



## PUMPING ELEMENT Model : 1R\*

Ref. No. D 11100  
Release 10 / 2023

ENGINEERING - 1 of 2

A Polyhydron Group Company

### Description

Model 1R\* is a Piston type self contained pumping element, supplied with its Suction valve , Delivery valve and a spring loaded piston as a single unit. It is basically meant for supplying small volume of lubricating oil under high pressure.

For its working, the element must remain submerged in the oil all the time while pumping.

Reciprocating motion of the piston gives pumping action. The motion can be imparted either by a lever, a cam or a rocker arm.

Radially arranging a number of such elements around a bearing, which is mounted eccentrically on a rotating shaft and connecting all delivery port of the elements together will create a pump giving a continuous oil flow. Odd number of elements connected in such a manner will give smoother flow than even number.

There are seven types of pumping elements, each having different displacement and pressure rating.



### Technical specifications

Type	:	Reciprocating Spring loaded piston, Oli immersed.
Mounting Standard	:	Factory standard.
Operating Speed range	:	300 to 2000 strokes/min.
Hydraulic medium	:	Mineral oil.
Oil Temperature range	:	-20°C to + 80°C.
Viscosity range	:	10 cSt to 100 cSt.
Fluid cleanliness required	:	ISO 4406 20/18/15 or better.
Flow and pressure rating	:	Refer Table - 1

### Hydraulic symbol

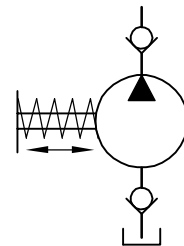


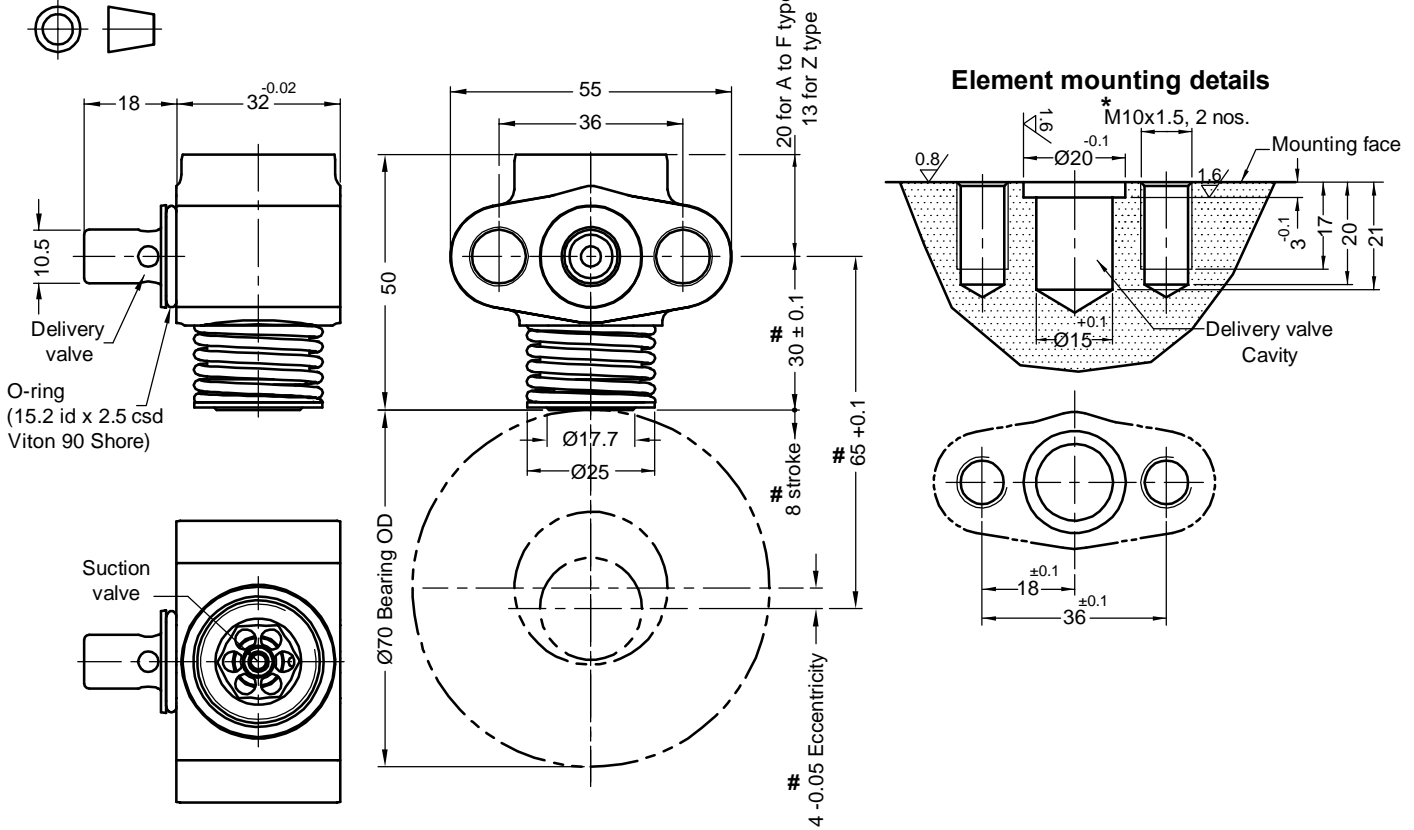
Table - 1

Model	Geometrical displacement with 8 mm stroke cm <sup>3</sup> /stroke	Max. operating pressure (bar)	Expected Delivery flow (l/min)		Force required to operate piston at rated pressure (N)	Mass (kg)
			1450 s/min.	2000 s/min.		
1R Z	0.23	700	0.31	0.43	1980	0.3
1R A	0.40	550	0.55	0.75	2765	
1R B	0.63	450	0.86	1.18	3535	
1R C	0.90	350	1.23	1.70	3960	
1R D	1.06	300	1.53	1.99	3982	
1R E	1.23	250	1.78	2.31	3848	
1R F	1.41	200	2.04	2.65	3534	



### Unit dimensions

Dimensions in mm.



# Exceeding these dimensions will damage internal parts of the element.

\* Element mounting S.H.C screws (class 12.9) tightening torque 45 Nm. Element mounting S.H.C screws are OUT OF SCOPE OF SUPPLY.

### Ordering code

**1R A - 11**

Pumping element		
Type of element		
Flow and pressure rating		
Operating Pressure in bar	Geometrical displacement with 8 mm stroke cm <sup>3</sup> /stroke	Code letter
700	0.23	Z
550	0.40	A
450	0.63	B
350	0.90	C
300	1.06	D
250	1.23	E
200	1.41	F

Design code subjected to change. Installation dimensions remain same for design code 10 thru 19.

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Due to continuous improvement in the design of the product, the actual product supplied may look different than shown above.  
For critical applications, please ask for certified installation drawing.