

2/2 way cartridge valve type URZS 16 can be used to build hydraulic systems as a pilot operated check valve or by combination several elements as a multiple directional control block.

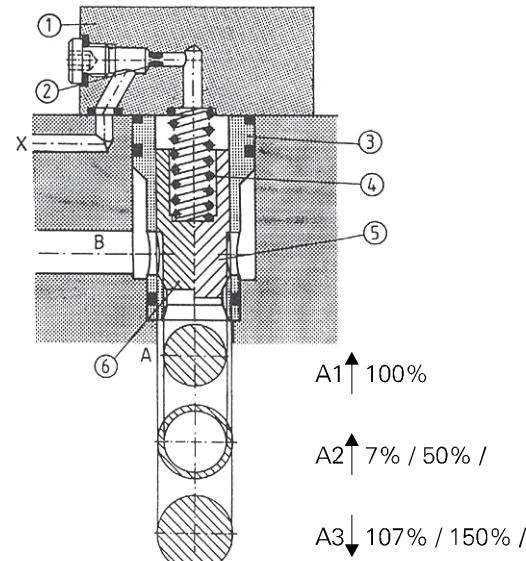


DESCRIPTION OF OPERATION

2/2 way cartridge valves - inserts comprise the cartridge assembly and the cover 1 with the control bores. The cartridge assembly is composed of the sleeve 3, the spring 4 and poppet with an optional dumping nose 5 or without it 6.

The valve poppet is held on its seat by means of the spring 4. There is free flow from A to B or reversely from B to A. The valve poppet is graded, so that there are three important surfaces for the operation. The area of the seat A1 is assumed as 100 %. The annulus area A2, resulting from the grading is 7 % or 50 % of area A1, depending on the version. The area A3 is A1 + A2 and can be either 107 % or 150 % of area A1. The area A3 remains unchanged. When the annulus area changes, then the surface area A1, which is regarded as 100 % also changes. The valves opens in both flow directions (port X is unpressurized) if surface A3 is not affected by pressure force affecting the adequate surfaces A1 and A2 exceeds the spring force. If control pressure affects surface A3, the valve poppet is pushed onto its seat, irrespective of the spring force.

The valve may be opened by unloading surface A3 or by suitably high pressure in port A or B. An orifice 2 fitted in port X allows to select the opening curve and the valve opening time.

