



# GAS SPRINGS

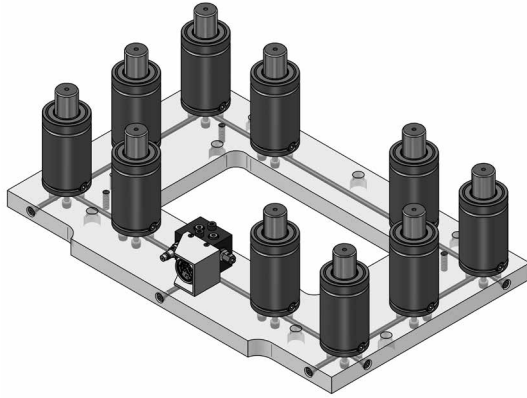


# AZOL GAS



## EASY & READY MANIFOLD (-ER)

- Consistent force and reduced pressure increase
- More compact: higher force in less space
- More simple: hose-free die design
- Quicker delivery and easier installation
- Cost effective alternative to manifold
- Leak-free tested and ready to be installed



## TECHNICAL DATA

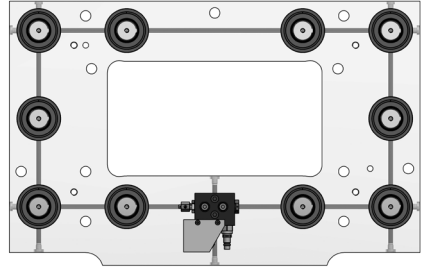
- All benefits of self-contained gas springs into a linked system.
- Gas springs mounted to a customer specified plate.
- Valveless gas springs fixed by screws on a low thickness plate.
- Bottom port gas springs attached to the plate with sealing washers.
- Connecting holes are drilled within the plate (uniform pressure).
- Filling, draining and monitoring from control panel.

## ADVANTAGES

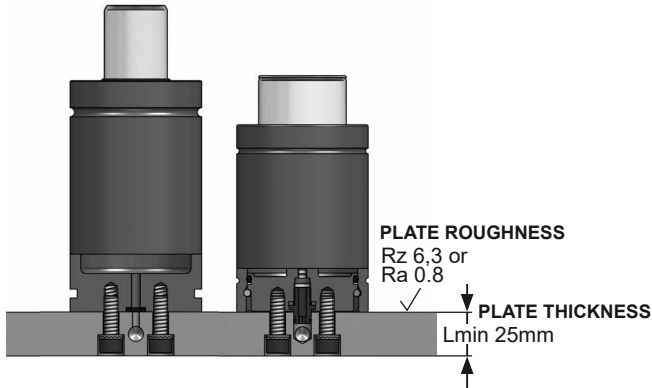
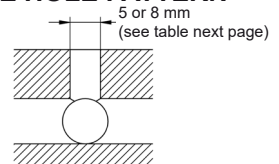
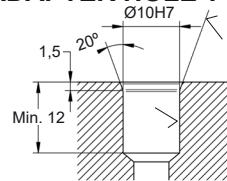
- Conforms VW 39D 22100 Standards.
- Cost effective alternative to manifold.
- More compact: higher force in less space.
- More simple: hose-free die design.
- Easier installation and maintenance.
- Quicker delivery.
- Possibility to keep consistent force and reduce pressure increase.
- Leak-free tested and ready to be installed.

**EASY & READY MANIFOLD****-ER MANIFOLD PLATE**

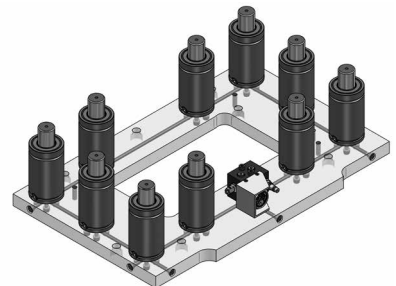
- Avoid blind holes.
- Align gas springs as much as possible.
- Use existing port to mount control panel.
- Avoid interference between cylinder fixing holes and gas ports.



Design guidelines recommended to achieve the best performing solution and the most efficient machining.

**HOLE PATTERN****PLATE HOLE PATTERN****ADAPTER HOLE TYPE****-ER MANIFOLD PLATE TECHNICAL DATA**

<b>Pressure Medium:</b>	N2
<b>Min charging pressure:</b>	20 bar / 290 psi
<b>Max charging pressure:</b>	150 bar / 2175 psi
<b>Operating temperature:</b>	0 - 80 °C / 32 - 176 °F
<b>Plate thickness:</b>	Min. 25 mm / 0,98"
<b>Plate wall thickness:</b>	Min. 2,5 mm / 0,098"
<b>Plate fasteners:</b>	Metric High grade bolts
<b>Plate edges:</b>	Burned out
<b>Plate drilled holes:</b>	5 mm / 8 mm



When quoting -ER manifold plate, please provide with CAD files and detailed plate information.

**-ER GAS SPRINGS**

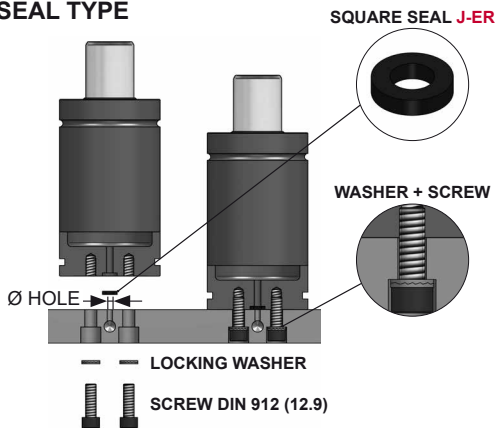
MODEL	THREAD	Ø HOLE	SEAL / ADAPTER	TORQUE (Nm)
AG-ER 1500	M8	8	J-ER-9	38
AG-ER 3000	M8	8	J-ER-9	38
AG-ER 5000	M10	8	J-ER-9	75
AG-ER 7500	M10	8	J-ER-9	75
AG-ER 10000	M12	8	J-ER-9	128
CD-ER 1500 V2	M8	5	J-ER-6	38
CD-ER 2400	M8	8	J-ER-9	38
CD-ER 4200	M8	8	J-ER-9	38
CD-ER 6600	M10	8	J-ER-9	75
CD-ER 9600	M10	8	J-ER-9	75
CD-ER 18500	M12	8	J-ER-9	128
KZ-ER 1500 V1	M8	5	J-ER-6	38
KZ-ER 2400	M8	8	J-ER-9	38
KZ-ER 4200	M8	8	J-ER-9	38
KZ-ER 6600	M10	8	J-ER-9	75

MODEL	THREAD	Ø HOLE	SEAL / ADAPTER	TORQUE (Nm)
CW-ER 1500 V1	M8	5	J-ER-6	38
CW-ER 2400 V1	M8	8	J-ER-9	38
CW-ER 4200 V1	M8	8	J-ER-9	38
CW-ER 6600	M10	8	J-ER-9	75
CW-ER 9500	M10	8	J-ER-9	75
CW-ER 11800	M10	8	J-ER-9	75
CW-ER 20000	M12	8	J-ER-9	128
CS-ER 1800 V1	M6	10	T-ER	15
CS-ER 3000 V2	M8	10	T-ER	38
CS-ER 4700 V1	M8	10	T-ER	38
CS-ER 7500 V1	M8	10	T-ER	38
CS-ER 11800 V1	M10	10	T-ER	75
CS-ER 18300 V1	M10	10	T-ER	75

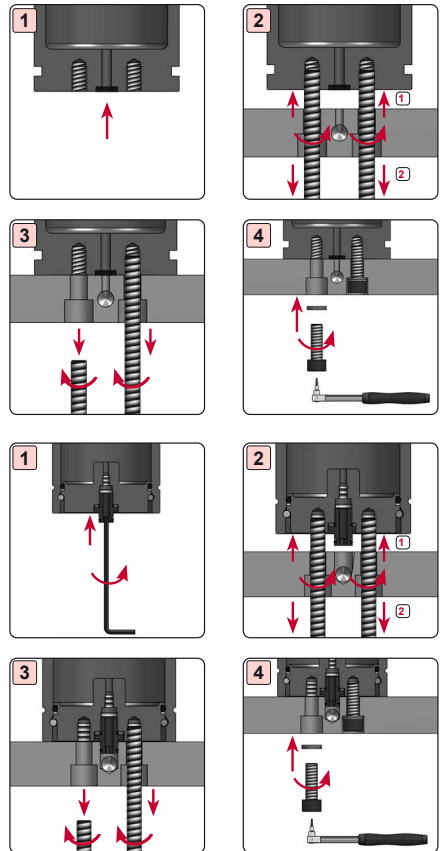
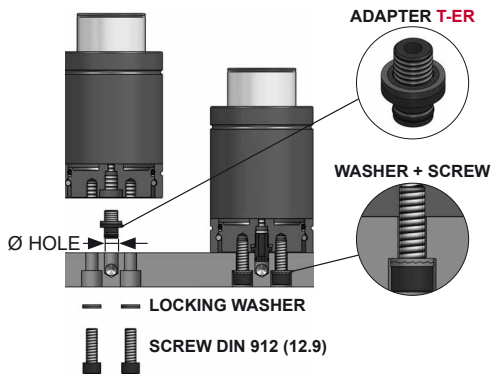
Recommended gas springs to be used in ER manifold plates, other gas springs under request.  
-ER gas springs are supplied with the corresponding seal J-ER / adapter T-ER

**-ER GAS SPRINGS SEALING AND MOUNTING**

**SEAL TYPE**



**ADAPTER TYPE**

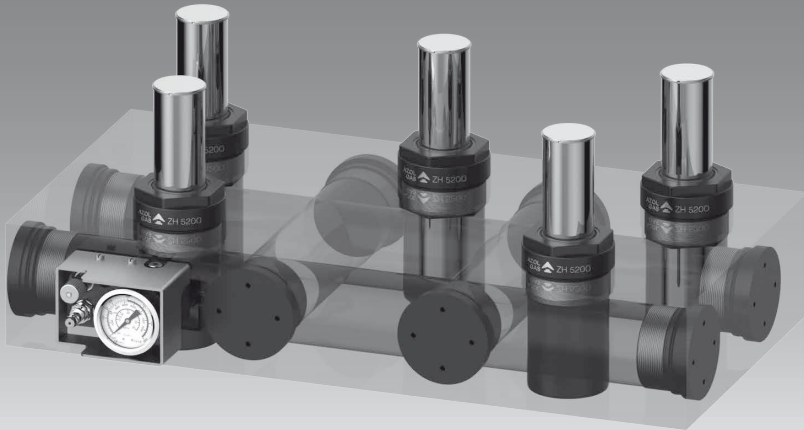




# GAS SPRINGS



**AZOL**   
**GAS**



## MANIFOLD (SERIES Z)

- High initial force in a limited space
- Lower compression rate
- Hose-free system
- Higher performance and lifetime
- High precision and complex tooling
- High efficiency and low maintenance



**MANIFOLD**

**ADVANTAGES OF MANIFOLD SYSTEMS**

AZOLGAS manifold systems are **suitable for tools** demanding:

- High initial **force** in limited space
- High **performance** and lifetime
- High **precision** and complex tooling
- High **efficiency** and low maintenance

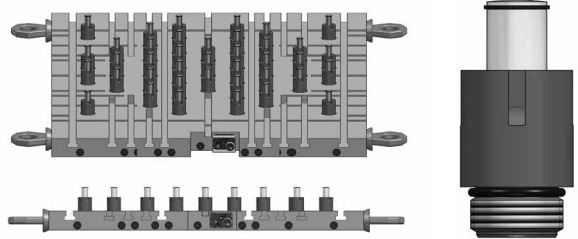
**Feature**

- Consistent force
- Lower pressure rise
- Higher forces in less space
- Lower compression rate
- Balanced force
- Hose-free system
- Easy adjustable force
- Distribution of pressure points

**Advantage**

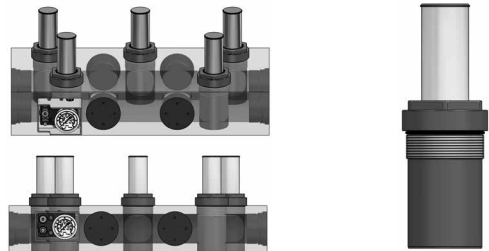
- for long-term performance to improve metal part forming
- to improve metal part forming for a cost-effective die construction
- to reduce press wearing
- to increase productivity
- to minimize leaking points
- to reduce maintenance timing
- for press versatility

