

NDS Series

NDS-3000 to NDS-7500

Nitrogen Die Separation Gas Springs



Product Value

- In addition to preventing wear, NDS springs aid in the reduction of snap through and unnecessary use of tonnage.
- NDS springs allow dies which use cushions to be stacked, in turn freeing up floor space and preventing die pin and die steel damage to storage.
- Energy savings of 70-80% when compared to traditional springs.

Product Features

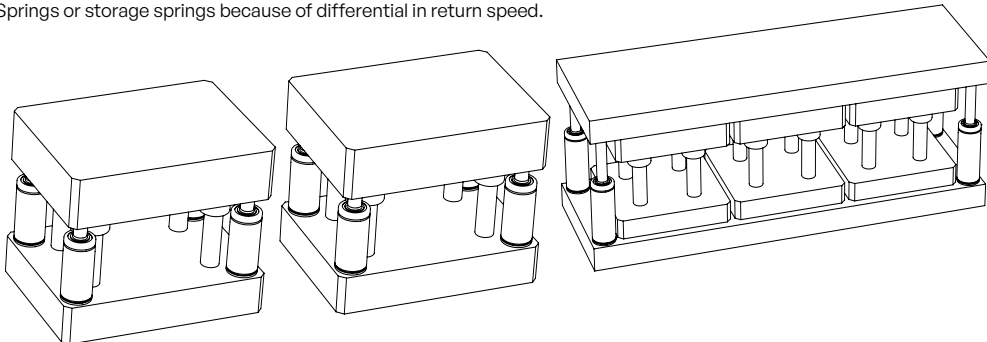
- Hyson Nitrogen Die Separation Gas Springs range from model sizes NDS-3000 to NDS-7500.
- Using the new NDS Springs is an excellent way to avoid unnecessary wear of the die, press and Gas Springs.
- Initial forces from 30,000 to 75,000 N.
- Stroke lengths of 80 up to 300 mm.
- Upper C-groove, lower U-groove and bottom threaded holes allow for various standard mounting possibilities.
- Suitable for both top up and bottom up working position in the tool.
- NDS Gas Springs have a very slow return speed compared to traditional springs and should not be intermixed with standard Gas Springs or other storage springs because of return speed differential.

Compatible to Replace NP Series in Die Storage Applications

- Based on NP outside dimension.
- Return speed approx. 150 mm / 5.90 in per min.
- Saves up to 5 kW / spring depending of used stroke.
- Longer life time because of less stroke.
- Same mounting possibilities as NP, but should not be intermixed with NP Springs.

Return Speed Variation

NDS Gas Springs are suitable for line dies or progressive dies. Some progressive dies with multiple die sets are more sensitive and caution should be taken. NDS is a storage spring and should not be intermixed with other Gas Springs or storage springs because of differential in return speed.





Product Specifications

Pressure medium Nitrogen
 Min. charging pressure 25 bar/365 psi
 Max. charging pressure 150 bar/2175 psi
 Operating temperature 0° to 80°C/32° to 176°F
 Max piston rod velocity 1.6 m/s / 315 ft./min.
 Max Return Speed 3.33 mm per sec / 0.13 in per sec.
 Return Speed Variation +/- 3%

Ordering Options

X

Model
 NDS-3000, NDS-5000,
 NDS-7500

STROKE (mm)
 See Dimensional
 Information Charts

All Gas Springs shipped at maximum charge pressure unless otherwise specified.

Repair Kits

Gas Spring	Order Number
NDS-3000	3226825
NDS-5000	3226826
NDS-7500	3226827

NOTE: Applicable only for models with identification groove.

Gas Spring Model	Page
NDS-3000	170
NDS-5000	172
NDS-7500	174

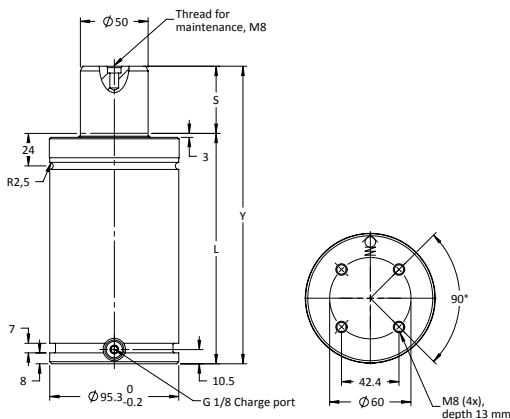
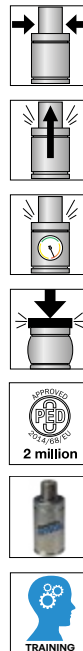
NDS-3000 provides full stroke force between 46,000 N (10,340 lbf) and 48,000 N (10,790 lbf) and are available in seven stroke lengths

Available Flanges for the 3000 model are Bottom Mounting Plate (MP-3000), Circular Flange (FC-3000), Upper Square Flange (FCS-3000), Lower Square Flange (FFC-3000), Support Mount (S-3000), and Round Mount (RM-3000).