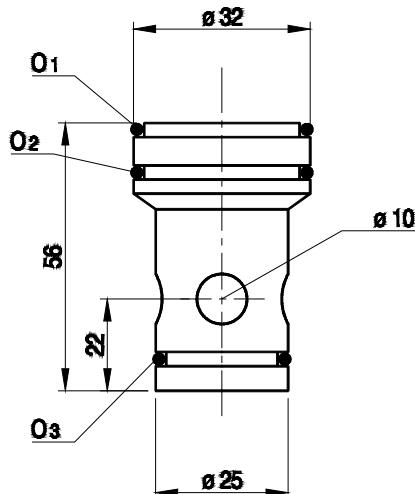


TECHNICAL DATA

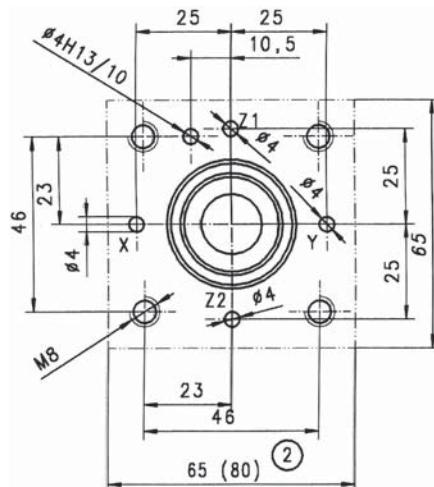
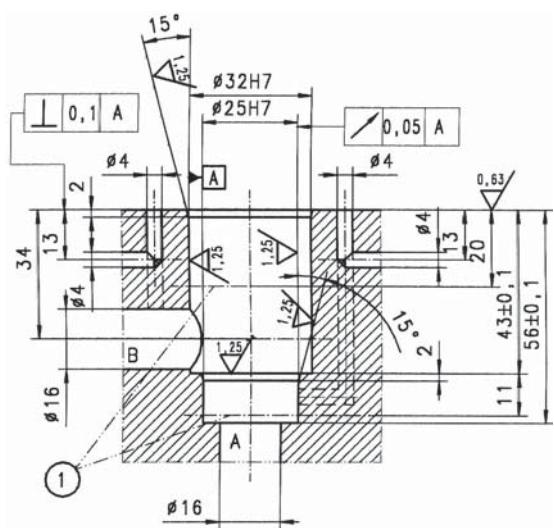
Hydraulic fluid	Mineral oil or phosphate ester
Working pressure at port A, B, X	up to 42 MPa
Maximum flow	140 dm ³ /s
Optimum working temperature (fluid in a tank)	313 - 328 K
Fluid temperature range	243 - 343 K
Nominal fluid viscosity	37 mm ² /s at the temperature of 328 K
Viscosity range	2.8 to 380 mm ² /s
Required filtration	16 µm
Recommended filtration	10 µm

OVERALL DIMENSIONS FOR URZS 16

O₁ - O-ring 26,2 x 3 - 1 piece
 O₂ - O-ring 27,3 x 2,4 - 1 piece
 O₃ - O-ring 20,3 x 2,4 - 1 piece
 Weight of URZS 16 - 0.2 kg



VALVE SEAT DIMENSIONS FOR URZS 16



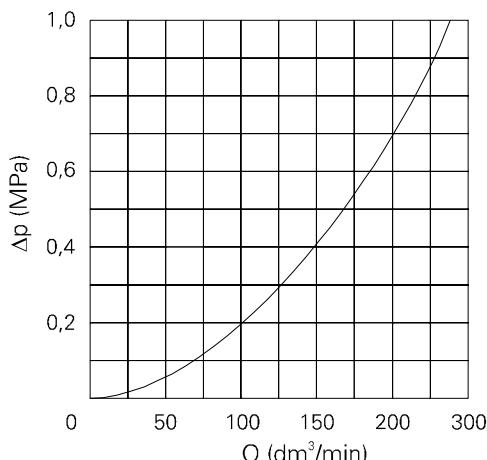
1 - fit depth

2 - for ULZS 16 WE

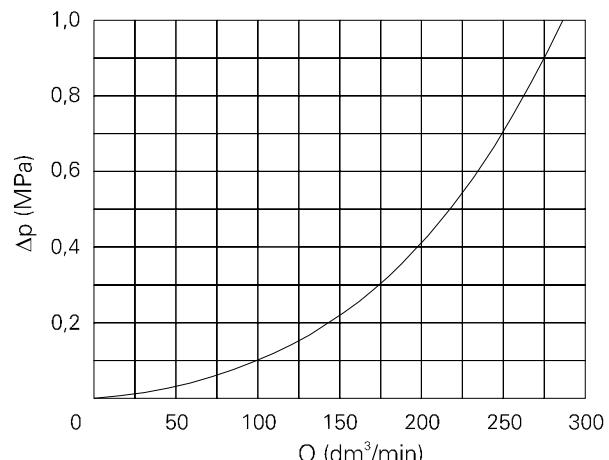
Cover is mounted to the valve seat by means of 4 bolts M8 x 40 - 10,9 PN - 87 / M-82302 (DIN 912 - 10,9)
 Tightening torque M_d=32 Nm.

The mounting bolts must be ordered separately.

