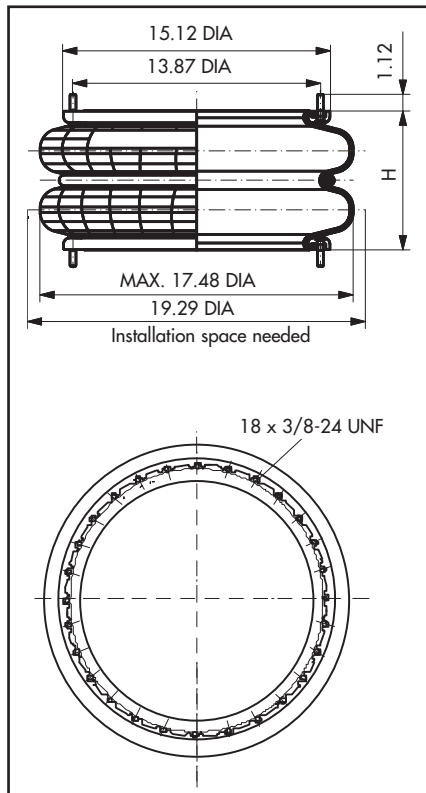
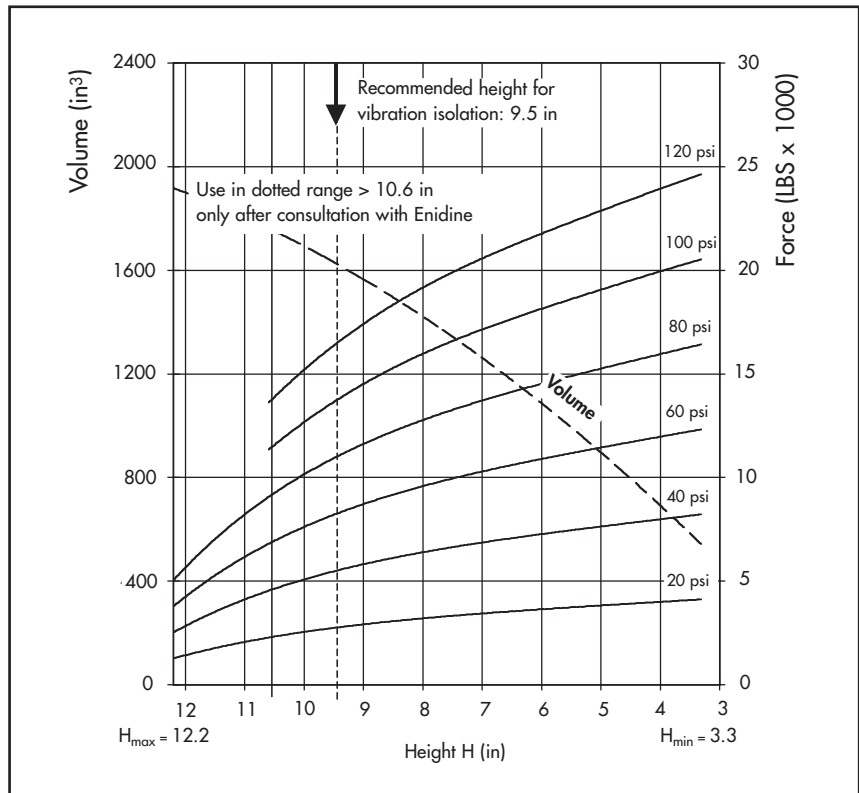


Double Convoluted Air Spring

YI-FD 960-22-191



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 960-22-191
Rubber bellows only	YR-FD 960-22-925

Additional types on request

Service Instruction:
3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤ 45 lbs
Overall weight with bead rings, bolts, nuts and washers	19 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 9.5 in, minimum 8.7 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	5450	8180	10900	13630	16350	1655
Spring Rate (lbs/in)	1638	2303	3005	3633	4317	
Natural Frequency (Hz)	1.7	1.7	1.6	1.6	1.6	

