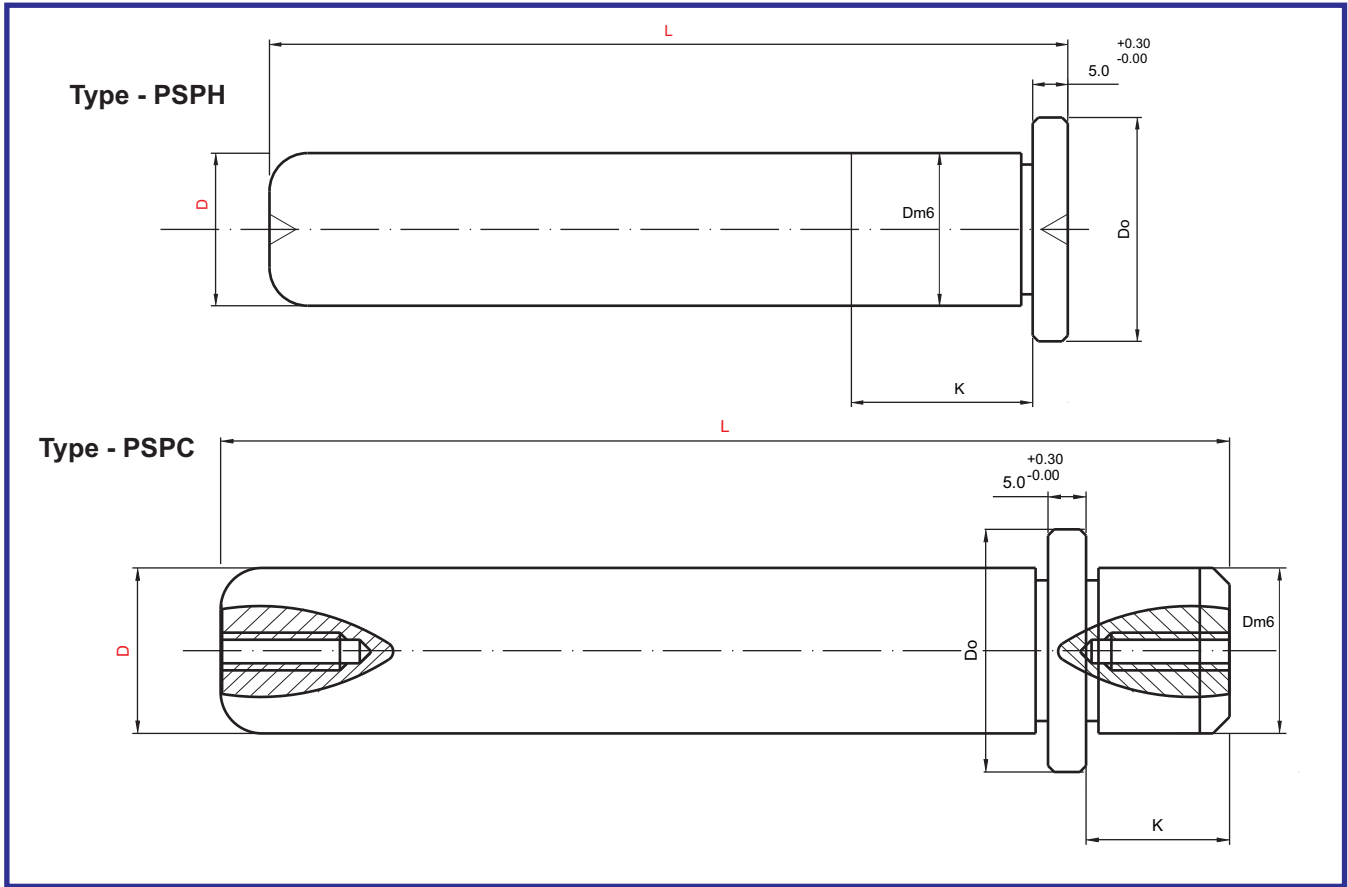
Note : Kindly refer Page No.115 for Guide Post Length

► 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
DEMBB-F DEMBB-M 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

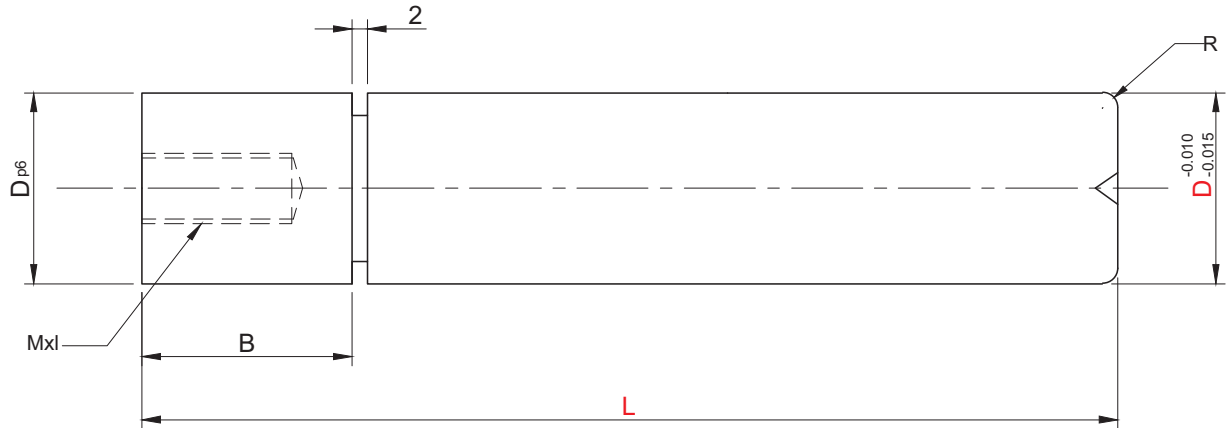


Size	Code	Dia D	Do	K	L				
Tolerance		h7	-0.02(max)	-1.0(max)	+1.0(max)				
	PSPH	8	11	8	50	60			
		10	13	13	50	60	80		
		16	19	18	50	60	80	100	120
		20	23	22		60	80	100	120
		25	28	28			80	100	120

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



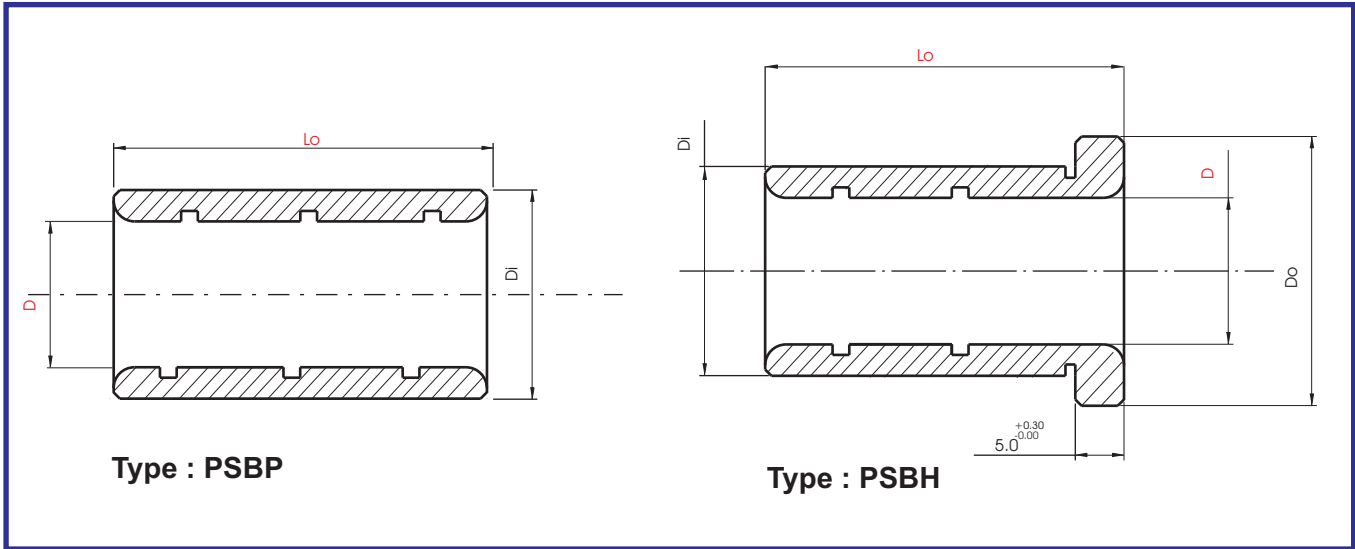
Material :- 20 MnCr5 / En353
Hardness :- 55-58 HRC



Type	Dp6		M x I 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



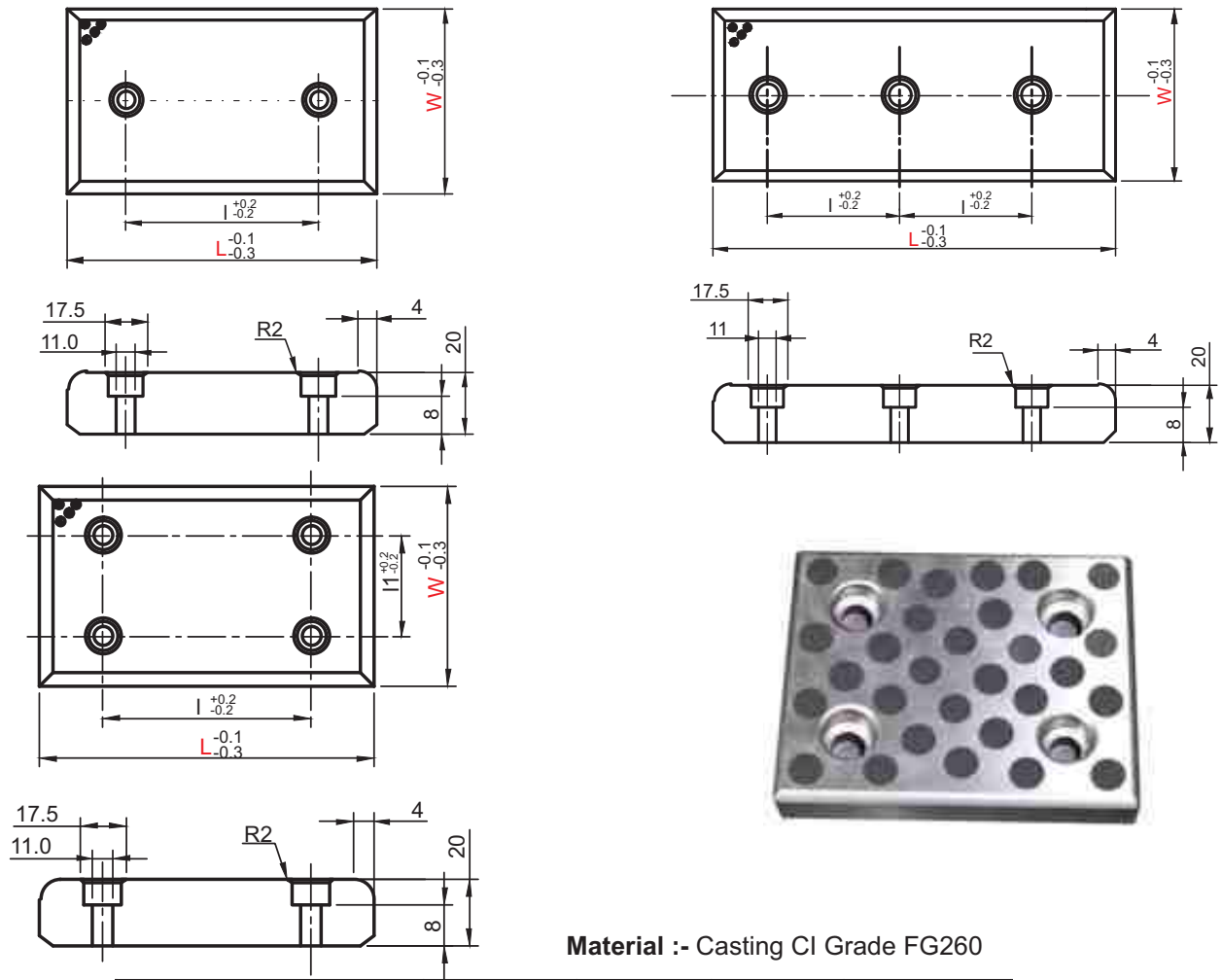
Size	Code	D	Di	L				
Tolerance		G6	+0.02(max)	-1.0(max)				
	PSBP	8	14	10	16	20		
		10	16	10	16	20	25	
		16	22		16	20	25	30
		20	25			20	25	30
		25	32				25	30

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
		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

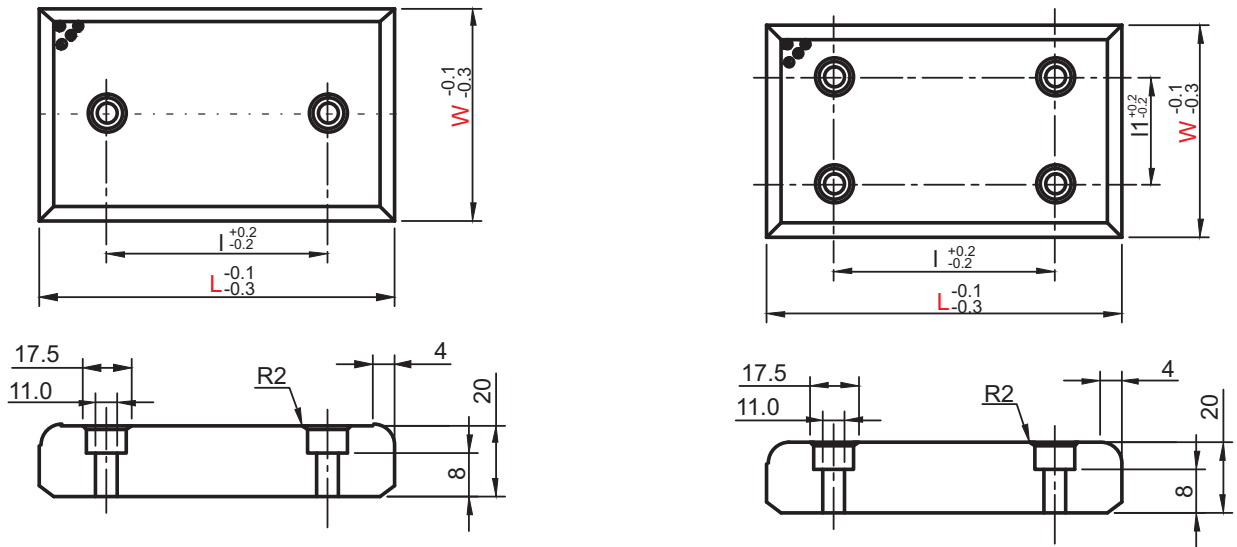
► Wear plate (PWP - CI)

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
			150	200
	58	45	75	
		50	100	
		75	125	
		100	150	
	75	25	75	
		50	100	
		75	125	
		100	150	
		150	200	
		200	250	
		100*	300	
	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	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
		125	75	50	125
			100		150
			150		200
			200		250
			200		300
		150	100	100	150
			150		200
			200		250
			-		-

Order Type :- Code X W X L

Example :- PWP-PB X 100 X 150

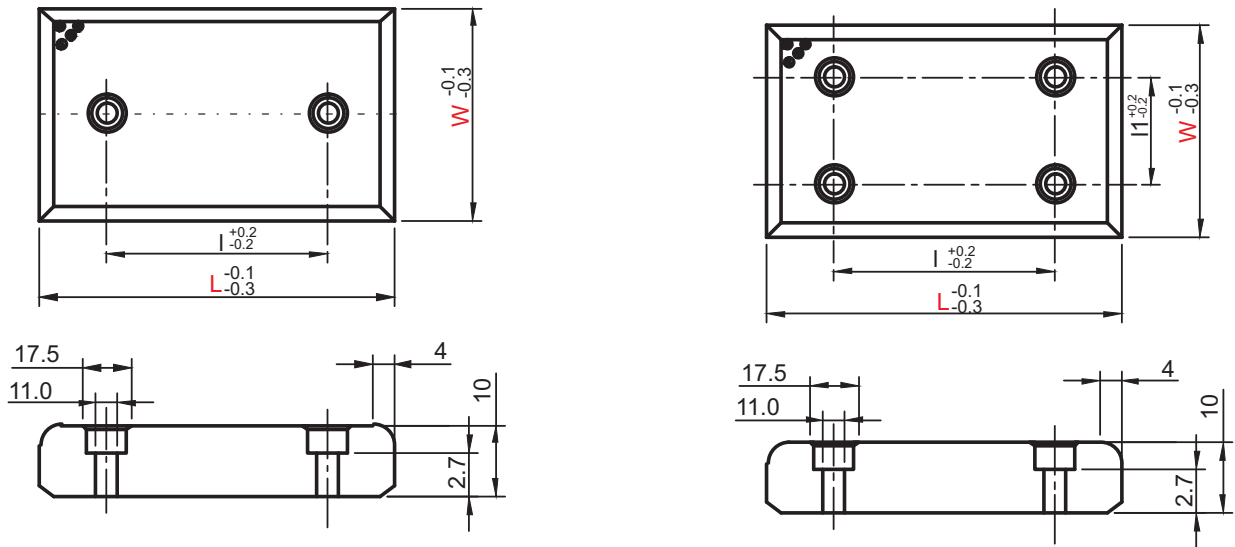
► Wear plate (PWP - PB)

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	l1	L
PWPZ-PB	4 bolt holes	100	50	50	100
			75		125
			100		150
			150		200
			200		250
			-		-
		125	-	-	
			100	50	150
			150		200
			200		250
			-		-
		-	-		
		150	100	100	150
			150		200
			-		-
			-		-

Order Type :- Code X W X L
Example :- PWPZ-PB X 100 X 150

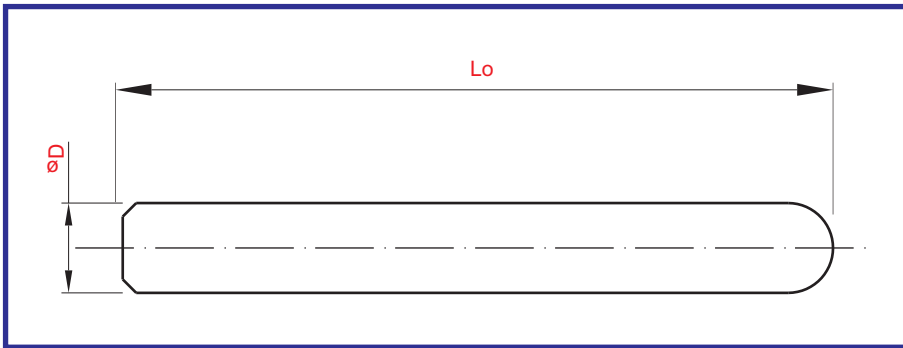
► Wear plate (PWPZ - PB)

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

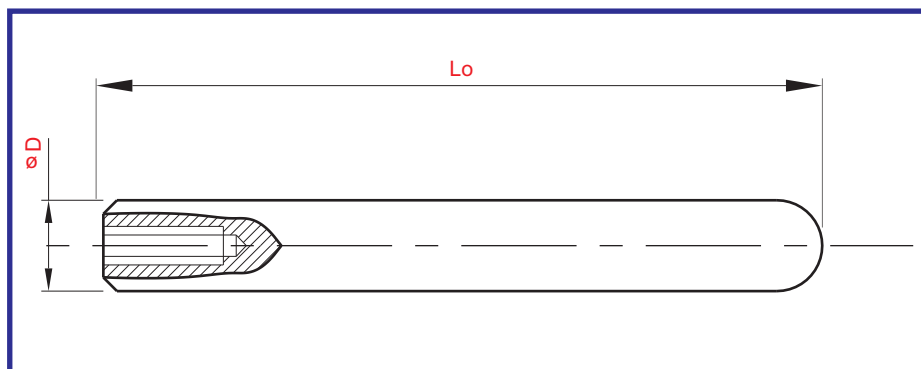


Material :- Case Hardened Alloy Steel
Hardness :- 58-62 HRC

Order Type :- Dowel (Type) - Dia (D) X Length (Lo)
Example :- Dowel (Threaded / Plain) 10 X 50

Dia	Length (Lo)																		
	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

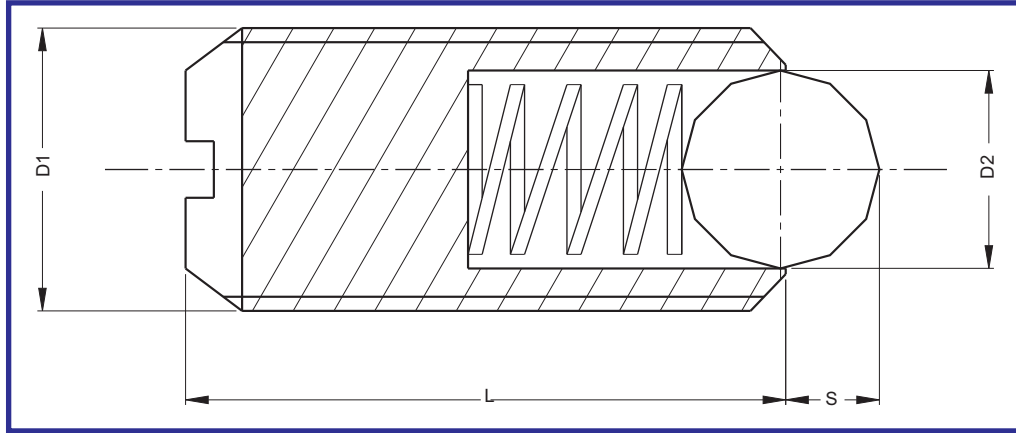


Material :- Case Hardened Alloy Steel
Hardness :- 58-62 HRC

Dia	Length (Lo)																		
	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 (Lo)
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

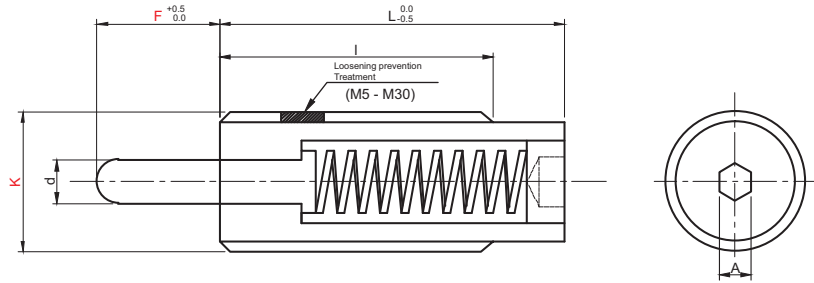
Order Type :- Code
Example :- PSP-B M8



► Spring Plunger (PSP-P)



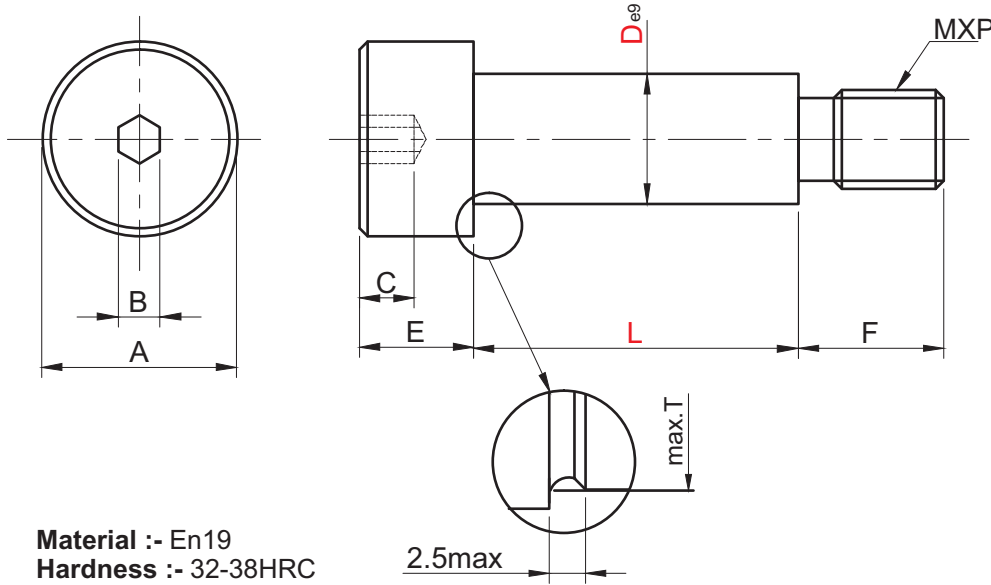
Material :- En8d
Hardness :- 32-38 HRC
Surface Treatment :- Blackodised