PERFORMANCE CURVES FOR URZS 16 measured at $v = 41 \text{ mm}^2/\text{s}$ and $T = 323 \text{ K}$

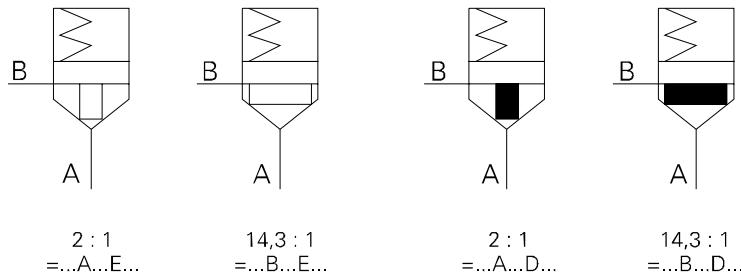


With dumping nose



Without dumping nose

HYDRAULIC SCHEME FOR URZS 16



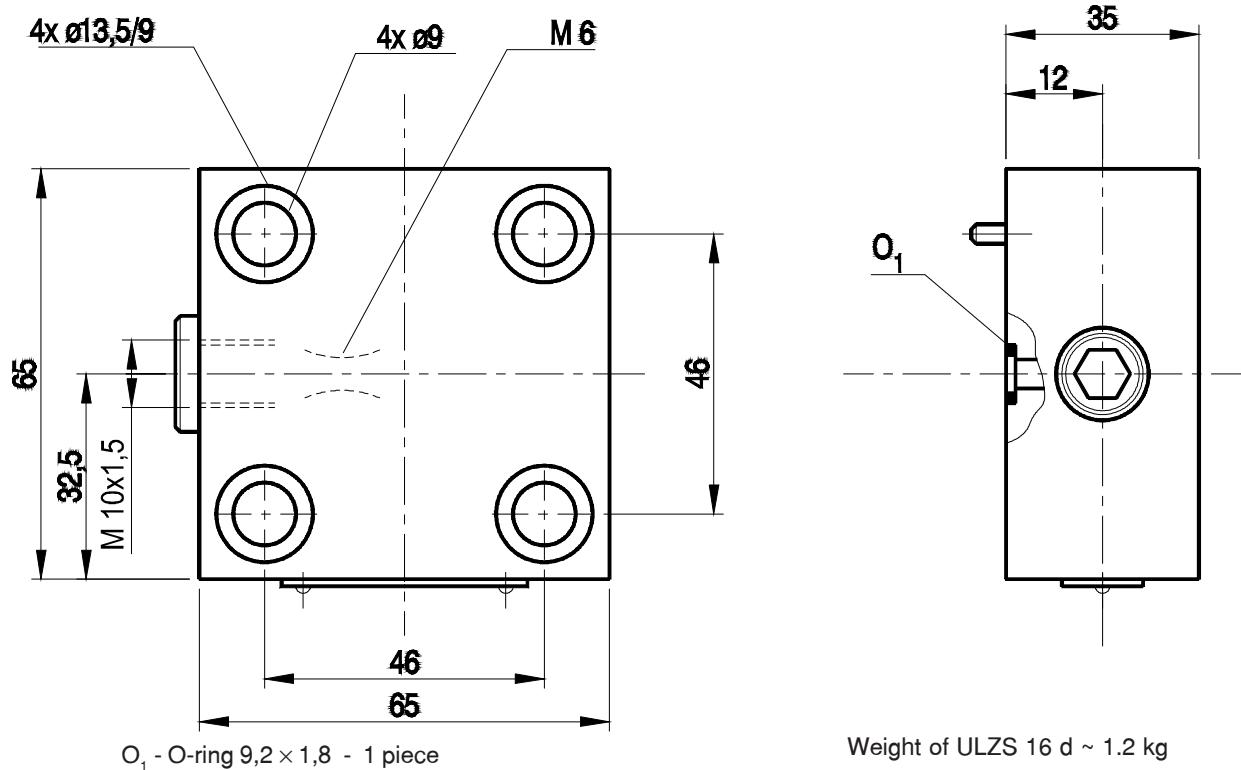
HOW TO ORDER URZS 16

Orders coded in the way showed below should be forwarded to the manufacturer.