**ZP / ZR / ZB / ZC / ZF**



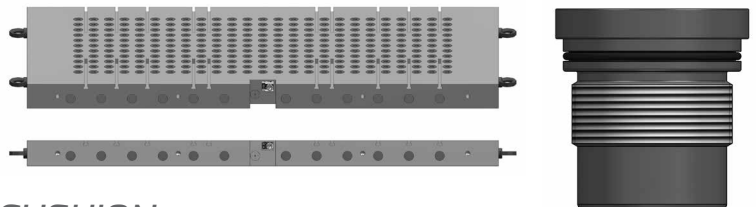
**MANIFOLD**

**ZH**




**MANIFOLD HIGH FORCE**

**ZT**







**MANIFOLD DIE CUSHION**



MODEL	F <sub>0</sub> daN lb	Thread 	S mm inch	L1 mm inch	Pmax bar psi	Sealing Area mm <sup>2</sup> inch <sup>2</sup>
ZP 750	750 1686	1 - 5/16 - 12"	6.3 - 101.6 0.25 - 4.00	29.5 - 220.0 1.16 - 8.66	150 2175	4.91 0.76
ZP 1500	1500 3372	1 - 7/8 - 12"	12.7 - 127 0.5 - 5.00	48.5 - 277.1 1.91 - 10.91	150 2175	9.62 1.49
ZP 3000	3500 7868	2 - 1/2 - 12"	12.7 - 152.4 0.5 - 6.00	48.5 - 327.9 1.91 - 12.91	150 2175	22.9 3.55
ZP 5000	5000 11240	M82x2	12.7 - 177.8 0.5 - 7.00	48.5 - 378.7 1.91 - 14.91	150 2175	33.18 5.14
ZP 8000	8000 17985	M100x2	12.7 - 203.2 0.5 - 8.00	48.5 - 429.5 1.91 - 16.91	150 2175	50.27 7.79

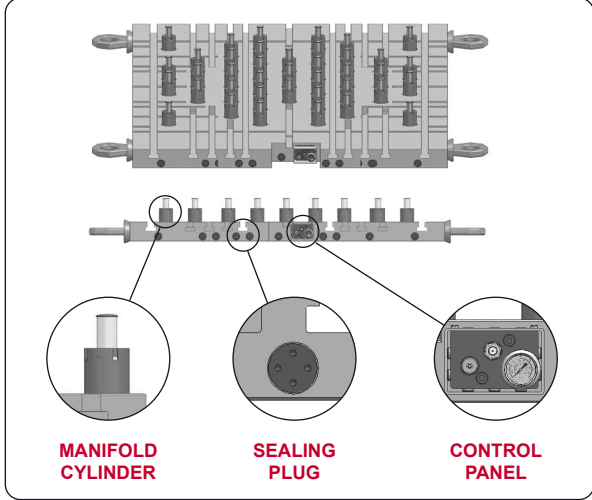
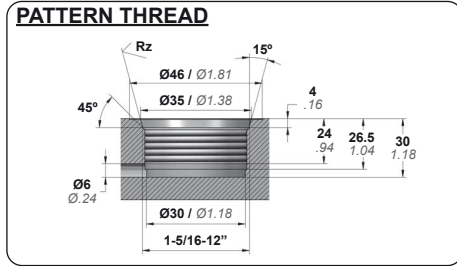
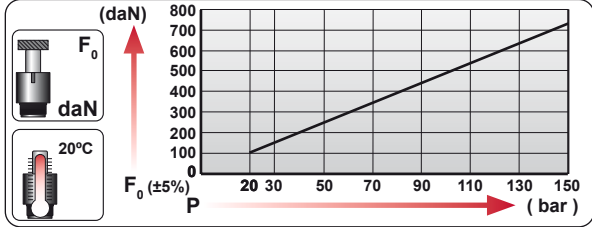
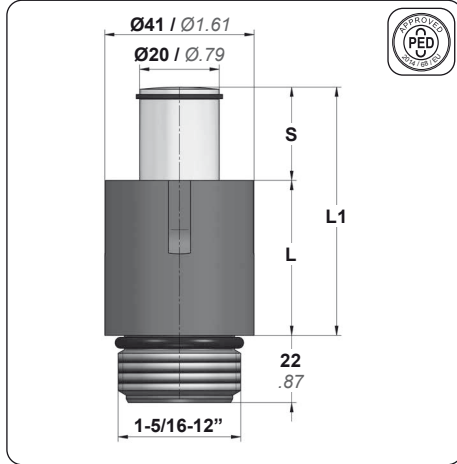
- Large cylinder used where space is not an issue
- Threads available in inch/metric size
- Wide range of strokes available (6-203 mm)
- Extended range of forces (750-8000 daN)

	6.3 - 101.6 12.7 - 127 12.7 - 152.4 12.7 - 177.8 12.7 - 203.2	6.3 - 101.6 25.4 - 127 25.4 - 152.4 25.4 - 177.8 25.4 - 203.2	100 - 200 100 - 250 100 - 250	25 - 100 25 - 100 25 - 100	20 100 - 200
	1-5/16-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	1-5/8-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	M82x2 M100x2 M120x2	M36x2 M48x2 M64x2	M64x2 M82x2
	29.5 - 220.0 48.5 - 277.1 48.5 - 327.9 48.5 - 378.7 48.5 - 429.5	48.5 - 143.8 67.6 - 169.2 67.6 - 194.6 67.6 - 220 67.6 - 245.4	135 - 335 135 - 435 135 - 435	70.5 - 220.5 73.5 - 223.5 73.5 - 223.5	80 175 - 275
	750 1500 3000 5000 8000	750 1500 3000 5000 8000	5200 7700 10700	750 1500 3000	3000 5800
MODEL	ZP 750 ZP 1500 ZP 3000 ZP 5000 ZP 8000	ZR 750 ZR 1500 ZR 3000 ZR 5000 ZR 8000	ZH 5200 ZH 7700 ZH 10700	ZB 750 ZC 1500 ZF 3500	ZT 3000 ZT 5800
SERIES	ZP	ZR	ZH	ZB / ZC / ZF	ZT



# ZP 750

Manifold Large



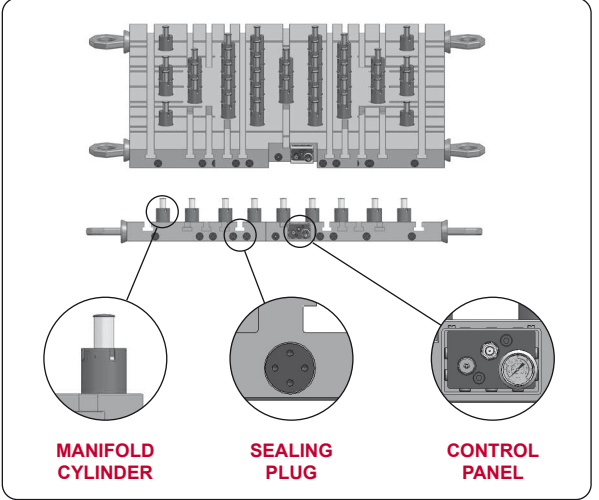
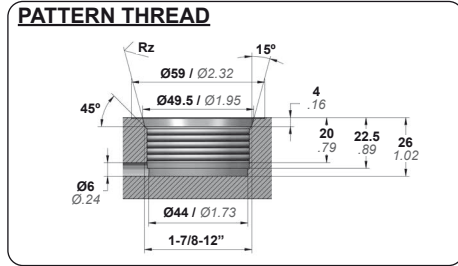
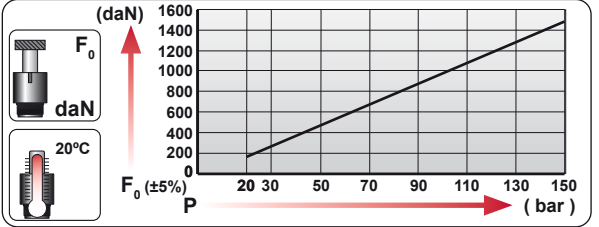
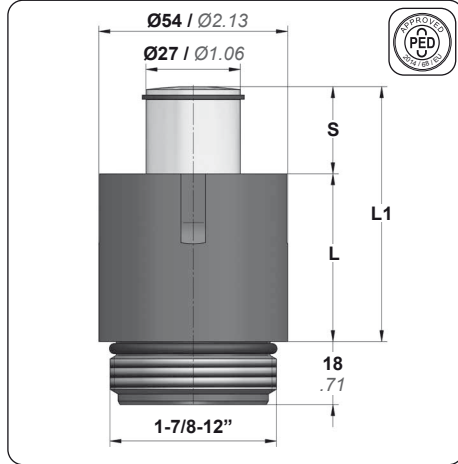
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZP 750 006	6.3	0.25	29.5	1.16	23.1	0.91	540	1214	736	1655	0.29	0.64
ZP 750 013	12.7	0.50	42.2	1.66	29.5	1.16					0.35	0.77
ZP 750 019	19.1	0.75	54.9	2.16	35.9	1.41					0.40	0.88
ZP 750 025	25.4	1.00	67.6	2.66	42.2	1.66					0.46	1.01
ZP 750 038	38.1	1.50	93.0	3.66	54.9	2.16					0.58	1.28
ZP 750 051	50.8	2.00	118.4	4.66	67.6	2.66					0.70	1.54
ZP 750 064	63.5	2.50	143.8	5.66	80.3	3.16					0.82	1.81
ZP 750 076	76.2	3.00	169.2	6.66	93.0	3.66					0.93	2.05
ZP 750 089	88.9	3.50	194.6	7.66	105.7	4.16					1.05	2.31
ZP 750 102	101.6	4.00	220.0	8.66	118.4	4.66					1.17	2.58

**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi / 0 °C / 32 °F	150 bar / 2175 psi / 80 °C / 176 °F	Assembly Tool	LGM 40-42
Smax	< 90%	Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F	Sealing Effective Area	4,91 cm <sup>2</sup> / 0,76 in <sup>2</sup>
Vmax	0,8 m/s	Force variation by temperature	±0,3% / °C		Seal Kit	S-XXXXXXX




**ZP 1500**  
Manifold Large



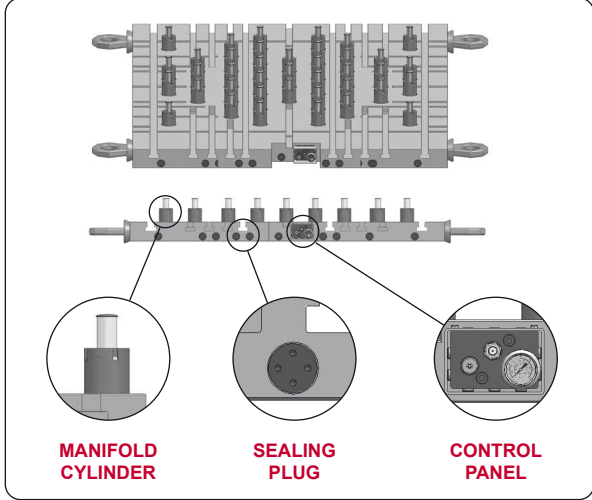
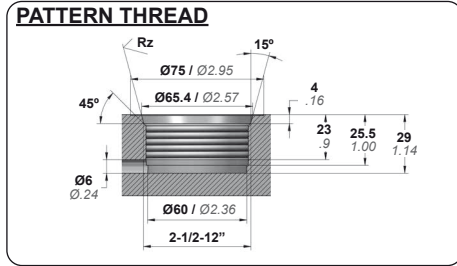
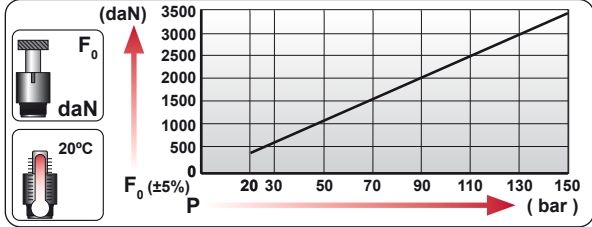
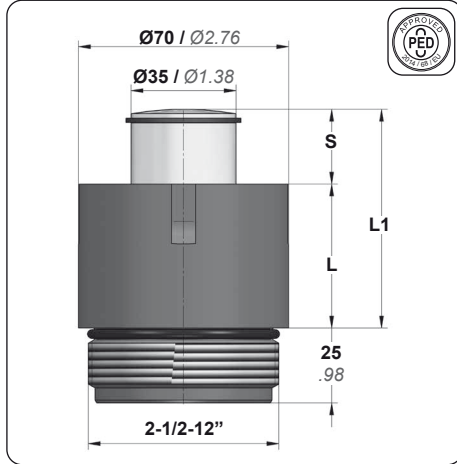
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg.	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZP 1500 013	12.7	0.50	48.5	1.91	35.8	1.41	1060 2383	2383	1443	3244	0.74	1.63
ZP 1500 019	19.1	0.75	61.2	2.41	42.2	1.66					0.83	1.83
ZP 1500 025	25.4	1.00	73.9	2.91	48.5	1.91					0.92	2.03
ZP 1500 038	38.1	1.50	99.3	3.91	61.2	2.41					1.11	2.45
ZP 1500 051	50.8	2.00	124.7	4.91	73.9	2.91					1.30	2.87
ZP 1500 064	63.5	2.50	150.1	5.91	86.6	3.41					1.49	3.28
ZP 1500 076	76.2	3.00	175.5	6.91	99.3	3.91					1.67	3.68
ZP 1500 089	88.9	3.50	200.9	7.91	112.0	4.41					1.86	4.10
ZP 1500 102	101.6	4.00	226.3	8.91	124.7	4.91					2.05	4.52
ZP 1500 114	114.3	4.50	251.7	9.91	137.4	5.41					2.23	4.92
ZP 1500 127	127	5.00	277.1	10.91	150.1	5.91					2.42	5.34

