



## NPL Series

NPL-750 to NPL-7500

Low Height Nitrogen  
Gas Springs



### NPL Product Value

- Lower Height:  
Provides the force needed in a shorter profile where height is restricted.
- Force Adjustability & Increased Productivity:  
Hyson Gas Springs are adjustable simply by modifying gas pressure through a hoses control panel while the die is in the press.
- Balanced, Consistent Force:  
Hyson Gas Springs provide for a balanced pad and high quality parts while, as Coil Springs start to fatigue and break, the pad can become imbalanced resulting in poor quality parts.

### Advanced Safety Features

- Overpressure Protection: designed to safely vent excessive gas pressure in the event of an over-pressure situation such as overcharged gas springs or the ingestion of large amounts of drawing or cooling fluids.
- Overstroke Protection: A patented system allows the venting of gas in a pre-determined manner with deformation or knock-out plug in the event of a mechanical overload of the gas spring body.
- Overload Protection: In the case of blockage in the tool that causes excessive piston return speed, a specially designed rod and integral safety stops retain the piston rod in the gas spring and allow gas to vent safely.



## Product Specifications

Pressure medium .....	Nitrogen
Min. charging pressure .....	25 bar
Max. charging pressure .....	150 bar
Operating temperature .....	0° to 80°C
Force increase by temperature .....	±0.3% per °C
Recommended max strokes/min .....	~15-40 @ 20°C
Max piston rod velocity .....	1.6 m/s
Inlet valve .....	56-072-5500
Charge fitting .....	T2-770-G1/8-P

## Ordering Options

NPL-5000	X	50
Model		Stroke (mm)
NPL-750		See
NPL-1500		Dimensional
NPL-3000		Information
NPL-5000		Charts
NPL-7500		

## Repair Kits

Gas Spring	NP Repair kit number
NPL-750	3324118
NPL-1500	3324144
NPL-3000	3324171
NPL-5000	3324178
NPL-7500	3325027

Gas Spring Model	Page
NPL-750	30
NPL-1500	32
NPL-3000	34
NPL-5000	36
NPL-7500	38

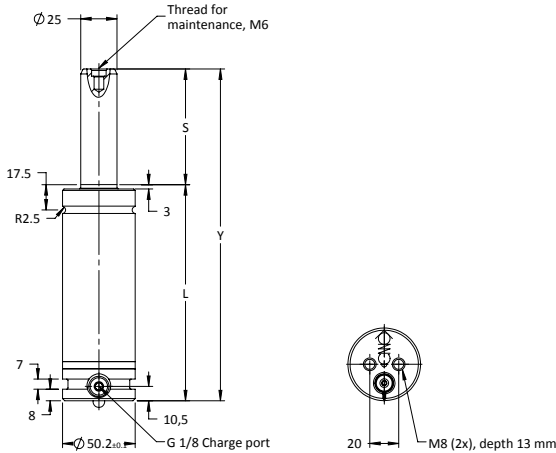
NPL-750 provides full stroke force between 11,400 N (2,560 lbf) and 12,000 (2,700 lbf) and is available in 18 stroke lengths.

Strokes 25, 50, 80, 100, and 125 are offered as a part of the Hyson Preferred Program which provides optimal delivery.

### Basic Information

For general information see “About Gas Springs”.

Min. charging pressure (at 20°C)	25 bar
Max. charging pressure (at 20°C)	150 bar
Contact Force at max. pressure (N)	7400
Contact Force at max. pressure (lbf)	1660
Recommended max strokes/min (at 20°C)	~ 15-40
Cylinder diameter (mm)	50
Charge port	G 1/8"
Repair kit	3324118
Operating temperature	0 to +80°C
Max piston rod velocity	1.6 m/s
Force increase by temperature	±0.3%/°C
Pressure medium	Nitrogen