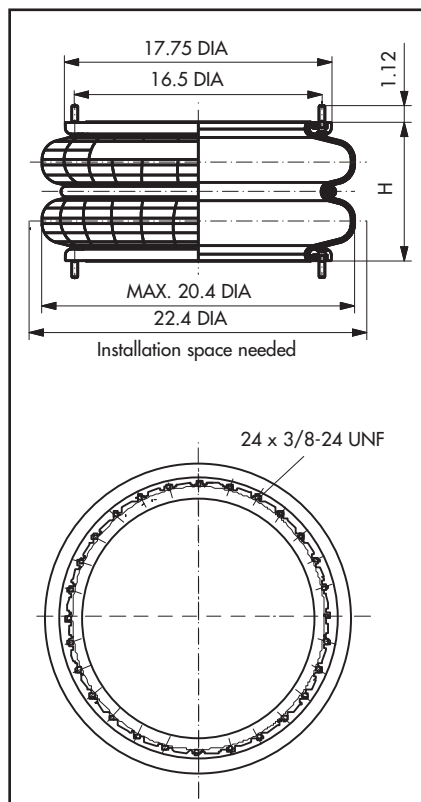
Pneumatic Application - static characteristic values

Force F (lbs)

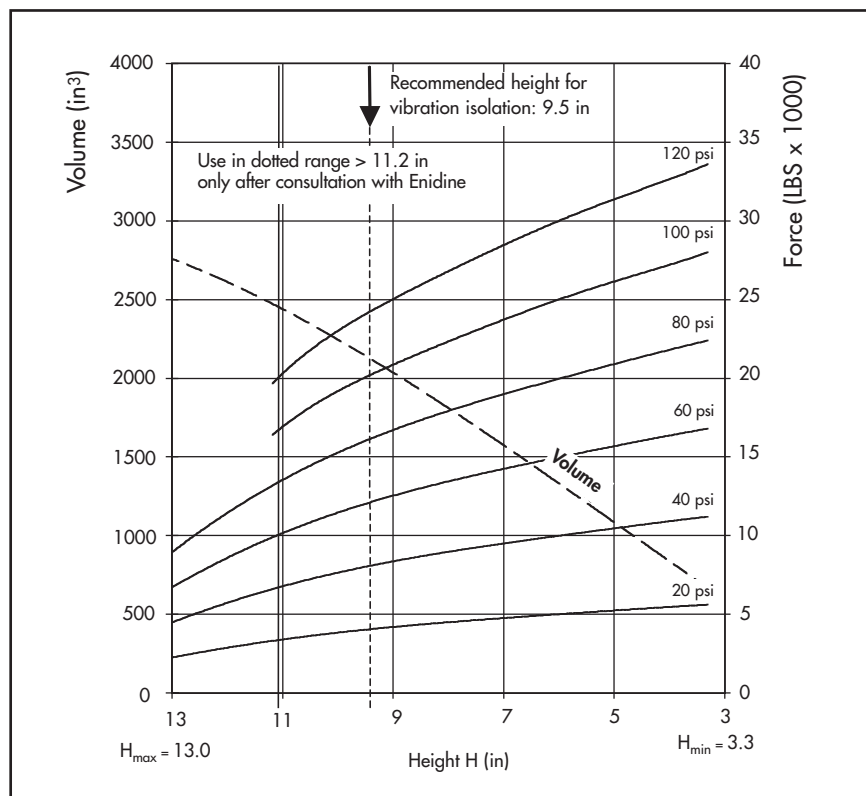
Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	10	2520	5040	7560	10080	12600	1687
	9	2890	5790	8680	11580	14470	1566
	8	3190	6380	9560	12750	15940	1423
	7	3420	6840	10260	13680	17100	1265
	6	3630	7260	10890	14510	18140	1081
	5	3800	7610	11410	15220	19020	896
	4	3990	7980	11970	15960	19950	688

Double Convoluted Air Spring

YI-FD 1330-25-227



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 1330-25-227
Rubber bellows only	YR-FD 1330-25-205

Additional types on request

Service Instruction:
3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤ 40 lbs
Overall weight with bead rings, bolts, nuts and washers	23.8 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 9.5 in, minimum 8.7 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	7990	11990	15990	19980	23980	2145
Spring Rate (lbs/in)	2173	3171	4101	4915	5882	
Natural Frequency (Hz)	1.6	1.6	1.5	1.5	1.5	

