



## 2/2 WAY CARTRIDGE VALVE TYPE URZS 25 COVER FOR CARTRIDGE VALVE TYPE ULZS 25

**WK  
450 423**

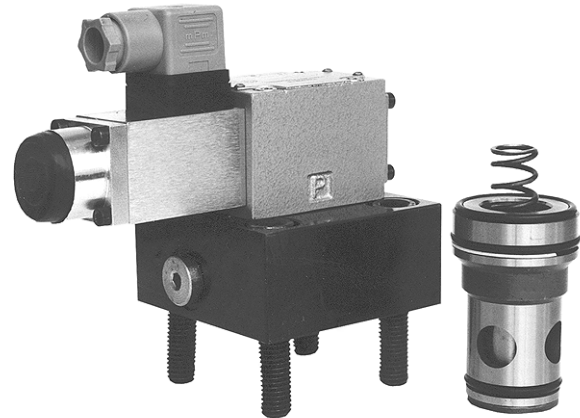
Size 25

up to 42 MPa

400 dm<sup>3</sup>/min

04.1999r.

2/2 way cartridge valve type URZS 25 can be used to build hydraulic systems as a pilot operated check valve, a pressure relief valve or by combination several elements as a multiple directional control block.

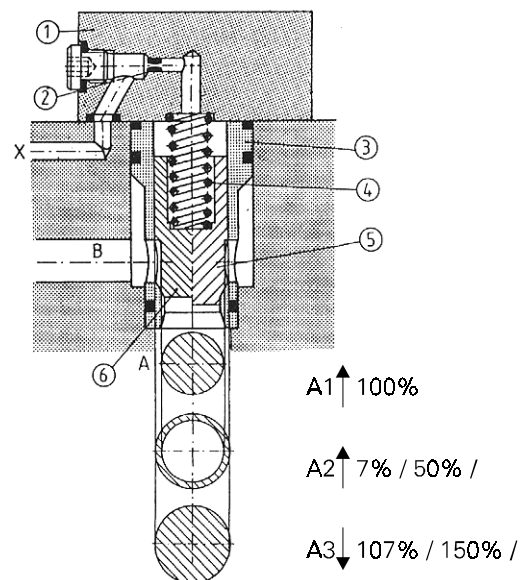


### DESCRIPTION OF OPERATION

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 bushing 3, the spring 4 and the valve poppet with an optional dumping nose 5 or without dumping nose 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 ratio A1 : A2 is therefore either 14.3 : 1 or 2 : 1. 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 valve 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.