Order number Model X Stroke	Stroke		Contact Force		Full Stroke Force		Cylinder Height		Body Height		Gas vol.	Weight	
	S		2175 psi at 68 °F		N	lbf.	Y ±0.25	Y ±0.010	L			ℓ	kg
	mm	in	N	lbf.					mm	in	mm		
<b>Preferred Stroke Lengths (optimal delivery)</b>													
NPL-750X25*	25	.98	7,400	1,665	11,700	2,630	120	4.72	95	3.35	0.04	1.08	2.38
NPL-750X50*	50	1.97			11,900	2,670	170	6.69	120	4.72	0.08	1.32	2.91
NPL-750X80*	80	3.15			11,900	2,670	230	9.06	150	5.91	0.11	1.58	3.48
NPL-750X100*	100	3.94			11,900	2,670	270	10.63	170	6.69	0.14	1.77	3.90
NPL-750X125*	125	4.92			12,000	2,700	320	12.60	195	7.68	0.15	2.01	4.43
NPL-750X160*	160	6.30	12,000	2,700	390	15.35	230	9.06	0.20	2.34	5.16		
<b>Alternative Stroke Lengths</b>													
NPL-750X12.5	12.5	.49	7,400	1,665	11,400	2,560	95	3.74	82.5	3.25	0.03	.97	2.14
NPL-750X37.5	37.5	1.48			11,800	2,650	145	5.71	107.5	4.23	0.06	1.20	2.65
NPL-750X62.5	62.5	2.46			11,900	2,670	195	7.68	132.5	5.22	0.09	1.42	3.13
NPL-750X75	75	2.95			11,900	2,675	220	8.66	145	5.71	0.11	1.53	3.37
NPL-750X87.5	87.5	3.44			11,900	2,670	245	9.65	157.5	6.20	0.11	1.65	3.64
NPL-750X112.5	112.5	4.43			12,000	2,700	295	11.61	182.5	7.19	0.15	1.89	4.17
NPL-750X137.5	137.5	5.41			12,000	2,700	345	13.58	207.5	8.17	0.17	2.13	4.70
NPL-750X150	150	5.91			12,000	2,700	370	14.57	220	8.66	0.19	2.25	4.96
NPL-750X175	175	6.89			12,000	2,700	420	16.54	245	9.65	0.23	2.48	5.47
NPL-750X200	200	7.87			12,000	2,700	470	18.50	270	10.63	0.26	2.72	6.00
NPL-750X225	225	8.86			12,000	2,700	520	20.47	295	11.61	0.30	2.96	6.53
NPL-750X250	250	9.84			12,000	2,700	570	22.44	320	12.60	0.33	3.19	7.03

**Note!** All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



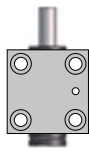
## Mounting Possibilities



Body  $\varnothing_{+2.0}^{+0.5}$   
Top mount  
FC, FCS,  
FCSC



Foot mount  
FFC, SF,  
LM-lug, L



Body mount  
HM, HMF,  
S



Base mount  
MP, RM

## Recommended Flanges



FC-750



235



FCS-750



238



FFC-750



240



HMF-750



243



MP-750



246



S-750



248

## Additional Flanges



FCSC-750



239



SF-750



249



HM-750



242



LM-LUG-750



244



L-750



245



RM-750



247

### Note!

For dimensions on all mounting flanges, refer to "Flanges" in chapter 3.

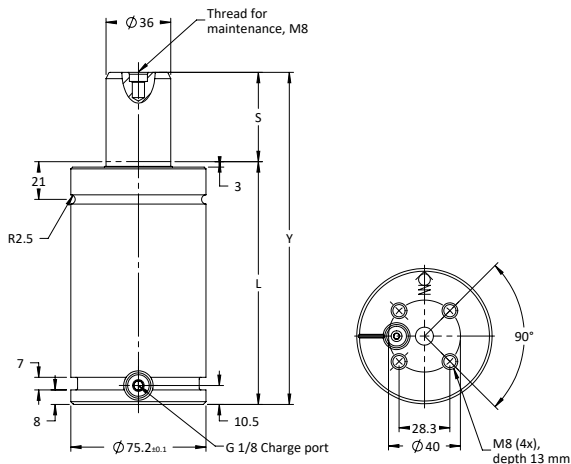
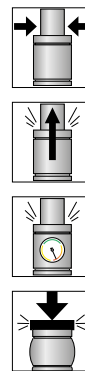
**NPL-1500 provides full stroke force between 18,000 N (4,050 lbf) and 22,200 (4,990 lbf) and is available in 18 stroke lengths.**

Strokes 25, 50, 80, 100, 125 and 160 are offered as a part of the Hyson Preferred Program which provides optimal delivery.