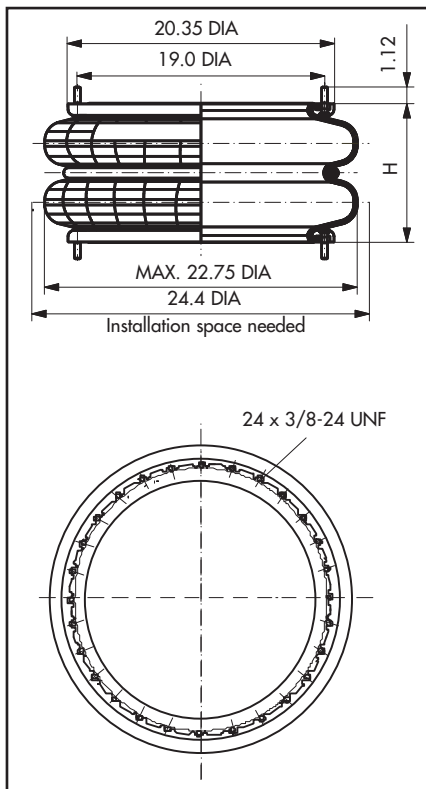
Pneumatic Application - static characteristic values

Force F (lbs)

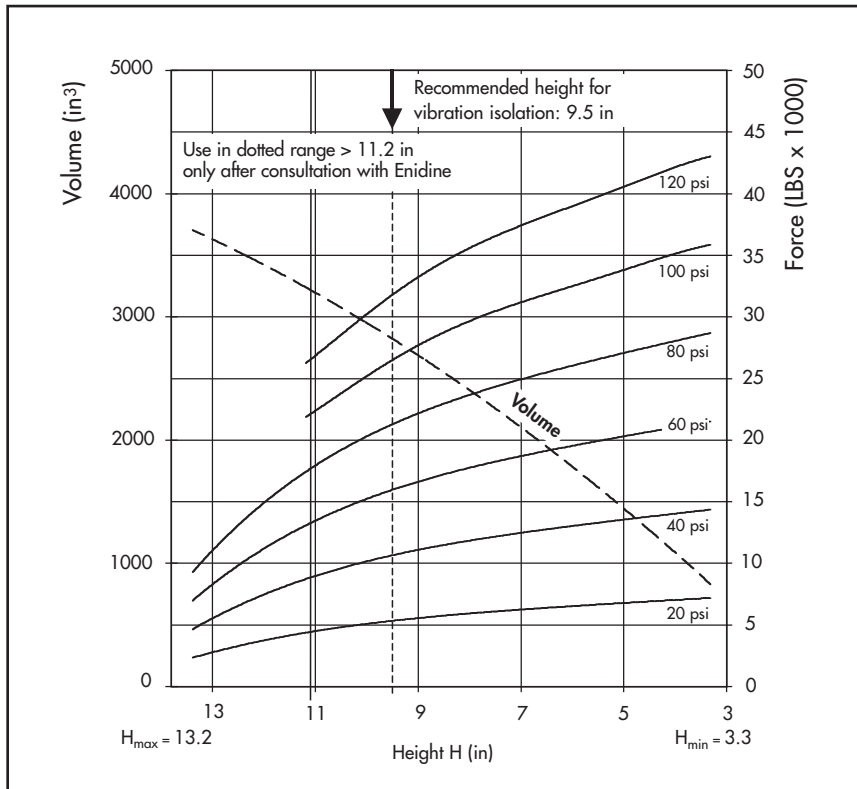
Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	11	3360	6710	10070	13430	16780	2440
	10	3930	7860	11790	15720	19650	2236
	9	4180	8360	12550	16730	20910	2050
	8	4470	8930	13400	17870	22330	1821
	7	4760	9510	14270	19030	23780	1565
	6	4980	9970	14950	19930	24910	1334
	5	5220	10440	15660	20880	26100	1083

Double Convoluted Air Spring

YI-FD 1710-25-203



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 1710-25-203
Rubber bellows only	YR-FD 1710-25-902

Additional types on request

Service Instruction:
3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤ 70 lbs
Overall weight with bead rings, bolts, nuts and washers	26.5 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 9.5 in, minimum 8.7 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	10580	15860	21150	26440	31730	2820
Spring Rate (lbs/in)	2814	4027	5266	6299	7417	
Natural Frequency (Hz)	1.6	1.6	1.6	1.5	1.5	