**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi 150 bar / 2175 psi	Tmin Tmax	0 °C / 32 °F 80 °C / 176 °F	Assembly Tool	LGM 52-55
Smax	< 90%	Force variation by temperature	±0,3% / °C	Sealing Effective Area	9,62 cm <sup>2</sup> 1,49 in <sup>2</sup>	Seal Kit	S-XXXXXXX
Vmax	0,8 m/s						

# ZP 3000

Manifold Large



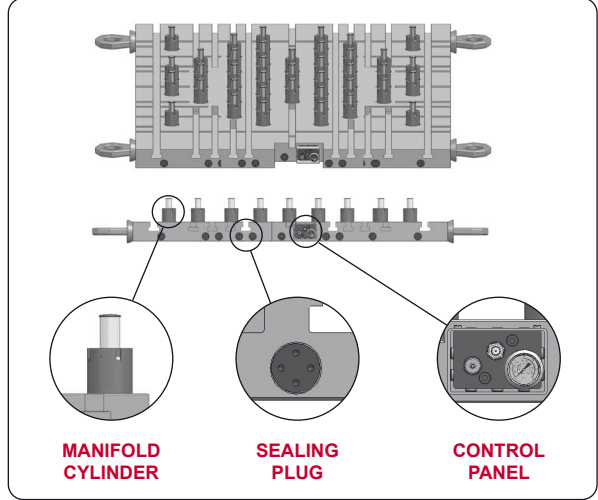
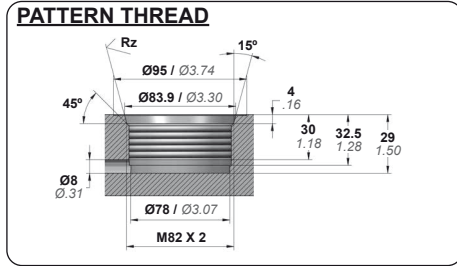
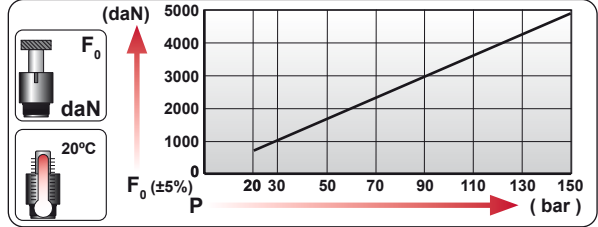
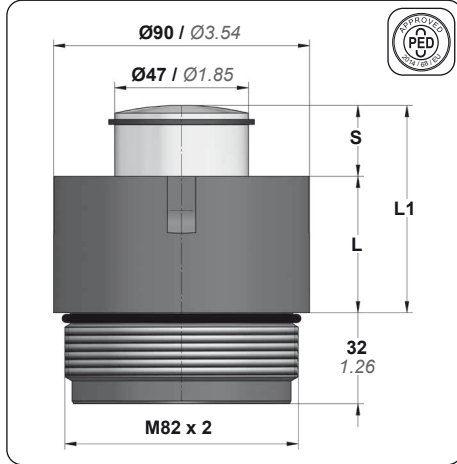
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg.			
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb				
ZP 3000 013	12.7	0.50	48.5	1.91	35.8	1.41	2520 5665	5665	3435	7722	1.34	2.95		
ZP 3000 019	19.1	0.75	61.2	2.41	42.2	1.66							±5%	±5%
ZP 3000 025	25.4	1.00	73.9	2.91	48.5	1.91								
ZP 3000 038	38.1	1.50	99.3	3.91	61.2	2.41								
ZP 3000 051	50.8	2.00	124.7	4.91	73.9	2.91								
ZP 3000 064	63.5	2.50	150.1	5.91	86.6	3.41								
ZP 3000 076	76.2	3.00	175.5	6.91	99.3	3.91								
ZP 3000 089	88.9	3.50	200.9	7.91	112.0	4.41								
ZP 3000 102	101.6	4.00	226.3	8.91	124.7	4.91								
ZP 3000 114	114.3	4.50	251.7	9.91	137.4	5.41								
ZP 3000 127	127	5.00	277.1	10.91	150.1	5.91	110 bar 1595 psi at 20°C 68°F	150 bar 2175 psi at 20°C 68°F						
ZP 3000 140	139.7	5.50	302.5	11.91	162.8	6.41			2.34	5.16				
ZP 3000 152	152.4	6.00	327.9	12.91	175.5	6.91					2.58	5.69		
									2.83	6.24				
							3.09	6.81						
									3.32	7.32				
							3.57	7.87						
									3.83	8.44				
							4.06	8.95						

**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi	150 bar / 2175 psi	Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F	Assembly Tool	LGM 68-75
Smax	< 90%	Force variation by temperature	±0,3% / °C		Sealing Effective Area	22,9 cm <sup>2</sup> 3,55 in <sup>2</sup>		Seal Kit	S-XXXXXXX
Vmax	0,8 m/s								




**ZP 5000**  
Manifold Large



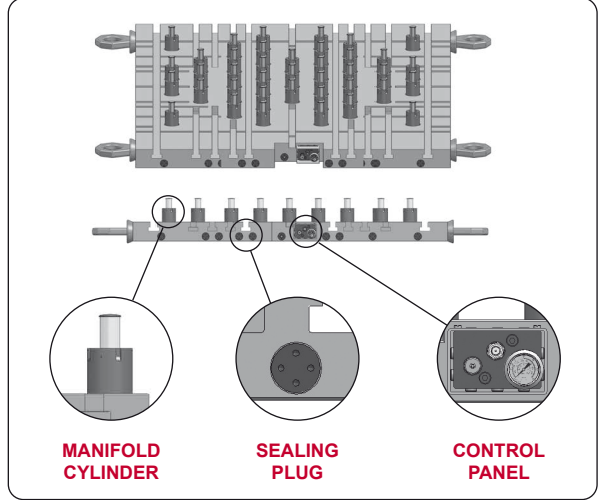
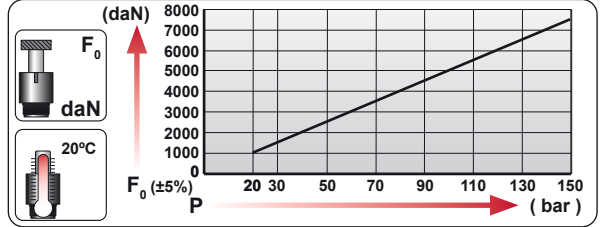
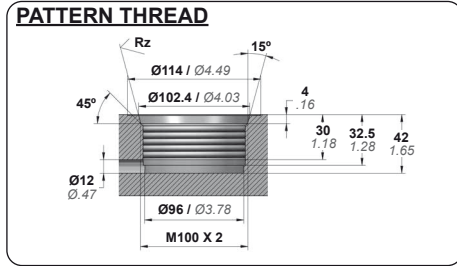
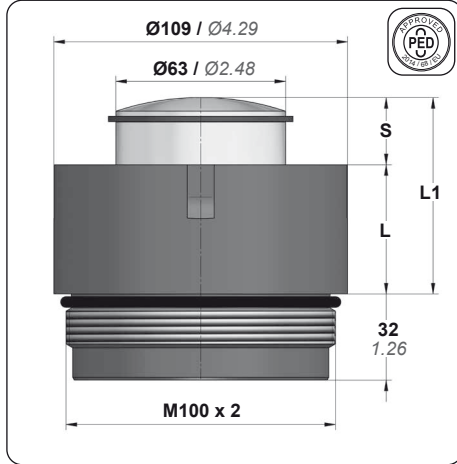
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb		
ZP 5000 013	12.7	0.50	48.5	1.91	35.8	1.41	3650 8206		4977	11189	2.57	5.67
ZP 5000 019	19.1	0.75	61.2	2.41	42.2	1.66					2.79	6.15
ZP 5000 025	25.4	1.00	73.9	2.91	48.5	1.91					3.01	6.64
ZP 5000 038	38.1	1.50	99.3	3.91	61.2	2.41					3.50	7.72
ZP 5000 051	50.8	2.00	124.7	4.91	73.9	2.91					3.98	8.77
ZP 5000 064	63.5	2.50	150.1	5.91	86.6	3.41					4.47	9.85
ZP 5000 076	76.2	3.00	175.5	6.91	99.3	3.91					4.91	10.82
ZP 5000 089	88.9	3.50	200.9	7.91	112.0	4.41					5.40	11.90
ZP 5000 102	101.6	4.00	226.3	8.91	124.7	4.91					5.88	12.96
ZP 5000 114	114.3	4.50	251.7	9.91	137.4	5.41					6.33	13.96
ZP 5000 127	127	5.00	277.1	10.91	150.1	5.91	6.82	15.04				
ZP 5000 140	139.7	5.50	302.5	11.91	162.8	6.41	7.30	16.09				
ZP 5000 152	152.4	6.00	327.9	12.91	175.5	6.91	7.75	17.09				
ZP 5000 165	165.1	6.50	353.3	13.91	188.2	7.41	8.23	18.14				
ZP 5000 178	177.8	7.00	378.7	14.91	200.9	7.91	8.72	19.22				

**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi	150 bar / 2175 psi	Assembly Tool	LGM 80-90
Smax	< 90%	Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F	Sealing Effective Area	33,18 cm <sup>2</sup> / 5,14 in <sup>2</sup>
Vmax	0,8 m/s	Force variation by temperature	±0,3% / °C		Seal Kit	S-XXXXXXX

# ZP 8000

Manifold Large



ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZP 8000 013	12.7	0.50	48.5	1.91	35.8	1.41	5550 12477		7540	16951	3.82	8.42
ZP 8000 019	19.1	0.75	61.2	2.41	42.2	1.66					4.17	9.19
ZP 8000 025	25.4	1.00	73.9	2.91	48.5	1.91					4.52	9.96
ZP 8000 038	38.1	1.50	99.3	3.91	61.2	2.41					5.27	11.62
ZP 8000 051	50.8	2.00	124.7	4.91	73.9	2.91					6.03	13.29
ZP 8000 064	63.5	2.50	150.1	5.91	86.6	3.41					6.78	14.95
ZP 8000 076	76.2	3.00	175.5	6.91	99.3	3.91					7.48	16.49
ZP 8000 089	88.9	3.50	200.9	7.91	112.0	4.41					8.23	18.14
ZP 8000 102	101.6	4.00	226.3	8.91	124.7	4.91					8.99	19.82
ZP 8000 114	114.3	4.50	251.7	9.91	137.4	5.41					9.68	21.34
ZP 8000 127	127	5.00	277.1	10.91	150.1	5.91					10.44	23.02
ZP 8000 140	139.7	5.50	302.5	11.91	162.8	6.41					11.19	24.67
ZP 8000 152	152.4	6.00	327.9	12.91	175.5	6.91					11.89	26.21
ZP 8000 165	165.1	6.50	353.3	13.91	188.2	7.41					12.64	27.87
ZP 8000 178	177.8	7.00	378.7	14.91	200.9	7.91	13.40	29.54				
ZP 8000 191	190.5	7.50	404.1	15.91	213.6	8.41	14.15	31.20				
ZP 8000 203	203.2	8.00	429.5	16.91	226.3	8.91	14.85	32.74				





TECHNICAL DATA											
	Fluid	N <sub>2</sub>		Pmin Pmax	20 bar 290 psi	150 bar 2175 psi		Assembly Tool	LGM 110-115		
	Smax	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	50,27 cm <sup>2</sup> 7,79 in <sup>2</sup>		
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX		





MODEL	F <sub>0</sub> daN lb	Thread	S mm inch	L1 mm inch	Pmax bar psi	Sealing Area mm <sup>2</sup> inch <sup>2</sup>
<b>ZR 750</b>	750 1686	1 - 5/16 - 12"	6.3 - 101.6 0.25 - 4.00	48.5 - 143.8 1.91 - 5.66	150 2175	4.91 0.76
<b>ZR 1500</b>	1500 3372	1 - 7/8 - 12"	25.4 - 127 1.00 - 5.00	67.6 - 169.2 2.66 - 6.66	150 2175	9.62 1.49
<b>ZR 3000</b>	3000 6744	2 - 1/2 - 12"	25.4 - 152.4 1.00 - 6.00	67.6 - 194.6 2.66 - 7.66	150 2175	22.9 3.55
<b>ZR 5000</b>	5000 11240	M82x2	25.4 - 177.8 1.00 - 7.00	67.6 - 220 2.66 - 8.66	150 2175	33.18 5.14
<b>ZR 8000</b>	8000 17985	M100x2	25.4 - 203.2 1.00 - 8.00	67.6 - 245.4 2.66 - 9.66	150 2175	50.27 7.79