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)		10
	3.1	25 (27)	25	27	2.5	3.5 (0.4)	9.4(1)	8	3
	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)		10
	3.8	30	30	35	3	2.8 (0.3)	14.1(1.4)	10	5
	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)		15
	5.5	30 (35)	30	43	4	3.5 (0.4)	17.1(1.7)	12	5
	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)		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)		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)		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)		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)		80
	10	45	60	80	6	14.4 (1.5)	79.4(8.1)		20	15
	10	45	72	-	6	13.9 (1.4)	83.4(8.5)	20	
10	45	96	-	6	13.6 (1.4)	88.3(9)	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)	7		
10	45	60	84	10	25.5 (2.6)	106.9(10.9)	24	15	
10	45	75	-	10	15.3 (1.6)	101(10.3)		20	
10	45	100	-	10	19.1 (2)	100(10.2)		30	
10	45	124	-	10	17.1 (1.7)	98.1(10)		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		
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



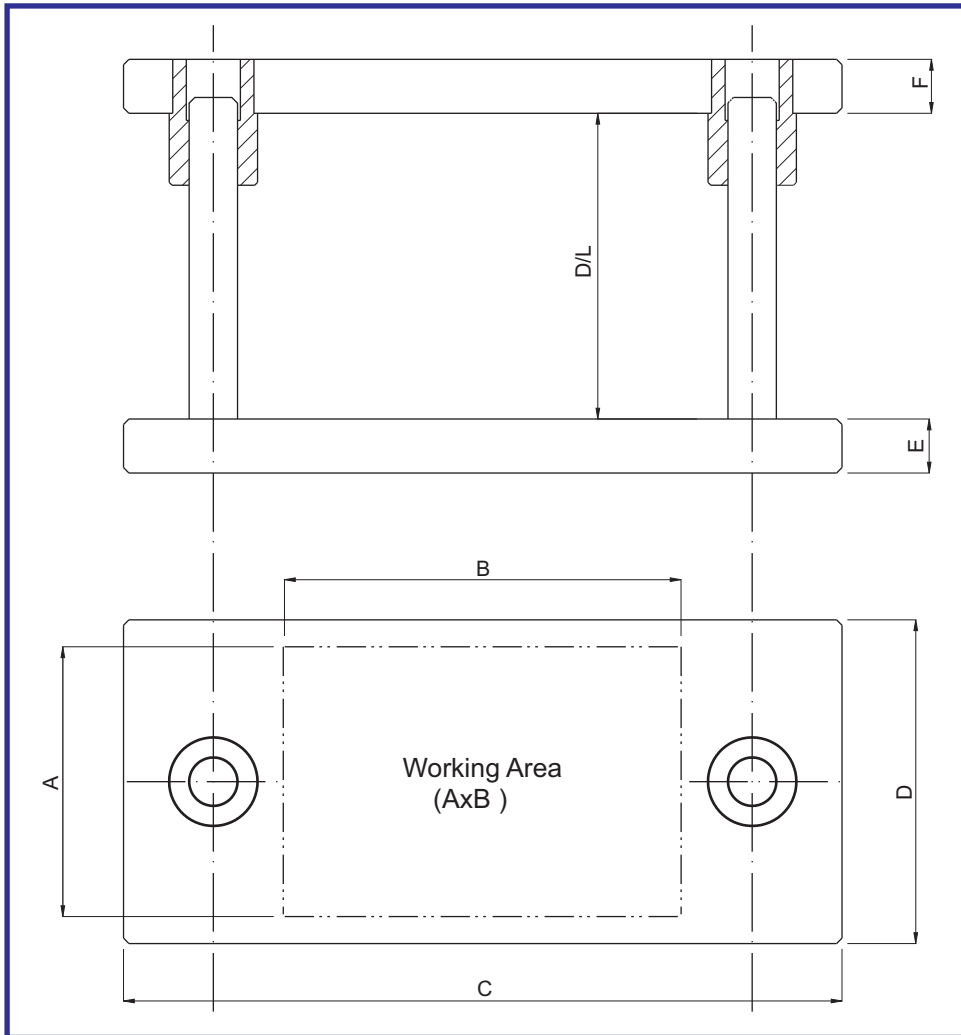
TYPE	De9	A	B	C	E	F	MXP	T	L
PSTB	4	6.5	2.5	1.6	3	5	2.5X0.45	4.5	25 30 35 40 45
	4.5	7				6	3X0.5	5	25 30 35 40 45 50
	5	8				3.5	5.5	25 30 35 40 45 50	
	5.5	9	3	2.2	4	7	4X0.7	6	25 30 35 40 45 50 55
	6			2				6.5	25 30 35 40 45 50 55 60 65 70
	6.5	10	4	2.5	5	9	5X0.8	7	25 30 35 40 45 50 55 60 65 70 75 80
	8							13	5
	10	16	6	4	8	12	8X1.25	10.8	25 30 35 40 45 50 55 60 65 70 75 80 90 95 100
	12							17	12.8
	13	18	8	5	10	16	10X1.5	14	25 30 35 40 45 50 55 60 65 70 75 80 90 95 100
	16							24	10
	20	27	14	9	18	24	16X2.0	21	25 30 35 40 45 50 55 60 65 70 75 80 90 95 100

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

Die Sets



► Centre Pillar Die Set (PMSC / PMSCB)



Die Set Plain

Material :
 Plate :- MS
 Pillar :- En353
 Bush :- En353

Hardness :
 Pillar :- 55 - 58 HRC
 Bush :- 55 - 58 HRC

Die Set With Ball Cage

Material :
 Plate :- MS
 Pillar :- En353
 Bush :- En353
 BallCage :- Brass / Aluminium

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



CENTRE PILLAR DIE SET PLAIN

Order Type :- Code - D/L

Example :- PMSC100 X 100 -125

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSC 100X100	100	100	225	110	32	32	164.0	24/25
PMSC 125X125	125	125	255	135	32	32	194.0	24/25
PMSC 150X150	150	150	290	160	32	32	222.5	28/29
PMSC 175X175	175	175	315	185	32	32	247.5	28/29
PMSC 200X200	200	200	350	210	40	40	277.5	34/35
PMSC 250X250	250	250	400	260	40	40	327.5	34/35
PMSC 300X300	300	300	450	310	40	40	372.5	40/42

CENTRE PILLAR DIE SET WITH BALL CAGE

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSCB 100X100	100	100	240	110	32	32	172	24/25
PMSCB 125X125	125	125	270	135	32	32	202	24/25
PMSCB 150X150	150	150	305	160	32	32	232	28/29
PMSCB 175X175	175	175	330	185	32	32	257	28/29
PMSCB 200X200	200	200	365	210	40	40	287	34/35
PMSCB 250X250	250	250	415	260	40	40	337	34/35

Note : Our standard day light is 100mm. Day light to any other specification can be provided.
 Die Set as per Customer Drawing can also be manufactured.

► Rear Pillar Die Sets (PMSR / PMSRB)

Die Set Plain

Material :

Plate :- MS

Pillar :- En353

Bush :- En353

Hardness :

Pillar :- 55 - 58 HRC

Bush :- 55 - 58 HRC

Die Set With Ball Cage

Material :

Plate :- MS

Pillar :- En353

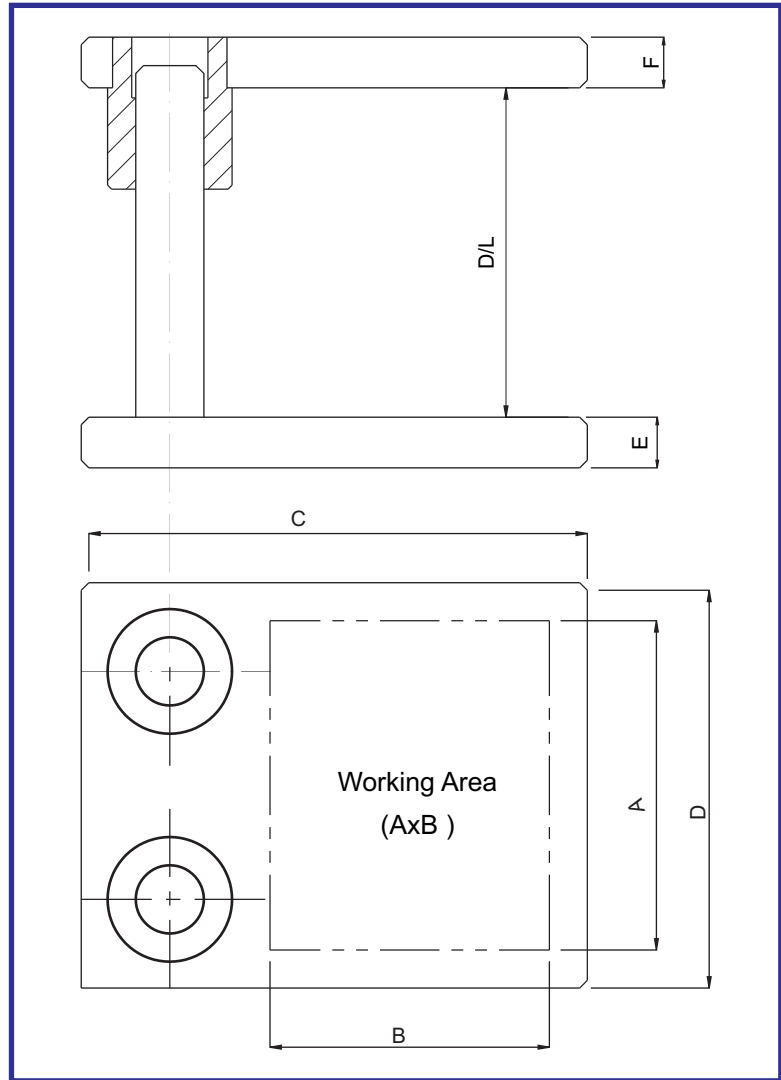
Bush :- En353

BallCage :- Brass / Aluminium

Hardness :

Pillar :- 58 - 60 HRC

Bush :- 58 - 60 HRC



Order Type :- Code - D/L

Example :- PMSR125 X 125 -125

CENTRE DIE SET PLAIN

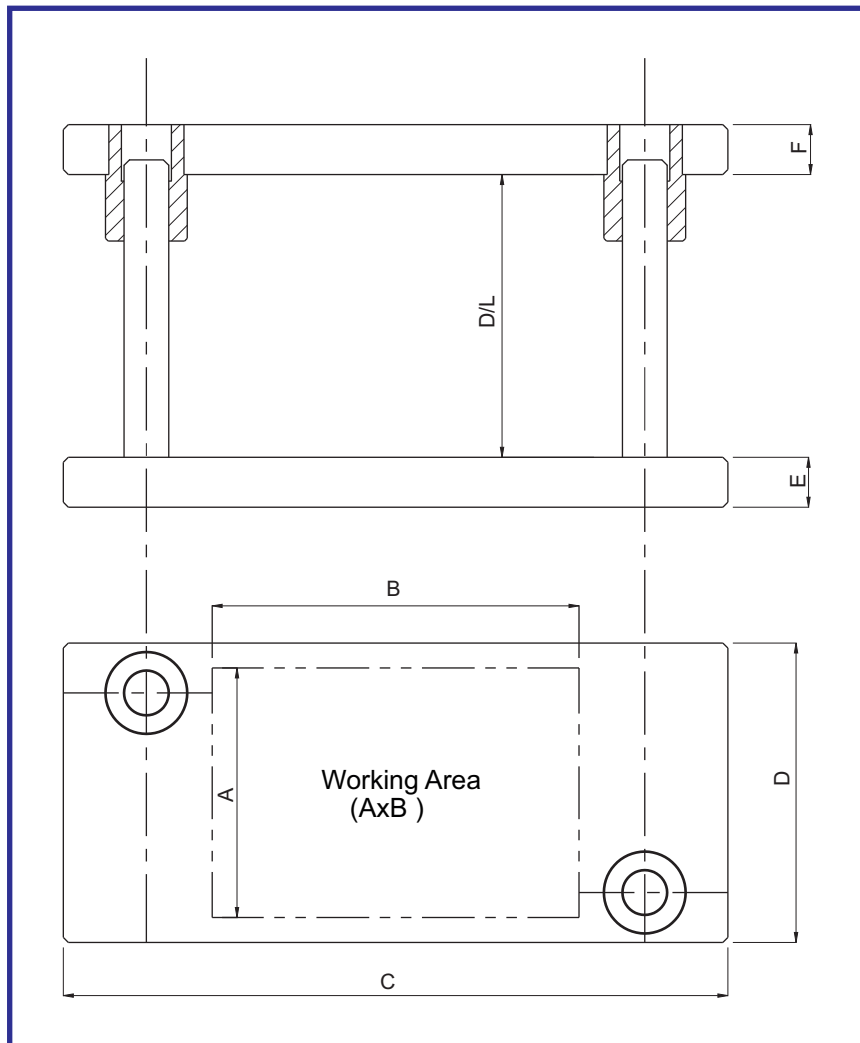
Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSR 75X75	75	75	130	120	25	25	64.6	20/21
PMSR 100X100	100	100	160	140	32	32	81.0	24/25
PMSR 125X125	125	125	190	165	32	32	106.0	24/25
PMSR 150X150	150	150	220	190	32	32	122.5	28/29
PMSR 175X175	175	175	240	215	32	32	142.5	34/35
PMSR 200X200	200	200	270	240	40	40	167.5	34/35

CENTRE DIE SET WITH BALL CAGE

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSRB 75X75	75	75	140	120	25	25	57	20/21
PMSRB 100X100	100	100	170	140	32	32	72	24/25
PMSRB 125X125	125	125	200	165	32	32	97	24/25
PMSRB 150X150	150	150	230	190	32	32	117	28/29
PMSRB 175X175	175	175	250	215	32	32	137	34/35
PMSRB 200X200	200	200	280	240	40	40	162	34/35

Note : Our standard day light is 100mm. Day light to any other specification can be provided.
Die Set as per Customer Drawing can also be manufactured.

▶ Diagonal Pillar Die Sets (PMSD / PMSDB)



Die Set Plain

Material :

Plate :- MS
Pillar :- En353
Bush :- En353

Hardness :

Pillar :- 55 - 58 HRC
Bush :- 55 - 58 HRC

Die Set With Ball Cage

Material :

Plate :- MS
Pillar :- En353
Bush :- En353
BallCage :- Brass / Aluminium

Hardness :

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



Order Type :- Code - D/L

Example :- PMSD100 X 100 -125

DIAGONAL PILLAR DIE SET PLAIN

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSD 100X100	100	100	225	110	32	32	164.0	24/25
PMSD 125X125	125	125	255	135	32	32	194.0	24/25
PMSD 150X150	150	150	290	160	32	32	222.5	28/29
PMSD 175X175	175	175	315	185	32	32	247.5	28/29
PMSD 200X200	200	200	350	210	40	40	277.5	34/35
PMSD 250X250	250	250	400	260	40	40	327.5	34/35
PMSD 300X300	300	300	450	310	40	40	372.5	40/42

DIAGONAL PILLAR DIE SET WITH BALLCAGE

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSDB 100X100	100	100	240	110	32	32	172	24/25
PMSDB 125X125	125	125	270	135	32	32	202	24/25
PMSDB 150X150	150	150	305	160	32	32	232	28/29
PMSDB 175X175	175	175	330	185	32	32	257	28/29
PMSDB 200X200	200	200	365	210	40	40	287	34/35
PMSDB 250X250	250	250	415	260	40	40	337	34/35

Note : Our standard day light is 100mm. Day light to any other specification can be provided.
Die Set as per Customer Drawing can also be manufactured.

► Four Pillar Die Sets (PMSF / PMSFB)

Die Set Plain

Material :

Plate :- MS
 Pillar :- En353
 Bush :- En353

Hardness :

Pillar :- 55 - 58 HRC
 Bush :- 55 - 58 HRC

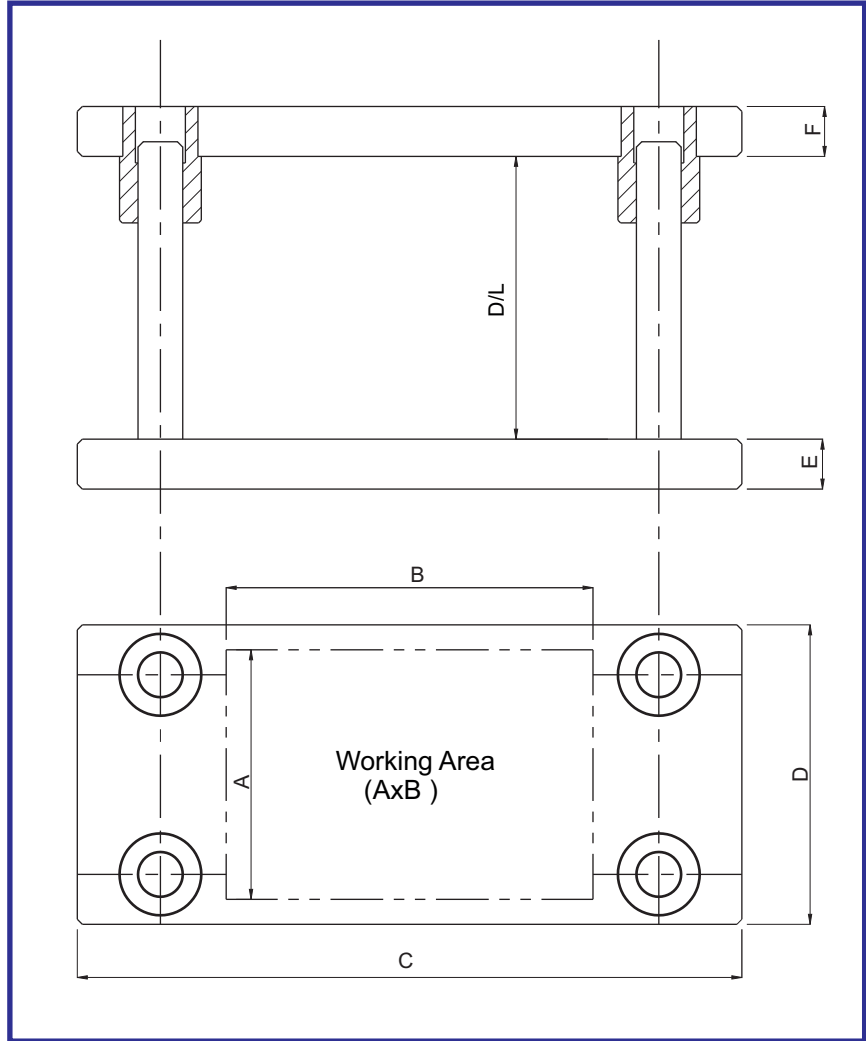
Die Set With Ball Cage

Material :

Plate :- MS
 Pillar :- En353
 Bush :- En353
 BallCage :- Brass / Aluminium

Hardness :

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



Order Type :- Code - D/L

Example :- PMSF200 X 200 -125

FOUR PILLAR DIE SET PLAIN

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSF 100X100	100	100	225	110	32	32	164.0	24/25
PMSF 125X125	125	125	255	135	32	32	194.0	24/25
PMSF 150X150	150	150	290	160	32	32	222.5	28/29
PMSF 175X175	175	175	315	185	32	32	247.5	28/29
PMSF 200X200	200	200	350	210	40	40	277.5	34/35
PMSF 250X250	250	250	400	260	40	40	327.5	34/35
PMSF 300X300	300	300	450	310	40	40	372.5	40/42

FOUR PILLAR DIE SET WITH BALLCAGE

Code	A	B	C	D	E	F	CD	PILLAR SIZES
PMSFB 100X100	100	100	240	110	32	32	172	24/25
PMSFB 125X125	125	125	270	135	32	32	202	24/25
PMSFB 150X150	150	150	305	160	32	32	232	28/29
PMSFB 175X175	175	175	330	185	32	32	257	28/29
PMSFB 200X200	200	200	365	210	40	40	287	34/35
PMSFB 250X250	250	250	415	260	40	40	337	34/35

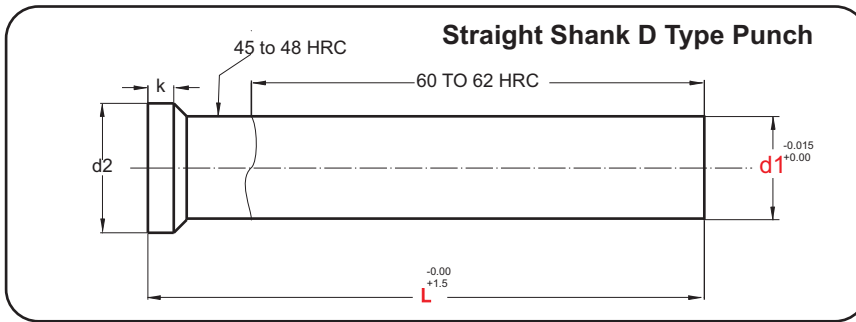
Note : Our standard day light is 100mm. Day light to any other specification can be provided.
 Die Set as per Customer Drawing can also be manufactured.