URZS 16		/		*
Area ratio 2 : 1 (50 %) = A 13,4 : 1 (7 %) = B		Further requirements in clear text (to be agreed with the manufacturer)		
Cracking pressure 0 MPa (without spring) = 00 0.05 MPa = 05 0.10 MPa = 10 0.20 MPa = 20 0.40 MPa = 40		Sealing Mineral oil = with no code Phosphate ester = V		
Valve poppet without dumping nose = E with dumping nose = D		Series number 10 = 10 (10 - 19) - installation and connection dimensions unchanged		

1. COVER ULZS 16 D

DIMENSIONS FOR COVER ULZS 16 D

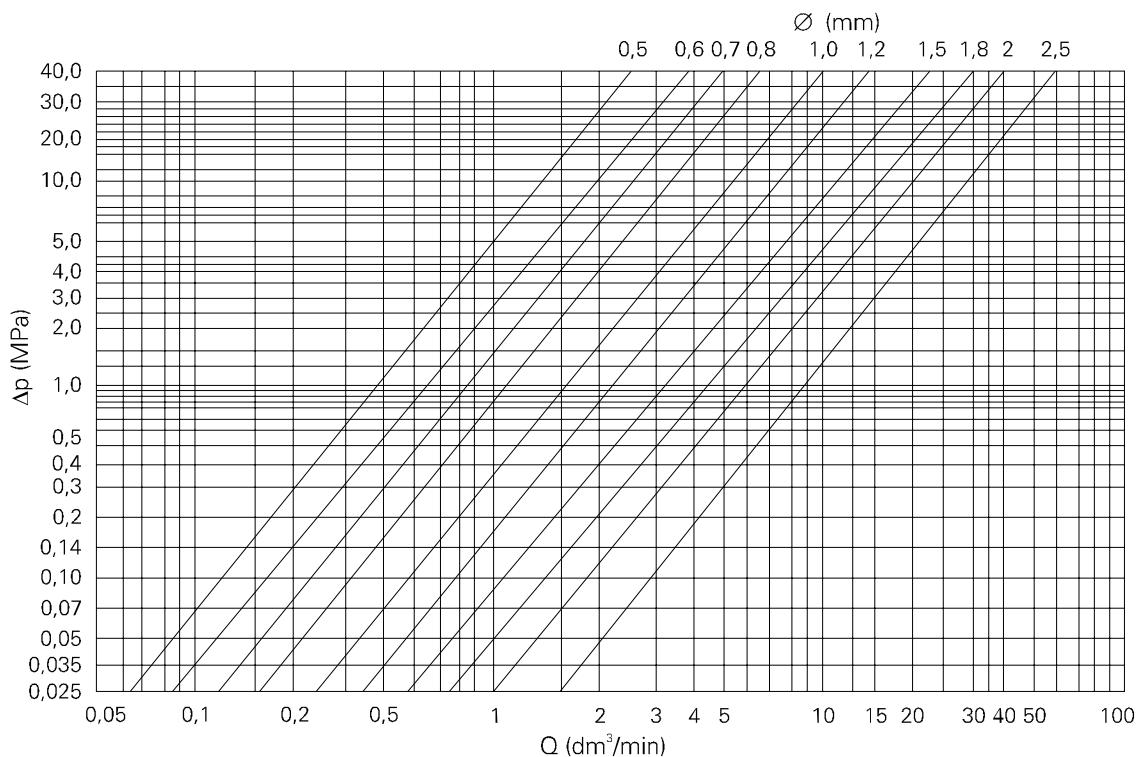


Mounting the cover by means of 4 bolts M8 x 50-10.9 PN - 87/M-82302 (DIN 912-10.9).

Tightening torque M_d = 32 Nm

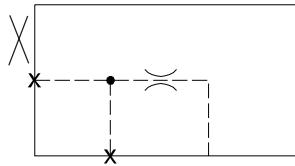
Mounting bolts must be ordered separately.