**Basic Information**

For general information see “About Gas Springs”.

Min. charging pressure (at 20°C) .....	25 bar
Max. charging pressure (at 20°C) .....	150 bar
Contact Force at max. pressure (N) .....	15000
Contact Force at max. pressure (lbf) .....	3370
Recommended max strokes/min (at 20°C) .....	~ 15-40
Cylinder diameter (mm) .....	75
Charge port .....	G 1/8"
Repair kit .....	3324144
Operating temperature .....	0 to +80°C
Max piston rod velocity .....	1.6 m/s
Force increase by temperature .....	±0.3%/°C
Pressure medium .....	Nitrogen



Order number Model X Stroke	Stroke		Contact Force		Full Stroke Force		Cylinder Height		Body Height		Gas vol. ℓ	Weight	
	S		2175 psi at 68 ° F		N	lbf.	Y ±0.25		L			kg	lb
	mm	in	N	lbf.			mm	in	mm	in			
<b>Preferred Stroke Lengths (optimal delivery)</b>													
NPL-1500X25*	25	.98	15,000	3,375	19,200	4,320	135	5.31	110	4.33	0.15	2.88	6.35
NPL-1500X50*	50	1.97			20,400	4,590	185	7.28	135	5.31	0.23	3.34	7.36
NPL-1500X80*	80	3.15			21,000	4,720	245	9.65	165	6.50	0.33	3.89	8.58
NPL-1500X100*	100	3.94			21,200	4,770	285	11.22	185	7.28	0.39	4.26	9.39
NPL-1500X125*	125	4.92			21,500	4,830	335	13.19	210	8.27	0.47	4.71	10.38
NPL-1500X160*	160	6.30	22,100	4,970	405	15.95	245	9.65	0.56	5.36	11.82		
<b>Alternative Stroke Lengths</b>													
NPL-1500X12.5	12.5	.49	15,000	3,375	18,000	4,050	110	4.33	97.5	3.84	0.11	2.65	5.84
NPL-1500X37.5	37.5	1.48			20,000	4,500	160	6.30	122.5	4.82	0.19	3.11	6.86
NPL-1500X62.5	62.5	2.46			20,700	4,650	210	8.27	147.5	5.81	0.27	3.57	7.87
NPL-1500X75	75	2.95			20,900	4,700	235	9.25	160	6.30	0.31	3.88	8.55
NPL-1500X87.5	87.5	3.44			21,100	4,740	260	10.24	172.5	6.79	0.35	4.03	8.88
NPL-1500X112.5	112.5	4.43			21,400	4,810	310	12.20	197.5	7.78	0.43	4.49	9.90
NPL-1500X137.5	137.5	5.41			22,000	4,950	360	14.17	222.5	8.76	0.49	4.94	10.89
NPL-1500X150	150	5.91			22,000	4,950	385	15.16	235	9.25	0.52	5.17	11.40
NPL-1500X175	175	6.89			22,100	4,970	435	17.13	260	10.24	0.60	5.63	12.41
NPL-1500X200	200	7.87			22,100	4,970	485	19.09	285	11.22	0.68	6.09	13.43
NPL-1500X225	225	8.86			22,200	4,990	535	21.06	310	12.20	0.76	6.55	14.44
NPL-1500X250	250	9.84			22,200	4,990	585	23.03	335	13.19	0.84	7.01	15.45

\* Recommended stroke length for optimal delivery

**Note!** All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



## Mounting Possibilities

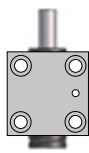


Body  $\varnothing_{+0.5}^{-2.0}$

Top mount  
FC, FCS,  
FCSC



Foot mount  
FFC, SF,  
LM-lug, L



Body mount  
HM, HMF,  
S



Base mount  
MP, RM

## Recommended Flanges



FC-1500



235



FCS-1500



238



FFC-1500



240



HMF-1500



243



MP-1500



246



S-1500



248

## Additional Flanges



FCSC-1500



239



SF-1500



249



HM-1500



242



LM-LUG-1500



244



L-1500



245



RM-1500



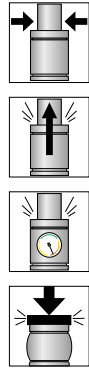
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### Note!