Punches & Die Buttons



► Piercing Punches Type D

Reference Standard - IS 4296 / DIN 9861 Type D



Material :- High Speed Steel (HSS) Grade M2 / HcHCr Grade D2 (for sizes above 12mm)
Hardness :- 60 - 62 HRC
Head Hardness :- 45 - 48 HRC

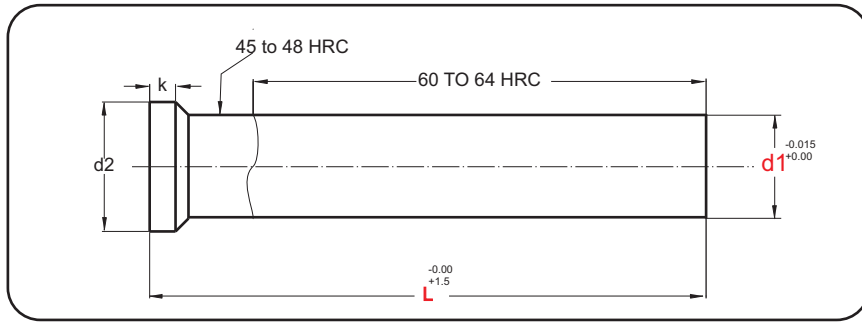


d1 (-0.015)	d2 (-0.1)	L +1.5					K + 0.2
Increment of 0.1		50	70	80	90	100	
0.5	0.9	*	*				0.2
0.55	1.0	*	*				
0.6	1.1	*	*				
0.7	1.3	*	*				
0.8	1.4	*	*				0.4
0.9	1.6	*	*				
1.0-1.1	1.8	*	*	*			0.5
1.2-1.3	2.0	*	*	*			
1.4-1.5	2.2	*	*	*			
1.6-1.7	2.5	*	*	*	*		
1.8-1.9	2.8	*	*	*	*		
2	3.0	*	*	*	*	*	
2.1-2.2	3.2		*	*	*	*	
2.3-2.5	3.5		*	*	*	*	
2.6-2.9	4.0		*	*	*	*	
3.0-3.4	4.5		*	*	*	*	
3.5-3.9	5.0		*	*	*	*	
4.0-4.4	5.5		*	*	*	*	
4.5-4.9	6.0		*	*	*	*	
5.0-5.4	6.5		*	*	*	*	
5.5-5.9	7.0		*	*	*	*	
6.0-6.4	8.0		*	*	*	*	
6.5-7.4	9.0		*	*	*	*	
7.5-8.4	10		*	*	*	*	
8.5-9.4	11		*	*	*	*	
9.5-10.4	12		*	*	*	*	
10.5-11.4	13		*	*	*	*	
11.5-12.4	14		*	*	*	*	
12.5-13.4	15		*	*	*	*	
13.5-14.4	16		*	*	*	*	
14.5-15.4	17		*	*	*	*	
15.5-16.4	18		*	*	*	*	
16.5-17.4	19		*	*	*	*	
17.5-18.4	20		*	*	*	*	
18.5-19.4	21		*	*	*	*	
19.5-20.0	22		*	*	*	*	
							1.5

Order Type :- Punch (Type) Dia (d1) X Length (L)

Example :- Punch (D) Dia 8 X 80

► Piercing Punches Heavy Duty (Type H)



Material :- High Speed Steel

(HSS) Grade M2 / HcHCr Grade

D2 (for sizes above 12mm)

Hardness :- 60 - 62 HRC

Head Hardness :- 45 - 48 HRC

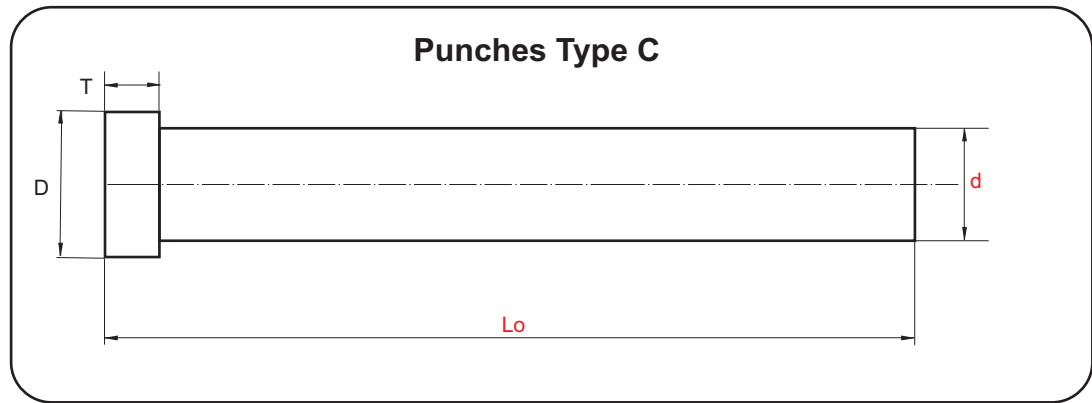
Note : This punches are to be used where sheet thickness are higher.

d1 (-0.015)	d2 (-0.1)	L +1.5					K + 0.2
Increment of 0.1		50	70	80	90	100	
4.0-4.4	5.5		*	*			2.5
4.5-4.9	6.0		*	*			
5.0-5.4	6.5		*	*			
5.5-5.9	7.0		*	*			4
6.0-6.4	8.0		*	*			
6.5-7.4	9.0		*	*			
7.5-8.4	10		*	*	*	*	5
8.5-9.4	11		*	*	*	*	
9.5-10.4	12		*	*	*	*	
10.5-11.4	13		*	*	*	*	
11.5-12.4	14		*	*	*	*	
12.5-13.4	15		*	*	*	*	
13.5-14.4	16		*	*	*	*	
14.5-15.4	17		*	*	*	*	
15.5-16.4	18		*	*	*	*	
16.5-17.4	19		*	*	*	*	
17.5-18.4	20		*	*	*	*	
18.5-19.4	21		*	*	*	*	
19.5-20.0	22		*	*	*	*	

Order Type :- Punch (Type) Dia (d1) X Length (L)

Example :- Punch (H) Dia 8 X 80

► Piercing Punches Type C



Material :- High Speed Steel (HSS) Grade M2 / HcHCr Grade D2 (for sizes above 12mm)
Hardness :- 60 - 62 HRC

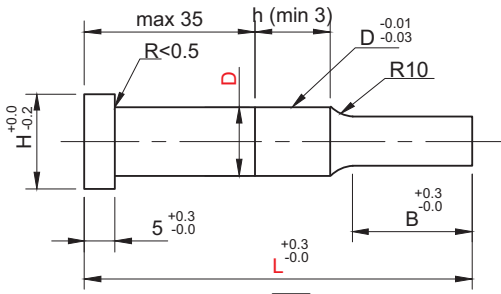
d (-0.01)	D (-0.1)	Lo (+ 2.0)					T
		50	60	70	80	100	
3-3.9	5	*	*	*	*	*	5
4-4.9	7	*	*	*	*	*	5
5-5.9	8		*	*	*	*	5
6-6.9	9		*	*	*	*	5
8-8.9	11		*	*	*	*	5
10-11.9	13		*	*	*	*	5
12-12.9	15		*	*	*	*	5
13	16		*	*	*	*	5
16	19			*	*	*	5
20	23			*	*	*	5
25	28			*	*	*	5

Heavy Load Punches

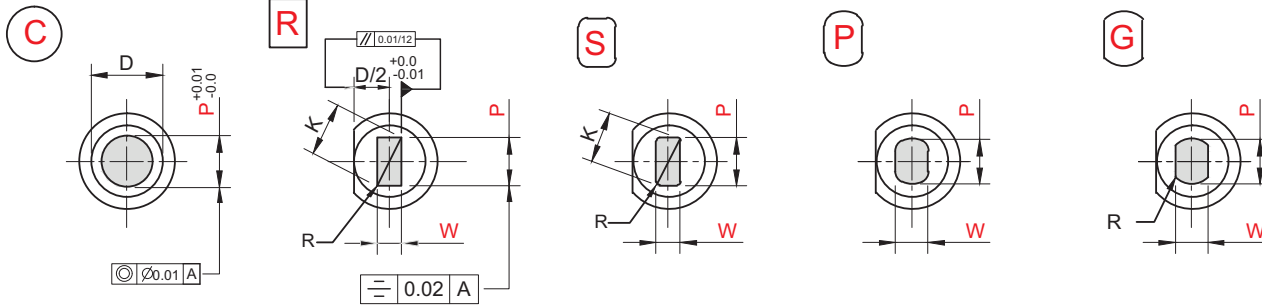
d (-0.01)	D (-0.1)	Lo (+ 2.0)					T
		60	70	80	100	125	
5	8	*	*	*	*		8
6	9	*	*	*	*		8
8	11	*	*	*	*	*	8
10	13	*	*	*	*	*	8
12	15	*	*	*	*	*	8
13	16	*	*	*	*	*	8
16	19		*	*	*	*	8
20	23		*	*	*	*	8
25	28		*	*	*	*	8

Order Type :- Punch (type) Dia d X Length (Lo) (Normal / Heavy)
Example :- Punch (C) 8 X 70 (Heavy)

Piercing Punch (PCC)



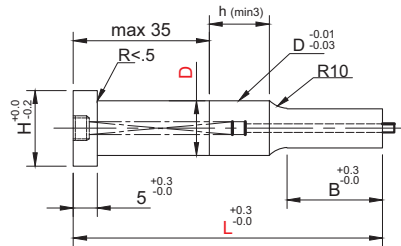
Material :- HCHCr (D)
High Speed Steel (H)
Powder Metallurgy (PM)
Hardness :- 60-62HRC



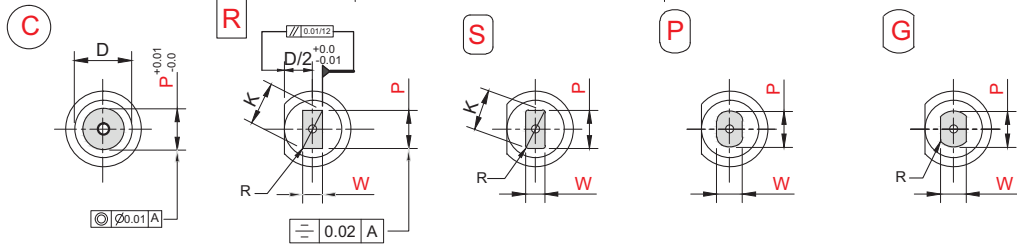
Type	Tip Shape	Tip Length	D	L								0.01 mm increments				B	H
												C		R S P G				R
				min. P	max	P. K max	P. W min	R									
PCC	C	S	3	40	50	60	70	80	90	100	1.00	~2.99			0.15 < R < W/2	8	5
			4	40	50	60	70	80	90	100	1.00	~3.99	3.97	1		7	
			5	40	50	60	70	80	90	100	2.00	~4.99	4.97	1.2		8	
			6	40	50	60	70	80	90	100	2.00	~5.99	5.97	1.5		9	
			8	40	50	60	70	80	90	100	3.00	~7.99	7.97	2		11	
			10	40	50	60	70	80	90	100	3.00	~9.99	9.97	2.5		13	
			12	70	80	90	100	5.00	~11.99	-		15					
			13	40	50	60	70	80	90	100	6.00	~12.99	12.97	3		16	
			16	40	50	60	70	80	90	100	10.00	~15.99	15.97	4		19	
		20	40	50	60	70	80	90	100	13.00	~19.99	19.97	5	23			
		25	40	50	60	70	80	90	100	18.00	~24.99	24.97	6	28			
		R S P G	L	3	50	60	70	80	90	100	1.00	~2.99				13	5
				4	50	60	70	80	90	100	1.00	~3.99	3.97	2		7	
				5	50	60	70	80	90	100	2.00	~4.99	4.97	2		8	
				6	50	60	70	80	90	100	2.00	~5.99	5.97	2		9	
				8	50	60	70	80	90	100	3.00	~7.99	7.97	2.5		11	
				10	50	60	70	80	90	100	3.00	~9.99	9.97	2.5		13	
				13	50	60	70	80	90	100	6.00	~12.99	12.97	3		16	
	16			60	70	80	90	100	10.00	~15.99	15.97	4	19				
	20			60	70	80	90	100	13.00	~19.99	19.97	5	23				
	25		60	70	80	90	100	18.00	~24.99	24.97	6	28					
	X		3	50	60	70	80	90	100	1.20	~3.99			19	5		
			4	50	60	70	80	90	100	1.20	~2.99	3.97	2	7			
			5	60	70	80	90	100	2.00	~4.99	4.97	3.5	8				
			6	60	70	80	90	100	2.00	~5.99	5.97	3.5	9				
			8	60	70	80	90	100	3.00	~7.99	7.97	5	11				
			10	60	70	80	90	100	3.00	~9.99	9.97	5	13				
			13	60	70	80	90	100	6.00	~12.99	12.97	5	16				
			16	70	80	90	100	10.00	~15.99			19					
		20	70	80	90	100	13.00	~19.99			23						
	25	70	80	90	100	18.00	~24.99			28							

Order Type :- Code (Material) X Tip Shape X Tip Length X D X L X P.W
Example :- PCC (D) X P X L X 20 X 100 X 10 X 5

► Ejector Punch (PJCL)



Material :- HCHCr (D)
High Speed Steel (H)
Powder Metallurgy (PM)
Hardness :- 60-62HRC



Type	Tip Shape	Tip Length	D	L	0.01 mm increments				B	H	
					C		R S P G				R
					min. P	max.	P. K max.	P. W min			R
PJCL	C R S P G	S	4	40 50 60 70 80	1.00	-3.99	3.97	1	8	7	
			5	40 50 60 70 80	2.00	-4.99	4.97	2		8	
			6	40 50 60 70 80	2.00	-5.99	5.97	2		9	
			8	40 50 60 70 80 90 100	3.00	-7.99	7.97	3	13	11	
			10	40 50 60 70 80 90 100	3.00	-9.99	9.97	3		13	
			13	40 50 60 70 80 90 100	6.00	-12.99	12.97	6		16	
			16	40 50 60 70 80 90 100	10.00	-15.99	15.97	6	19	19	
		20	40 50 60 70 80 90 100	13.00	-19.99	19.97	6	23			
		25	40 50 60 70 80 90 100	18.00	-24.99	24.97	6	28			
		L	4	50 60 70 80	1.00	-3.99	3.97	2	13	7	
			5	50 60 70 80	2.00	-4.99	4.97	2		8	
			6	50 60 70 80	2.00	-5.99	5.97	2		9	
			8	50 60 70 80 90 100	3.00	-7.99	7.97	3	19	11	
			10	50 60 70 80 90 100	3.00	-9.99	9.97	3		13	
	13		50 60 70 80 90 100	6.00	-12.99	12.97	6	16			
	16		60 70 80 90 100	10.00	-15.99	15.97	6	25	19		
	20	60 70 80 90 100	13.00	-19.99	19.97	6	23				
	25	60 70 80 90 100	18.00	-24.99	24.97	6	28				
	X	5	60 70 80	2.00	-4.99	4.97	3.5	25	8		
		6	60 70 80	2.00	-5.99	5.97	3.5		9		
		8	70 80 90 100	3.00	-7.99	7.97	5	30	11		
		10	70 80 90 100	3.00	-9.99	9.97	6		13		
		13	70 80 90 100	6.00	-12.99	12.97	6		16		
		16	80 90 100	10.00	-15.99	-	-	40	19		
		20	80 90 100	13.00	-19.99				23		
		25	80 90 100	18.00	-24.99				28		

Order Type :- Code (Material) X Tip Shape X Tip Length X D X L X P.W
Example :- PJCL (D) X C X S X 20 X 100 X 6

▶ Coated Punch

Coating on the Punches & Dies is carried by Physical Vapor Deposition (PVD) process. The thin Layer of hard carbide is form on the surface (Ex:-TiN Layer). Which have a very high wear resistance & also assist for reducing the coefficient of friction. This makes the difference into life of the material. Following Properties are achieved –

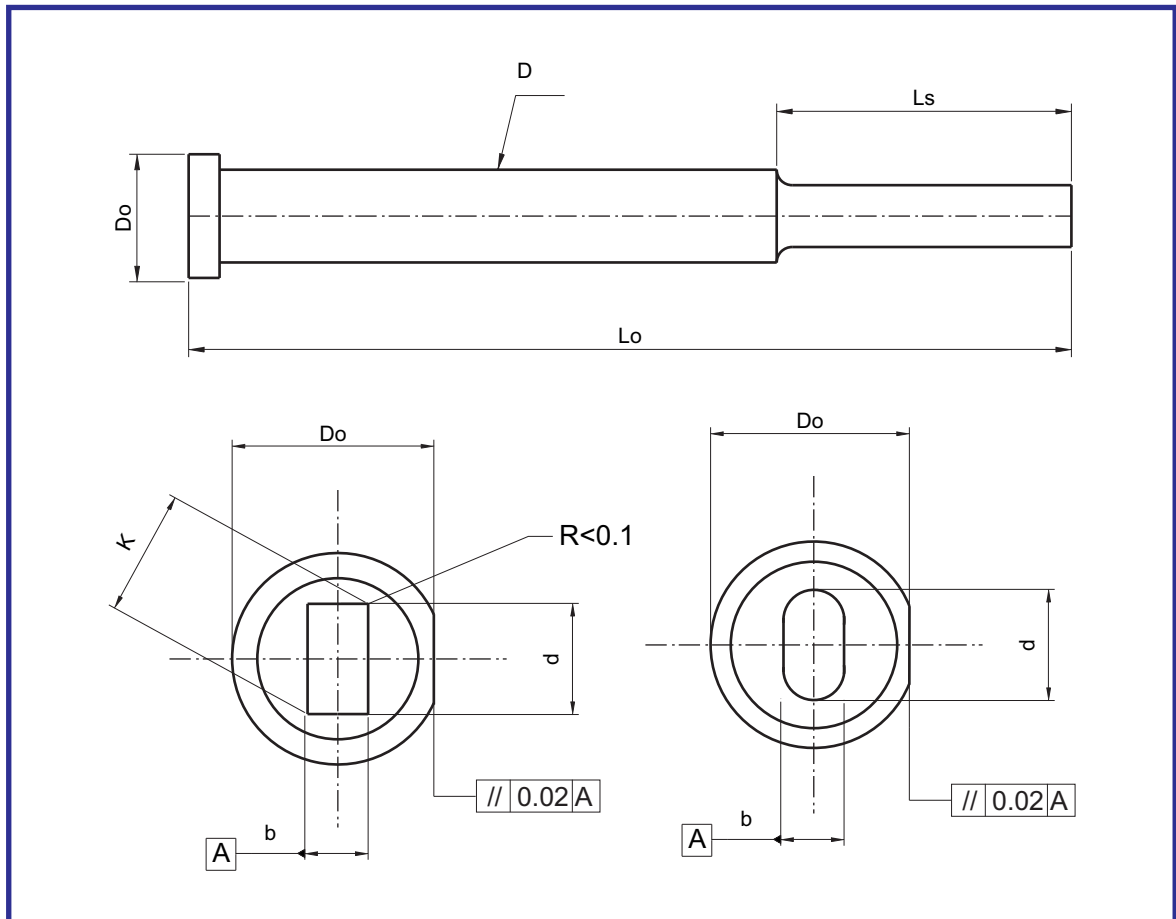
- High Surface Hardness.
- Wear Resistance
- Toughness
- Low Coefficient of friction
- Galling resistance.
- Corrosion resistance.

Due to Incurring of mention properties.
We can achieve the following advantages:-

- Longer Tool Life
- Improved Part Quality
- Reduced Lubrication Usage
- Reduced Downtime
- Reduced Tool maintenance
- Reduced Cold Welding.

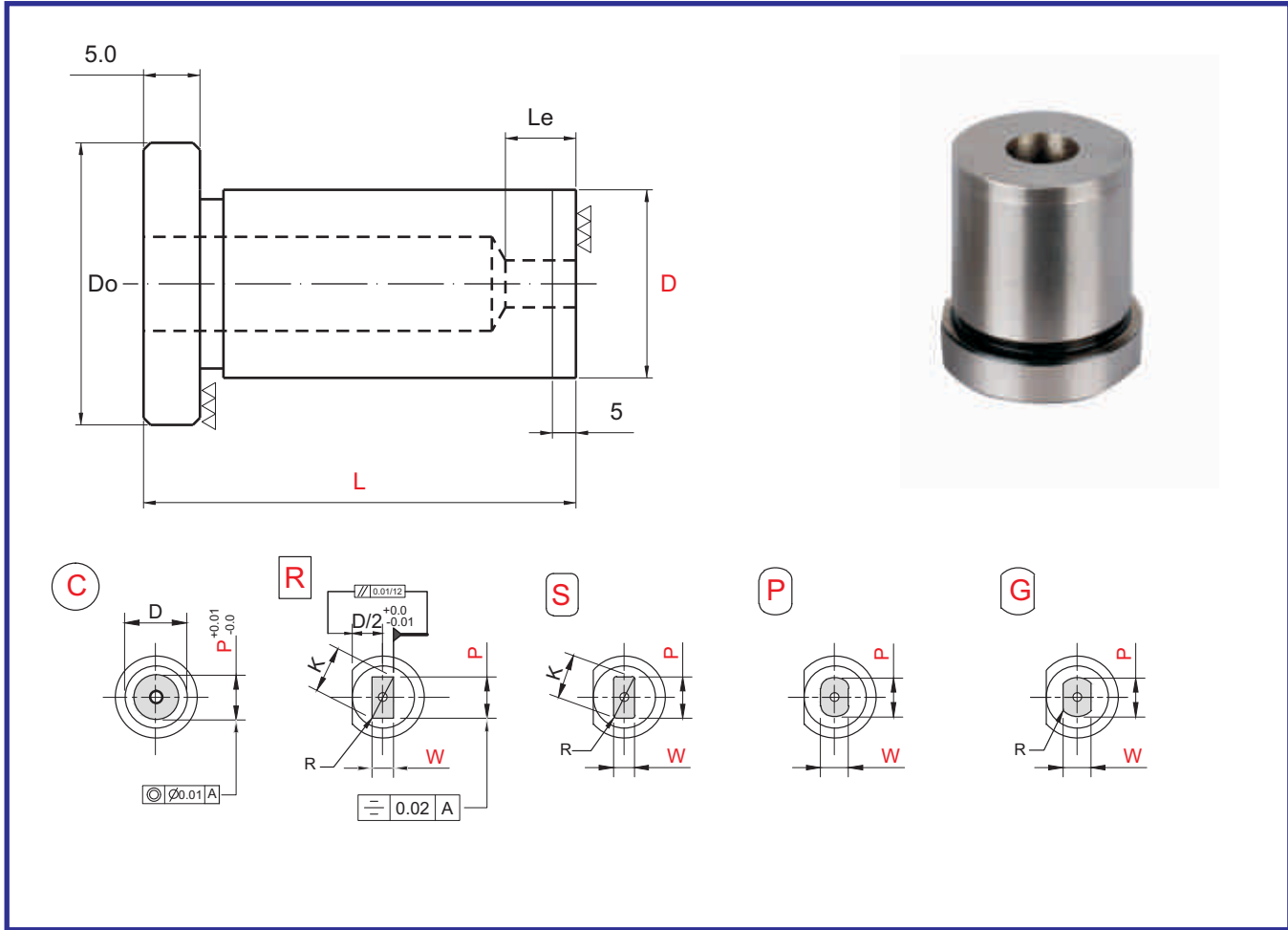


▶ Customized Punch



Note : Profile Punches as per drawing can be manufactured

► Die Button Table Head Type (PDBH)