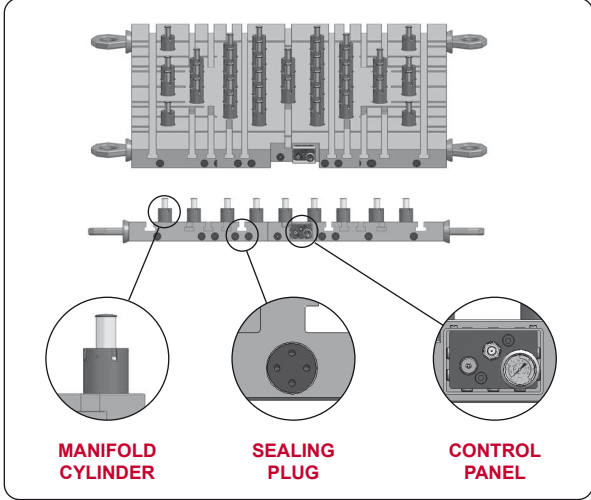
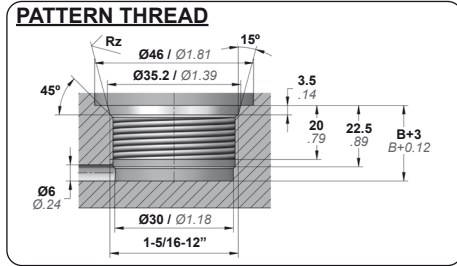
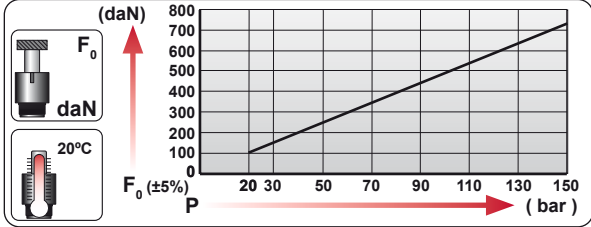
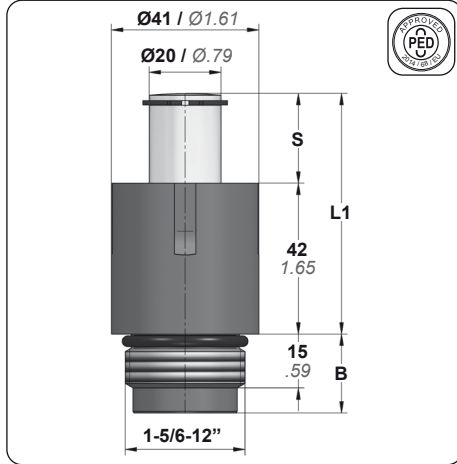
- Shorter cylinder than ZP used where height is important
- Threads available in inch/metric size
- Wide range of strokes available (6-203 mm)
- Extended range of forces (750-8000 daN)

	6.3 - 101.6 12.7 - 127 12.7 - 152.4 12.7 - 177.8 12.7 - 203.2	6.3 - 101.6 25.4 - 127 25.4 - 152.4 25.4 - 177.8 25.4 - 203.2	100 - 200 100 - 250 100 - 250	25 - 100 25 - 100 25 - 100	20 100 - 200
	1-5/16-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	1-5/8-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	M82x2 M100x2 M120x2	M36x2 M48x2 M64x2	M64x2 M82x2
	29.5 - 220.0 48.5 - 277.1 48.5 - 327.9 48.5 - 378.7 48.5 - 429.5	48.5 - 143.8 67.6 - 169.2 67.6 - 194.6 67.6 - 220 67.6 - 245.4	135 - 335 135 - 435 135 - 435	70.5 - 220.5 73.5 - 223.5 73.5 - 223.5	80 175 - 275
	750 1500 3000 5000 8000	750 1500 3000 5000 8000	5200 7700 10700	750 1500 3000	3000 5800
MODEL	ZP 750 ZP 1500 ZP 3000 ZP 5000 ZP 8000	ZR 750 ZR 1500 ZR 3000 ZR 5000 ZR 8000	ZH 5200 ZH 7700 ZH 10700	ZB 750 ZC 1500 ZF 3500	ZT 3000 ZT 5800
SERIES	ZP	ZR	ZH	ZB / ZC / ZF	ZT



# ZR 750

Manifold Short

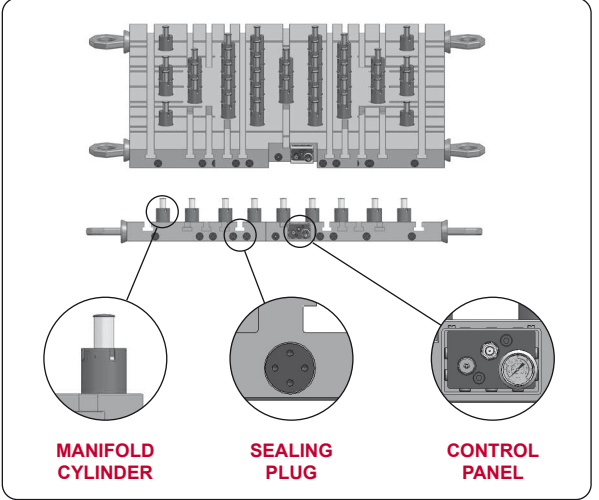
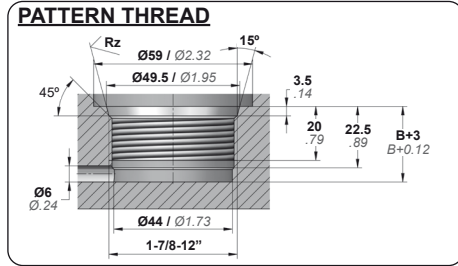
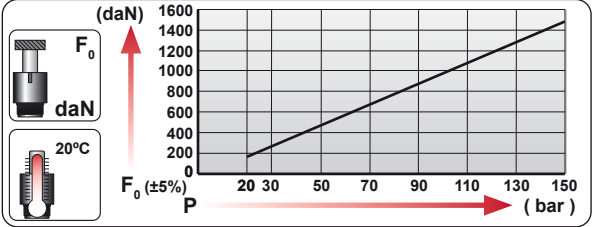
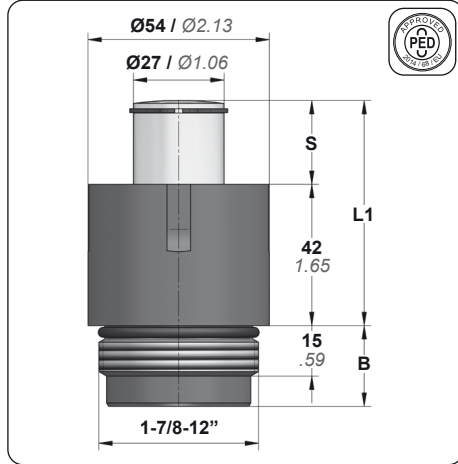


ORDER	S		L1 ±0.25		B		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		⚖	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZR 750 006	6.3	0.25	48.5	1.91	15	0.59	540	1214	736	1655	0.39	0.86
ZR 750 013	12.7	0.50	54.9	2.16	15	0.59						
ZR 750 019	19.1	0.75	61.2	2.41	16	0.63	±5%		±5%		0.44	0.97
ZR 750 025	25.4	1.00	67.6	2.66	22.4	0.88						
ZR 750 038	38.1	1.50	80.3	3.16	35.1	1.38	110 bar	1595 psi	150 bar	2175 psi	0.51	1.12
ZR 750 051	50.8	2.00	93	3.66	47.8	1.88						
ZR 750 064	63.5	2.50	105.7	4.16	60.5	2.38	at 20°C		at 20°C		0.61	1.34
ZR 750 076	76.2	3.00	118.4	4.66	73.2	2.88						
ZR 750 089	88.9	3.50	131.1	5.16	85.9	3.38	68°F		68°F		0.65	1.43
ZR 750 102	101.6	4.00	143.8	5.66	98.6	3.88						

TECHNICAL DATA											
	Fluid	N <sub>2</sub>		Pmin Pmax 20°C / 68°F	20 bar 290 psi	150 bar 2175 psi		Assembly Tool	LGM 40-42		
	Sm <sub>ax</sub>	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	4,91 cm <sup>2</sup> 0,76 in <sup>2</sup>		
	V <sub>max</sub>	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX		




**ZR 1500**  
Manifold Short

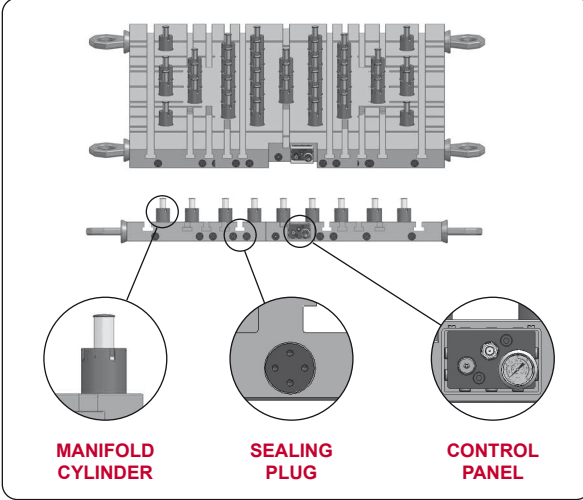
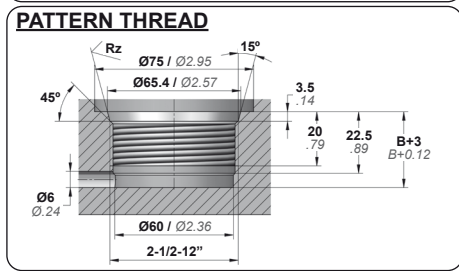
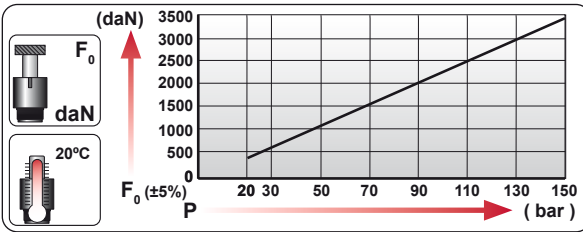
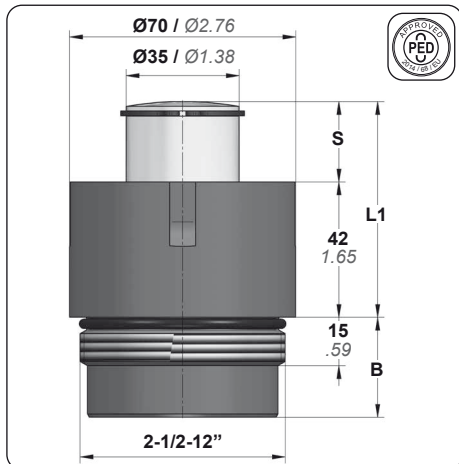


ORDER	S		L1 ±0.25		B		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZR 1500 025	25.4	1.00	67.6	2.66	24.6	0.97	1060	2383	1443	3244	0.88	1.94
ZR 1500 038	38.1	1.50	80.3	3.16	37.3	1.47	±5%	110 bar 1595 psi at 20°C 68°F	±5%	150 bar 2175 psi at 20°C 68°F	0.98	2.16
ZR 1500 051	50.8	2.00	93	3.66	50.0	1.97					1.09	2.40
ZR 1500 064	63.5	2.50	105.7	4.16	62.7	2.47	1.20	2.65				
ZR 1500 076	76.2	3.00	118.4	4.66	75.4	2.97	1.29	2.84				
ZR 1500 089	88.9	3.50	131.1	5.16	88.1	3.47	1.40	3.09				
ZR 1500 102	101.6	4.00	143.8	5.66	100.8	3.97	1.50	3.31				
ZR 1500 114	114.3	4.50	156.5	6.16	113.5	4.47	1.60	3.53				
ZR 1500 127	127	5.00	169.2	6.66	126.2	4.97	1.71	3.77				

TECHNICAL DATA												
	Fluid	N <sub>2</sub>		Pmin Pmax 20°C / 68°F	20 bar 290 psi	150 bar 2175 psi		Assembly Tool	LGM 52-55			
	Sm <sub>ax</sub>	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	9,62 cm <sup>2</sup> 1,49 in <sup>2</sup>			
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX			