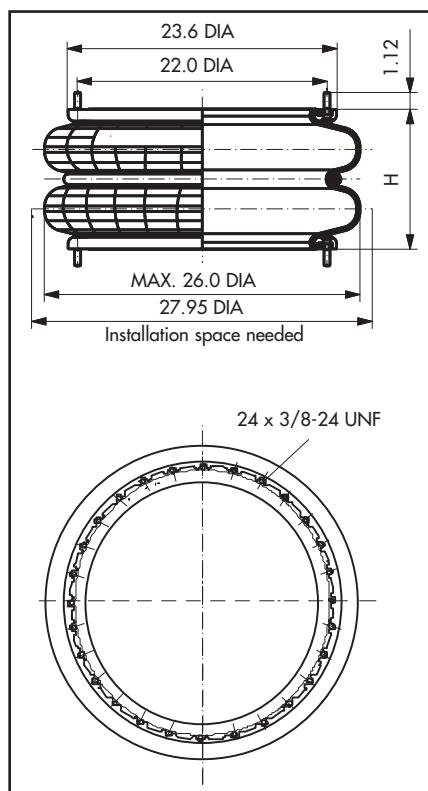
Pneumatic Application - static characteristic values

Force F (lbs)

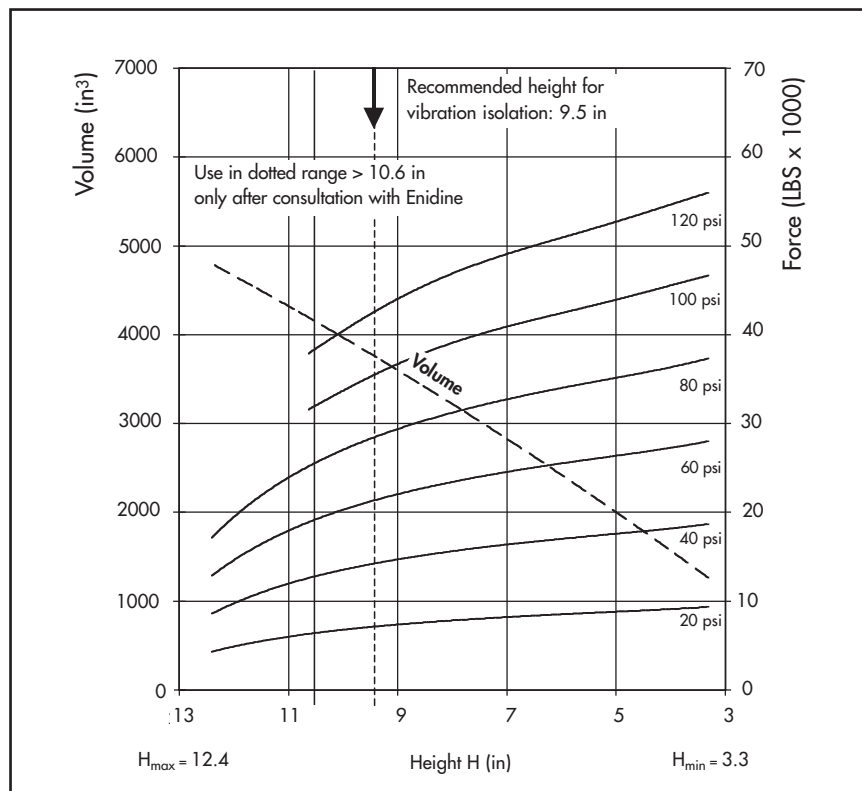
Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	10	5020	10040	15050	20070	25090	2943
	8	5920	11840	17760	23680	29600	2407
	6	6490	12990	19480	25970	32460	1781
	4	7010	14020	21020	28030	35040	1076

Double Convoluted Air Spring

YI-FD 2380-24-772



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 2380-24-772
Rubber bellows only	YR-FD 2380-24-126

Additional types on request

Service Instruction:

3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤100 lbs
Overall weight with bead rings, bolts, nuts and washers	31 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 9.5 in, minimum 8.7 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	14090	21130	28180	35220	42260	3778
Spring Rate (lbs/in)	3790	5344	7004	8391	10009	
Natural Frequency (Hz)	1.6	1.6	1.6	1.5	1.5	

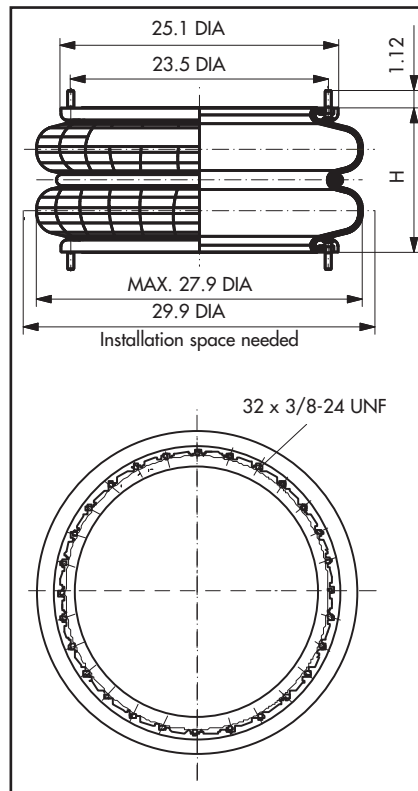
Pneumatic Application - static characteristic values