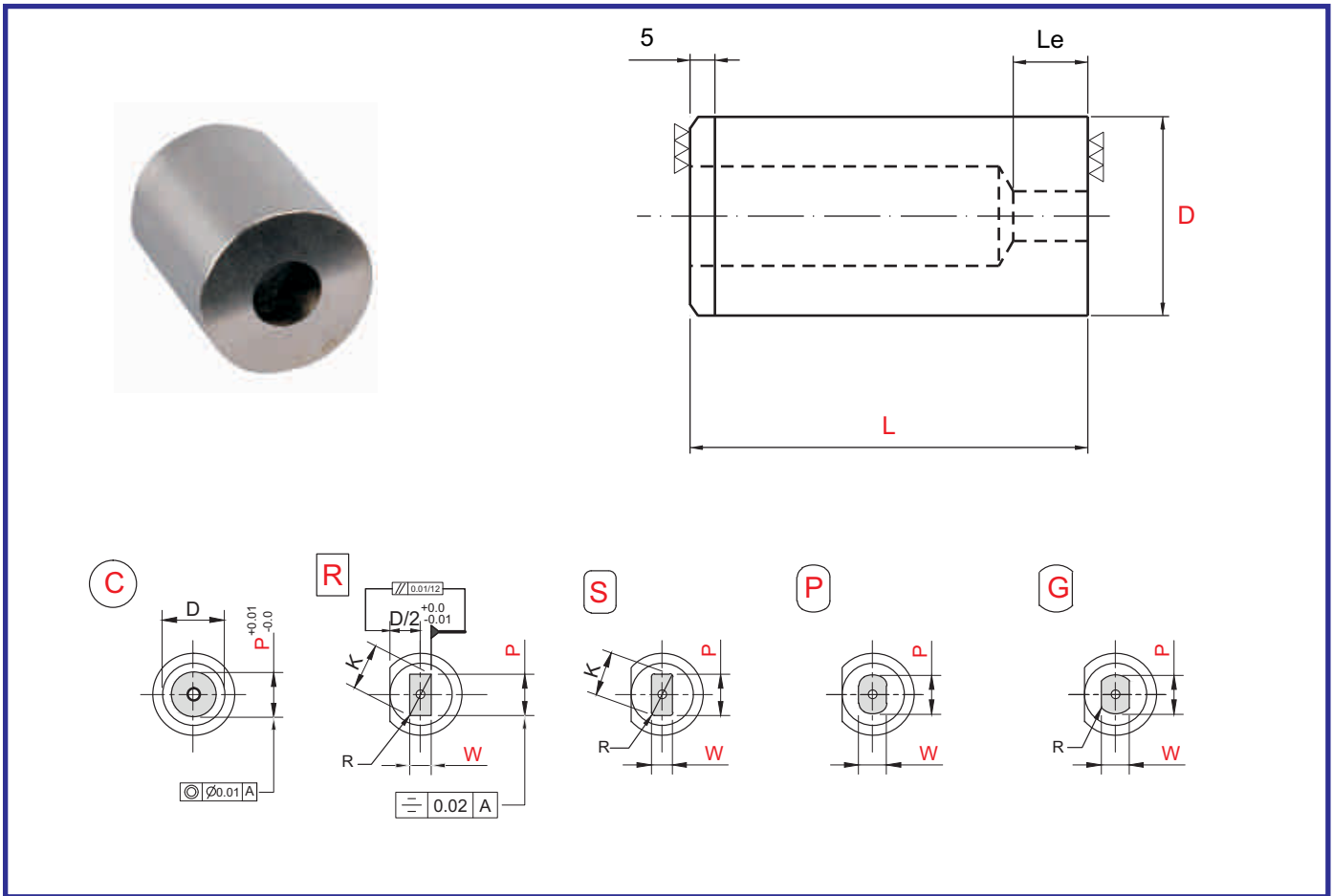


Material :- High Speed Steel (Grade M2)/ HcHcr (Grade D2)
Hardness :- 60-62 Hrc

Size	Code	Type	D	d	d - K	d - b	L					Do	Le	
Tolerance			m5	+ 0.02(max)	max	min	+0.5(max)						-0.2 (max)	
	PDBH	C,R,S,P,G	6	1.50 - 3.00	3.00	2.00	16	20	25	30	35	40	9	3
			8	1.50 - 4.00	4.00	2.00	16	20	25	30	35	40	11	4
			10	2.00 - 6.00	6.00	2.00	16	20	25	30	35	40	13	6
			13	3.00 - 8.00	8.00	2.00	16	20	25	30	35	40	16	8
			16	5.00 - 10.00	10.00	3.00	16	20	25	30	35	40	19	8
			20	7.00 - 12.00	12.00	3.00	16	20	25	30	35	40	23	8
			22	8.00 - 14.00	14.00	3.00	16	20	25	30	35	40	25	8
			25	10.00 - 16.00	16.00	3.00	16	20	25	30	35	40	28	8
			32	15.00 - 20.00	20.00	4.00	16	20	25	30	35	40	35	8
			38	19.00 - 26.00	26.00	5.00	16	20	25	30	35	40	41	8
			45	25.00 - 35.00	35.00	6.00		20	25	30	35	40	48	8
			50	33.00 - 40.00	40.00	7.00		20	25	30	35	40	53	8
	56	38.00 - 45.00	45.00	8.00		20	25	30	35	40	59	8		

Order Type :- Code X Type X Dia D - d - (K/b) X Length L
Example :- PDBH X R X 16 - 8 - (8.94) X 35

▶ Die Button Table Headless Type (PDB)



Material :- High Speed Steel (Grade M2)/ HcHcr (Grade D2)

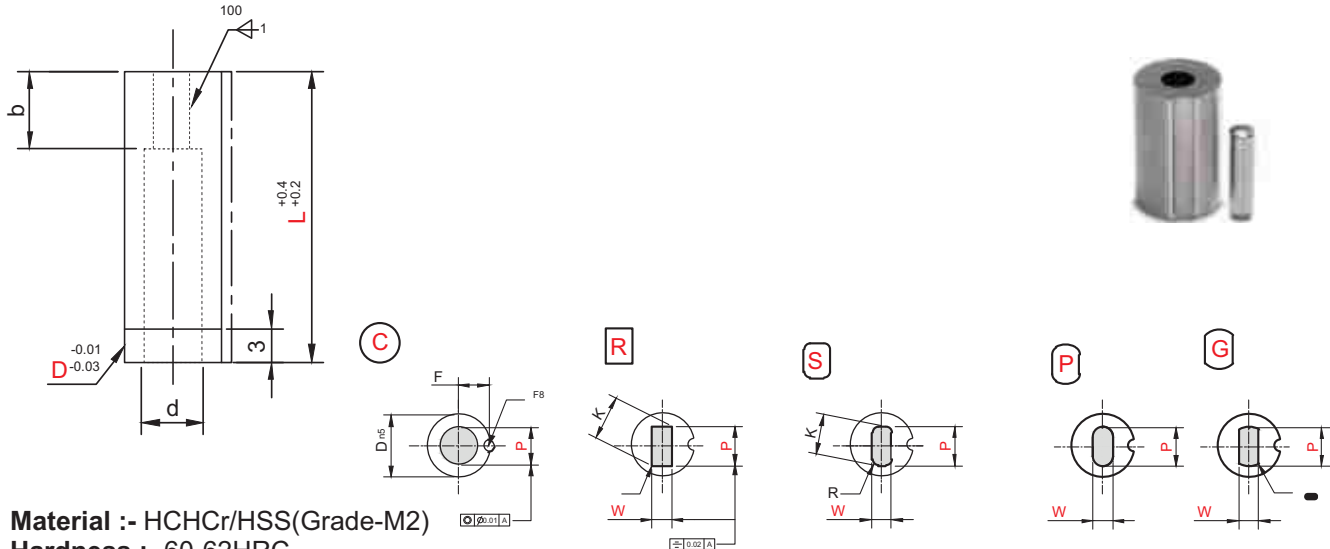
Hardness :- 60-62 Hrc

Size	Code	Type	D	d	d - K	d - b	L					Le	
Tolerance			m5	+ 0.02(max)	max	min	+0.5(max)						
	PDB	C,R,P,S,G	6	1.50 - 3.00	3.00	2.00	16	20	25	30	35		3
			8	1.50 - 4.00	4.00	2.00	16	20	25	30	35	40	4
			10	2.00 - 6.00	6.00	2.00	16	20	25	30	35	40	6
			13	3.00 - 8.00	8.00	2.00	16	20	25	30	35	40	8
			16	5.00 - 10.00	10.00	3.00	16	20	25	30	35	40	8
			20	7.00 - 12.00	12.00	3.00	16	20	25	30	35	40	8
			22	8.00 - 14.00	14.00	3.00	16	20	25	30	35	40	8
			25	10.00 - 16.00	16.00	3.00	16	20	25	30	35	40	8
			32	15.00 - 20.00	20.00	4.00	16	20	25	30	35	40	8
			38	19.00 - 26.00	26.00	5.00	16	20	25	30	35	40	8
			45	25.00 - 35.00	35.00	6.00		20	25	30	35	40	8
			50	33.00 - 40.00	40.00	7.00		20	25	30	35	40	8
	56	38.00 - 45.00	45.00	8.00		20	25	30	35	40	8		

Order Type :- Code X Type X Dia D - d - (K/b) X Length L

Example :- PDB X R X 16 - 8 - (8.94) X 35

▶ Die Button Dowel Hole (PDBD)

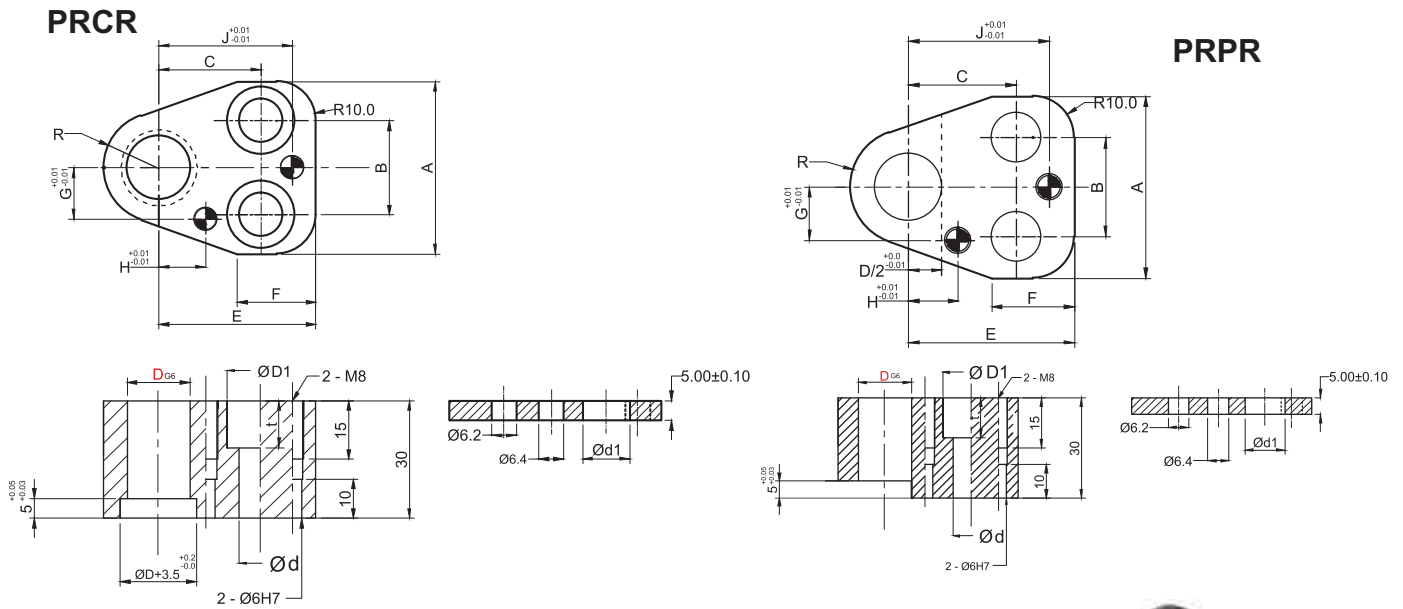


Material :- HCHCr/HSS(Grade-M2)
Hardness :- 60-62HRC

Dm5	Type	D	L	0.01 mm increments				MT (workpiece material thickness)	C (clearance)	b	d	f	
				C	R S P G		R						
				min. P max.	P. K max	P. W min	R						
10	(+0.016) (+0.010)	10	16 20 22 25 28 30 32 35	2.00 -6.00	6	2	0.15 < R < W/2	MT > 0.5	C > 0.06	8	6	6.4	6
13	(+0.020) (+0.012)	13	16 20 22 25 28 30 32 35	3.00 -8.00	8	2					8.4	7.5	
16		16 20 22 25 28 30 32 35	5.00 ~ 10.00	10	2	10.6					8		
20	(+0.024) (+0.015)	20	16 20 22 25 28 30 32 35	7.00 ~ 12.00	12	3					12.6	10	
22		22	16 20 22 25 28 30 32 35	8.00 ~ 14.00	14	3					14.6	11	
25		25	16 20 22 25 28 30 32 35	10.00 ~ 16.00	16	3					16.6	12.5	

Order Type :- Code X Type X D X L X P.W
Example :- PDBD X S X 20 X 35 X 3

Punch Retainer (PRCR / PRPR)

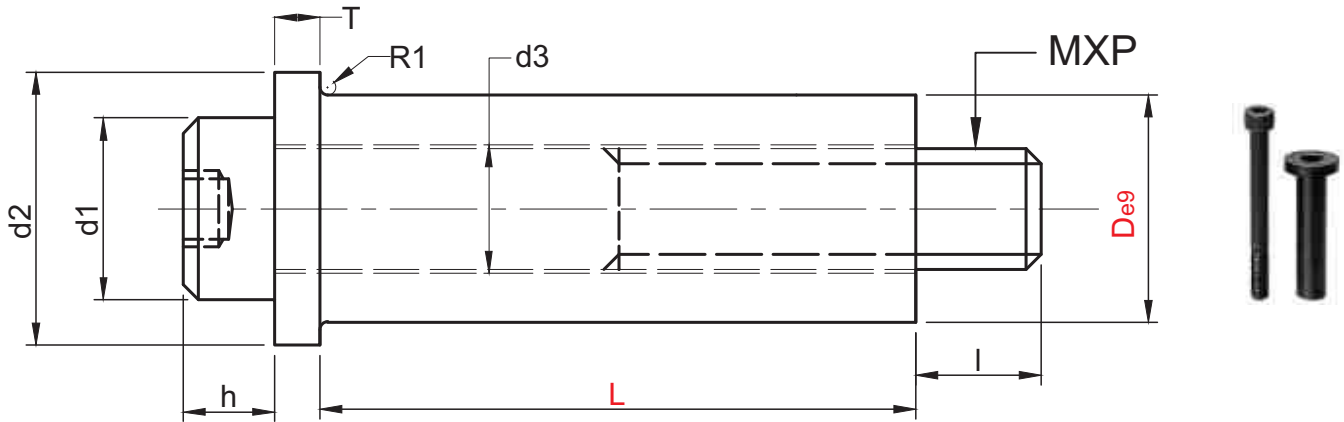


Material:- 1)Punch Retainer-En-8, 2)Back Up Plate-WPS
Hardness:- 1)Punch Retainer- NA, 2)Back Up Plate- 56-60HRC

Type	D	Dg6	A	B	C	E	F	G	H	J	R	D1	d	t	d1
PRCR PRPR	10	(+0.014) (+0.005)	37	20	21	35	20	10	9	29	9.5	14	9	10	10
	13	(±0.017) (±0.006)	43	26	23	38		11	32	12					
	16		44	24	26	40		12	34	14					
	20		48	28	27	42		16	14	36	17	17	11	12	12
	25	(+0.020) (+0.007)	50	30	30	46		18	17	39	19.5				

Order Type :- Code x D
Example :- PRCR X 20

► Spool Retainer (PSRS)



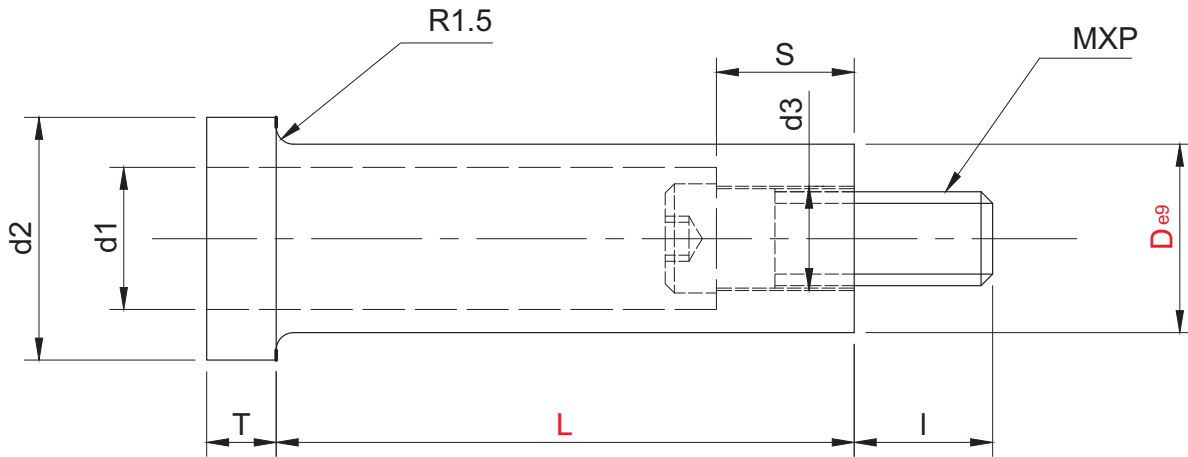
Material :- En-8
Hardness :- 38-42HRC
Surface Treatment :- Blackodised

De9		d1	d2	d3	MxP	h	T	l
10	(-0.025) (-0.061)	10	15	6.3	6x1.0	6	5	10
13	(-0.032) (-0.075)	13	18	8.4	8x1.25	8	5	15
16		16	24	10.6	10x1.5	10	8	22
20	(-0.040) (-0.092)	18	28	12.6	12x1.75	12	10	20
25		24	36	16.8	16x2.0	16	13	27
32	(-0.050) (-0.112)	30	45	20.8	20x2.5	20	16	34

Type	D	L
PSRS	10	10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100
	13	15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 120
	16	20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180
	20	30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180
	25	40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 200
	32	60, 70, 80, 90, 100, 110, 120, 130, 140, 150, 160, 170, 180, 200

Order Type :- Code X D X L
Example :- PSRS X 16 X 50

► Spool Retainer (PSRZ)



Material :- En-8
Hardness :- 38-42HRC
Surface Treatment :- Blackodised



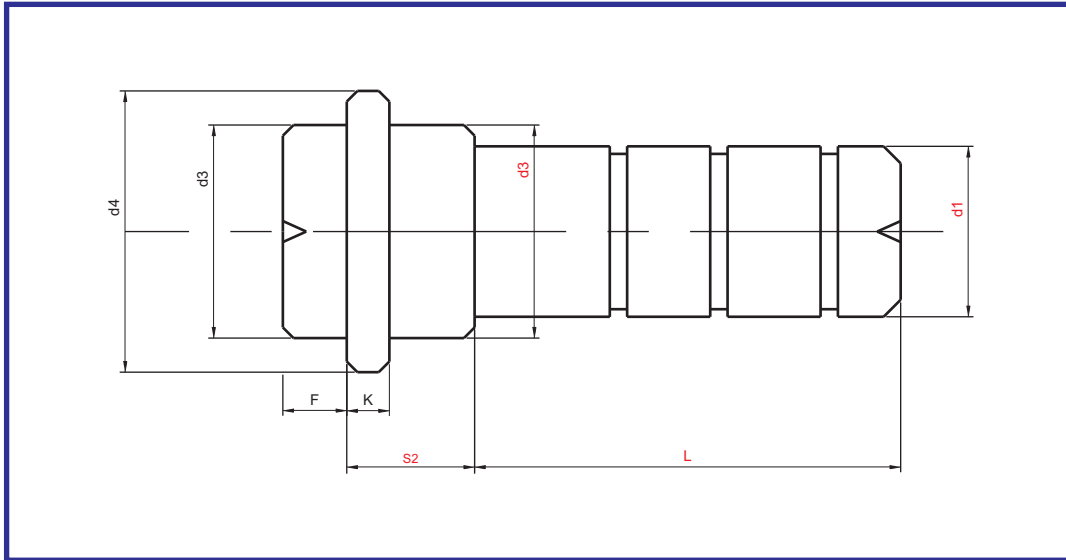
Type	De9	d1	d2	d3	MXP	Provided bolt	T	S	I	D	L	
PSRZ	20	(-0.040) (-0.092)	15	26	9	8X1.25	CB 8 - 35	6	20	15	20	40 50 60 70 80 90
	24		18	33	11	10X1.5	CB 10 - 45	6	25	20	24	50 60 70 80 90 100
	28	20	37	13	12X1.75	CB 12 - 50	8	30	20	28	50 60 70 80 90 100 110	
	35	(-0.050) (-0.112)	26	47	17	16X2.0	CB 16 - 60	8	35	25	35	60 70 80 90 100 110 120 130
	44		32	57	21	20X2.5	CB 20 - 70	8	40	30	44	70 80 90 100 110 120 130

Order Type :- Code X D X L
Example :- PSRZ X 20 X 50

Mould Accessories



▶ Guide Pin (PGPA)

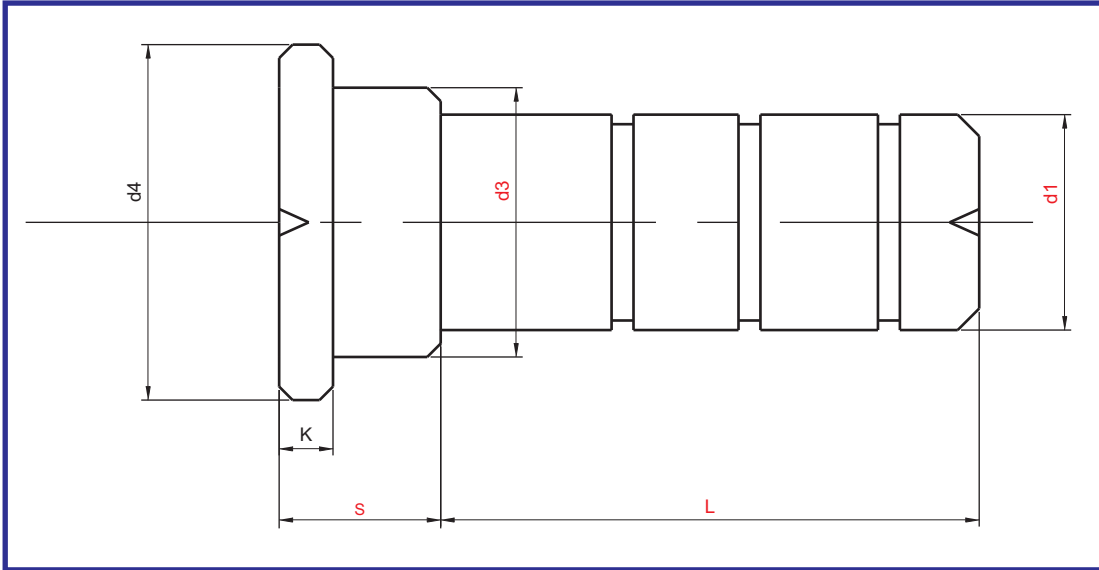


Material: 20 Mn Cr5 / En 353
Hardness: 55 to 58 HRC

Order Type: PGPA d1-d3-S2-L
Example : PGPA 9-14-36-45

d1	F	K	d3	d4	S2	L1	L									
9	3	3	14	16	12	4	25	45	65							
					17		20	30	50	70						
					22		25	35	55	75	95					
					27		20	30	50	70	90					
					36		25	45	65	85						
					46		30	45	70							
					56		35	60	70							
14	9	6	20	25	17	7	35	55	75	95						
					22		30	50	70	90	110	125	150			
					27		30	45	65	85	105	125	145	165		
					36		35	55	75	95	125	155				
					46		35	45	65	85	105	125	145			
					56		35	55	75	95	135					
					66		55	65	95	125						
					76		55	95								
					86		55	95								
96	55	95														
18	9	6	26	31	116	7	75									
					17		35	55	75	120						
					22		35	45	65	85	115					
					27		35	45	65	85	105	125	165	225	245	
					36		35	55	75	95	115	135	165	225	255	
					46		35	45	65	85	105	135	165	245		
					56		35	55	75	95	155					
					66		35	55	75	95	145					
					76		55	75	95	135						
					86		55	75	95	125						
96	55	95														

▶ Guide Pin (PGPB)