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)	6744
Recommended max strokes/min (at 20°C)	~ 20-50
Cylinder diameter (mm)	95
Charge port	G 1/8"
Repair kit	3226825
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		Weight	
	S		2175 psi at 68°F		N	lbf.	Y ±0.25	Y ±0.010	L		kg	lb
	mm	in	mm	in			mm	in				
Preferred Stroke Lengths (optimal delivery)												
NDS-3000x80	80	3.15	30,000	6,750	46,000	10,340	280	11.02	200	7.87	8.1	17.82
NDS-3000x100	100	3.94			47,000	10,570	320	12.60	220	8.66	8.8	19.36
NDS-3000x125	125	4.92			47,000	10,570	370	14.57	245	9.65	9.6	21.12
NDS-3000x160	160	6.30			47,000	10,570	440	17.32	280	11.02	10.7	23.54
NDS-3000x200	200	7.87			48,000	10,790	520	20.47	320	12.60	12	26.4
NDS-3000x250	250	9.84			48,000	10,790	620	24.41	370	14.57	13.5	29.7
NDS-3000x300	300	11.81			48,000	10,790	720	28.35	420	16.54	15.1	33.22

NOTE:
All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



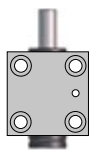
Mounting Possibilities



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



MP-3000



246



S-3000



248



HMF-3000



243

Additional Flanges



FCSC-3000



239



SF-3000



249



L-3000



244



RM-3000



247



HM-3000



242



LM-3000



242

Note!

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

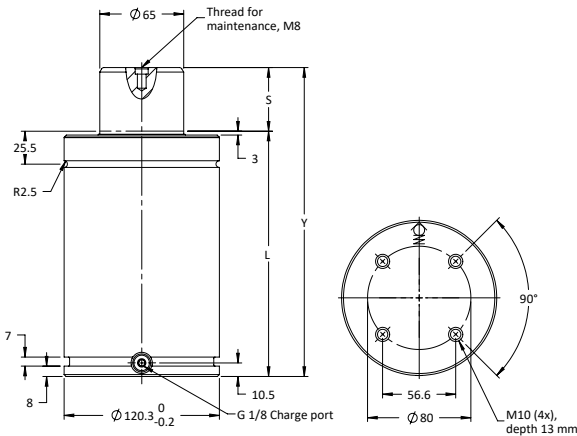
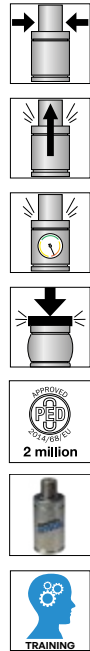
NDS-5000 provides full stroke force between 81,000 N (18,210 lbf) and 84,000 N (18,880 lbf) and are available in seven stroke lengths

Available Flanges for the 5000 model are Bottom Mounting Plate (MP-5000), Circular Flange (FC-5000), Upper Square Flange (FCS-5000), Lower Square Flange (FFC-5000), Support Mount (S-5000), and Round Mount (RM-5000).

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)	11240
Recommended max strokes/min (at 20°C)	~ 20-50
Cylinder diameter (mm)	120
Charge port	M6, G 1/8"
Repair kit	3226826
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		Weight	
	S		2175 psi at 68°F		N	lbf.	Y ±0.25	Y ±0.010	L		kg	lb
	mm	in	N	lbf.					mm	in		
Preferred Stroke Lengths (optimal delivery)												
NDS-5000x80	80	3.15	50,000	11,240	81,000	18,210	300	11.81	220	8.66	14.05	30.91
NDS-5000x100	100	3.94			82,000	18,430	340	13.39	240	9.45	15.11	33.242
NDS-5000x125	125	4.92			82,000	18,430	390	15.35	265	10.43	16.44	36.168
NDS-5000x160	160	6.30			83,000	18,660	460	18.11	300	11.81	18.31	40.282
NDS-5000x200	200	7.87			84,000	18,880	540	21.26	340	13.39	20.45	45.012
NDS-5000x250	250	9.84			84,000	18,880	640	25.20	390	15.35	23.09	50.798
NDS-5000x300	300	11.81			84,000	18,880	740	29.13	440	17.32	25.75	56.65