OPERATING CURVES FOR COVER ULZS 16 D



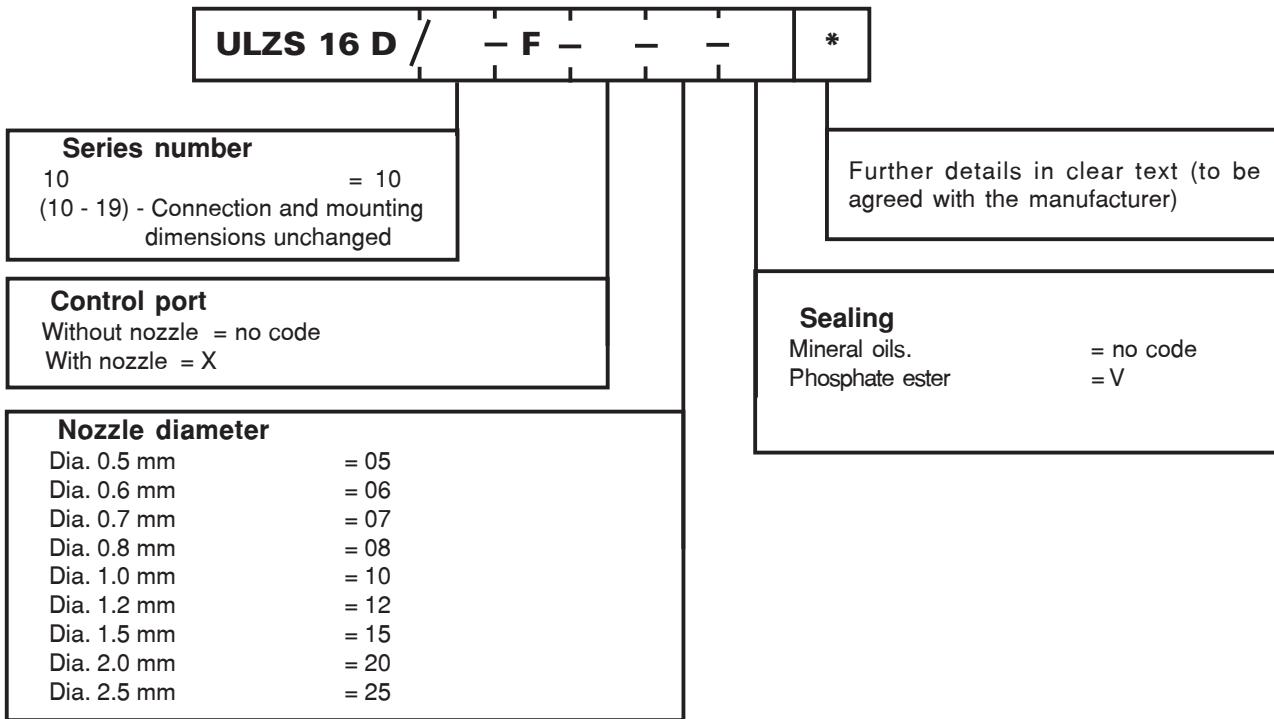
$$\Delta p = f(\phi \text{ nozzle})$$

DIAGRAM FOR ULZS 16 D



HOW TO ORDER ULZS 16 D

Orders coded as below should be forwarded to the manufacturer.