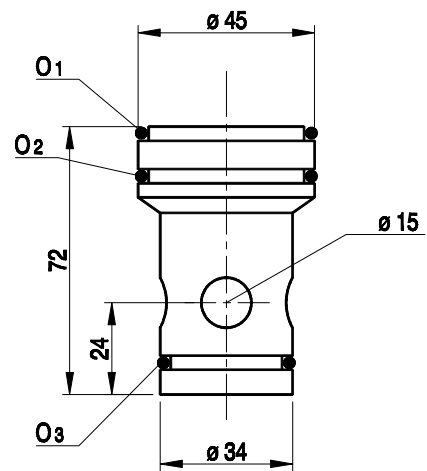


# TECHNICAL DATA

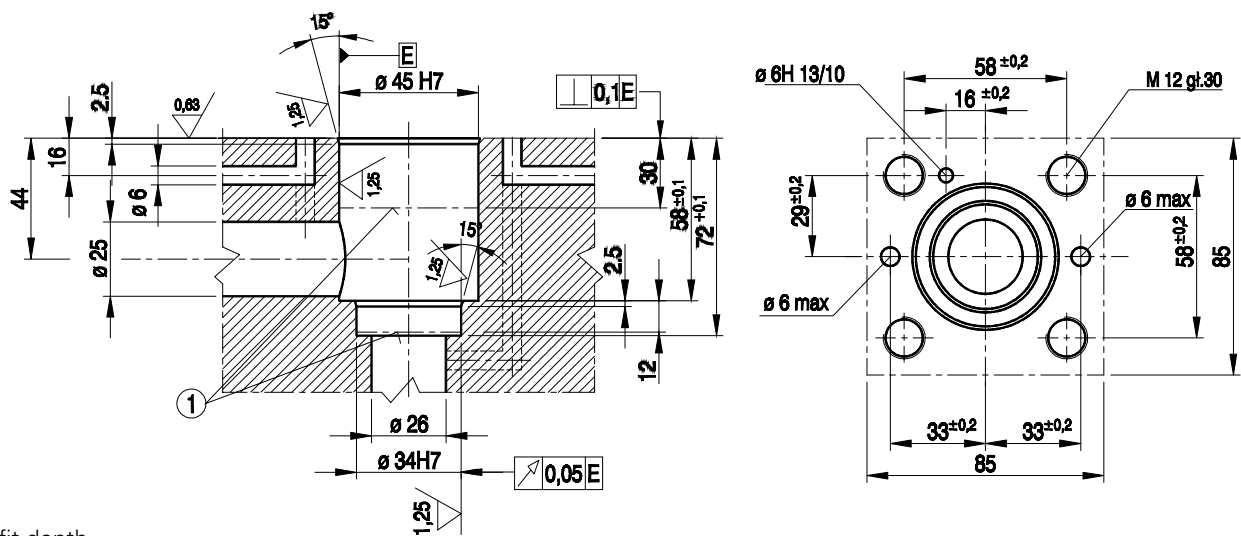
|   |   |
|---|---|
| Hydraulic fluid                                 | Mineral oil or phosphate ester                    |
| Working pressure at port A, B, X                | up to 42 MPa                                      |
| Maximum flow                                    | 400 dm <sup>3</sup> /s                            |
| Optimum working temperature ( fluid in a tank ) | 313 - 328 K                                       |
| Fluid temperature range                         | 243 - 343 K                                       |
| Nominal fluid viscosity                         | 37 mm <sup>2</sup> /s at the temperature of 328 K |
| Viscosity range                                 | 2.8 to 380 mm <sup>2</sup> /s                     |
| Required filtration                             | 16 μm   |
| Recommended filtration                          | 10 μm   |

## OVERALL DIMENSIONS FOR URZS 25

- O<sub>1</sub> - O-ring 36.2 × 3 - 1 piece
- O<sub>2</sub> - O-ring 39.2 × 3 - 1 piece
- O<sub>3</sub> - O-ring 28.2 × 3 - 1 piece
- Weight of URZS 25 - 0.2 kg



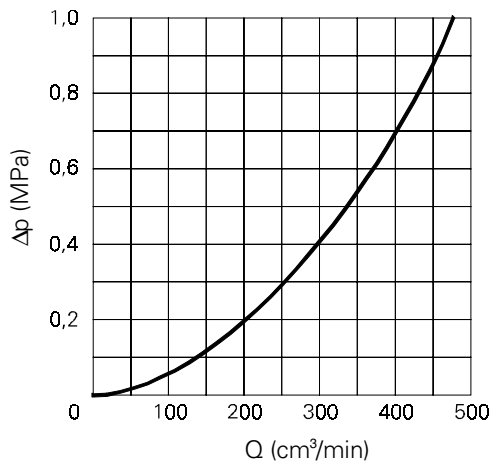
## VALVE SEAT DIMENSIONS FOR URZS 25



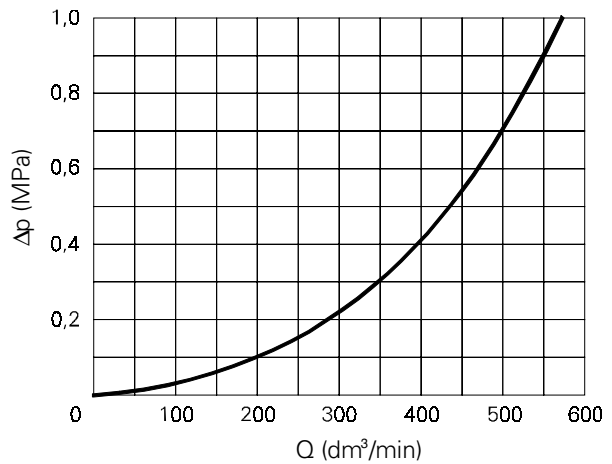
1 - fit depth

Cover is mounted to the valve seat by means of 4 bolts M12 x 50 - 10,9 PN - 87 / M-82302 (DIN 912 - 10,9)  
 Tightening torque  $M_d=280$  Nm.  
 The mounting bolts must be ordered separately.