Force F (lbs)

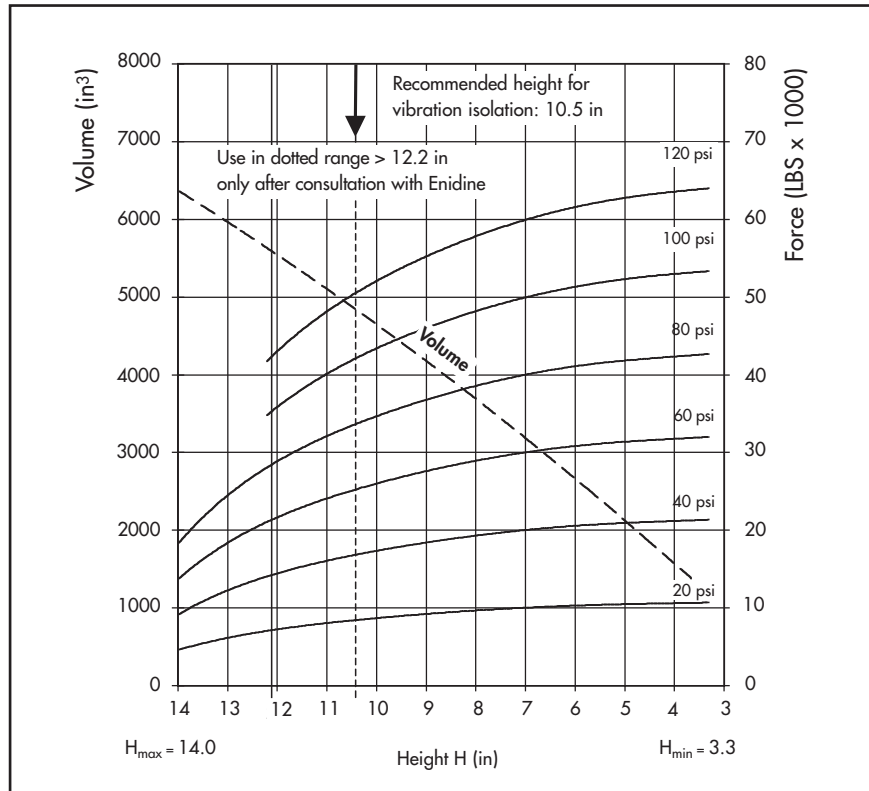
Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	10	6730	13470	20200	26930	33670	3968
	9	7310	14620	21930	29240	36550	3602
	8	7830	15650	23480	31300	39130	3223
	7	8160	16310	24470	32620	40780	2836
	6	8480	16970	25450	33940	42420	2407
	5	8780	17560	26350	35130	43910	1989
	4	9100	18210	27310	36420	45520	1567

Double Convoluted Air Spring

YI-FD 2870-30-230



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 2870-30-230
Rubber bellows only	YR-FD 2870-30-912

Additional types on request

Service Instruction:
3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤157 lbs
Overall weight with bead rings, bolts, nuts and washers	34 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 10.5 in, minimum 9.6 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	16700	25050	33400	41750	50100	4884
Spring Rate (lbs/in)	4058	5817	7420	8734	10452	
Natural Frequency (Hz)	1.5	1.5	1.5	1.4	1.4	

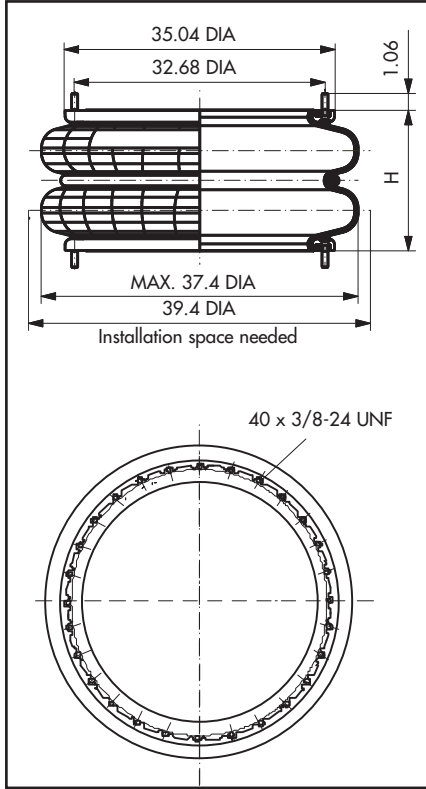
Pneumatic Application - static characteristic values