For dimensions on all mounting flanges, refer to "Flanges" in chapter 3.

**NPL-3000 provides full stroke force between 38,700 N (8,710 lbf) and 47,300 (10,640 lbf) and is available in 18 stroke lengths.**

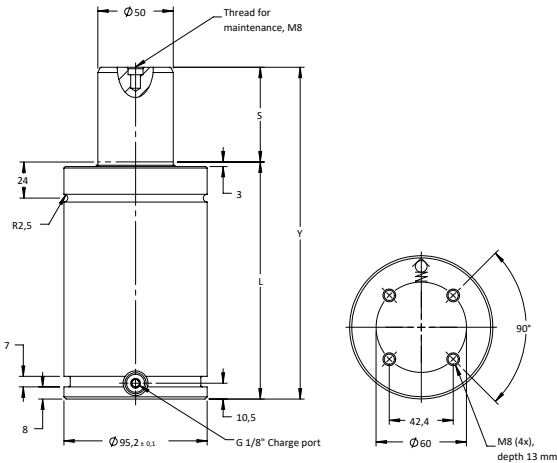
Strokes 25, 50, 80, 100, 125 and 160 are offered as a part of the Hyson Preferred Program which provides optimal delivery.



**Basic Information**

For general information see “About Gas Springs”.

- Min. charging pressure (at 20°C) ..... 25 bar
- Max. charging pressure (at 20°C) ..... 150 bar
- Contact Force at max. pressure (N) ..... 30000
- Contact Force at max. pressure (lbf) ..... 6750
- Recommended max strokes/min (at 20°C) ..... ~ 15-40
- Cylinder diameter (mm) ..... 95
- Charge port ..... G 1/8"
- Repair kit ..... 3324171
- Operating temperature ..... 0 to +80°C
- Max piston rod velocity ..... 1.6 m/s
- Force increase by temperature ..... ±0.3%/°C
- Pressure medium ..... Nitrogen



Order number Model X Stroke	Stroke		Contact Force		Full Stroke Force		Cylinder Height		Body Height		Gas vol.	Weight	
	S		2175 psi at 68 ° F		N	lbf.	Y ±0.25	Y ±0.010	L			ℓ	kg
	mm	in	N	lbf.					mm	in	mm		
<b>Preferred Stroke Lengths (optimal delivery)</b>													
NPL-3000X25*	25	.98	30,000	6,750	41,800	9,400	145	5.71	120	4.72	0.21	5.24	11.55
NPL-3000X50*	50	1.97			44,400	9,980	195	7.68	145	5.71	0.33	6.03	13.29
NPL-3000X80*	80	3.15			45,600	10,260	255	10.04	175	6.89	0.48	7.12	15.70
NPL-3000X100*	100	3.94			46,100	10,360	295	11.61	195	7.68	0.58	7.62	16.80
NPL-3000X125*	125	4.92			46,500	10,450	345	13.58	220	8.66	0.71	8.41	18.54
NPL-3000X160*	160	6.30			46,900	10,530	415	16.34	255	10.04	0.89	9.53	21.01
<b>Alternative Stroke Lengths</b>													
NPL-3000X12.5	12.5	.49	30,000	6,750	38,700	8,710	120	4.72	107.5	4.23	0.14	4.84	10.67
NPL-3000X37.5	37.5	1.48			43,500	9,770	170	6.69	132.5	5.22	0.27	5.64	12.43
NPL-3000X62.5	62.5	2.46			45,100	10,130	220	8.66	157.5	6.20	0.40	6.43	14.18
NPL-3000X75	75	2.95			45,500	10,230	245	9.65	170	6.69	0.46	6.83	15.06
NPL-3000X87.5	87.5	3.44			45,800	10,300	270	10.63	182.5	7.19	0.52	7.23	15.94
NPL-3000X112.5	112.5	4.43			46,300	10,410	320	12.60	207.5	8.17	0.65	8.02	17.68
NPL-3000X137.5	137.5	5.41			46,600	10,490	370	14.57	232.5	9.15	0.77	8.84	19.49
NPL-3000X150	150	5.91			46,800	10,510	395	15.55	245	9.65	0.84	9.21	20.30
NPL-3000X175	175	6.89			47,000	10,560	445	17.52	270	10.63	0.96	10.00	22.05
NPL-3000X200	200	7.87			47,100	10,590	495	19.49	295	11.61	1.09	10.79	23.79
NPL-3000X225	225	8.86			47,200	10,620	545	21.46	320	12.60	1.21	11.59	25.55
NPL-3000X250	250	9.84			47,300	10,640	595	23.43	345	13.58	1.34	12.38	27.29