# ZR 3000

Manifold Short



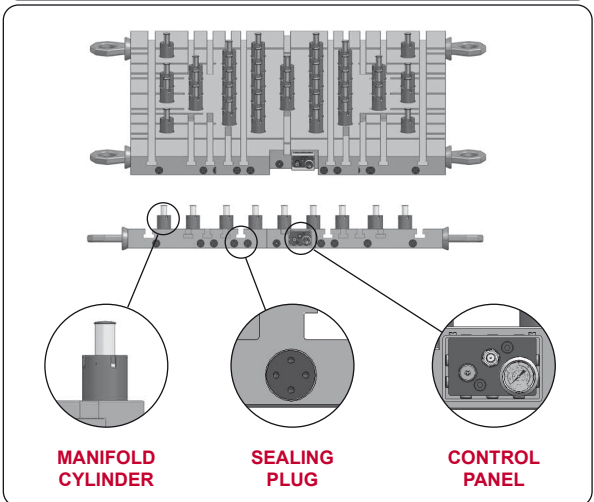
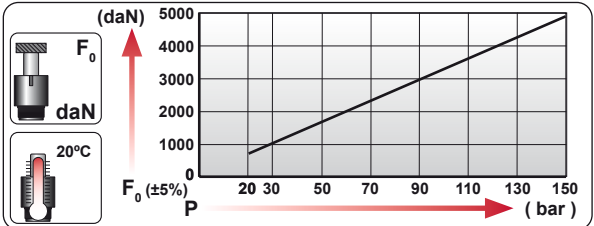
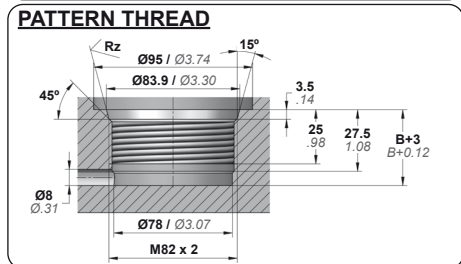
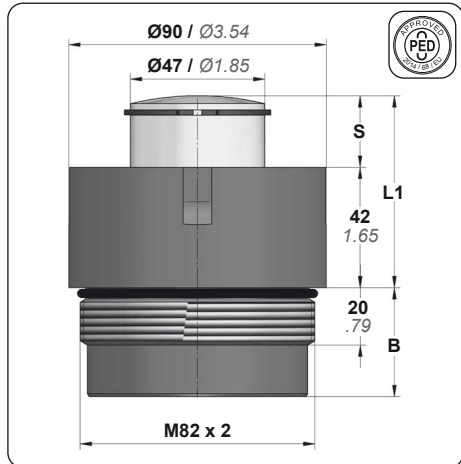
ORDER	S		L1 ±0.25		B		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg.	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	kg	lb
ZR 3000 025	25.4	1.00	67.6	2.66	31.8	1.25	2520	5665	3435	7722	1.51	3.33
ZR 3000 038	38.1	1.50	80.3	3.16	44.5	1.75					1.65	3.64
ZR 3000 051	50.8	2.00	93.0	3.66	57.2	2.25	±5%	±5%	1.79	3.95		
ZR 3000 064	63.5	2.50	105.7	4.16	69.9	2.75			1.93	4.25		
ZR 3000 076	76.2	3.00	118.4	4.66	82.6	3.25	110 bar 1595 psi at 20°C 68°F	150 bar 2175 psi at 20°C 68°F	2.06	4.54		
ZR 3000 089	88.9	3.50	131.1	5.16	95.3	3.75			2.20	4.85		
ZR 3000 102	101.6	4.00	143.8	5.66	108.0	4.25	2.34	5.16				
ZR 3000 114	114.3	4.50	156.5	6.16	120.7	4.75	2.47	5.45				
ZR 3000 127	127	5.00	169.2	6.66	133.4	5.25	2.61	5.75				
ZR 3000 140	139.7	5.50	181.9	7.16	146.1	5.75	2.75	6.06				
ZR 3000 152	152.4	6.00	194.6	7.66	158.8	6.25	2.88	6.35				

TECHNICAL DATA											
Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi	150 bar / 2175 psi	Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F	Assembly Tool	LGM 68-75	Sealing Effective Area	22,9 cm <sup>2</sup> / 3,55 in <sup>2</sup>
Sm <sub>max</sub>	< 90%	Force variation by temperature	±0,3% / °C		Seal Kit	S-XXXXXXX					
Vmax	0,8 m/s										




# ZR 5000

Manifold Short



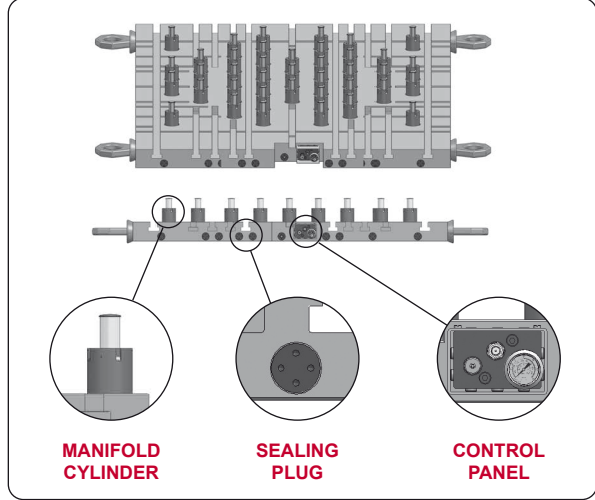
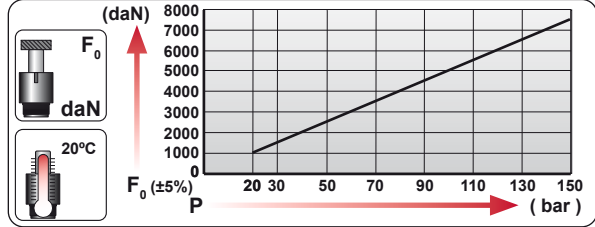
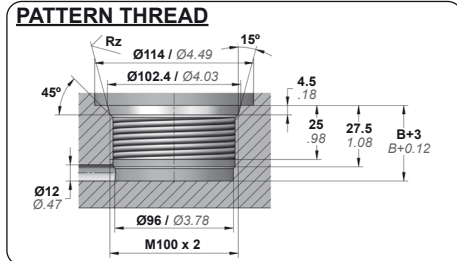
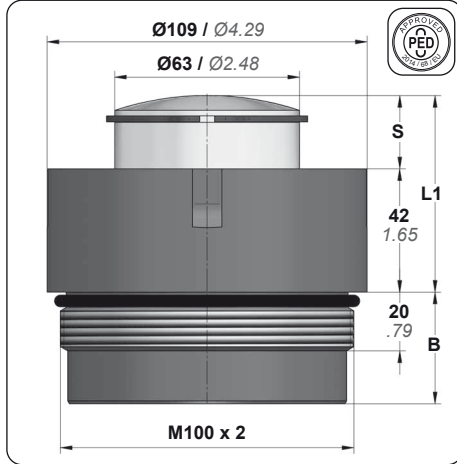
ORDER	S		L1 ±0.25		B		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZR 5000 025	25.4	1.00	67.6	2.66	38.1	1.50	3650 8206	8206	4977	11189	2.89	6.37
ZR 5000 038	38.1	1.50	80.3	3.16	50.8	2.00					3.20	7.05
ZR 5000 051	50.8	2.00	93.0	3.66	63.5	2.50					3.52	7.76
ZR 5000 064	63.5	2.50	105.7	4.16	76.2	3.00					3.83	8.44
ZR 5000 076	76.2	3.00	118.4	4.66	88.9	3.50					4.11	9.06
ZR 5000 089	88.9	3.50	131.1	5.16	101.6	4.00					4.42	9.74
ZR 5000 102	101.6	4.00	143.8	5.66	114.3	4.50					4.73	10.43
ZR 5000 114	114.3	4.50	156.5	6.16	127.0	5.00					5.02	11.07
ZR 5000 127	127	5.00	169.2	6.66	139.7	5.50					5.33	11.75
ZR 5000 140	139.7	5.50	181.9	7.16	152.4	6.00					5.64	12.43
ZR 5000 152	152.4	6.00	194.6	7.66	165.1	6.50	5.93	13.07				
ZR 5000 165	165.1	6.50	207.3	8.16	177.8	7.00	6.24	13.76				
ZR 5000 178	177.8	7.00	220.0	8.66	190.5	7.50	6.55	14.44				

**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi	150 bar / 2175 psi	Assembly Tool	LGM 80-90
Tmin Tmax	20°C / 68°F	Sealing Effective Area	0°C / 32°F	80°C / 176°F	Seal Kit	33,18 cm <sup>2</sup> / 5,14 in <sup>2</sup>
Fluid	N <sub>2</sub>	Force variation by temperature	±0,3% / °C			S-XXXXXXX
Smax	< 90%					
Vmax	0,8 m/s					

# ZR 8000

Manifold Short



ORDER	S		L1 ±0.25		B		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg.	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZR 8000 025	25.4	1.00	67.6	2.66	38.1	1.50	5550 12477	12477	7540	16951	4.41	9.72
ZR 8000 038	38.1	1.50	80.3	3.16	50.8	2.00					4.94	10.89
ZR 8000 051	50.8	2.00	93.0	3.66	63.5	2.50					5.46	12.04
ZR 8000 064	63.5	2.50	105.7	4.16	76.2	3.00					5.99	13.21
ZR 8000 076	76.2	3.00	118.4	4.66	88.9	3.50					6.47	14.26
ZR 8000 089	88.9	3.50	131.1	5.16	101.6	4.00					7.00	15.43
ZR 8000 102	101.6	4.00	143.8	5.66	114.3	4.50					7.53	16.60
ZR 8000 114	114.3	4.50	156.5	6.16	127.0	5.00					8.01	17.66
ZR 8000 127	127	5.00	169.2	6.66	139.7	5.50					8.54	18.83
ZR 8000 140	139.7	5.50	181.9	7.16	152.4	6.00					9.06	19.97
ZR 8000 152	152.4	6.00	194.6	7.66	165.1	6.50	9.55	21.05				
ZR 8000 165	165.1	6.50	207.3	8.16	177.8	7.00	10.07	22.20				
ZR 8000 178	177.8	7.00	220.0	8.66	190.5	7.50	10.60	23.37				
ZR 8000 191	190.5	7.50	232.7	9.16	203.2	8.00	11.12	24.52				
ZR 8000 203	203.2	8.00	245.4	9.66	215.9	8.50	11.61	25.60				





TECHNICAL DATA												
	Fluid	N <sub>2</sub>		Pmin Pmax 20°C / 68°F	20 bar 290 psi	150 bar 2175 psi		Assembly Tool	LGM 110-115			
	Smax	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	50,27 cm <sup>2</sup> 7,79 in <sup>2</sup>			
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX			





MODEL	F <sub>0</sub> daN lb	Thread	S mm inch	L1 mm inch	Pmax bar psi	Sealing Area mm <sup>2</sup> inch <sup>2</sup>
ZH 5200	5200 11690	M82x2	100 - 200 3.94 - 7.87	135 - 335 5.31 - 13.19	150 2175	38.48 5.97
ZH 7700	7700 17310	M100x2	100 - 250 3.94 - 9.84	135 - 435 5.31 - 17.13	150 2175	50.27 7.79
ZH 10700	10700 24055	M120x2	100 - 250 3.94 - 9.84	135 - 435 5.31 - 17.13	150 2175	78.54 12.17

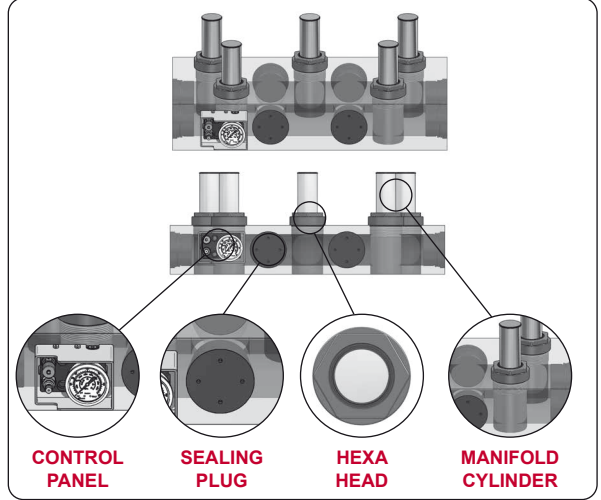
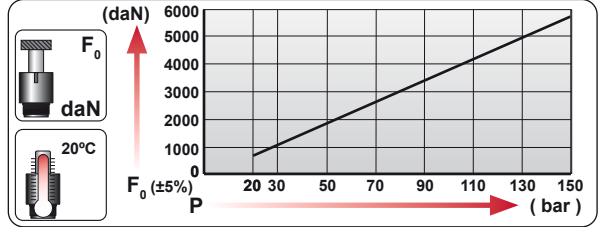
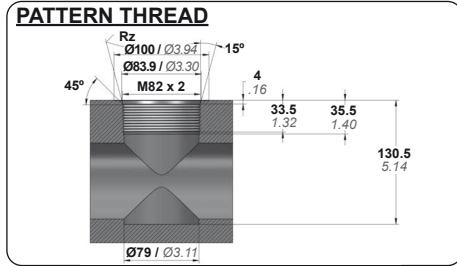
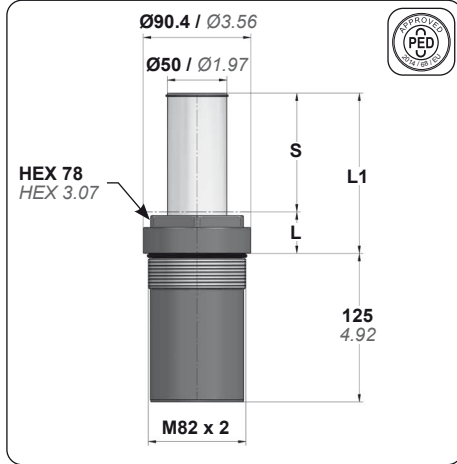
- Large cylinder used where space is not an issue
- Threads available in metric size
- Indicated for long strokes (100-250 mm)
- Specially suited for high forces (5200-10700 daN)