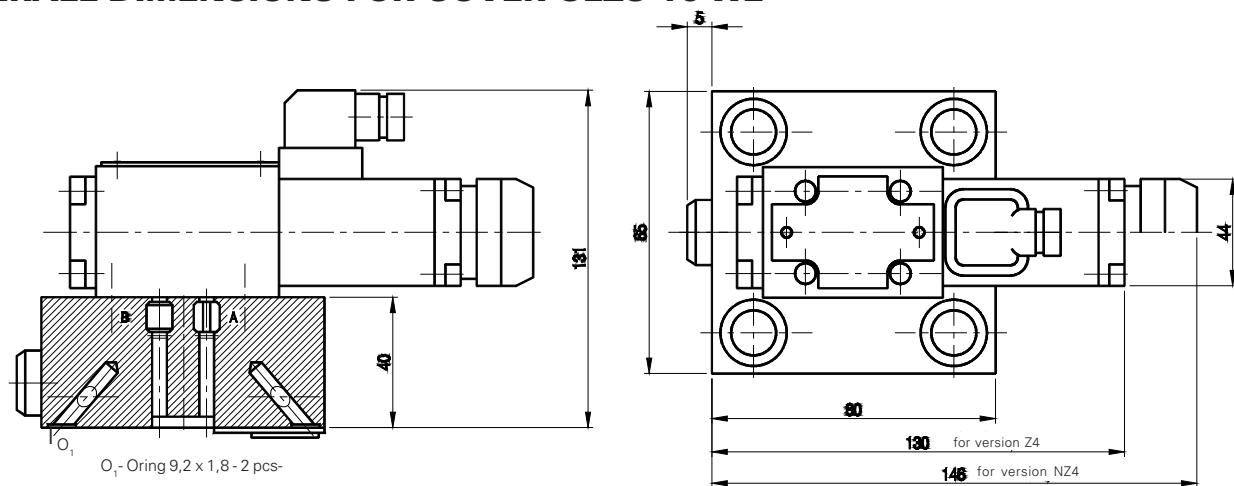


In case of ordering the cover together with the valve, please, quote the codes of the both elements.

Example : ULZS 16D / 10.F - X - 07 + URZS 16 - A -10 - E - 10

2. COVER ULZS 16 WE

OVERALL DIMENSIONS FOR COVER ULZS 16 WE



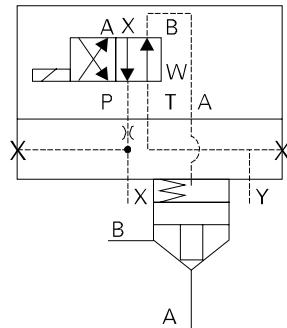
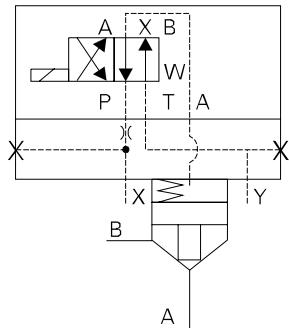
HOW TO ORDER ULZS 16 WE

Orders coded as below should be forwarded to the manufacturer.

ULZS 16 WE														*
De - energized position														Further requirements in clear text (to be agreed with the manufacturer)
closed = A open = B														
Series number														Sealing Mineral oils = with no code Phosphate ester = V
10 = 10 (10 - 19) - connection and mounting dimensions unchanged														
Control port														Electrical connection Plug-in connector = Z4 Plug-in connector with lamp = Z4L
Without nozzle = no code With nozzle at port „A“ (only for valve A) = A With nozzle at port „B“ (only for valve B) = B With nozzle at port „T“ = T With nozzle at port „P“ = P														
Nozzle diameter														Version without emergency operator = no code with emergency operator = N
Dia. 0.6 mm = 06 Dia. 0.7 mm = 07 Dia. 0.8 mm = 08 Dia. 1.0 mm = 10 Dia. 1.2 mm = 12 Dia. 1.5 mm = 15 Dia. 2.0 mm = 20 Dia. 2.5 mm = 25														Voltage AC U = 220 V - 50 Hz = W220 - 50 AC U = 110 V - 50 Hz = W110 - 50 DC U = 110 V = G 110 DC U = 24 V = G 24
														Control valve version normal = no code without return spring = O with detent = OF

In case of ordering the cover together with the valve, please, quote the codes of the both elements.