\* Recommended stroke length for optimal delivery  
**Note!** All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



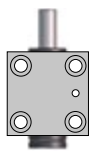
## Mounting Possibilities



Body  $\varnothing_{+2.0}^{+0.5}$   
Top mount  
FC, FCS,  
FCSC



Foot mount  
FFC, SF,  
LM-lug, L



Body mount  
HM, HMF,  
S



Base mount  
MP, RM

## Recommended Flanges



FC-3000

235



FCS-3000

238



FFC-3000

240



HMF-3000

243



MP-3000

246



S-3000

248

## Additional Flanges



FCSC-3000

239



SF-3000

249



HM-3000

242



LM-LUG-3000

244



L-3000

245



RM-3000

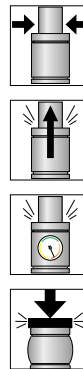
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### Note!

For dimensions on all mounting flanges, refer to "Flanges" in chapter 3.

**NPL-5000 provides full stroke force between 80,100 N (18,000 lbf) and 85,400 (19,190 lbf) and is available in 17 stroke lengths.**

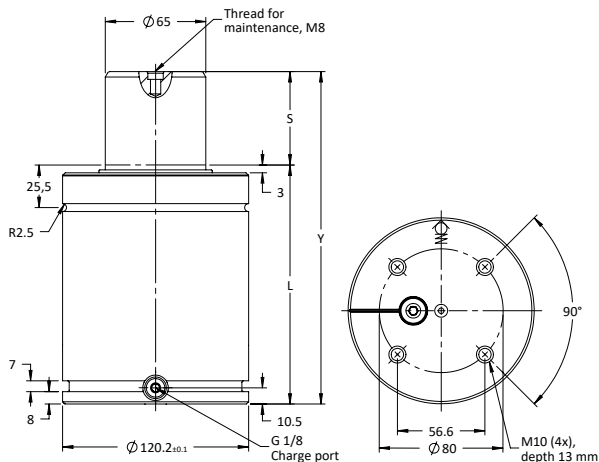
Strokes 25, 50, 80, 100, 125 and 160 are offered as a part of the Hyson Preferred Program which provides optimal delivery.



### Basic Information

For general information see “About Gas Springs”.

Min. charging pressure (at 20°C) .....	25 bar
Max. charging pressure (at 20°C) .....	150 bar
Contact Force at max. pressure (N) .....	50000
Contact Force at max. pressure (lbf) .....	11200
Recommended max strokes/min (at 20°C) .....	~ 15-40
Cylinder diameter (mm) .....	120
Charge port .....	G 1/8"
Repair kit .....	3324178
Operating temperature .....	0 to +80°C
Max piston rod velocity .....	1.6 m/s
Force increase by temperature .....	±0.3%/°C
Pressure medium .....	Nitrogen