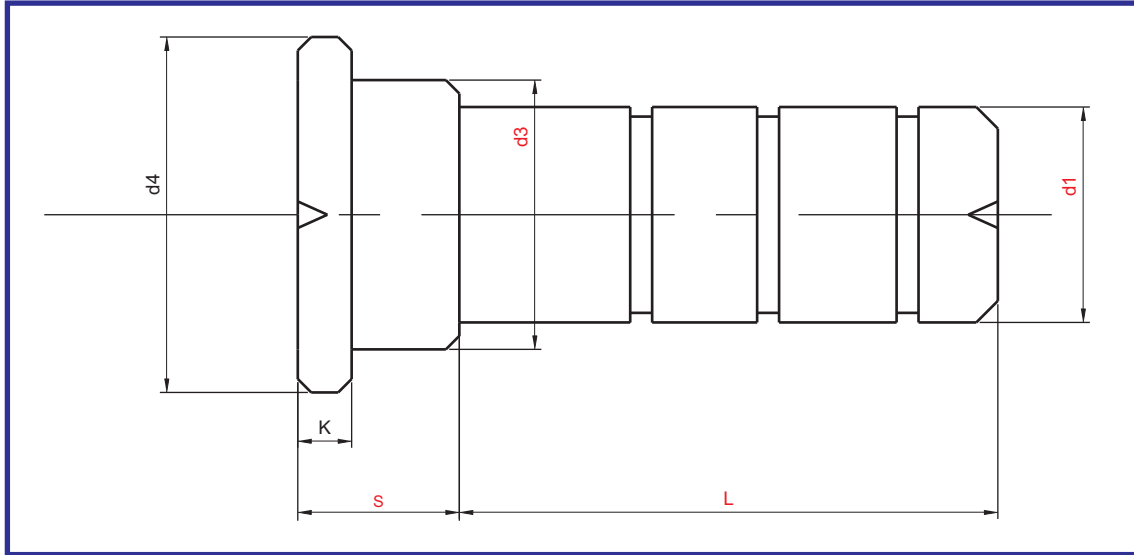


Material: 20 Mn Cr5 / En 353
Hardness: 55 to 58 HRC

Order Type: PGPB d1-d3-S2-L
Example : PGPB 9-14-36-45

d1	K	d3	d4	S2	L1	L																		
9	3	14	16	17	4	20	30	55																
				22		25																		
				27		30																		
				36		25																		
				46		30																		
				46		45																		
14	6	20	25	22	7	20	35	40	45	50	55	65	70	90										
				27		20	35	40	45	55	65	85	105											
				36		20	35	40	45	55	65	75	95											
				46		20	35	45	65	85	105													
				56		20	35	55	75	95														
				66		55	65	95																
				76		55	95																	
				86		55	95																	
18	6	26	31	22	7	20	35	40	45	50	55	60	65	70	80	85	115							
				27		20	35	40	45	50	55	60	65	70	80	85	105							
				36		20	35	40	45	50	55	60	65	70	75	80	95					115	125	
				46		20	45	65	85	105	135	165												
				56		20	35	55	75	95														
				66		55	75	95																
				76		55	75	95																
				86		55	75	95																
				96		55	95																	
				116		55	95																	
22	6	30	35	27	7	25	45	50	60	65	70	80	85	105	125	165								
				36		25	45	50	55	60	70	75	80	95	115	135								
				46		25	45	50	60	65	70	80	85	105	125	165								
				56		25	45	55	75	95	115	165												
				66		55	75	95	115															

► Guide Pin (PGPB)

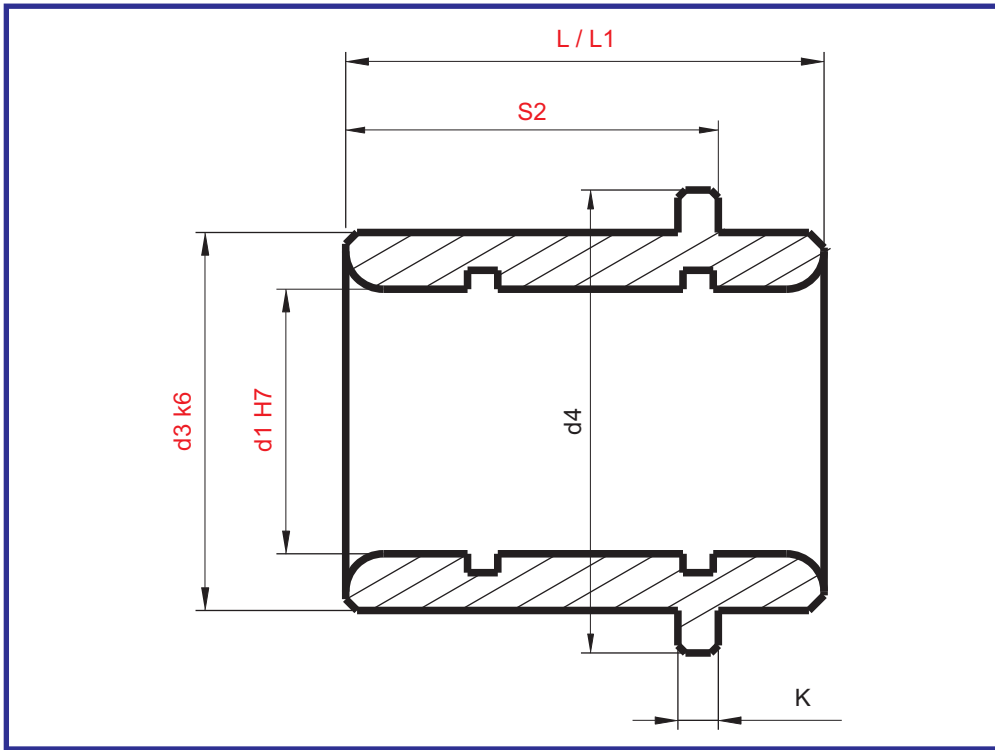


Material: 20 Mn Cr5 / En 353
Hardness: 55 to 58 HRC

Order Type: PGPB d1-d3-S2-L
Example : PGPB 9-14-36-45

d1	K	d3	d4	S2	L1	L														
				76		25	45	55	75	95										
				86		55	75	95												
				96		55	75	95												
				116		75	115	155												
				136		135														
30	6	42	47	27	7	45	65	105	165											
				36		55	75	95	115	155										
				46		45	65	85	105	125	165									
				56		55	75	95	115	135	175									
				66		55	75	95	115	135	175									
				76		55	75	95	115	155										
				86		55	75	95	115	155										
				96		55	75	95	115	155										
				116		75	115	155												
				136		95	115	155												
				156		115	136													
				196		155	195													
40	10	54	60	56	7	75	115	155	195											
				66		75	135													
				76		75	115	175												
				86		75	135													
				96		75	115	155												
				116		95	135	195												
				136		95	135	215												
				156		115	155	215												
				196		155	195	235												
50	10	66	72	96	10	115														
				116		135														
				136		135														
				156		155														
				196		175														
60	20	80	86	96	10	115														
				116		135														
				136		135														
				156		155														
				196		175														
				246		195														

► Guide Bush (PGBA)



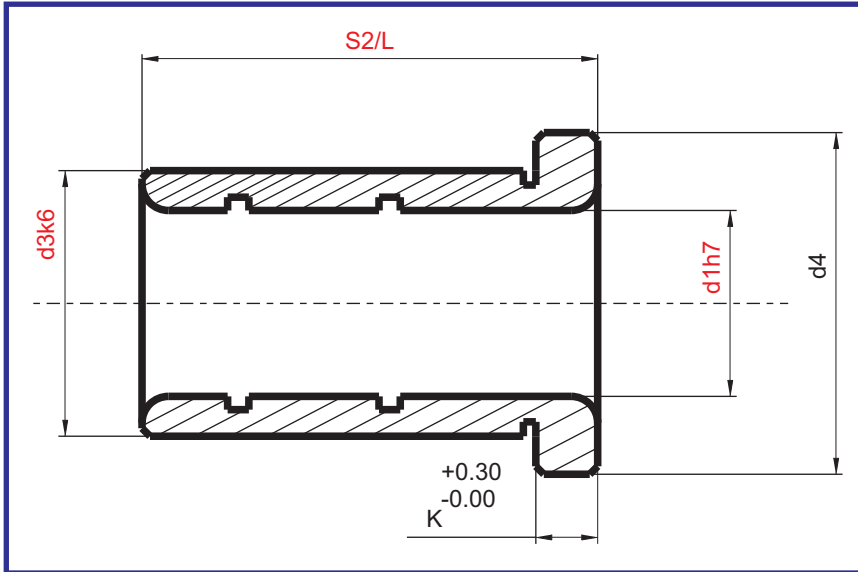
Material: 20 Mn Cr5 / En 353
Hardness: 55 to 58 HRC

Order Type: PGBA d1-d3-S2-L
Example : PGBA 22-30-46-75

L	L1	f	K	d3	d4	S2	d1
15		3	3	14	16	12	9
20						17	
25						22	
30						27	
39						36	
46	49					46	
	59	56					
	69	66					
26		9	6	20	25	17	14
31						22	
36						27	
45						36	
55						46	
56	65					56	
	75	66					
	85	76					
	95	86					
	105	96					
	125	116					
26		9	6	26	31	17	18
31						22	
36						27	
45						36	
55						46	
65						56	
75		66					
76	85	9	6	26	31	76	18
	95					86	
	105					96	
	125					116	
	145					136	

L	L1	f	K	d3	d4	S2	d1
26		9	6	30	35	17	22
31						22	
36						27	
45						36	
55						46	
65						56	
75						66	
85						76	
95						86	
105						96	
96	125	9	6	42	47	116	30
	146					136	
	165					156	
36						27	
45						36	
55						46	
65						56	
75						66	
85						76	
95						86	
105		96					
125		116					
116	146	12	10	54	60	136	40
	165					156	
	205					196	
58						46	
68						56	
78						66	
88						76	
98						86	
108						96	
128						116	
136	148	9	6	26	31	136	18
	168					156	
	208					196	
	258					246	

► Guide Bush (PGBB)



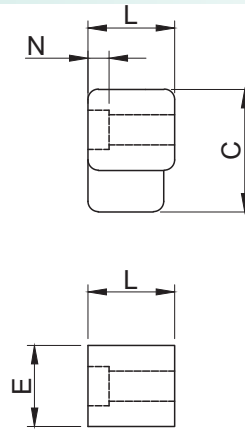
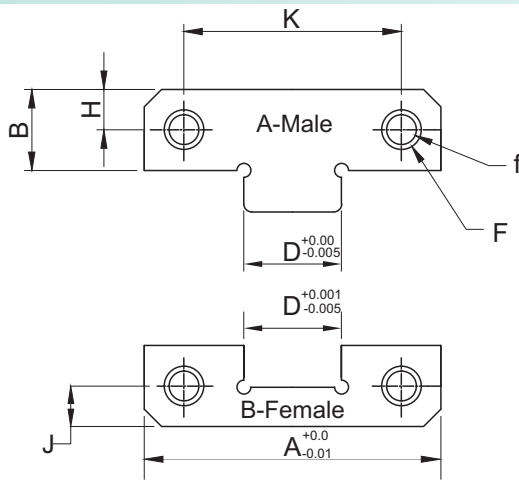
Material: 20 Mn Cr5 / En 353
Hardness: 55 to 58 HRC

Order Type: PGBB d1-d3-S2-L
Example : PGBB 22-30-46-75

L	d3	d4	K	S2	d1
9	14	16	3	9	9
12					
17					
22					
27					
36					
46					
66					
17	18	23	6	17	12
22					
27					
36					
46					
56					
12	20	25	6	12	14
17					
22					
27					
36					
46					
56					
66					
76					
86					
96					
17	22	27	6	17	16
22					
27					
36					
46					
56					
17	26	31	6	17	18
22					
27					
36					
46					
56					
66					
76					
86					
96					
116					

L	d3	d4	K	S2	d1
17	30	35	6	17	22
22					
27					
36					
46					
56					
66					
76					
86					
96					
116					
136					
17	42	47	6	17	30
27					
36					
46					
56					
66					
76					
86					
96					
116					
136					
156					
46	54	60	10	46	40
56					
66					
76					
86					
96					
116					
136					
156					
196					
246					
76	66	72	10	76	50
96					
116					
136					
156					
196					
96	80	86	20	96	60
116					
136					
156					
196					
246					

► Straight Block Set (PMSB)

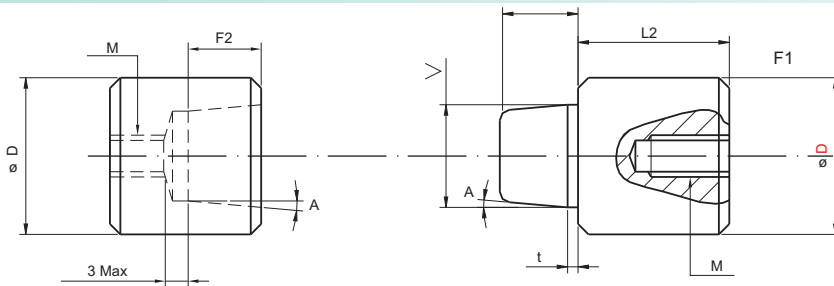


Material :- Tool Steel

Order Type :- Code | Example :- PMSB 50

Code	A	B	C	D	E	F	f	J	H	K	L	M	N
PMSB 38	38	22	30	12	22	10.5	6.5	7	7	22	13	5	8
PMSB 50	50	21.5	30	17	21.5	10.5	6.5	11	11	34	16	5	8
PMSB 75	75	36	50	25	36	16.5	10.5	18	18	50	19	8	12
PMSB 100	100	45	65	35	45	16.5	10.5	22	22	70	19	10	12
PMSB 125	125	45	65	45	45	16.5	10.5	22	22	84	25	10	12

► Taper Interlock (PPTI)



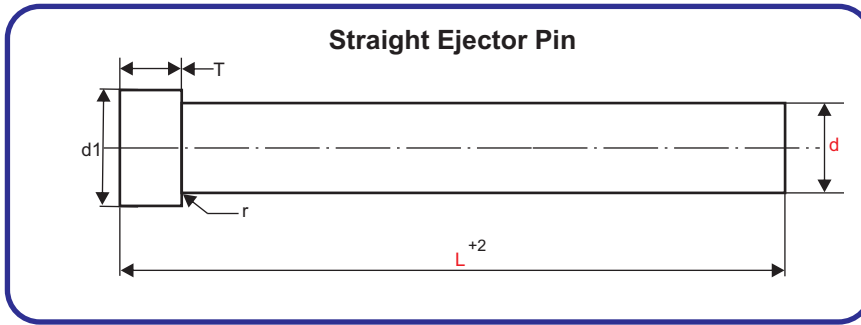
Material :- Tool Steel
Hardness :- 56-60 HRC

Code	D	A	V	L	L1	L2	F1	F2	F3	M
	k6	deg	mm	mm	mm	mm	mm	mm	mm	
PPTI	13	5°	8.5	30	14	14	6	5	10	M4
	16		10	30	14	14	6	5	10	M5
	20		13	40	19	19	9	8	12	M6
	25		16	50	24	24	12	11	16	M8
	30		20	60	29	29	15	14	20	M10
	32		20	60	29	29	15	14	20	M10
	35		24	70	34	34	18	17	24	M12
	42		30	80	39	39	24	23	24	M12

Order Type :- Code X Dia (D) X Length (L) | Example :- PPTI X 25 X 50

► Ejector Pin JIS Std (PEPJ)

Reference Standard - JIS STD



Material :- Hot Die Steel (H13).

Hardness :-

45 - 47 HRC (Core),

67 - 68 HRC (Surface)

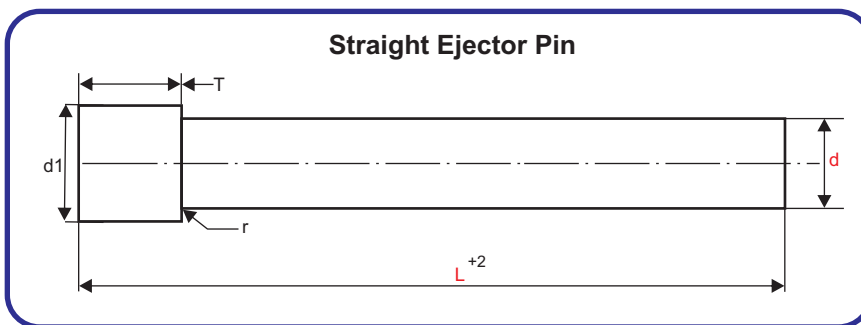
Surface Treatment :- Head Annealed ,
Blackodised , Nitrieded

d	d1	T	L										
4	8	6	100	150	200	250	300	350	400				
5	9		100	150	200	250	300	350	400				
6	10		100	150	200	250	300	350	400	500			
8	13	8	100	150	200	250	300	350	400	500	600		
10	15		100	150	200	250	300	350	400	500	600	700	800
12	17		100	150	200	250	300	350	400	500	600	700	800
15	20		100	150	200	250	300	350	400	500	600	700	800
16	21		100	150	200	250	300	350	400	500	600	700	800
20	25		100	150	200	250	300	350	400	500	600	700	800
25	30		100	150	200	250	300	350	400	500	600	700	800

Order Type :- Code X Dia (d) X Length (L)

Example :- PEPJ X Dia 8 X 250

► Ejector Pins - Heavy Load (PEPH)



Material :- Hot Die Steel (H13).

Hardness :-

Hot Die Steel - 45 - 47 HRC (Core),

66 - 68 HRC (Surface)

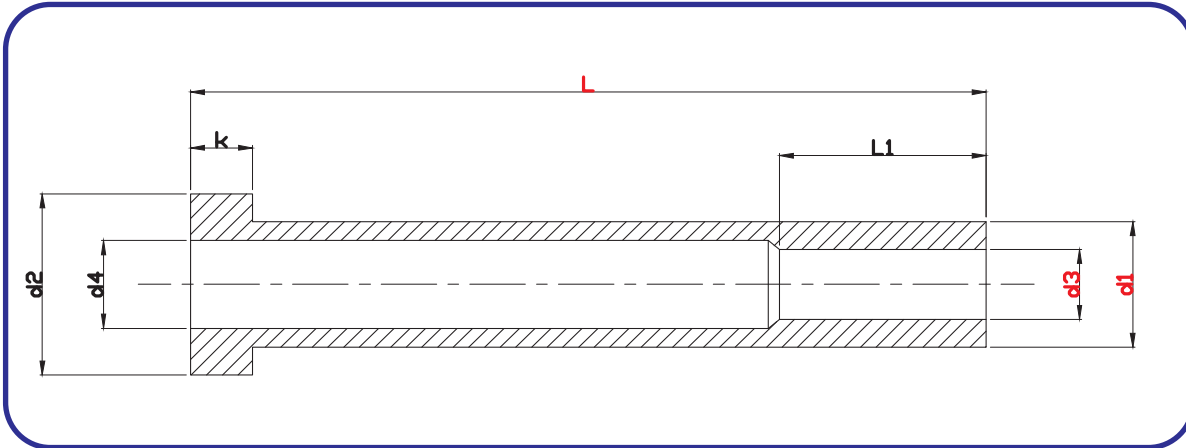
Surface Treatment :- Head Annealed ,
Blackodised , Nitrieded

d	d1	T	L										
6	10	10	100	150	200	250	300	350	400	500			
8	13		100	150	200	250	300	350	400	500	600		
10	15		100	150	200	250	300	350	400	500	600	700	800
12	17		100	150	200	250	300	350	400	500	600	700	800
15	20		100	150	200	250	300	350	400	500	600	700	800
16	21		100	150	200	250	300	350	400	500	600	700	800
20	25		100	150	200	250	300	350	400	500	600	700	800
25	30		100	150	200	250	300	350	400	500	600	700	800

Order Type :- Code (Material) Dia (d) X Length (L)

Example :- PEPH (HDS) Dia 8 X 250

► Ejector Sleeves Pin JIS Std (PPES)



Material :- Silver Steel (SS), Hot Die Steel (HDS)

Hardness :- Silver Steel 48 – 52 HRC Hot Die Steel - 45 - 47 HRC (Core), 66 - 68 HRC (Surface)

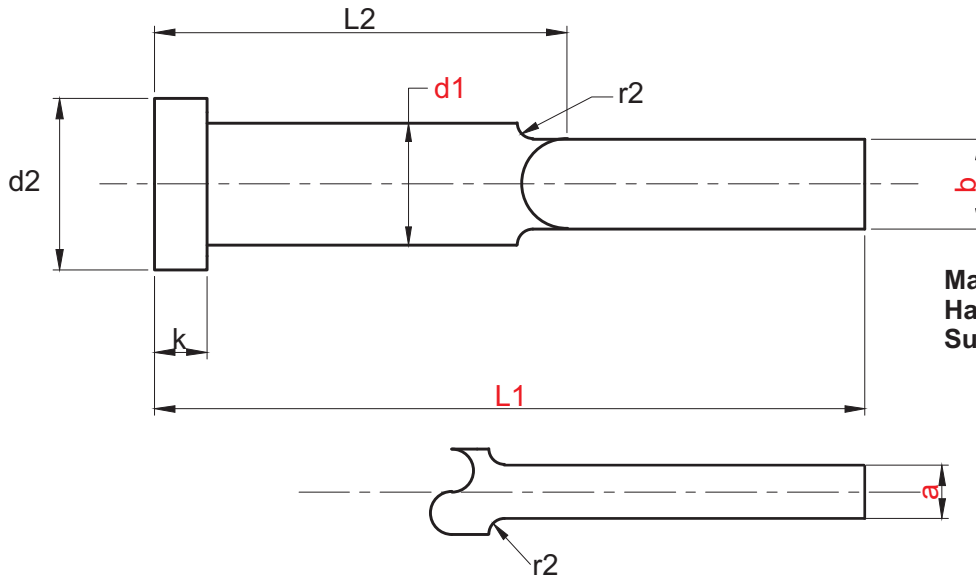
Surface Treatment :- Blackodised , Nitrieded

d1 g6	d3 h7	d2 -0.1	K -0.05	d4 -0.2	L1	R	L (+1)										
							60	75	100	125	150	175	200	225	250	275	300
3	1.5	6	3	1.8	25	0.3	.	.	.	.	.	.	.	.	.	.	.
	1.6			2			.	.	.	.	.	.	.	.	.	.	.
4	2	8	3	2.4	35	0.3	.	.	.	.	.	.	.	.	.	.	.
	2.2			2.5			.	.	.	.	.	.	.	.	.	.
5	2.5	10	3	3	45	0.3	.	.	.	.	.	.	.	.	.	.	.
	2.7			3			.	.	.	.	.	.	.	.	.	.
	3			3.5			.	.	.	.	.	.	.	.	.	.	.
	3.2			3.5			.	.	.	.	.	.	.	.	.	.	.
6	3.5	12	5	4	45	0.5	.	.	.	.	.	.	.	.	.	.	.
	3.7			4			.	.	.	.	.	.	.	.	.	.
	4			4.5			.	.	.	.	.	.	.	.	.	.
8	4.2	14	5	5	45	0.5	.	.	.	.	.	.	.	.	.	.	.
	5			5.5			.	.	.	.	.	.	.	.	.	.
	5.2			5.5			.	.	.	.	.	.	.	.	.	.
10	6	16	5	6.5	45	0.5	.	.	.	.	.	.	.	.	.	.	.
	6.2			6.5			.	.	.	.	.	.	.	.	.	.
12	8	20	7	8.5	45	0.8	.	.	.	.	.	.	.	.	.	.	.
	8.2			8.5			.	.	.	.	.	.	.	.	.	.
14	10	22	7	10.5	45	0.8	.	.	.	.	.	.	.	.	.	.	.
16	12	22	7	12.5	50	0.8	.	.	.	.	.	.	.	.	.	.	.