Force F (lbs)

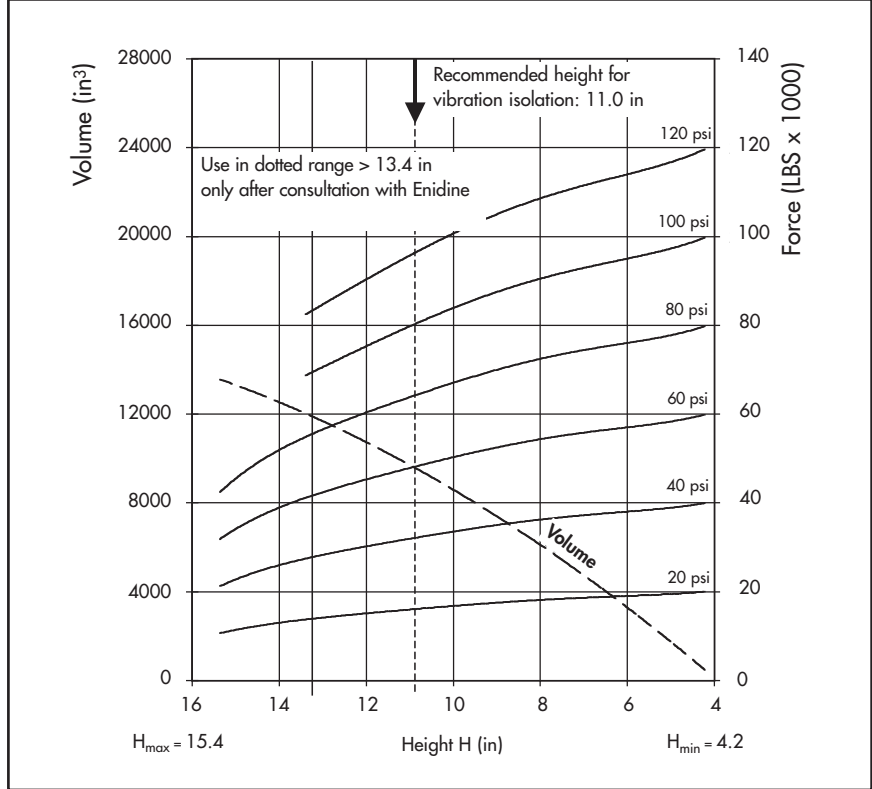
Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	12	7130	14270	21400	28540	35670	5521
	10	8640	17290	25930	34570	43210	4647
	8	9640	19280	28930	38570	48210	3702
	6	10230	20460	30690	40920	51150	2657
	4	10590	21170	31760	42340	52930	1549

Double Convoluted Air Spring

YI-FD 5450-28-602



Force-Height-diagram



Purchase Order Data

Type	Part Number
Bellows with bead rings, 1 7/8 bolts, nuts and washers	YI-FD 5450-28-602
Rubber bellows only	YR-FD 5450-28-022

Additional types on request

Service Instruction:

3/8-24 UNF = 28-32 FT-LBS

Technical Data

Min. Pressure	0 psi
Return Force to min. height	≤ 350 lbs
Overall weight with bead rings, bolts, nuts and washers	72.5 lbs

Vibration Isolation - dynamic characteristic values

Design height H: recommended 11 in, minimum 10.2 in

Pressure p (psi)	40	60	80	100	120	Vol. V (in³)
Force (Load) (lbs)	31720	47590	63450	79310	95170	9577
Spring Rate (lbs/in)	6661	9336	12195	14533	17173	
Natural Frequency (Hz)	1.4	1.4	1.4	1.3	1.3	

Pneumatic Application - static characteristic values

Force F (lbs)

Pressure p (psi)	20	40	60	80	100	120	Vol. (in³)
Height H (in)	13	14120	28240	42350	56470	70590	84710
	11	15860	31720	47590	63450	79310	95170
	9	17490	34990	52480	69980	87470	104970
	7	18520	37040	55560	74080	92600	111120
	5	19530	39070	58600	78130	97660	117200