



PROLOAD LIVELOADINGSYSTEM

New Generation encapsulated Disc Spring System with defined compression length

Advantages

- Disc springs slide on an even machined surface rather on a bolt thread
- Disc springs are encapsulated by outer cylinder against environmental impact
- Disc springs never get over-compressed
- No torque measuring tools necessary
- Relaxation of the springset by volumeloss of the packing stack will show on an inspection gap. Simply tighten the nut until the gap closes
- PROLOAD Live Loading System acts as a prevention against mechanical destruction of packing
- Extended nut screws on the existing valve bolt and eliminates the need for new longer bolts

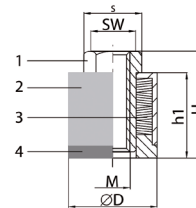


Main application

- Valves
- Sootblowers

Material of Construction

Pos.	Part	Material specification
1	Nut/Boltextension	1.4301
2	Springcup	1.4305
3	Spring	1.8159 galCd
4	Springcover	1.4305



Dimensions									
M in (mm)	Order-Type	D in (mm)	H in (mm)	h ₁ in (mm)	SW	s in (mm)	Bolt center to stem min (mm)	FE (N)	ME (Nm)
M8	L8	22	20.2	14.5	13	14.8	15	4,660	7
M8	L8HI	22	20.2	14.5	13	14.8	15	9,256	14
M10	L10	26	23	16	17	19.4	18	4,722	9
M10	L10HI	26	30.5	23.3	17	19.4	18	9,440	18
M10	L10Sootblower	26	30.5	23.3	17	19.4	18	4,722	9
M12	L12	32	24	17.2	19	21.9	22	9,346	20
M12	L12HI	32	32	25.2	19	21.9	22	18,224	40
M12	L12Sootblower	32	32	25.2	19	21.9	22	9,346	20
M14	L14	38	28	18	22	25.3	26	16,254	48
M14	L14HI	38	36	26	22	25.3	26	31,695	96
M16	L16	38	28	18	24	27.6	27	16,254	48
M16	L16HI	38	36	26	24	27.6	27	31,695	96
M18	L18	45	63.5	48.5	30	34.5	31.5	40,258	136
M18	L18HI	45	63.5	48.5	30	34.5	31.5	50,254	170
M20	L20	45	63.5	48.5	30	34.5	32.5	40,258	136
M20	L20HI	45	63.5	48.5	30	34.5	32.5	50,254	170
M22	L22	60	72	57	41	47	41	38,530	144
M24	L24	60	72	57	41	47	42	38,530	144

Dimensions									
M in (inch)	Order-Type	D in (inch)	H in (inch)	h ₁ in (inch)	s in (inch)	Bolt center to stem min (inch)	FE (lbf)	ME (ftlb)	
5/16"	L5/16"	0.87	0.80	0.57	0.58	0.59	1,048	5.2	
5/16"	L5/16"HI	0.87	0.80	0.57	0.58	0.59	2,081	10.3	
3/8"	L3/8"	1.02	0.91	0.63	0.76	0.71	1,062	6.6	
3/8"	L3/8"HI	1.02	1.20	0.92	0.76	0.71	2,122	13.3	
3/8"	L3/8"Sootblower	1.02	1.20	0.92	0.76	0.71	1,062	6.6	
7/16"	L7/16"	1.26	0.98	0.68	0.86	0.87	2,101	14.8	
7/16"	L7/16"HI	1.26	1.31	0.99	0.86	0.87	4,097	29.5	
1/2"	L1/2"	1.26	0.98	0.68	0.86	0.87	2,101	14.8	
1/2"	L1/2"HI	1.26	1.31	0.99	0.86	0.87	4,097	29.5	
1/2"	L1/2"Sootblower	1.26	1.31	0.99	0.86	0.87	2,101	14.8	
9/16"	L9/16"	1.50	1.10	0.71	1.00	1.02	3,654	35.4	
9/16"	L9/16"HI	1.50	1.42	1.02	1.00	1.02	7,125	70.8	
5/8"	L5/8"	1.50	1.10	0.71	1.09	1.06	3,654	35.4	
5/8"	L5/8"HI	1.50	1.42	1.02	1.09	1.06	7,125	70.8	
3/4"	L3/4"	1.77	2.30	1.91	1.36	1.28	9,050	100.3	
3/4"	L3/4"HI	1.77	2.30	1.91	1.36	1.28	11,298	125.4	
7/8"	L7/8"	2.36	2.83	2.24	1.85	1.61	8,662	106.2	
1"	L1"	2.36	2.83	2.24	1.85	1.65	8,662	106.2	

For best functionality and longlasting performance use White Assembly Paste.

All technical information and advice is based on our experience and will be given most conscientiously but without any liability.

Indication and figures are for guidance only and need to be examined by the user. All sizes are subject to manufacturing tolerances. We reserve the right to modify specifications at any time.

Please note that the technical values cannot be used all at the same time in their maximum values.

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Typical problem

The stack of disc springs is too long for the of the available bolt length.

As a result usually the bolts need to be replaced which is time and cost consuming.



Solution

The PROLOAD Live Loading System screws on top of the bolt in a kind of cup form and giving thereby plenty of extra length to accommodate the uncompressed disc spring stack. This incorporates also an equal load of compression for thermal expansion of the valve. The springs cannot be overcompressed as the optimum compression length is set by the PROLOAD housing dimension.

A sideeffect of the system is that the disc springs slide instead on a thread on a smooth machined surface. Further they are encapsulated and protected against dirt and environmental impact.



Functional Description

When the packing or gasket settles in operation the springs maintain the gland pressure and the sealing force constant. The settling is shown by a small inspection gap at the bottom of the housing. At a routine inspection the PROLOAD Live Loading System is simply torqued down till the gap is closed.

The full load and compensation length of the disc springs is now available. No torque measuring tools are needed!

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