Order Type :- Code (Material) X d1 X d3 X Length (L)

Example :- PPES (HDS) X 8 X 5 X 250

► Blade Ejector Pin (PPEB)



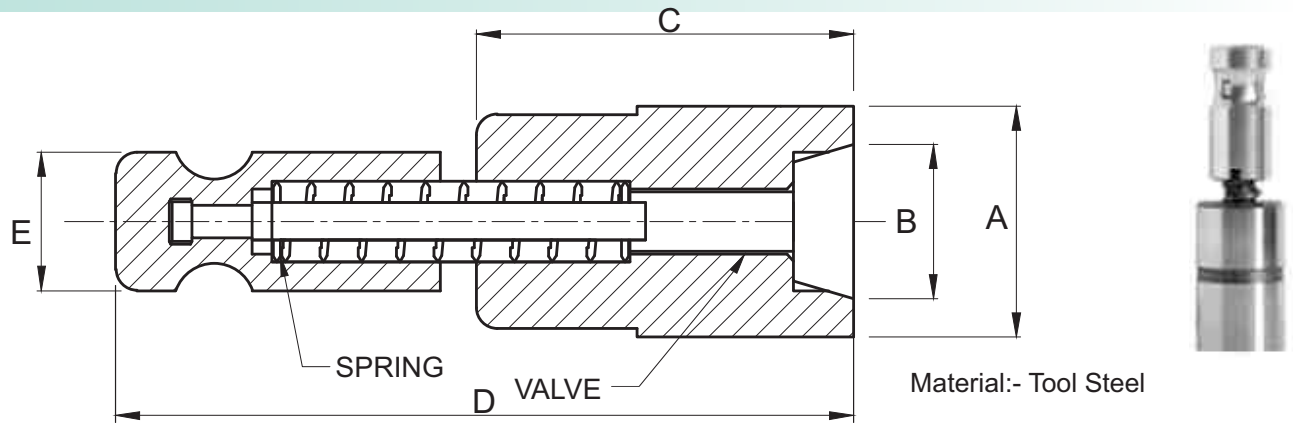
Material :- EN31/Hot Die Steel (H13)
Hardness :- 48-52HRC
Surface Treatment :- Blackodised



CODE	a (-0.015)	b (-0.015)	d1 (-0.2)	d2 (-0.2)	k (-0.05)	r1	r2	L1											
								L2											
								60	80	100	125	160	200	250	315	400			
								30	40	50	63	80	100	125	160	200			
PPEB	1	3.5	4	8	3	0.3	5	*	*	*									
	1	3.8	4.2	8	3	0.3	5	*	*	*	*	*							
	1.2	3.8	4.2	8	3	0.3	5		*	*	*	*							
	1	4.5	5	10	3	0.3	5		*	*	*	*							
	1.2	4.5	5	10	3	0.3	5		*	*	*	*							
	1.5	4.5	5	10	3	0.3	5		*	*	*	*							
	1	5.5	6	12	5	0.5	5		*	*	*	*							
	1.2	5.5	6	12	5	0.5	5		*	*	*	*							
	1.5	5.5	6	12	5	0.5	5				*	*	*	*					
	2	5.5	6	12	5	0.5	5					*	*	*					
	1.2	7.5	8	14	5	0.5	5				*	*	*	*					
	1.5	7.5	8	14	5	0.5	5					*	*	*	*				
	2	7.5	8	14	5	0.5	5						*	*	*	*			
	1.5	9.5	10	16	5	0.5	5						*	*	*	*			
	2	9.5	10	16	5	0.5	5							*	*	*	*	*	
	2	11.5	12	20	7	0.8	5								*	*	*	*	*
	2.5	11.5	12	20	7	0.8	10								*	*	*	*	*
	2	15.5	16	22	7	0.8	10								*	*	*	*	*
2.5	15.5	16	22	7	0.8	10								*	*	*	*	*	

Order Type :- Code X a X b X d1 X L1
Example :- PPEB X 2 X 5.5 X 6 X 100

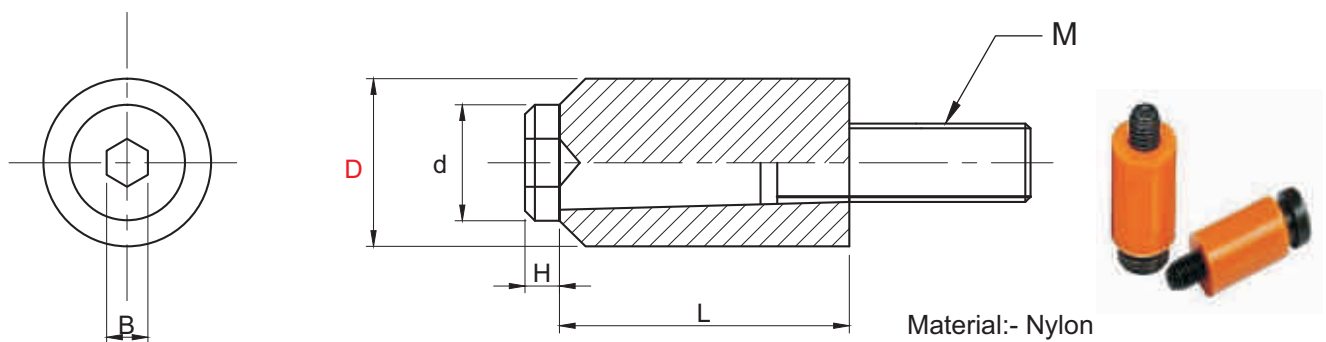
► Air Ejector (PPEA-A)



Code	Diameter A	Diameter B (approx)	C Body Length	D Overall Length	Diameter E
PPEA-A01	8	6.6	11	24	6
PPEA-A02	10	7.5	11	24	6
PPEA-A03	12	9.7	18	34	8
PPEA-A04	16	13	20	38	8
PPEA-A05	18	14.9	22	46	12
PPEA-A06	20	16	26	50	12
PPEA-A07	25	20	26	50	12

Order Type:- Code
Example:- PPEA-A03

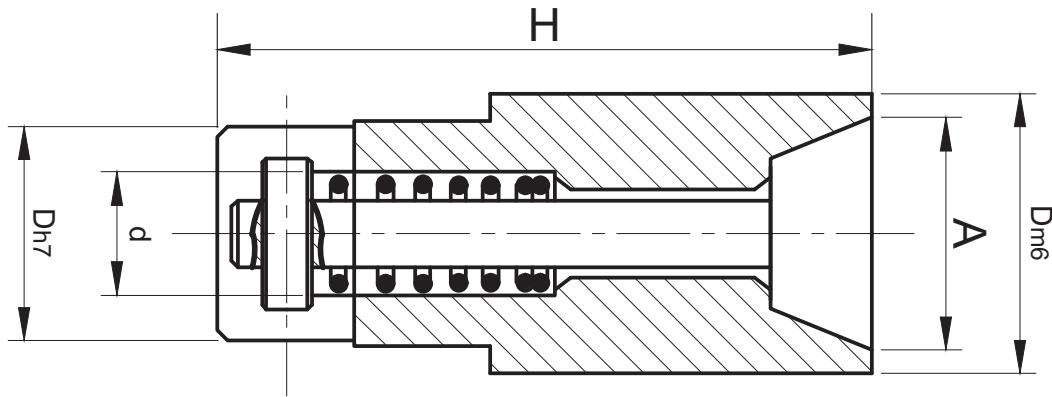
► Parting Lock (PPL)



Code	ØD	Ød	H	L	M	B
PPL	10	8.5	3	18	M5	4
	12	11	3.5	20	M6	5
	13	11	3.5	20	M6	5
	16	14	4	25	M8	6
	20	16	5.5	30	M10	8
	25	16	5.5	30	M10	8

Order Type:- Code x D Example:- PPL X 13

► Air Ejector (PPEA-B)

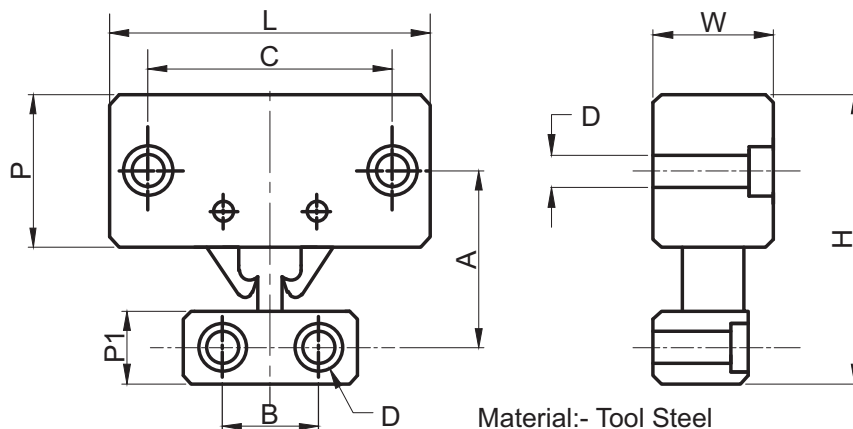


Material:- Tool Steel

Code	D	H	d	A
PPEA-B01	6	12	4.2	4.5
PPEA-B02	8	15	4.5	6
PPEA-B03	10	20	7	7.5
PPEA-B04	12	25	7.7	9
PPEA-B05	16	30	10.3	12
PPEA-B06	18	35	12	14
PPEA-B07	20	35	12.9	15
PPEA-B08	25	45	14.9	20
PPEA-B09	30	45	18	25

Order Type:- Code
Example:- PPEA-B04

► Mould Latch (PPLC-A)



Material:- Tool Steel

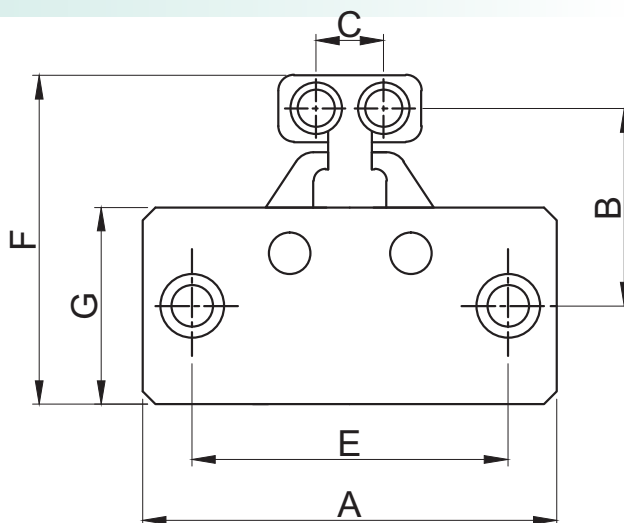
Code	Type	A	B	C	D	L	W	H	P	P1	Force(kg)
PPLC-A01	Light Duty	27.5	16	42	M6	55	22	44	25	13	45
PPLC-A02	Medium Duty	40	20	61	M8	80	28	70	38	18	110
PPLC-A03	Heavy Duty	60	30	95	M12	120	48	106	57	27	225

Order Type:- Code
Example:- PPLC-A02

► Mould Latch (PPLC-B)



Material:- Casting CI-FG260



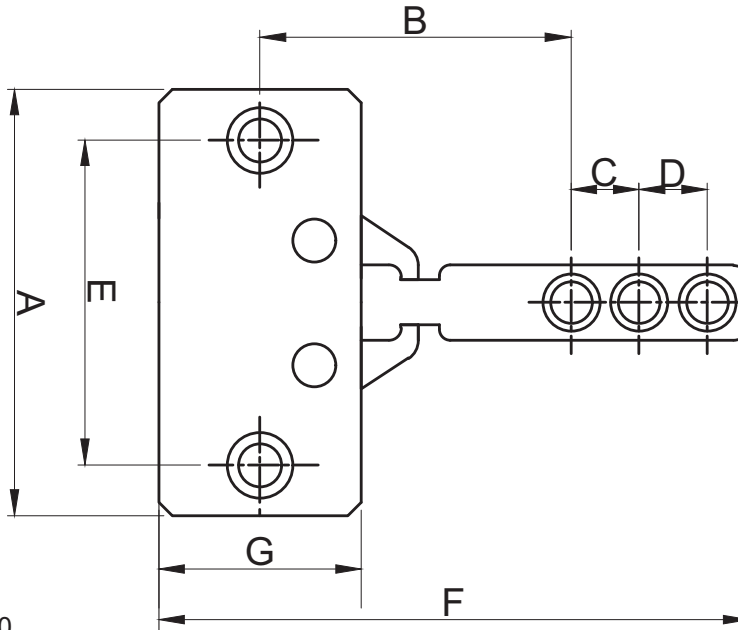
Code	Type	A	B	C	E	F	G	force(kg)	screw hole
PPLC-B01	Medium Duty	78	40	15	60	68	38	500	M8
PPLC-B02	Heavy Duty	91	58	17	72	93	51	900	M10

Order Type:- Code
Example:- PPLC-B01

► Mould Latch (PPLC-C)



Material:- Body Casting CI-FG260



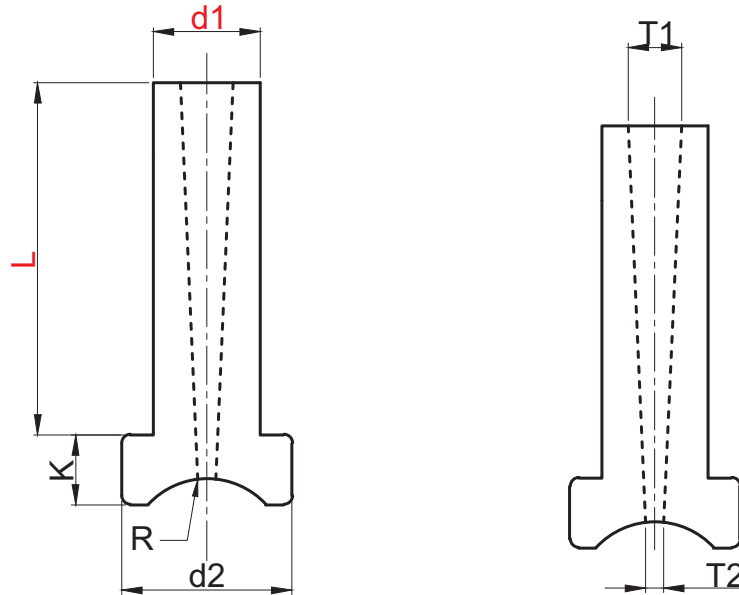
Code	Type	A	B	C	D	E	F	G	force(kg)	screw hole
PPLC-C01	Medium Duty	78	58	15	15	60	116	38	500	M8
PPLC-C02	Heavy Duty	91	73	17	17	72	142	51	900	M10

Order Type:- Code
Example:- PPLC-C01

► Spure Bush (PPMSB)



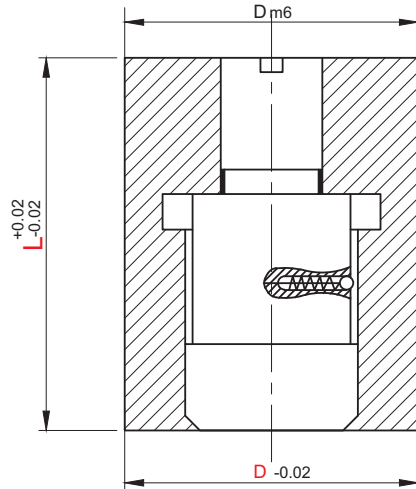
Material:- Tool Steel
Hardness:- 40-42HRC



Type	d1	d2	K	R	T1	T2	Body Length (L)			
PPMSB	16	30	19	16	7.5	3.6	20 (PPMSB- 1620)	25 (PPMSB -1625)	30 (PPMSB- 1630)	35 (PPMSB- 1635)
	16	30	19	16	7.8	3.6	40 (PPMSB- 1640)	45 (PPMSB- 1645)	50 (PPMSB- 1650)	55 (PPMSB- 1655)
	16	30	19	16	8	3.6	60 (PPMSB- 1660)	65 (PPMSB- 1665)	70 (PPMSB- 1670)	75 (PPMSB- 1675)
	16	30	19	16	8	3.6	80 (PPMSB- 1680)	85 (PPMSB- 1685)	90 (PPMSB- 1690)	95 (PPMSB- 1695)
	19	34	22	20	8	4.2	20 (PPMSB- 1920)	25 (PPMSB -1925)	30 (PPMSB- 1930)	35 (PPMSB- 1935)
	19	34	22	20	8.3	4.2	40 (PPMSB- 1940)	45 (PPMSB- 1945)	50 (PPMSB- 1950)	55 (PPMSB- 1955)
	19	34	22	20	8.5	4.2	60 (PPMSB- 1960)	65 (PPMSB- 1965)	70 (PPMSB- 1970)	75 (PPMSB- 1975)
	19	34	22	20	8.5	4.2	80 (PPMSB- 1980)	85 (PPMSB- 1985)	90 (PPMSB- 1990)	95 (PPMSB- 1995)
	22	38	25	24	8.5	4.5	20 (PPMSB- 2220)	25 (PPMSB -2225)	30 (PPMSB- 2230)	35 (PPMSB- 2235)
	22	38	25	24	9	4.5	40 (PPMSB- 2240)	45 (PPMSB- 2245)	50 (PPMSB- 2250)	55 (PPMSB- 2255)
	22	38	25	24	9.5	4.5	60 (PPMSB- 2260)	65 (PPMSB- 2265)	70 (PPMSB- 2270)	75 (PPMSB- 2275)
	22	38	25	24	9.5	4.5	80 (PPMSB- 2280)	85 (PPMSB- 2285)	90 (PPMSB- 2290)	95 (PPMSB- 2295)

Order Type:- Type x d1 x L
Example:- PPMSB x 16 x 50

► Mould Date Indicator (PPDI - F)



Material:- Tool Steel

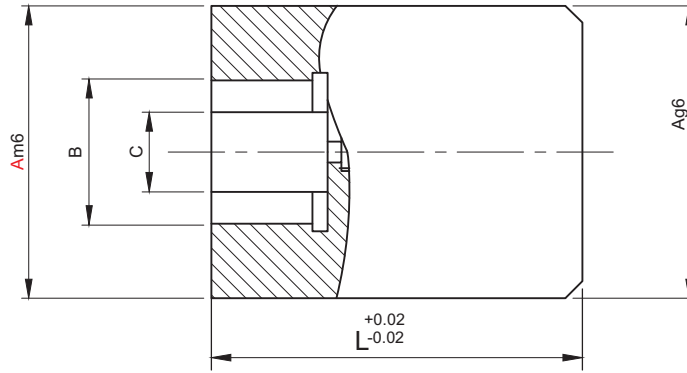


Type								
Only Month	Only Year	Month & Year	Only Days	Only Quarter	Only Week	Only Shift Numeric	Only Shift Alphabets	Only Arrow

Code	ØD m6		L					
			6	8	10	12	14	16
PPDI-F	3	(+0.012) (+0.004)	*	*	*			
	4		*	✓	✓			
	6		*	✓	✓			
	8	(+0.015) (+0.006)		*	✓	*		
	10			*	✓	*		
	12	(+0.018) (+0.007)				✓	*	
	16						✓	
	20	(+0.021) (+0.008)					*	*

Order Type:- Code x D x L (Type)
Example:- PPDI-F x 4 x 10 (Only Year)

► Mould Date Indicator (PPDI-C)

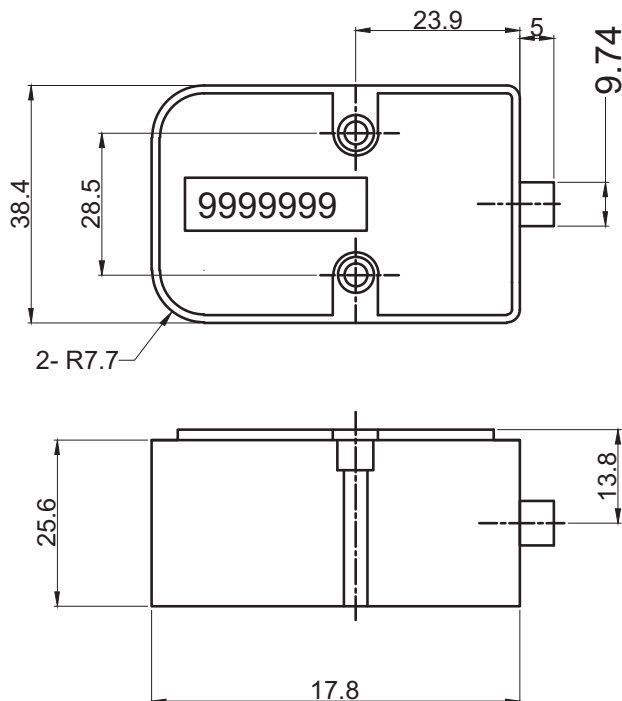


Material:- Tool Steel

Type	ØAm6		ØAg6		ØB	ØC	L
PPDI-C	8	(+0.015) (+0.006)	8	(-0.005) (-0.014)	5.8	3.6	10
	10		10		7	4	12
	12	(+0.018) (+0.007)	12	(-0.006) (-0.017)	8.5	5	14
	16		16		11.5	7	14
	20	(+0.021) (+0.008)	20	(-0.007) (-0.020)	14	8	16

Order Type :- Type x A
Example :- PPDI-C x 8

► Muold Short Counter (PPMC)



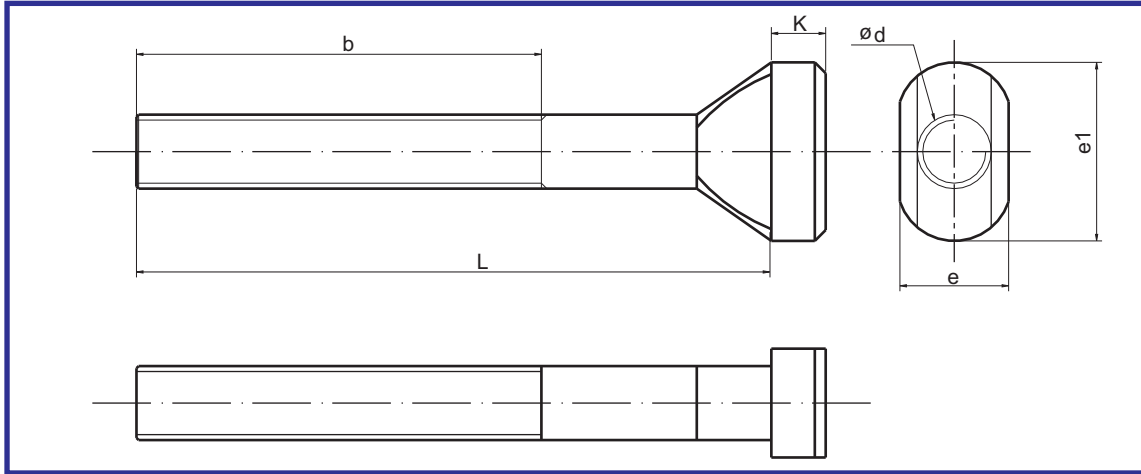
Code	Screw Size
PPMC-01	M4x0.7x25

Order Type:- Code
Example:- PPMC-01

Clamping Elements



► T-Bolt



Material :- En8d

Hardness :- Core 28-30 HRC (Toughened)