Example : ULZS 16 WEA / 10 - A - 07 W220 - 50 Z4 V + URZS 16 - A -10 - E - 10

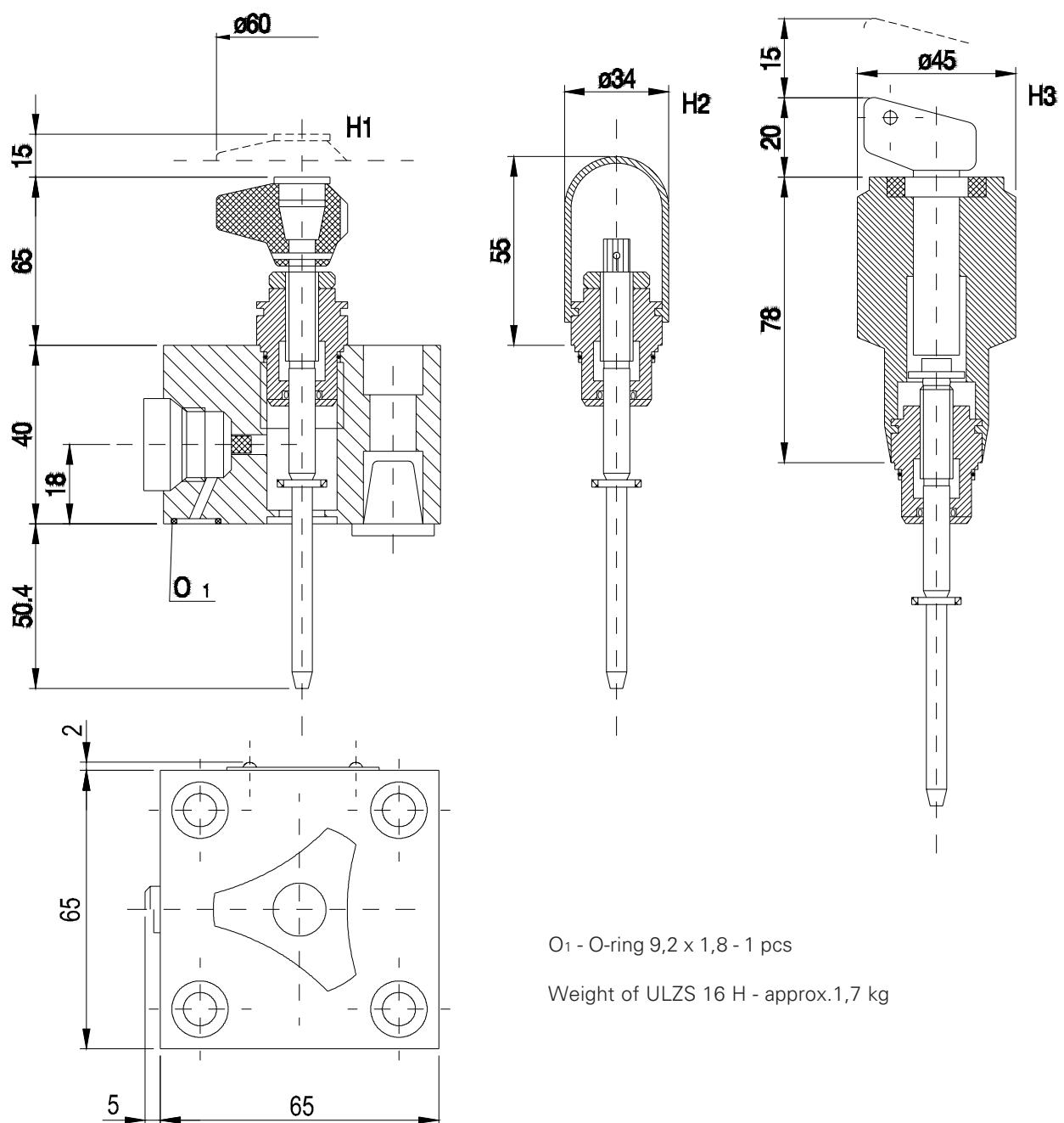


ULZS - 16WEA 10/P...

ULZS - 16WEB 10/P...

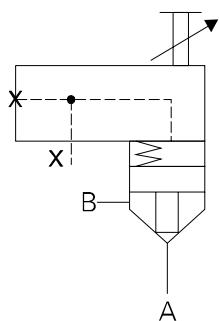
3. COVER ULZS - 16 H

OVERALL DIMENSIONS FOR COVER ULZS 16 H

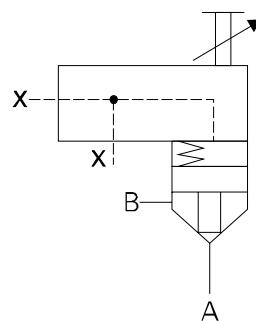


DIAGRAMS FOR ULZS 16 H

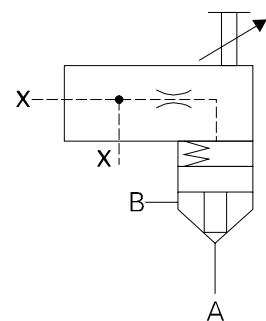
ULZS - 16 H.../...