Order number Model X Stroke	Stroke		Contact Force		Full Stroke Force		Cylinder Height		Body Height		Gas vol. ℓ	Weight		
	S		2175 psi at 68 ° F		N	lbf.	Y ±0.25		L			kg	lb	
	mm	in	N	lbf.			mm	in	mm	in				
<b>Preferred Stroke Lengths (optimal delivery)</b>														
NPL-5000X25	25	.98	50,000	11,240	80,100	18,000	152.5	6.00	127.5	5.02	0.2	9.04	19.93	
NPL-5000X50	50	1.97			82,800	18,620	202.5	7.97	152.5	6.00	0.4	10.35	22.82	
NPL-5000X80	80	3.15			84,000	18,870	262.5	10.33	182.5	7.19	0.7	11.93	26.30	
NPL-5000X100	100	3.94			84,400	18,970	302.5	11.91	202.5	7.97	0.8	12.98	28.62	
NPL-5000X125	125	4.92			84,700	19,040	352.5	13.88	227.5	8.96	1.0	14.30	31.53	
NPL-5000X160	160	6.30			85,000	19,100	422.5	16.63	262.5	10.33	1.3	16.14	35.58	
<b>Alternative Stroke Lengths</b>														
NPL-5000X37.5	37.5	1.48	50,000	11,240	81,900	18,410	177.5	6.99	140	5.51	0.3	9.70	21.38	
NPL-5000X62.5	62.5	2.46			83,500	18,760	227.5	8.96	165	6.50	0.5	11.01	24.27	
NPL-5000X75	75	2.95			83,800	18,850	252.5	9.94	177.5	6.99	0.6	11.67	25.73	
NPL-5000X87.5	87.5	3.44			84,100	18,920	277.5	10.93	190	7.48	0.7	12.32	27.16	
NPL-5000X112.5	112.5	4.43			84,500	19,000	327.5	12.89	215	8.46	0.9	13.64	30.07	
NPL-5000X137.5	137.5	5.41			84,800	19,070	377.5	14.86	240	9.45	1.1	14.96	32.98	
NPL-5000X150	150	5.91			84,900	19,090	402.5	15.85	252.5	9.94	1.2	15.62	34.44	
NPL-5000X175	175	6.89			85,100	19,130	452.5	17.81	277.5	10.93	1.4	16.94	37.35	
NPL-5000X200	200	7.87			85,200	19,160	502.5	19.78	302.5	11.91	1.6	18.25	40.23	
NPL-5000X225	225	8.86			85,300	19,180	552.5	21.75	327.5	12.89	1.8	19.57	43.14	
NPL-5000X250	250	9.84			85,400	19,190	602.5	23.72	352.5	13.88	2.0	20.89	46.05	

**Note!** All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



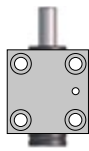
## Mounting Possibilities



Body  $\varnothing_{+2.0}^{+0.5}$   
Top mount  
FC, FCS,  
FCSC



Foot mount  
FFC, SF,  
LM-lug, L



Body mount  
HM, HMF,  
S



Base mount  
MP, RM

## Recommended Flanges



FC-5000



235



FCS-5000



238



FFC-5000



240



HMF-5000



243



MP-5000



246



S-5000



248

## Additional Flanges



FCSC-5000



239



SF-5000



249



LM-LUG-5000



242



L-5000



244



RM-5000



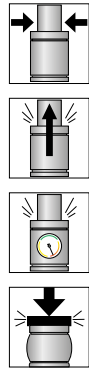
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### Note!

For dimensions on all mounting flanges, refer to "Flanges" in chapter 3.

**NPL-7500 provides full stroke force between 99,900 N (22,450 lbf) and 116,000 (26,080 lbf) and is available in 17 stroke lengths.**

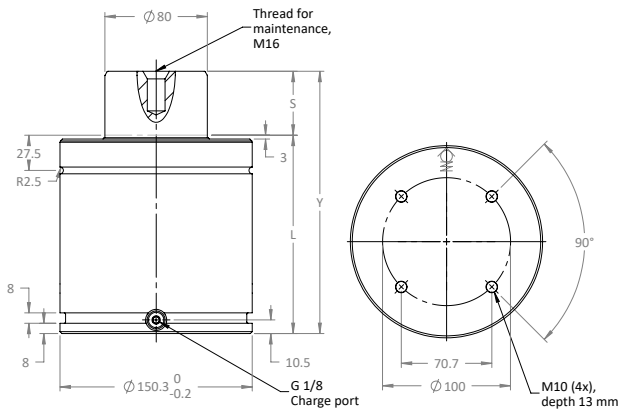
Strokes 25, 50, 80, 100, 125 and 160 are offered as a part of the Hyson Preferred Program which provides optimal delivery.