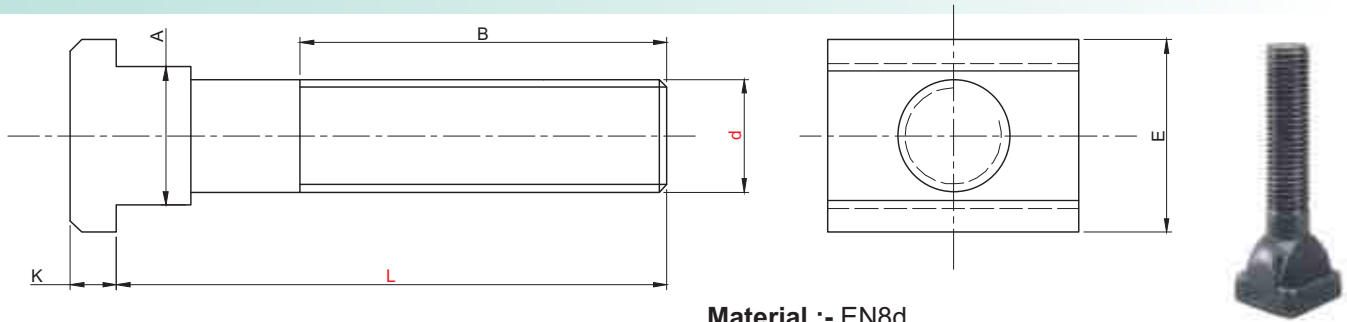
Surface Treatment :- Blackodised

CODE	SIZE Ø d	WIDTH e	HEAD DIA. e1	COLLAR K	LENGTH L	THREAD LENGTH b
T-BOLT M 8X50					50	30
T-BOLT M 8X60	M8	13	26	6	60	35
T-BOLT M 8X80					80	40
T-BOLT M 8X100					100	60
T-BOLT M 10X50					50	30
T-BOLT M 10X60					60	35
T-BOLT M 10X80	M10	15	30	6	80	40
T-BOLT M 10X100					100	60
T-BOLT M 10X125					125	80
T-BOLT M 12X60					60	35
T-BOLT M 12X80					80	40
T-BOLT M 12X100	M12	18	24	7	100	60
T-BOLT M 12X125					125	80
T-BOLT M 12X160					160	100
T-BOLT M-16X100					100	60
T-BOLT M-16X125	M16	25	32	9	125	80
T-BOLT M-16X160					160	100
T-BOLT M-16X200					200	125
T-BOLT M-16X250					250	155
T-BOLT M-16X300					300	190
T-BOLT M-20X100					100	65
T-BOLT M-20X125					125	80
T-BOLT M-20X160	M20	32	40	12	160	100
T-BOLT M-20X200					200	125
T-BOLT M-20X250					250	155
T-BOLT M-20X300					300	190
T-BOLT M-24X100					100	65
T-BOLT M-24X125					125	80
T-BOLT M-24X160	M24	40	48	16	160	100
T-BOLT M-24X200					200	125
T-BOLT M-24X250					250	155
T-BOLT M-24X300					300	190

Order Type :- Code

Example :- T-Bolt M-20X250

T-Bolt - Heavyduty

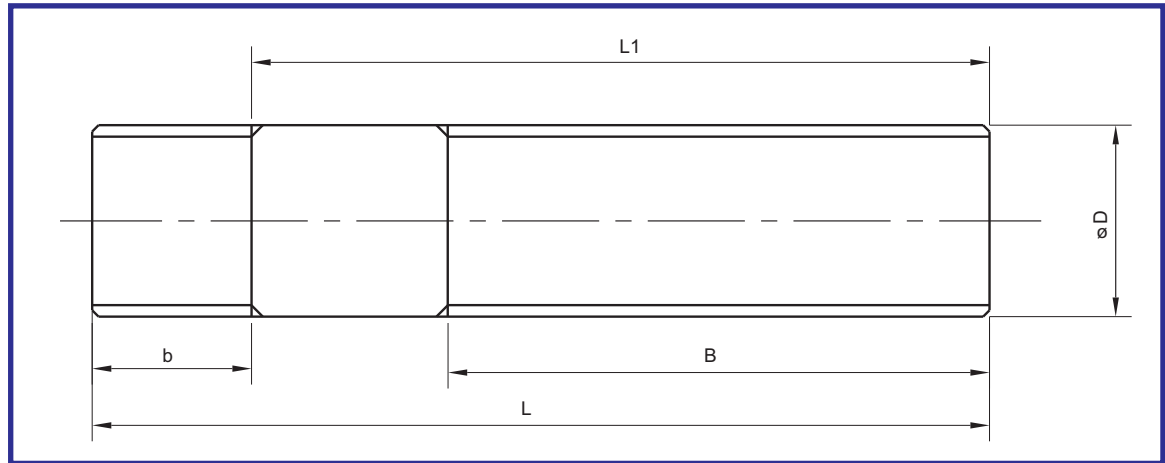


Material :- EN8d
Hardness :- 28 - 32 HRC

Type	A Suitable for t-Bolt size	E	K	L	d Thread size	B	N.W Kgs
T-Bolt Heavy	12	18	7	80	M12	40	0.08
				100		60	0.1
				160		100	0.14
	14	22	8	60	M12	35	0.09
				80		55	0.1
				100		65	0.12
				125		80	0.14
				160		100	0.16
				200		125	0.19
	16	25	9	80	M16	40	0.17
				130		80	0.23
				200		125	0.33
	18	28	10	80	M16	55	0.19
				100		65	0.22
				130		80	0.25
				160		100	0.29
				200		125	0.35
				250		155	0.4
				290		175	0.47
	20	32	12	110	M20	70	0.35
				150		95	0.43
				210		130	0.55
	22	35	14	110	M20	70	0.4
				150		95	0.48
				210		130	0.6
				285		170	0.76
	24	40	16	150	M24	95	0.68
				210		130	0.87
28	44	18	110	M24	65	0.67	
			150		95	0.79	
			210		130	0.96	
			250		160	1.1	
			300		190	1.23	
36	54	22	200	M30	130	1.52	
			250		150	1.77	
			300		190	2.02	

Order Type :- Type X d X L
Example :- T Bolt Heavy X M24 X 160

► Stud



Material :- En8d

Hardness :- Core 28-30 HRC (Toughened)

Surface Treatment :- Blackodised

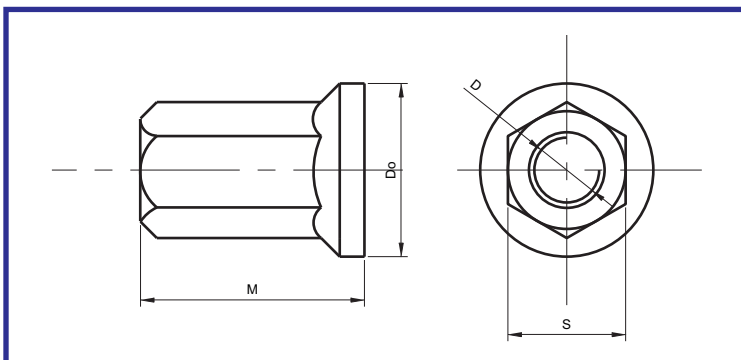
Order Type :- Code

Example :- Stud M20X125

Code (DXL)	B	b	L1	D
Stud M8x40	20	11	29	M8
Stud M8x50	25	11	39	M8
Stud M8x65	40	11	54	M8
Stud M8x100	63	11	89	M8
Stud M10x50	25	13	39	M10
Stud M10x80	50	13	69	M10
Stud M10x100	63	13	87	M10
Stud M10x125	75	13	112	M10
Stud M12x50	25	15	35	M12
Stud M12x65	35	15	50	M12
Stud M12x80	50	15	65	M12
Stud M12x100	63	15	85	M12
Stud M12x125	75	15	110	M12
Stud M12x160	100	15	145	M12
Stud M12x200	125	15	185	M12

Code (DXL)	B	b	L1	D
Stud M16x65	40	15	46	M16
Stud M16x80	50	19	61	M16
Stud M16x100	63	19	81	M16
Stud M16x125	75	19	106	M16
Stud M16x160	100	19	146	M16
Stud M16x200	125	19	181	M16
Stud M16x250	160	19	231	M16
Stud M20x80	32	19	53	M20
Stud M20x125	70	27	98	M20
Stud M20x200	125	27	173	M20
Stud M20x315	190	27	288	M20
Stud M24x100	45	27	65	M20
Stud M24x160	100	35	125	M20
Stud M24x250	160	35	215	M20
Stud M24x400	250	35	365	M20

► Flange Nut



Material :- En8d

Hardness :- Toughened 28-32 HRC (Toughened)

Surface Coating :- Blackodised.

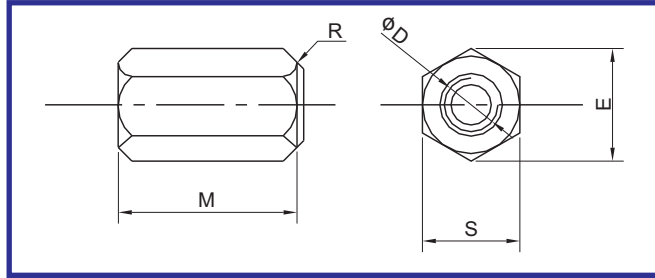


Order Type :- Flange Nut -Code

Example :- Flange Nut - M20

Code	D	Do	M	S
M12	M12	25	18	19
M16	M16	32	24	24
M20	M20	40	30	30
M24	M24	47	36	36

▶ Hex Nut



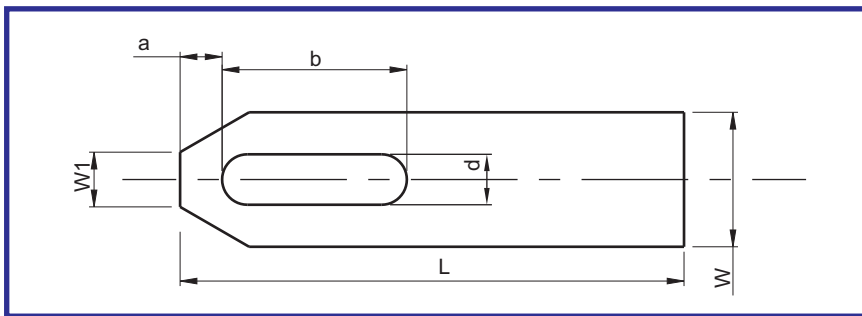
Material :- En8d
Hardness :- Core 28-30 HRC (Toughened)
Surface Treatment :- Blackodised

Code	D	M	D1	S	E	R
Hex Nut M8	M8	12	9	13	15.0	11
Hex Nut M10	M10	15	11.5	17	19.6	15
Hex Nut M12	M12	18	14	19	21.9	17
Hex Nut M16	M16	24	18	24	27.7	22
Hex Nut M20	M20	30	22	30	34.6	27
Hex Nut M24	M24	36	26	36	41.6	32



Order Type :- Code
Example :- Hex Nut M24

▶ Strap Clamp



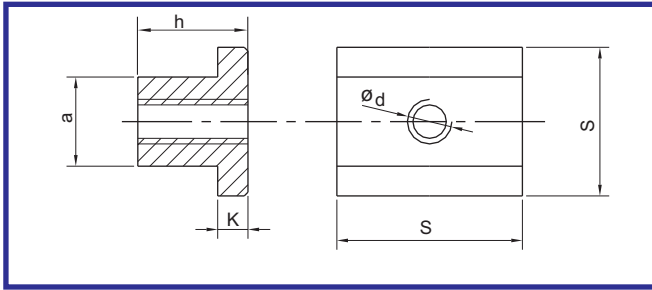
Material :- C45
Surface Treatment :- Blackodised



Order Type :- Code
Example :- M12X125

Code	For Bolts of	d	L	a	b	h	w	w1
M8X60	M 8	9	60	13	22	12	25	10
M10X80	M10	11	80	15	30	16	30	12
M12X100	M 12	14	100	21	40	20	40	14
M12X125	M 12	14	125	21	50	20	40	14
M16X125	M 16	18	125	26	45	25	50	18
M16X160	M 16	18	160	26	65	25	50	18
M20X160	M 20	22	160	30	60	30	60	22
M20X200	M 20	22	200	30	80	30	60	22
M24X250	M 24	26	250	35	105	40	70	26

► T Nut



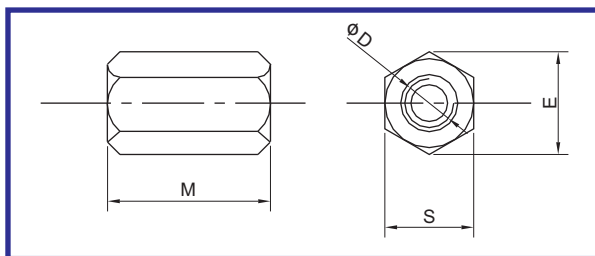
Material :- En8d
Hardness :- Core 28-30 HRC (Toughened)
Surface Treatment :- Blackodised

Code	a	d	s	h	k
T Nut M8	10	M8	15	12	6
T Nut M10	12	M10	18	14	7
T Nut M12	14	M12	22	16	8
T Nut M12 B	16	M12	25	18	9
T Nut M16	18	M16	28	20	10
T Nut M16 B	20	M16	32	24	12
T Nut M20	22	M20	35	28	14
T Nut M24	28	M24	44	36	18



Order Type :- Code
Example :- T Nut M16

► Extension Nut



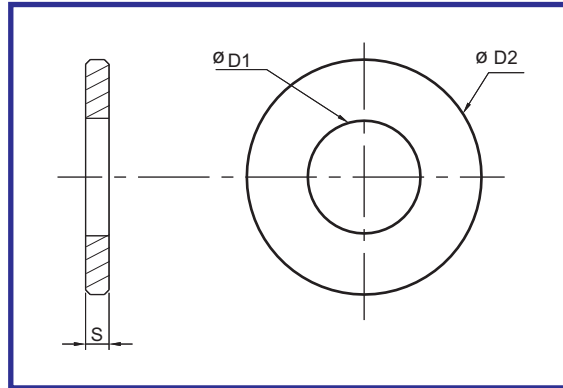
Material :- En8d
Hardness :- Core 28-30 HRC (Toughened)
Surface Treatment :- Blackodised

Code	D	M	S	E
Extension Nut M8	M8	24	13	15.0
Extension Nut M10	M10	30	17	19.6
Extension Nut M12	M12	36	19	21.9
Extension Nut M16	M16	48	24	27.7
Extension Nut M20	M20	60	30	34.6
Extension Nut M24	M24	72	36	41.6



Order Type :- Code
Example :- Extension Nut M20

► Washer

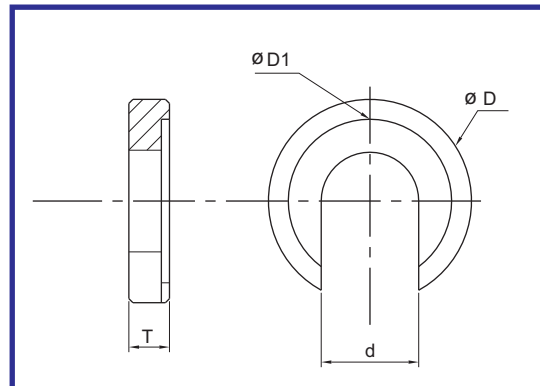


Material :- En8d
Surface Treatment :- Blackodised

Code	Bolt Size	D1	D2	S
Washer M8	M8	8.4	23	4
Washer M10	M10	10.5	28	4
Washer M12	M12	13	35	5
Washer M16	M16	17	45	6
Washer M20	M20	21	50	6
Washer M24	M24	25	60	8

Order Type :- Code
Example :- Washer M12

► C Washer

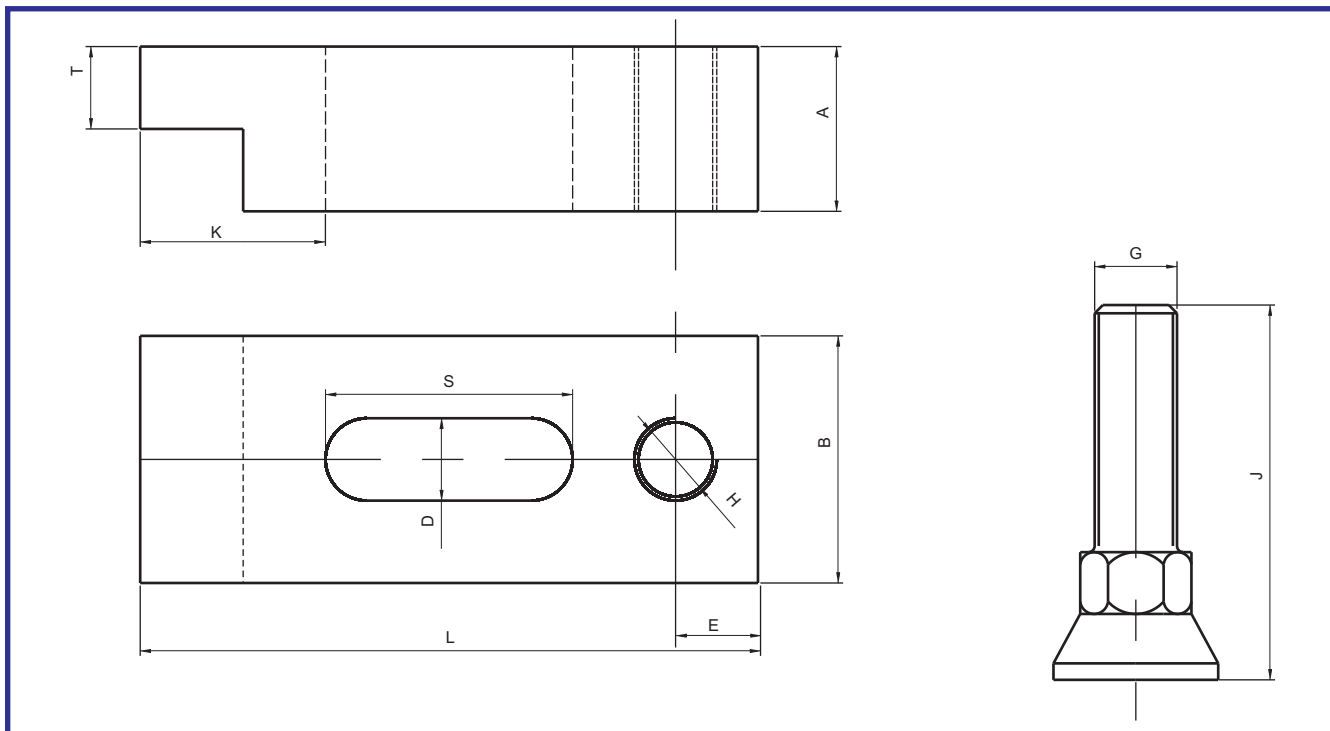


Material :- En8d
Surface Treatment :- Blackodised

Code	Bolt Size	D	d	D1	T	L
C-Washer M8	M8	28	8.4	21	7	1.0
C-Washer M10	M10	34	10.5	25	8	1.2
C-Washer M12	M12	40	13	30	9	1.8
C-Washer M16	M16	56	17	37	12	1.8
C-Washer M20	M20	64	21	45	14	2.0
C-Washer M24	M24	75	25	52	16	2.0

Order Type :- Code
Example :- C-Washer M12

► Mould Clamp With Heavy Support Bolt (PMCH)



Material :- En8d

Hardness :- Core 28 - 30 HRC (Toughened)

Surface Treatment :- Blackodised

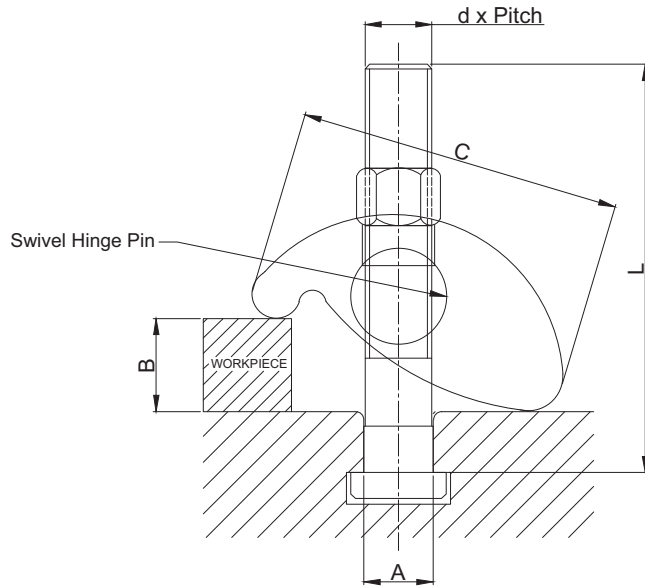


Code	BOLT SIZE	A	B	DxL	S	T	K	H	E	Support Bolt	
										GXJ	Hex A/F
											X Base
PMCH- 12115S	M12	24	38	14X115	65	15	20	M16	15	M16x55L	19X35
PMCH- 12115L	M12	24	38	14X115	65	15	20	M16	15	M16X90L	19X35
PMCH- 16130S	M16	31	48	18X130	70	20	25	M20	18	M20X60L	24X40
PMCH- 16130L	M16	31	48	18X130	70	20	25	M20	18	M20X90L	24X40
PMCH- 16160S	M16	31	48	18X160	90	20	30	M20	20	M20X60L	24X40
PMCH- 16160L	M16	31	48	18X160	90	20	30	M20	20	M20X90L	24X40
PMCH-20140S	M20	38	60	22X140	70	25	35	M24	18	M24X60L	27X50
PMCH-20140L	M20	38	60	22X140	70	25	35	M24	18	M24X100L	27X50
PMCH-20160S	M20	38	60	22X160	90	30	35	M24	20	M24X60L	27X50
PMCH-20160L	M20	45	60	22X160	90	30	35	M24	18	M24X100L	27X50
PMCH-20200	M20	45	60	22X200	110	30	45	M24	22	M24X100L	27X50
PMCH-24200	M24	48	78	26X200	105	35	45	M27	25	M27X100L	30X55

Order Type :- Code

Example :- PMCH - 20160L

► Universal Clamp - PUC

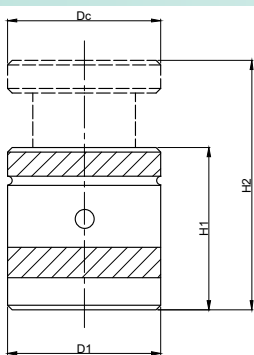


Material :- Casting (CI) Grade FG260
Hardness :- 180 - 200 BHN

Type	T-Slot size A	d x Pitch x L	Clamping range B	Length of clamp C	Breadth of clamp	Tightening Torque Nm Max.	Clamping Force Max. Kgs	N.W Kgs
PUC-12A	12	M12 x 1.75 x 100	0 - 60	105	42	90	2000	0.84
PUC-12B	14	M12 x 1.75 x 100	0 - 60	105	42	90	2000	0.86
PUC-16A	16	M16 x 2.0 x 130	0 - 80	130	50	210	3200	1.73
PUC-16B	18	M16 x 2.0 x 130	0 - 80	130	50	210	3200	1.74
PUC-20A	20	M20 x 2.5 x 150	0 - 100	160	55	410	5000	2.45
PUC-20B	22	M20 x 2.5 x 150	0 - 100	160	55	410	5000	2.48
PUC-24A	24	M24 x 3.0 x 210	0 - 120	190	65	730	6000	4.39
PUC-24B	28	M24 x 3.0 x 210	0 - 120	190	65	730	6000	4.68

Order Type :- Code
Example :- PUC - 24A

► Screw Jack (PCSJ)

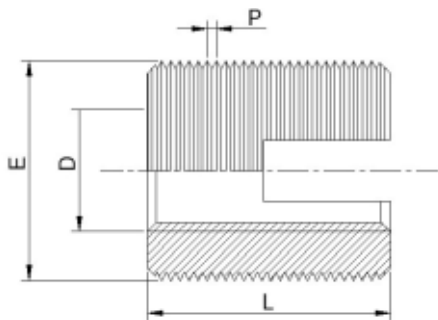


Material :- EN8D
Hardness :- 28 - 30 HRC

Order Type :- Code X Range
Example :- PCSJ X 50-70

Code	Range H1 - H2 mm	Base Dia. D1 mm	Cap Dia. Dc mm	Static load max Kn
PCSJ	40-50	32	32	12
	50-70	50	50	60
	70-100	50	50	60
	100-140	70	70	100

► Self Tap Thread Inserts



Material :- Steel & Stainless Steel

Order Type :- Code
Example :- PATI M12

Internal Thread	External Length Thread		Minimum L	borehole depth for blind holes	Code
	E	P			
M 2	4.5	0.5	6	8	PATI M2
M 2.5	4.5	0.5	6	8	PATI M2.5
M 3	5	0.5	6	8	PATI M3
M 3.5	6	0.75	8	10	PATI M3.5
M 4	6.5	0.75	8	10	PATI M4
M 5	8	1	10	13	PATI M5
M 6(a)	9	1	12	15	PATI M6(a)
M 6	10	1.5	14	17	PATI M6
M 8	12	1.5	15	18	PATI M8
M 10	14	1.5	18	22	PATI M10
M 12	16	1.5	22	26	PATI M12
M 14	18	1.5	24	28	PATI M14
M 16	20	1.5	22	26	PATI M16
M 18	22	1.5	24	29	PATI M18
M 20	26	1.5	27	32	PATI M20
M 22	26	1.5	30	36	PATI M22
M 24	30	1.5	30	36	PATI M24
M 27	34	1.5	30	36	PATI M27
M 30	36	1.5	40	46	PATI M30