NOTE:
All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



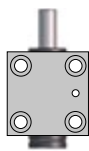
Mounting Possibilities



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



Foot mount
FFC, SF,
LM-lug, L



Body mount
HMF, S



Base mount
MP, RM

Recommended Flanges



FC-5000



FCS-5000



FFC-5000



MP-5000



S-5000



HMF-5000



Additional Flanges



FCSC-5000



SF-5000



L-5000



RM-5000



LM-5000



Note!

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

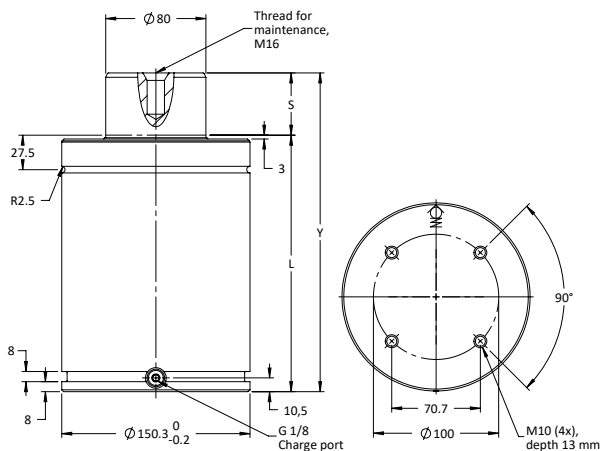
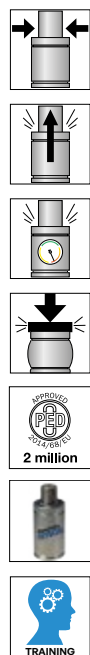
NDS-7500 provides full stroke force between 117,000 N (26,300 lbf) and 124,000 N (27,880 lbf) and are available in seven stroke lengths

Available Flanges for the 7500 model are Bottom Mounting Plate (MP-7500), Circular Flange (FC-7500), Upper Square Flange (FCS-7500), Lower Square Flange (FFC-7500), Support Mount (S-5000), and Round Mount (RM-7500).

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)	16860
Recommended max strokes/min (at 20°C)	~ 20-50
Cylinder diameter (mm)	150
Charge port	G 1/8"
Repair kit	3226827
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		Weight	
	S		2175 psi at 68°F		N	lbf.	Y ±0.25	Y ±0.010	L		kg	lb
	mm	in	N	lbf.					mm	in		
Preferred Stroke Lengths (optimal delivery)												
NDS-7500x80	80	3.15	75,000	16,860	117,000	26,300	315	12.40	235	9.25	22.71	49.962
NDS-7500x100	100	3.94			119,000	26,750	355	13.98	255	10.04	24.35	53.57
NDS-7500x125	125	4.92			121,000	27,200	405	15.94	280	11.02	26.41	58.102
NDS-7500x160	160	6.30			122,000	27,430	475	18.70	315	12.40	29.11	64.042
NDS-7500x200	200	7.87			123,000	27,650	555	21.85	355	13.98	32.56	71.632
NDS-7500x250	250	9.84			124,000	27,880	655	25.79	405	15.94	36.67	80.674
NDS-7500x300	300	11.81			124,000	27,880	755	29.72	455	17.91	40.77	89.694

NOTE:
All dimensions are nominal. Data shown are typical. Actual data for any particular unit may vary.



Mounting Possibilities

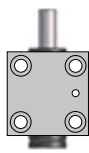


Body $\varnothing_{+2.0}^{+0.5}$

Top mount
FC, FCS,
FCSC



Foot mount
FFC, SF,
LM-lug, L



Body mount
HMF, S



Base mount
MP, RM

Recommended Flanges



FC-7500



235



FCS-7500



238



FFC-7500



240



MP-7500



246



S-7500



248



HMF-7500



243

Additional Flanges



FCSC-7500



239



SF-7500



249



L-7500



244



RM-7500



247



LM-7500



242

Note!

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