	6.3 - 101.6 12.7 - 127 12.7 - 152.4 12.7 - 177.8 12.7 - 203.2	6.3 - 101.6 25.4 - 127 25.4 - 152.4 25.4 - 177.8 25.4 - 203.2	100 - 200 100 - 250 100 - 250	25 - 100 25 - 100 25 - 100	20 100 - 200
	1-5/16-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	1-5/8-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	M82x2 M100x2 M120x2	M36x2 M48x2 M64x2	M64x2 M82x2
	29.5 - 220.0 48.5 - 277.1 48.5 - 327.9 48.5 - 378.7 48.5 - 429.5	48.5 - 143.8 67.6 - 169.2 67.6 - 194.6 67.6 - 220 67.6 - 245.4	135 - 335 135 - 435 135 - 435	70.5 - 220.5 73.5 - 223.5 73.5 - 223.5	80 175 - 275
	750 1500 3000 5000 8000	750 1500 3000 5000 8000	5200 7700 10700	750 1500 3000	3000 5800
MODEL	ZP 750 ZP 1500 ZP 3000 ZP 5000 ZP 8000	ZR 750 ZR 1500 ZR 3000 ZR 5000 ZR 8000	ZH 5200 ZH 7700 ZH 10700	ZB 750 ZC 1500 ZF 3500	ZT 3000 ZT 5800
SERIES	ZP	ZR	ZH	ZB / ZC / ZF	ZT



# ZH 5200

Manifold High Force



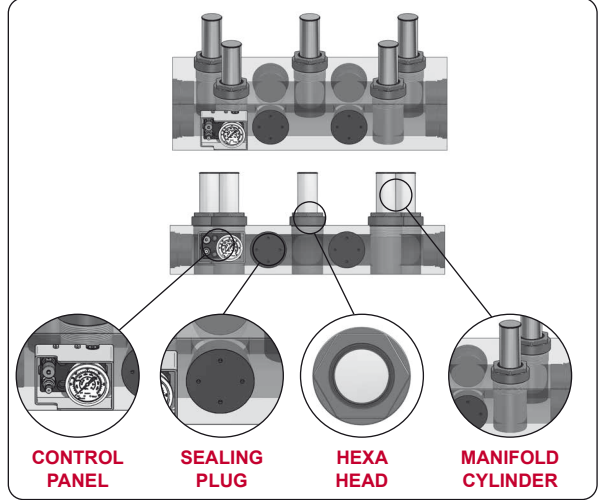
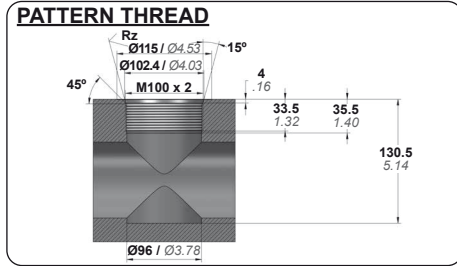
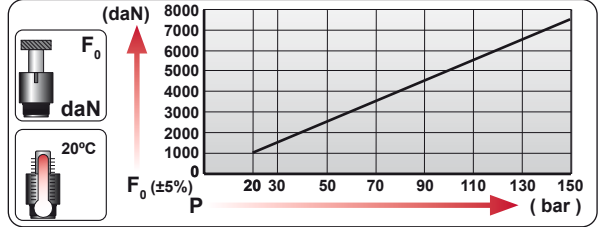
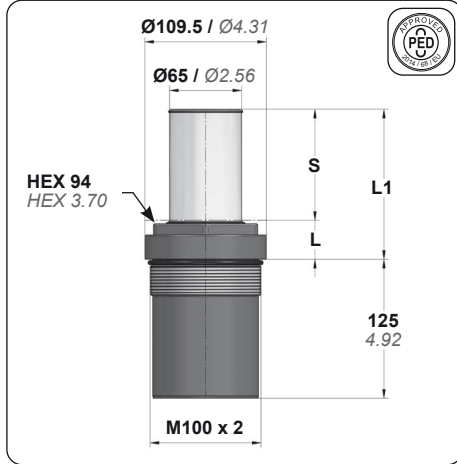
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb			
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb		
ZH 5200 100	100	3.94	135	5.31	35	1.38	4220	9487	5773	12978	4.67	10.30		
ZH 5200 125	125	4.92	185	7.28	60	2.36	±5% 110 bar 1595 psi at 20°C 68°F		±5% 150 bar 2175 psi at 20°C 68°F		5.56	12.26		
ZH 5200 160	160	6.30	255	10.04	95	3.74							6.80	14.99
ZH 5200 200	200	7.87	335	13.19	135	5.31							8.22	18.12

TECHNICAL DATA													
	Fluid	N <sub>2</sub>		Pmin Pmax	20 bar 290 psi	150 bar 2175 psi		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Assembly Tool	UHM 78
	Smax	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	38,48 cm <sup>2</sup> 5,97 in <sup>2</sup>				
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX				




# ZH 7700

Manifold High Force

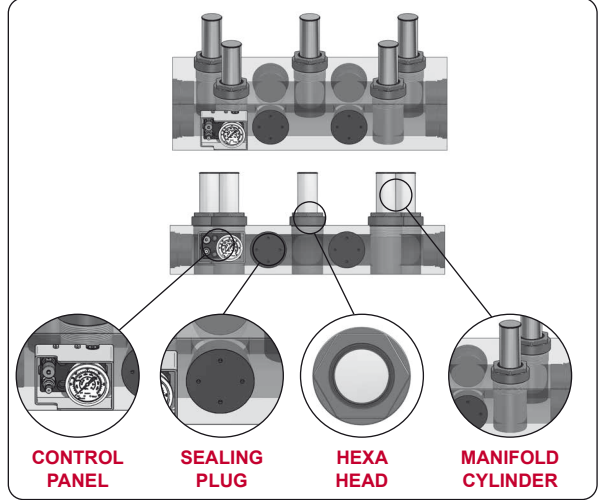
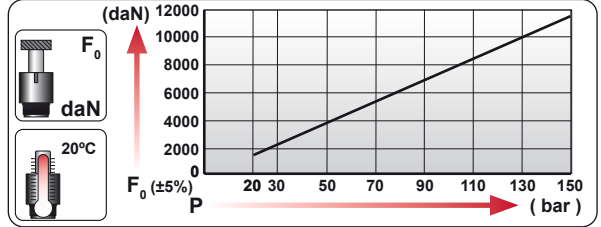
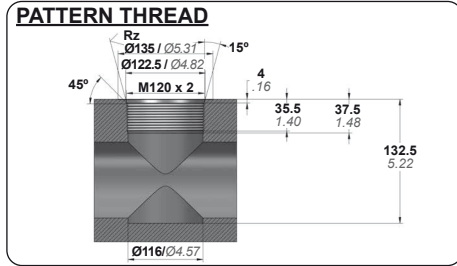
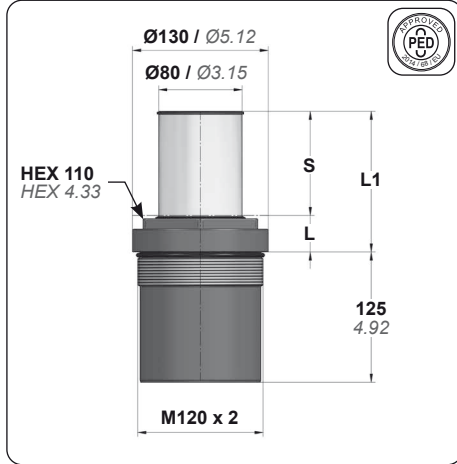


ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Weight	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZH 7700 100	100	3.94	135	5.31	35	1.38	5550	12477	7540	16951	7.80	17.20
ZH 7700 125	125	4.92	185	7.28	60	2.36	±5% 110 bar 1595 psi at 20°C 68°F		±5% 150 bar 2175 psi at 20°C 68°F		9.31	20.52
ZH 7700 160	160	6.30	255	10.04	95	3.74						
ZH 7700 200	200	7.87	335	13.19	135	5.31						
ZH 7700 250	250	9.84	435	17.13	185	7.28						
											13.85	30.53
											16.87	37.19

TECHNICAL DATA											
	Fluid	N <sub>2</sub>		Pmin Pmax	20 bar 150 bar		Tmin Tmax	290 psi 2175 psi		Assembly Tool	UHM 94
	Smax	< 90%		Tmin Tmax	0 °C 80 °C		Sealing Effective Area	32 °F 176 °F		Seal Kit	50,27 cm <sup>2</sup> 7,79 in <sup>2</sup>
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C						S-XXXXXXX

# ZH 10700

Manifold High Force




ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb		
ZH 10700 100	100	3.94	135	5.31	35	1.38	8650	19446	11781	26485	11.08	24.43
ZH 10700 125	125	4.92	185	7.28	60	2.36	±5% 110 bar 1595 psi at 20°C 68°F		±5% 150 bar 2175 psi at 20°C 68°F		13.13	28.95
ZH 10700 160	160	6.30	255	10.04	95	3.74					16.00	35.27
ZH 10700 200	200	7.87	335	13.19	135	5.31					19.28	42.50
ZH 10700 250	250	9.84	435	17.13	185	7.28					23.38	51.54





TECHNICAL DATA													
	Fluid	N <sub>2</sub>		Pmin Pmax	20 bar 290 psi	150 bar 2175 psi		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Assembly Tool	UHM 110
	Smax	< 90%		Tmin Tmax	0 °C 32 °F	80 °C 176 °F		Sealing Effective Area	78,54 cm <sup>2</sup> 12,17 in <sup>2</sup>				
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX				





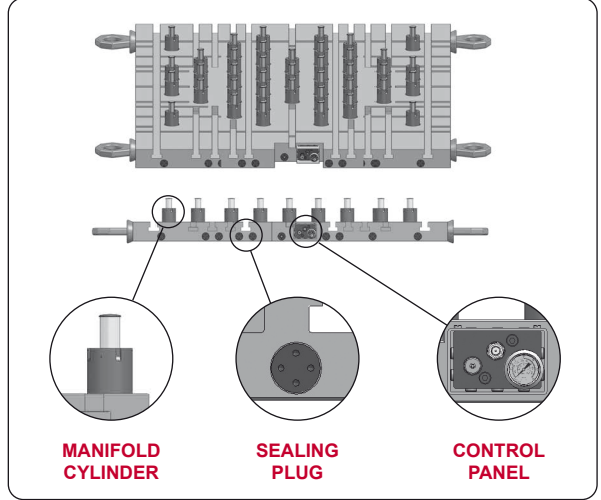
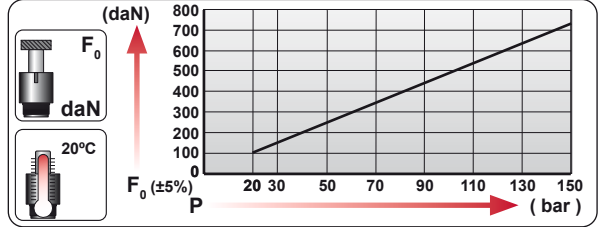
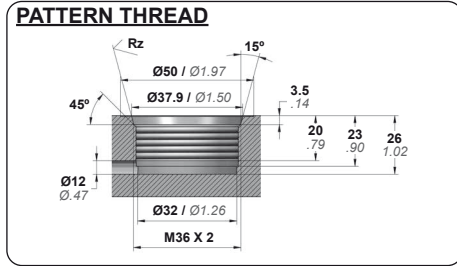
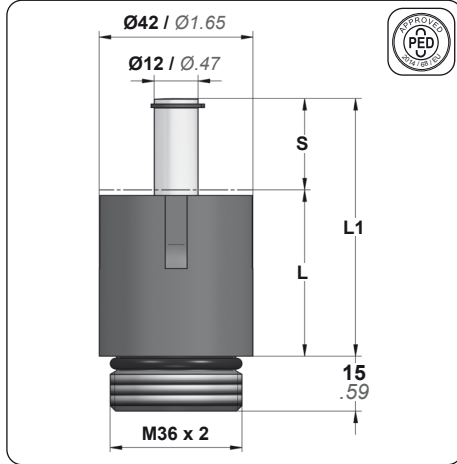
MODEL	F <sub>0</sub> daN <i>lb</i>	Thread 	S mm <i>inch</i>	L1 mm <i>inch</i>	Pmax bar <i>psi</i>	Sealing Area mm <sup>2</sup> <i>inch<sup>2</sup></i>
<b>ZB 750</b>	750 1686	M36x2	25 - 100 0.98 - 3.94	70.5 - 220.5 2.78 - 8.68	150 2175	4.91 0.76
<b>ZC 1500</b>	1500 3372	M48x2	25 - 100 0.98 - 3.94	73.5 - 223.5 2.89 - 8.80	150 2175	9.62 1.49
<b>ZF 3500</b>	3500 7868	M64x2	25 - 100 0.98 - 3.94	73.5 - 223.5 2.89 - 8.80	150 2175	22.90 3.55