### Basic Information

For general information see “About Gas Springs”.

Min. charging pressure (at 20°C) .....	25 bar
Max. charging pressure (at 20°C) .....	150 bar
Contact Force at max. pressure (N) .....	75000
Contact Force at max. pressure (lbf) .....	16900
Recommended max strokes/min (at 20°C) .....	~ 15-40
Cylinder diameter (mm) .....	150
Charge port .....	G 1/8”
Repair kit .....	3325027
Operating temperature .....	0 to +80°C
Max piston rod velocity .....	1.6 m/s
Force increase by temperature .....	±0.3%/°C
Pressure medium .....	Nitrogen



Order number Model X Stroke	Stroke		Contact Force		Full Stroke Force		Cylinder Height		Body Height		Gas vol. ℓ	Weight	
	S		2175 psi at 68 ° F		N	lbf.	Y ±0.25	Y ±0.010	L			kg	lb
	mm	in	mm	in			mm	in					
<b>Preferred Stroke Lengths (optimal delivery)</b>													
NPL-7500X25	25	.98	75,000	16,860	99,900	22,450	155	6.10	130	5.12	0.6	13.6	29.98
NPL-7500X50	50	1.97			106,800	24,010	205	8.07	155	6.10	0.9	15.4	33.95
NPL-7500X80	80	3.15			115,600	25,990	265	10.43	185	7.28	1.4	17.5	38.58
NPL-7500X100	100	3.94			112,000	25,180	305	12.01	205	8.07	1.8	18.9	41.67
NPL-7500X125	125	4.92			113,300	25,470	355	13.98	230	9.06	2.1	20.7	45.64
NPL-7500X160	160	6.30			114,400	25,720	425	16.73	265	10.43	2.6	23.2	51.15
<b>Alternative Stroke Lengths</b>													
NPL-7500X37.5	37.5	1.48	75,000	16,860	104,100	23,400	180	7.09	142.5	5.61	0.7	14.5	31.97
NPL-7500X62.5	62.5	2.46			108,700	24,440	230	9.06	167.5	6.59	1.0	16.3	35.94
NPL-7500X75	75	2.95			110,100	24,750	255	10.04	180	7.09	1.3	17.2	37.92
NPL-7500X87.5	87.5	3.44			111,200	25,000	280	11.02	192.5	7.58	1.6	18.0	39.68
NPL-7500X112.5	112.5	4.43			112,700	25,340	330	12.99	217.5	8.56	1.9	19.8	43.65
NPL-7500X137.5	137.5	5.41			113,700	25,560	380	14.96	242.5	9.55	2.3	21.6	47.62
NPL-7500X150	150	5.91			114,100	25,650	405	15.94	255	10.04	2.4	22.5	49.60
NPL-7500X175	175	6.89			114,800	25,810	453	17.83	280	11.02	3.0	24.3	53.57
NPL-7500X200	200	7.87			115,300	25,920	505	19.88	305	12.01	3.3	26.1	57.54
NPL-7500X225	225	8.86			115,700	26,010	555	21.85	330	12.99	3.3	27.8	61.29
NPL-7500X250	250	9.84			116,000	26,080	605	23.82	355	13.98	3.6	29.6	65.26

**Note!** All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



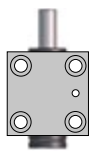
## Mounting Possibilities



Body  $\varnothing_{+0.5}^{-2.0}$   
Top mount  
FC, FCS,  
FCSC



Foot mount  
FFC, SF,  
LM-lug, L



Body mount  
HMF, S



Base mount  
MP, RM

## Recommended Flanges



FC-7500

235



FCS-7500

238



FFC-7500

240



HMF-7500

243



MP-7500

246



S-7500

248

## Additional Flanges



FCSC-7500

239



SF-7500

249



LM-LUG-7500

242



L-7500

244



RM-7500

247

### Note!

For dimensions on all mounting flanges, refer to "Flanges" in chapter 3.