► Toggle Clamps - Steel Smith

Vertical Hold Down Action



Horizontal Hold Down Action



All Black Clamps



Roto Moulding Clamps



Straight Line Action



Pull Action Clamp



Latches



Squeeze Action Clamps



Automotive Clamps



Additional Locking Mechanism



Pneumatic Clamps



Swing Clamps



One Touch Swing Clamps



Side Clamps



OD Holding Clamps



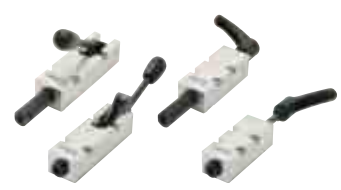
One Touch Fasteners



Work Supports



Precision Thrust Clamps



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Toggle Clamps - Steel Smith

VTC Series Heavy Duty Clamps - Angle Base

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC-6561 A	500 Kgs	65	61
VTC-120132 A	1000 Kgs	120	132



VTC Series Medium Duty Clamps - Straight Base

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC-2535-UB/BS	100 Kgs	36	44
VTC-2535-SF/BS	100 Kgs	36	44
VTC-2535-SB/BS	100 Kgs	36	41
VTC-8154-SB/BS	200 Kgs	79	58
VTC-3670 UB/BS	200 Kgs	57	80
VTC-3670 SF/BS	200 Kgs	57	80
VTC-3670 SB/BS	200 Kgs	57	65
VTC-4595 UB/BS	400 Kgs	75	105
VTC-4595 SF/BS	400 Kgs	75	105
VTC-4595 SB/BS	400 Kgs	75	97
VTC-50125 UB/BS	350 Kgs	75	135
VTC-50125 SF/BS	350 Kgs	75	135
VTC-50125 SB/BS	350 Kgs	75	130
VTC-85150 UB/BS	600 Kgs	116	162
VTC-85150 SF/BS	600 Kgs	116	175
VTC-85150 SB/BS	600 Kgs	116	142



VTC Series Light Duty Clamps - Flanged Base

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC - 1625 - UB	50 Kgs	16	32
VTC - 1625 - SF	50 Kgs	16	32
VTC - 2535 - UB	100 Kgs	25	44
VTC - 2535 - SF	100 Kgs	25	44
VTC - 2535 - SB	100 Kgs	25	44



VTC Series Medium Duty Clamps - Flanged Base

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC-3670 UB	200 Kgs	36	60
VTC-3670 SF	200 Kgs	36	72
VTC-3670 SB	200 Kgs	36	70
VTC-4595 UB	400 Kgs	45	80
VTC-4595 SF	400 Kgs	45	95
VTC-4595 SB	400 Kgs	45	95
VTC-5040 SF	500 Kgs	50	44
VTC-50125 UB	350 Kgs	50	110
VTC-50125 SF	350 Kgs	50	125
VTC-50125 SB	350 Kgs	50	130
VTC-85150 UB	600 Kgs	85	108
VTC-85150 SF	600 Kgs	85	160
VTC-85150 SB	600 Kgs	85	142
VTC-10088 SF	800 Kgs	105	105



Horizontal Hold Down Action : (H - Series)

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
H - 1330 - UB	50 Kgs	13	34
H - 1323 - UB	50 Kgs	14	28.5
H - 1323 - SF	50 Kgs	14	28.5
H - 2123 - UB	50 Kgs	21	28.5
H - 2123 - SF	50 Kgs	21	28.5



VTC Series Medium Duty Clamps - Front Mounting

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC-6440-UB/FM	100 Kgs	64	40
VTC-7273-UB/FM	200 Kgs	72	73
VTC-8296-UB/FM	500 Kgs	82	96



VTC 317 Series

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
VTC-317-U	170 Kgs	68	64
VTC-317-S	170 Kgs	68	81



H - Series Medium Duty Clamps

Model No.	Holding Capacity	Height Under Arm	Clamp Arm Length
H-2655 UB	150 Kgs	27	64
H-2655 SF	150 Kgs	27	64
H-3665 UB	250 Kgs	36	70
H-3665 SF	250 Kgs	36	70
H-3665 SB	250 Kgs	36	55
H-45105 UB	350 Kgs	45	112
H-45105 SF	350 Kgs	45	112
H-45105 SB	350 Kgs	45	95
H-57126 UB	500 Kgs	60	147
H-57126 SF	500 Kgs	60	147
H-57126 SB	500 Kgs	60	150



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Toggle Clamps - Steel Smith

HTC - Series Clamps Forged Base

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-2326	300 Kgs	26	9.5
HTC-3025	1100 Kgs	25	12
HTC-3545	2600 Kgs	45	20
HTC-5065	4500 Kgs	68	25



HTC - Series Clamps Low Height

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-1530LH	200 Kgs	30	9
HTC-2040 LH	600 Kgs	40	12
HTC-2550 LH	800 Kgs	50	16
HTC-3075 LH	1200 Kgs	75	20
HTC-35100 LH	2000 Kgs	100	25



HTC - Series Clamps Flat Handle

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-3015 FH	200 Kgs	30	9
HTC-4020 FH	600 Kgs	40	12
HTC-5025 LH	800 Kgs	50	16



HTC - Series Clamps Package Size

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-1825 PS	100 Kg	29	9
HTC-2530 PS	300 Kg	34	12
HTC-3540 PS	400 Kg	40	16
HTC-4560 PS	700 Kg	60	20



HTC - Series Clamps Package Size - Base Straight

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-2530 PS/BS	300 Kg	34	12
HTC-3540 PS/BS	400 Kg	40	16
HTC-4560 PS/BS	700 Kg	60	20



HTC - Series Clamps Package Size - Front Mounting

Model No.	Holding Capacity	Plunger Travel	Plunger Dia.
HTC-190 FM	50 Kg	24	9.5
HTC-350 FM	100 Kg	36	12
HTC-500 FM	150 Kg	39	12
HTC-600 FM	350 Kg	60	16



Pull Action Clamp - PAV Series

Model No.	Holding Capacity	U-Bolt Dia
PAV-620	100 Kg	Ø4
PAV-850	500 Kg	Ø6
PAV-1065	1000 Kg	Ø8



Pull Action Clamp - PA Series

Model No.	Holding Capacity	U-Bolt Dia
PA-325	50 Kg	Ø4
PA-1010	75 Kg	Ø6
PA-2056	200 Kg	Ø8
PA-3580	400 Kg	Ø10
PA-4575	500 Kg	Ø12



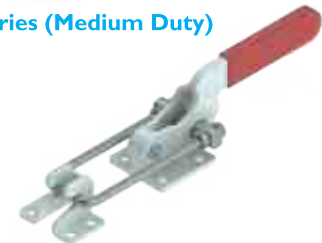
Pull Action Clamp - PAH Series (Light Duty)

Model No.	Holding Capacity	U-Bolt Dia
PAH - 2801	50 Kgs	Ø5
PAH - 1210	100 Kgs	Ø4
PAH - 1515	200 Kgs	Ø5
PAH - 1725	350 Kgs	Ø6



Pull Action Clamp - PAH Series (Medium Duty)

Model No.	Holding Capacity	U-Bolt Dia
PAH - 2445	950 Kg	Ø8
PAH - 5601	1000 Kg	Ø8
PAH - 3062	3000 Kg	Ø11



Pull Action Clamp - PAH Series (Heavy Duty)

Model No.	Holding Capacity	U-Bolt Dia
PAH - 375	1800 Kg	Ø11
PAH - 385	3500 Kg	Ø11
PAH - 385 - L	3500 Kg	Ø11



Pull Action Clamp - Additional Locking Mechanism

Model No.	Holding Capacity	U-Bolt Dia
PAH-331-TRIG	325 Kg	Ø5
PAH-341-TRIG	900 Kg	Ø8
PAH-5271-TRIG	350 Kg	Ø6
PAH-5442-TRIG	950 Kg	Ø8
PAH-2603-TRIG	1800 Kg	Ø11
PAH-385-TRIG	3500 Kg	Ø12



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Toggle Clamps - Steel Smith

Latch Clamps

PAH - 30 Series



PAH - 40 - 50 Series



PAH - 2600 Series



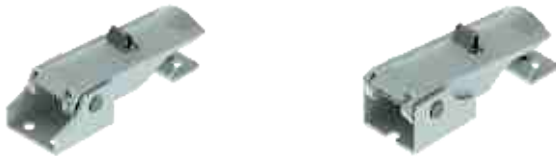
PAH - 33 - 38 Series



PAH - Miniature Series



PAH - 21227 - 21237 Series



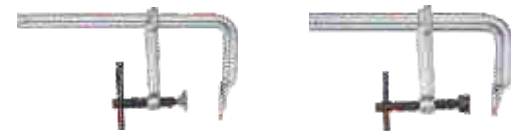
PAH - 0212/ 0222/0232 Series



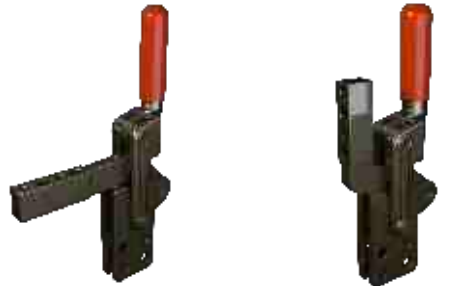
Squeeze Action Clamps



F - Clamps



Automotive Clamps



Modular Clamps



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Pneumatic and Hydraulic Toggle Clamps - Steel Smith

Additional Locking Mechanism

Vertical Hold Down Action



Horizontal Hold Down Action



HTC Series Clamps
PS Series



HTC Series Clamps
LH Series



Leveling Pads and Spring Plungers

TECHNOPOLYMER PLASTIC BASE LEVELING PADS
With Rubber Bottom for Anti-Skid (60mm Base)



TECHNOPOLYMER PLASTIC BASE LEVELING PADS
With Rubber Bottom for Anti-Skid (80mm Base)



Spring Plungers



Pneumatic Clamps

Hold Doen Action
Pneumatic Clamps



Hold Down Action
Fixed Cylinder



Right Angle
Hold Down Clamps



H.V. Series
Pneumatic Clamps



Straight Line
Action Clamps



SSC - Series
Pneumatic Clamps



Swing Clamps

Pneumatic Swing Clamps



Hydraulic Swing Clamps



Pneumatic Link Clamps



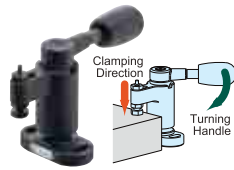
Hydraulic Link Clamps



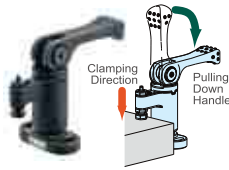
Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Quick Clamps - IMAO

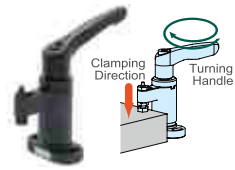
QLSWC
Swing Clamps



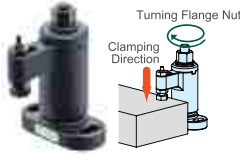
QLSWC
Swing Clamps
with
Cam Handle



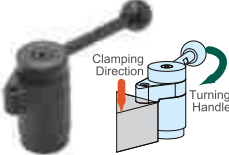
QLSWC
Swing Clamps
with
Adjustable Handle



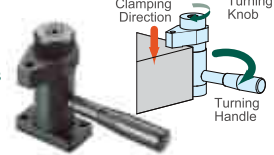
QLSWC
Swing Clamps
For
Torque Control



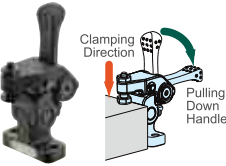
QLSW
Swing Clamps



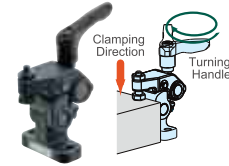
QLSWH
Swing Clamps
(Heavy)



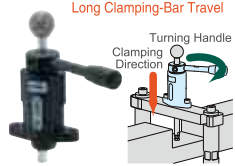
QLRE
Retractable
Clamps with
Cam Handle



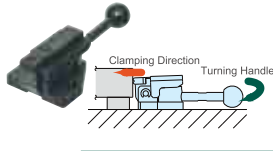
QLRE
Retractable
Clamps with
Adjustable Handle



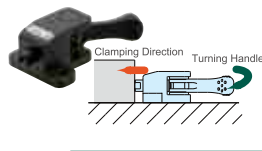
QLRCF
Thrust Clamps
(Vertical)



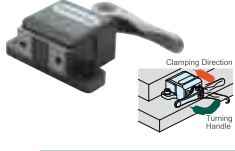
QLSC
Side Clamps



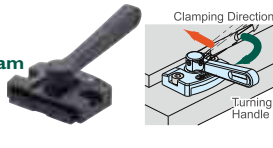
QLCP
Cam Push
Clamps



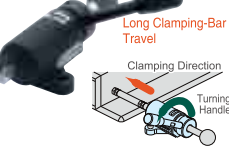
QLSCH
Cam Edge
Clamps



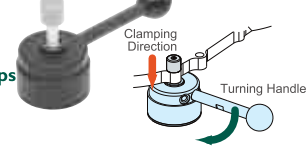
QLSCL
Low-Profile Cam
Edge Clamps



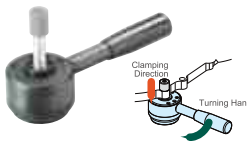
QLRC
Thrust Clamps



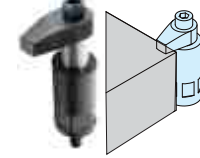
QLPD
Pull Clamps



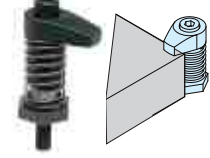
QLPDH
Pull Clamps
(Heavy)



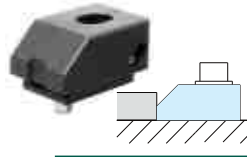
BJ130-A
Hook-Clamp
Assemblies



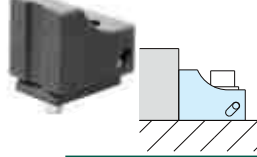
BJ131
Hook Clamps



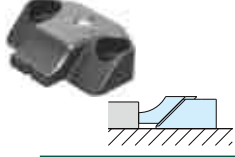
CP106
Toe Clamps



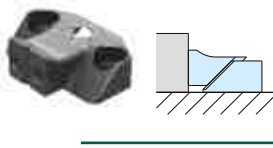
CP107
Side Clamps



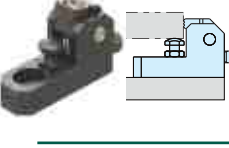
CP104
Toe Clamps



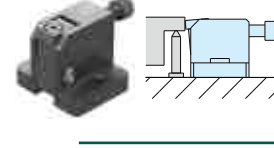
CP105
Side Clamps



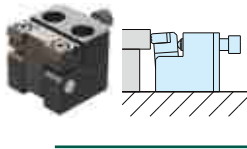
CP100
Side Clamps



CP101
Side Clamps



CP102
Wide-Jaw
Side Clamps



BJ161
Cam Clamps



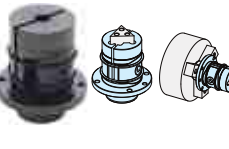
BJ162
Cam Edge
Clamps



CP120
OD Holding
Clamps



CP123
OD Holding
Clamps



CP130
ID Holding
Clamps



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

K0309 Spring Plunger with slot and ball, steel



K0310 Spring Plunger with slot and ball, stainless steel



K0311 Spring Plunger with slot and POM ball



K0312 Spring plungers with slot and stainless steel ball



K0609 Spring Plunger with slot and ceramic ball, stainless steel



K0313 & K0314 Spring Plunger with slot and pressure pin, steel & stainless steel



K0315 & K0316 Spring Plunger with hexagon socket and ball, steel & stainless steel



K0610 Spring Plunger with hexagon socket and ceramic ball



K0657 Spring Plunger with hexagon socket and pressure pin, long version



K0317 Spring Plunger with hexagon socket and pressure pin, steel



K0319 Spring Plunger with hexagon socket and pressure pin, stainless steel



K0321 Spring Plunger with slot and ball, steel LONG-LOK secured



K0322 Spring Plunger with slot and ball, stainless steel LONG-LOK secured



K0323 Spring Plunger with slot and pressure pin, steel LONG-LOK secured



K0324 Spring Plunger with slot and pressure pin, stainless steel LONG-LOK secured



K0005 & K0006 Cam Levers and Adjustable Cam Levers



K0645 & K0647 Cam Levers and Adjustable Cam Levers



K0646 & K0648 Adjustable Cam Levers with Plastic Handle



K0751 Eccentric Quick Lock



K0118 Eccentric Cam Levers



K0116 Clamping Levers with external thread



K0117 Clamping Levers with external thread stainless steel



K0120 & K0121 Clamping Levers with external thread steel and stainless steel



K0122 & K0123 Clamping Levers with external thread steel and stainless steel



K0124 Clamping Levers with external thread steel and stainless steel



K0737 & K0738 Clamping Levers with external thread steel and stainless steel



K0269 & K0270 Clamping Levers with external thread and plastic handle



K0125 & K0126 Clamping Levers 2K Cockatoo



K0252 Clamping Levers Toucan



K0175 Non-adjustable Clamping Levers



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

K0137
Knurled Nuts



K0138
Plastic
Knurled Nuts



K0141
Plastic Knurled
Thumb Screws



K0139
Quick Acting
Knurled Nuts



K0144
Thin
Knurled Nuts



K0143
High
Knurled Nuts



K0140
High Knurled
Thumb Screws



K0142
Knurled Knobs



K0247
Knurled Knobs



K0145, K0146 & K0147
Palm Grips
in Aluminium,
steel and
stainless steel



K0613
Palm Grips Soft



K0138
Plastic
Knurled Nuts



K0149, K0150 & K0151
Star Grips
in Aluminium,
steel and
stainless steel



K0152
Star Grips



K0153
Star Grips
with bush



K0154
Star Grips with
steel parts



K0155
Star Grips



K0156
Quick-acting
Star Grips



K0276
Ribbed Grips



K0276 & K0185
Five Lobe Grips



K0255
Clamp Grips



K0183
Triangular
Star Grips



K0260
Knurled Knobs



K0251
Mushroom Knobs



K0274
Wing Grips



K0650
Ball Knobs
stainless steel
and aluminium



K0159
Ball Knobs
with smooth
surface



K0253
Spherical
Knobs



K0248
Graduated
Knobs



K0249
Adjusting
Knobs



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

K0186
Pull Handles
Round, Tapped



K0187
Pull Handles
Offset, Tapped



K0191
Pull Handles
Bridge, Thru Hole



K0194
Pull Handles
Bridge, Thru Hole



K0196
Pull Handles
Arch, Tapped



K0197
Pull Handles
Angled, Tapped



K0198
Pull Handles
Stainless Steel
Bridge



K0201
Pull Handles
Round, Tapped



K0204
Pull Handles
Oval, Tapped



K0207
Pull Handles
Angled,
Machine Grip



K0209
Pull Handles
General
Purpose



K0210
Pull Handles
Light Weight
Thru Hole



K0231
Pull Handles
Bighand



K0232
Pull Handles
Ledge Tapped



K0239
Pull Handles
Recessed
Fold-Out



K0725
Handwheels
2-spoke plastic
with revolving
grip



K0671
Handwheels
DIN 950
Grey cast iron



K0160
Handwheels
DIN 950
aluminium



K0161
Handwheels
Disc
aluminium



K0162
Handwheels
2-spoke
aluminium



K0197
Handwheels
disc with
revolving grip



K0257
Handwheels with
revolving cylinder grip



K0262
Positioning
Wheels



K0275
Delta
Wheels



K0726
Ball Grip rotatable



K0684
Offset Crank
Handles



K0727
Aluminium
Crank Handles



K0659
Crank Handles with
Cylindrical Grip



K0740
Cylindrical
Revolving
Grips



K0408
Digital Position
Indicators



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

K0333
Spring Plungers,
smooth version



K0582
Spring Plungers,
with arrest ring



K0338
Indexing Plungers



K0339
Indexing Plungers



K0340
Indexing Plungers



K0342
Indexing Plungers



K0635
Indexing Plungers
with collar



K0359
Precision
Indexing Plungers
with tapered pin



K0245
Indexing and Clamp
Grips



K0348
Cam Action
Indexing Plungers



K0639
Cam Action
Indexing Plungers



K0349
Locking Bar



K0363
Ball Locking bolts
self-locking



K0364
Ball Locking bolts
in stainless steel
self-locking



K0642
Ball Locking bolts
with L-Grip
self-locking



K0282
Self-aligning
Pads



K0385
Round grippers
and inserts



K0287
Self-aligning
Pads adjustable



K0288
Adjustable toggle
locators with O-Ring



K0290
Self-aligning
Pads adjustable
with O-Ring



K0380
Ball-end thrust screws
with head



K0383
Ball-end thrust screws
without head



K0386
Hexagonal grippers



K0387
Square grippers



K0350
Locating Pins
with ball-end
Form A



K0351
Locating pins
with flattened
ball-end



K0352
Cylindrical positioning
pins ground



K0356
Locating bolts
spread type



K0294
Rest Pads



K0692
Height adjustment
bolts



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

K0518
Quarter turn lock,
small version



K0525
Quarter turn lock
with wing knob



K0529
Compression latch



K0520
Quarter turn lock
with cylinder,
small version



K0526
Quarter turn lock
with T - girp



K0531
Compression latch
with adjustable
cam height



K0522
Quarter turn lock



K0527
Compression latch
with stepped cam



K0535
Keys
for compression latch



K0524
Secure quarter turn loc



K0528
Compression latch
with variable
tightening length



K0271
Limit bolt



K0434
Hinges
in plastic,
detachable, left



K0437
Hinge
plastic, with oblong hol



K0441
Hinges, die cast
zinc with oblong
holes



K0434
Hinges
in plastic,
detachable, right



K0438
Hinges
plastic, with guide tabs,
detachable



K0442
Hinges
in die cast zinc
with clamping
function



K0435
Hinges
in plastic



K0439
Hinges
in plastic with a
catching function



K0579
Hinges
in aluminium, detachal
left



K0436
Hinges
in plastic with clamping
function



K0440
Hinges
in plastic with
adjustable friction



K0579
Hinges
in aluminium,
detachable, right



K0739
Swivel feet
steel or stainless steel



K0742
Swivel pads
steel



K0395
Swivel feet



K0741
Swivel feet
stainless steel for sterile
areas



K0674
Swivel feet round



K0420
Swivel feet
with vibration
absorption



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Standard Accessories - KIPP

**Clamping Levers, Tension Levers,
Cam Levers**



**Quarter-turn Locks,
Compression Latches**



Grips, Knobs



Hinges



**Handwheels, Crank Handles,
Position Indicators**



Swivel Feet, Levelling Feet



**Pull Handles, Tubular Handles,
Recessed Handles**



**Tube Connectors,
Profile Connectors**



**Spring Plungers,
Indexing Plungers, Ball Lock Pins**



**Support Elements,
Locking Elements, Stop Elements**



Machine And Fixture Components



Buffer Elements



Level Indicators, Screw Plugs



Material Handling



Telescopic Slides



Note : For more detailed catalog pl contact marketing@pawangroup.co.in

► Other Products



Lifting Bolt



Clamping Kit



Caster Wheel

► Other Products



Cam Unit



Guide Rail



Side Core



Locating Ring



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