- Large cylinder used where space is not an issue
- Threads available in metric size
- Indicated for short strokes (25-100 mm)
- Specially suited for smaller-medium range of forces (750-3000 daN)

	6.3 - 101.6 12.7 - 127 12.7 - 152.4 12.7 - 177.8 12.7 - 203.2	6.3 - 101.6 25.4 - 127 25.4 - 152.4 25.4 - 177.8 25.4 - 203.2	100 - 200 100 - 250 100 - 250	25 - 100 25 - 100 25 - 100	20 100 - 200
	1-5/16-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	1-5/6-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	M82x2 M100x2 M120x2	M36x2 M48x2 M64x2	M64x2 M82x2
	29.5 - 220.0 48.5 - 277.1 48.5 - 327.9 48.5 - 378.7 48.5 - 429.5	48.5 - 143.8 67.6 - 169.2 67.6 - 194.6 67.6 - 220 67.6 - 245.4	135 - 335 135 - 435 135 - 435	70.5 - 220.5 73.5 - 223.5 73.5 - 223.5	80 175 - 275
	750 1500 3000 5000 8000	750 1500 3000 5000 8000	5200 7700 10700	750 1500 3000	3000 5800
MODEL	ZP 750 ZP 1500 ZP 3000 ZP 5000 ZP 8000	ZR 750 ZR 1500 ZR 3000 ZR 5000 ZR 8000	ZH 5200 ZH 7700 ZH 10700	ZB 750 ZC 1500 ZF 3500	ZT 3000 ZT 5800
SERIES	ZP	ZR	ZH	ZB / ZC / ZF	ZT

# ZB 750

Manifold Medium



ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZB 750 025	25	0.98	70.5	2.78	45.5	1.79	540	1214	736	1655	0.47	1.04
ZB 750 038	38	1.50	96.5	3.80	58.5	2.30						
ZB 750 050	50	1.97	120.5	4.74	70.5	2.78	0.66	1.46				
ZB 750 063.5	63.5	2.50	147.5	5.81	84	3.31			0.77	1.70		
ZB 750 075	75	2.95	170.5	6.71	95.5	3.76	0.86	1.90				
ZB 750 088	88	3.46	196.5	7.74	108.5	4.27			0.96	2.12		
ZB 750 100	100	3.94	220.5	8.68	120.5	4.74	1.06	2.34				

±5%

**110 bar**

1595 psi

at 20°C

68°F

±5%

**150 bar**

2175 psi

at 20°C

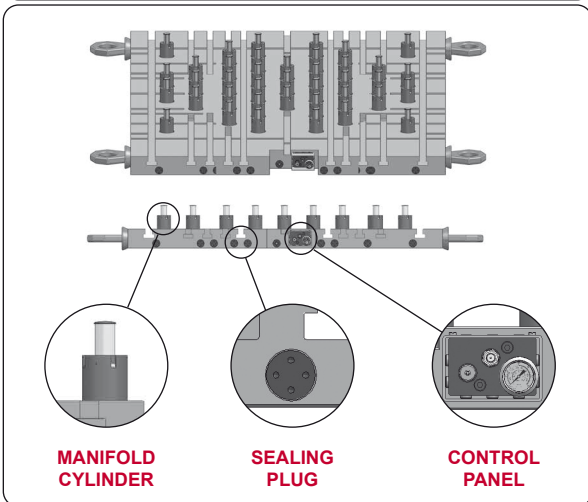
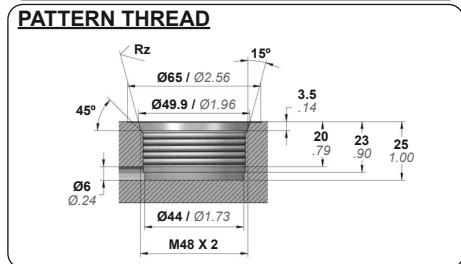
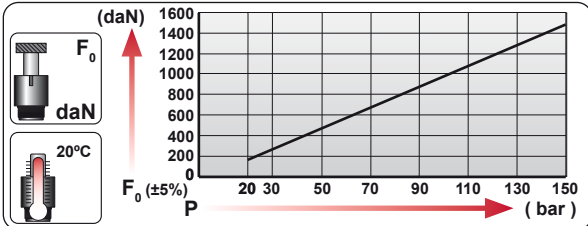
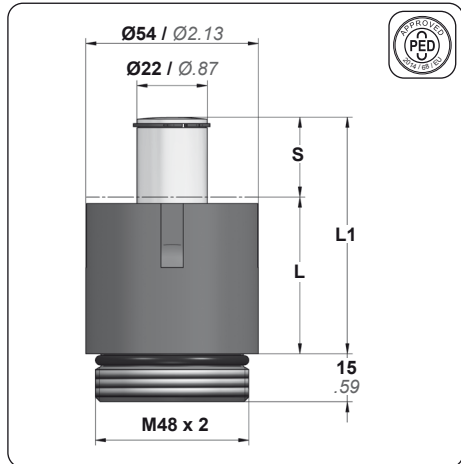
68°F

TECHNICAL DATA			
Fluid	N <sub>2</sub>	Pmin Pmax	20 bar 150 bar 290 psi 2175 psi
Smax	< 90%	Tmin Tmax	0 °C 80 °C 32 °F 176 °F
Vmax	0,8 m/s	Force variation by temperature	±0,3% / °C
Assembly Tool		Sealing Effective Area	LGM 40-42 4,91 cm <sup>2</sup> 0,76 in <sup>2</sup>
Seal Kit			S-XXXXXXX




**ZC 1500**

Manifold Medium



ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg.	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZC 1500 025	25	0.98	73.5	2.89	48.5	1.91	1057	2376	1443	3244	0.86	1.90
ZC 1500 038	38	1.50	99.5	3.92	61.5	2.42						
ZC 1500 050	50	1.97	123.5	4.86	73.5	2.89	±5%	110 bar 1595 psi at 20°C 68°F	±5%	150 bar 2175 psi at 20°C 68°F	1.20	2.65
ZC 1500 063	63.5	2.50	151	5.94	87.5	3.44						
ZC 1500 075	75	2.95	173.5	6.83	98.5	3.88	1.20	2.65	1.38	3.04	1.53	3.37
ZC 1500 088	88	3.46	200	7.87	112	4.41						
ZC 1500 100	100	3.94	223.5	8.80	123.5	4.86						

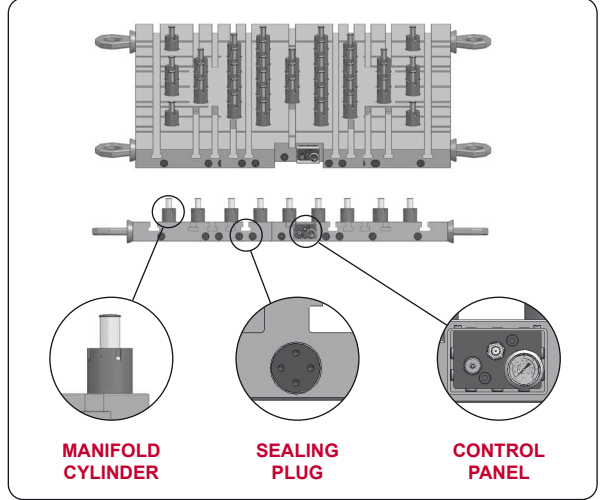
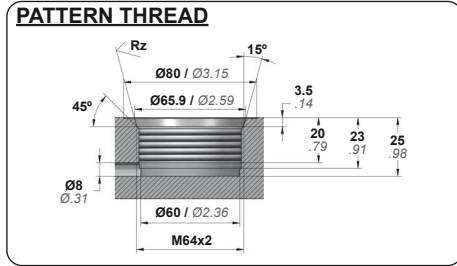
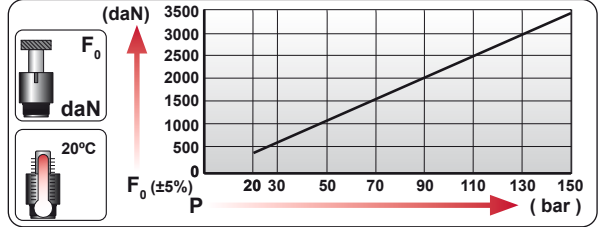
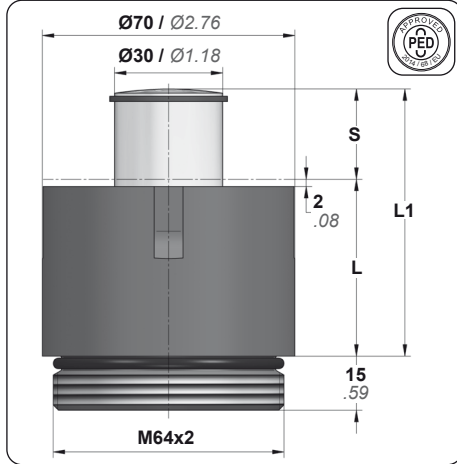
**TECHNICAL DATA**

Fluid	N <sub>2</sub>	Pmin Pmax	20 bar / 290 psi 150 bar / 2175 psi	Tmin Tmax	0 °C / 32 °F 80 °C / 176 °F	Assembly Tool	LGM 52-55
Smax	< 90%	Force variation by temperature	±0,3% / °C	Sealing Effective Area	9,62 cm <sup>2</sup> 1,49 in <sup>2</sup>	Seal Kit	S-XXXXXXX
Vmax	0,8 m/s						



# ZF 3500

Manifold Medium



ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
ZF 3500 025	25	0.98	73.5	2.89	48.5	1.91	2518	5661	3435	7722	1.35	2.98
ZF 3500 038	38	1.50	99.5	3.92	61.5	2.42					1.58	3.48
ZF 3500 050	50	1.97	123.5	4.86	73.5	2.89	±5%	110 bar 1595 psi at 20°C 68°F	±5%	150 bar 2175 psi at 20°C 68°F	1.79	3.95
ZF 3500 063	63.5	2.50	151	5.94	87.5	3.44					2.03	4.48
ZF 3500 075	75	2.95	173.5	6.83	98.5	3.88					2.23	4.92
ZF 3500 088	88	3.46	200	7.87	112	4.41					2.47	5.45
ZF 3500 100	100	3.94	223.5	8.80	123.5	4.86					2.68	5.91





TECHNICAL DATA												
	Fluid	N <sub>2</sub>		Pmin Pmax 20°C / 68°F	20 bar 290 psi	150 bar 2175 psi		Tmin Tmax 0°C / 32°F	80°C / 176°F		Assembly Tool	LGM 68-75
	Sm <sub>max</sub>	< 90%		Tmin Tmax	0°C / 32°F	80°C / 176°F		Sealing Effective Area	22,90 cm <sup>2</sup> 3,55 in <sup>2</sup>		Seal Kit	S-XXXXXXX
	V <sub>max</sub>	0,8 m/s		Force variation by temperature	±0,3% / °C							