ULZS - 16 H.../F...

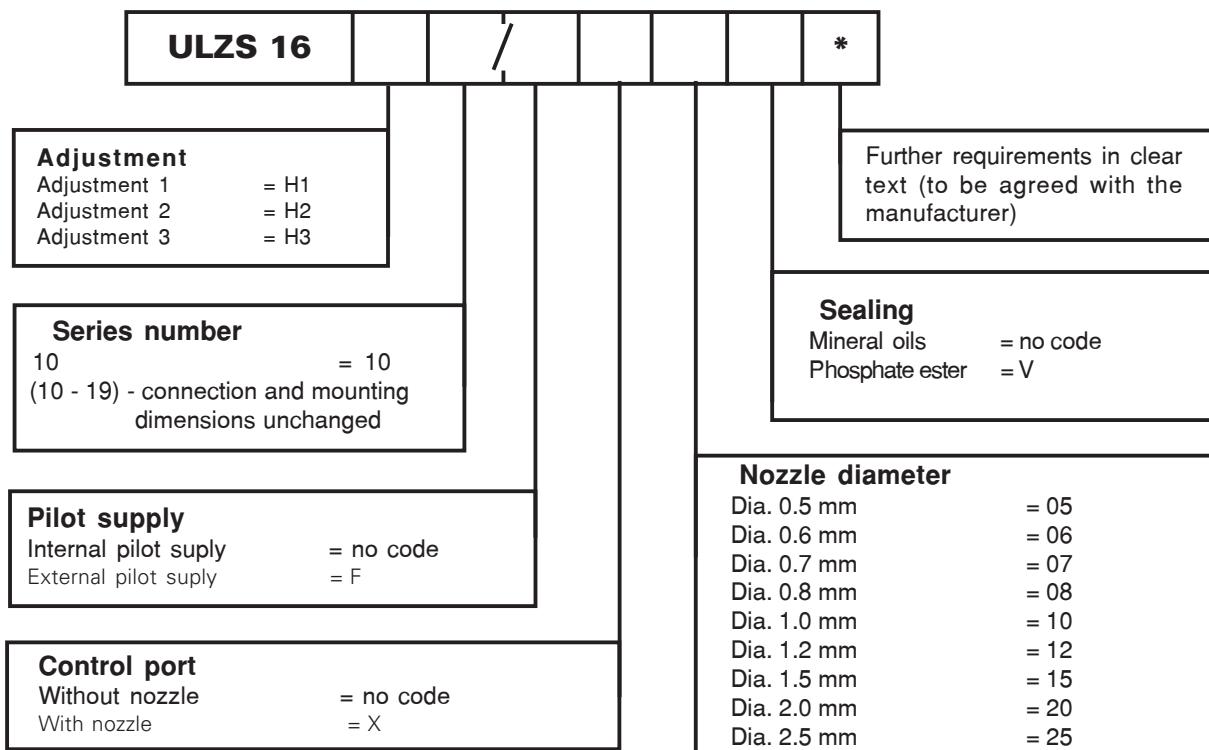


ULZS - 16 H.../FX...



HOW TO ORDER ULZS 16 H

Orders coded as below should be forwarded to the manufacturer.



In case of ordering the cover together with the valve, please, quote the codes of the both elements.

Example : ULZS 16 H1 10/ FX - 07 + URZS 16 - A -10 - E - 10

PONAR WADOWICE S.A.
ul. Wojska Polskiego 29
34-100 Wadowice
tel. 033/ 823 39 43, 823 30 41
fax 033/ 873 48 80
e-mail: ponar@ponar-wadowice.pl

 **ponar**[®]
wadowice