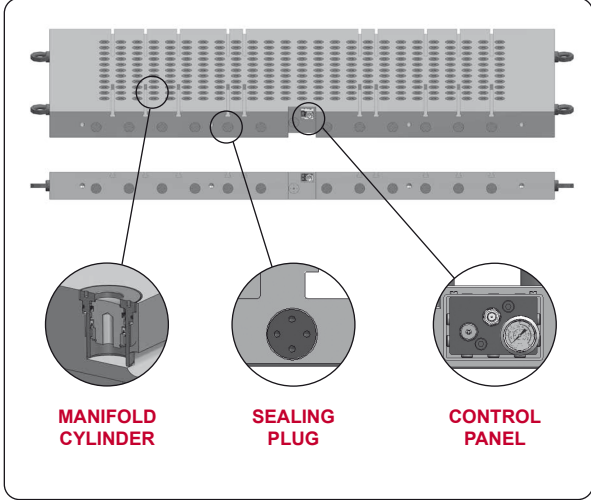
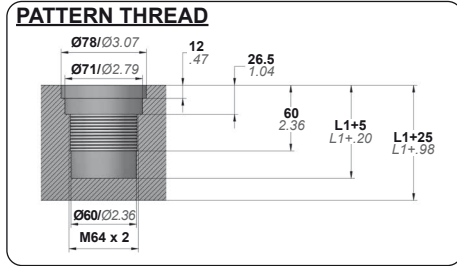
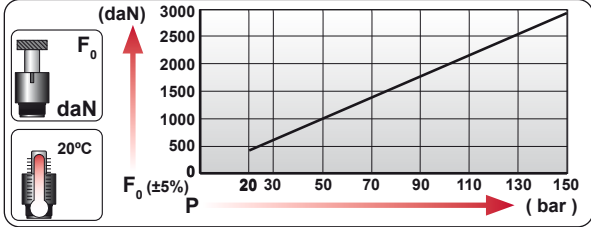
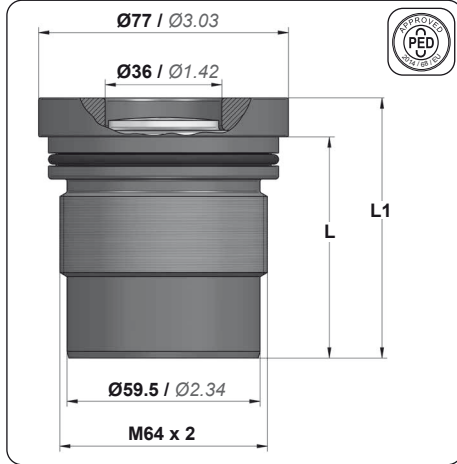
MODEL	F <sub>0</sub> daN lb	Thread	S mm inch	L1 mm inch	Pmax bar psi	Sealing Area mm <sup>2</sup> inch <sup>2</sup>
ZT 3000	3000 6744	M64x2	20 0.79	80 3.15	150 2175	19.63 3.04
ZT 5800	5800 13039	M82x2	100 - 200 3.94 - 7.87	175 - 275 6.89 - 10.83	150 2175	38.48 5.97

- Cylinders taylor-made under specification requested
- Specially suitable for die cushions

	6.3 - 101.6 12.7 - 127 12.7 - 152.4 12.7 - 177.8 12.7 - 203.2	6.3 - 101.6 25.4 - 127 25.4 - 152.4 25.4 - 177.8 25.4 - 203.2	100 - 200 100 - 250 100 - 250	25 - 100 25 - 100 25 - 100	20 100 - 200
	1-5/16-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	1-5/8-12" 1-7/8-12" 2-1/2-12" M82x2 M100x2	M82x2 M100x2 M120x2	M36x2 M48x2 M64x2	M64x2 M82x2
	29.5 - 220.0 48.5 - 277.1 48.5 - 327.9 48.5 - 378.7 48.5 - 429.5	48.5 - 143.8 67.6 - 169.2 67.6 - 194.6 67.6 - 220 67.6 - 245.4	135 - 335 135 - 435 135 - 435	70.5 - 220.5 73.5 - 223.5 73.5 - 223.5	80 175 - 275
	750 1500 3000 5000 8000	750 1500 3000 5000 8000	5200 7700 10700	750 1500 3000	3000 5800
MODEL	ZP 750 ZP 1500 ZP 3000 ZP 5000 ZP 8000	ZR 750 ZR 1500 ZR 3000 ZR 5000 ZR 8000	ZH 5200 ZH 7700 ZH 10700	ZB 750 ZC 1500 ZF 3500	ZT 3000 ZT 5800
SERIES	ZP	ZR	ZH	ZB / ZC / ZF	ZT

# ZT 3000

Manifold Die Cushion

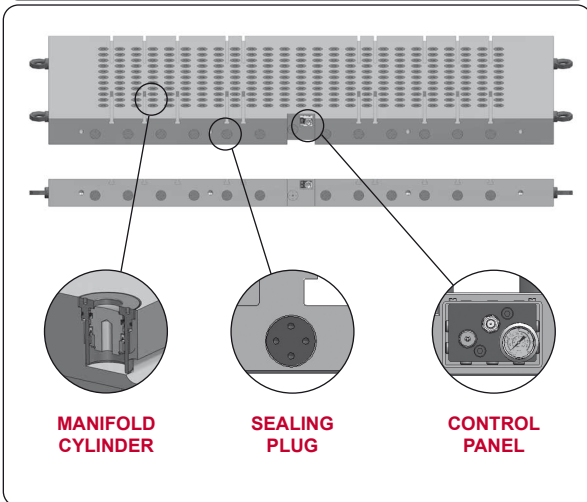
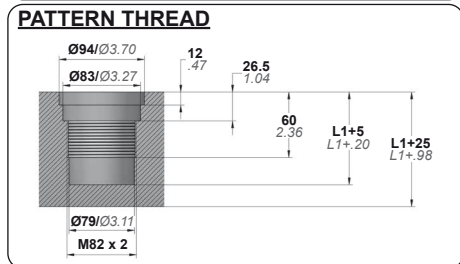
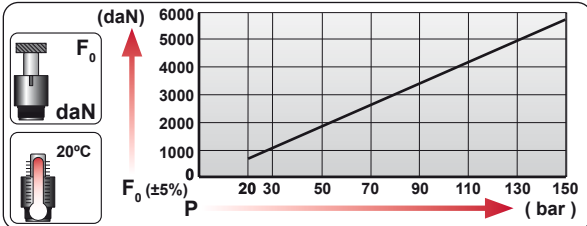
ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. / lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb	Kg.	lb
<b>ZT 3000 020</b>	20	0.79	80	3.15	68	2.68	2160	4856	2945	6621	1.52	3.35
							±5%		±5%			
							<b>110 bar</b>		<b>150 bar</b>			
							1595 psi		2175 psi			
							at 20°C		at 20°C			
							68°F		68°F			

TECHNICAL DATA													
	Fluid	N <sub>2</sub>		Pmin Pmax	20 bar / 290 psi	150 bar / 2175 psi		Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F		Assembly Tool	UAM 60
	Smax	< 90%		Tmin Tmax	0 °C / 32 °F	80 °C / 176 °F		Sealing Effective Area	19,63 cm <sup>2</sup> / 3,04 in <sup>2</sup>				
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C			Seal Kit	S-XXXXXXX				




**ZT 5800**

Manifold Die Cushion



MANIFOLD CYLINDER

SEALING PLUG

CONTROL PANEL

ORDER	S		L1 ±0.25		L		F <sub>0</sub> Initial Force		F <sub>0</sub> Initial Force		Kg. lb	
	mm	inch	mm	inch	mm	inch	daN	lb	daN	lb		
ZT 5800 100	100	3.94	175	6.89	163	6.42	4225	9498	5773	12978	3.50	7.72
ZT 5800 125	125	4.92	200	7.87	188	7.40	±5%	110 bar 1595 psi at 20°C 68°F	±5%	150 bar 2175 psi at 20°C 68°F	3.70	8.16
ZT 5800 150	150	5.91	225	8.86	213	8.39					3.89	8.58
ZT 5800 200	200	7.87	275	10.83	263	10.35	4.28	9.44				

TECHNICAL DATA

	Fluid	N <sub>2</sub>		Pmin Pmax 20°C / 68°F	20 bar 150 bar 290 psi 2175 psi		Assembly Tool	UAM 70
	Smax	< 90%		Tmin Tmax	0 °C 80 °C 32 °F 176 °F		Sealing Effective Area	38,48 cm <sup>2</sup> 5,97 in <sup>2</sup>
	Vmax	0,8 m/s		Force variation by temperature	±0,3% / °C		Seal Kit	S-XXXXXXX

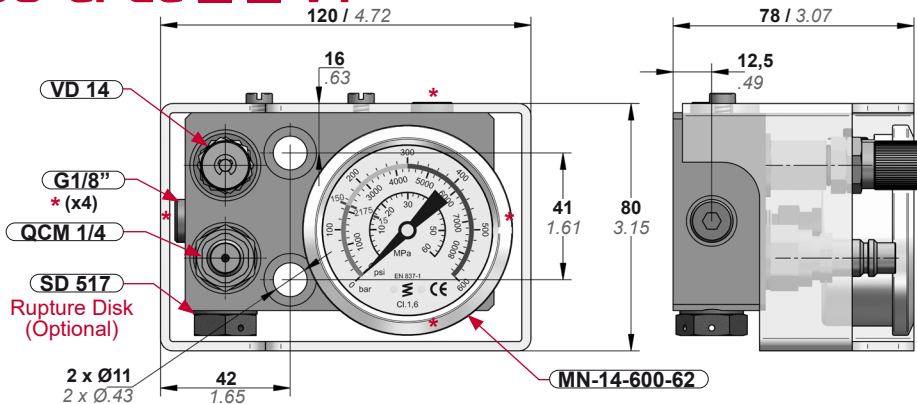
# ACCESSORIES

Manifold



## 600-CPLC \_\_ V1

### STANDARD CONTROL PANEL



bar psi  
600 8000

bar psi  
517 7500

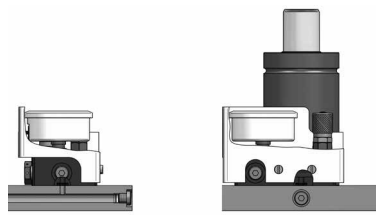
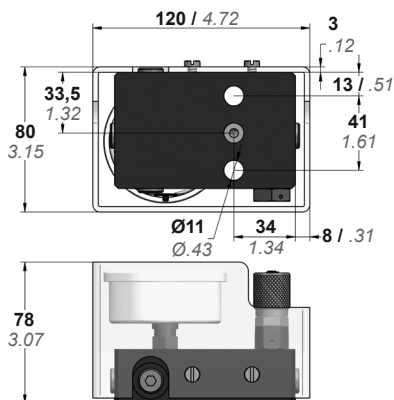
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	DEU BESTELL		
	FRA COMMANDE		
	ITA ORDINE		
	ESP PEDIDO		
POR PEDIDO			

**600-CPLC 01 V1**

**600-CPLC 02 V1**

## 600-CPLC-ER \_\_ V1

### DIRECT MOUNTING TO PLATE



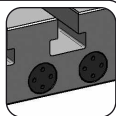
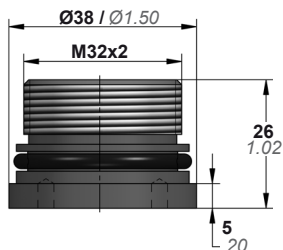
bar psi  
600 8000

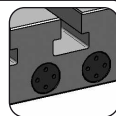
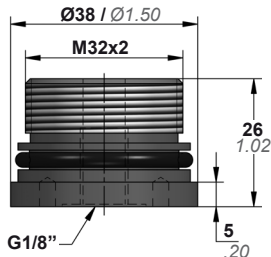
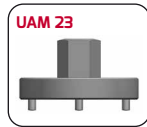
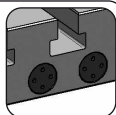
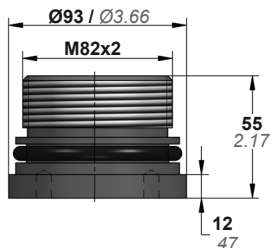
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517 7500

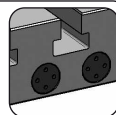
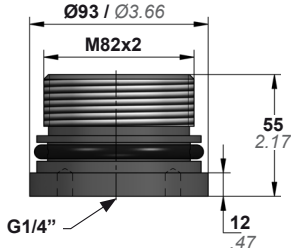
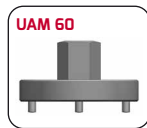
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	DEU BESTELL		
	FRA COMMANDE		
	ITA ORDINE		
	ESP PEDIDO		
POR PEDIDO			








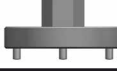


**600-CPLC-ER 01 V1**

**600-CPLC-ER 02 V1**

**SEALING PLUGS**
**TPM 32**

**UAM 23**

**TPM 32 18**

**UAM 23**

**TPM 82**

**UAM 60**

**TPM 82 14**

**UAM 60**

**FIXING TOOLS**

TOOL	MANIFOLD	TOOL	MANIFOLD
LGM 40-42 	ZP 750 ZR 750 ZB 750	UHM 78 	ZH 5200
LGM 52-55 	ZP 1500 ZR 1500 ZC 1500	UHM 94 	ZH 7700
LGM 68-75 	ZP 3000 ZR 3000 ZC 3500	UHM 110 	ZH 10700
LGM 80-90 	ZP 5000 ZR 5000	UAM 60 	ZT 3000
LGM 110-115 	ZP 8000 ZR 8000	UAM 70 	ZT 5800