PERFORMANCE CURVES FOR URZS 25 measured at  $v = 41 \text{ mm}^2/\text{s}$  and  $T = 323 \text{ K}$



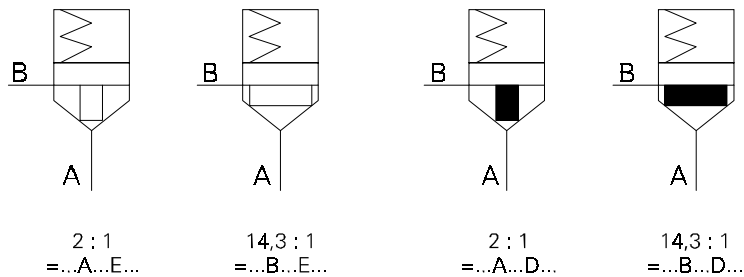
With dumping nose



Without dumping nose

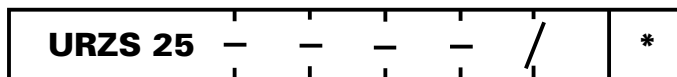
SCHEMES

HYDRAULIC SCHEME FOR URZS 25



HOW TO ORDER URZS 25

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



Area ratio  
 2 : 1 ( 50 % ) = A  
 13.4 : 1 ( 7 % ) = B

Cracking pressure  
 0 MPa ( without spring ) = 00  
 0.05 MPa = 05  
 0.10 MPa = 10  
 0.20 MPa = 20  
 0.30 MPa = 30  
 0.40 MPa = 40

Valve poppet  
 without dumping nose = E  
 with dumping nose = D

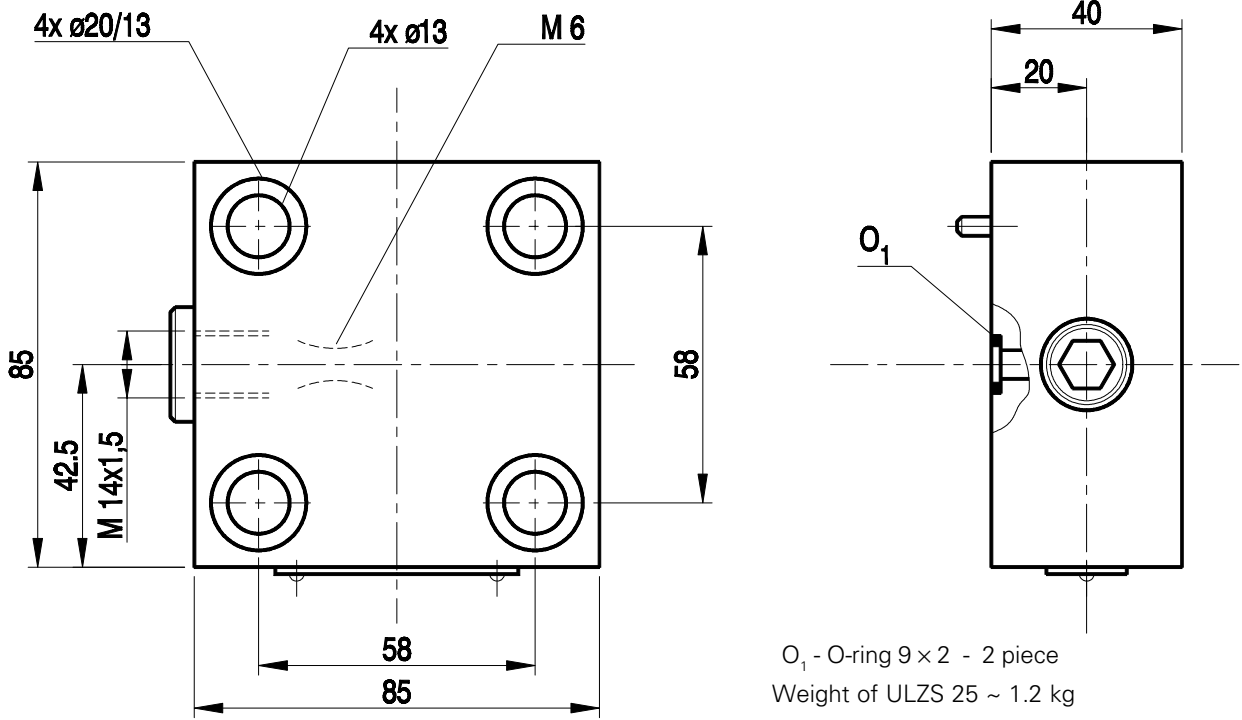
Additional requirements in clear text  
 ( to be agreed with the manufacturer )

Sealing  
 Fluids on mineral oil base = no designation  
 Fluids on phosphate ester base = V

Series number  
 10 = 10  
 ( 10 - 19 ) - installation and connection  
 dimensions unchanged

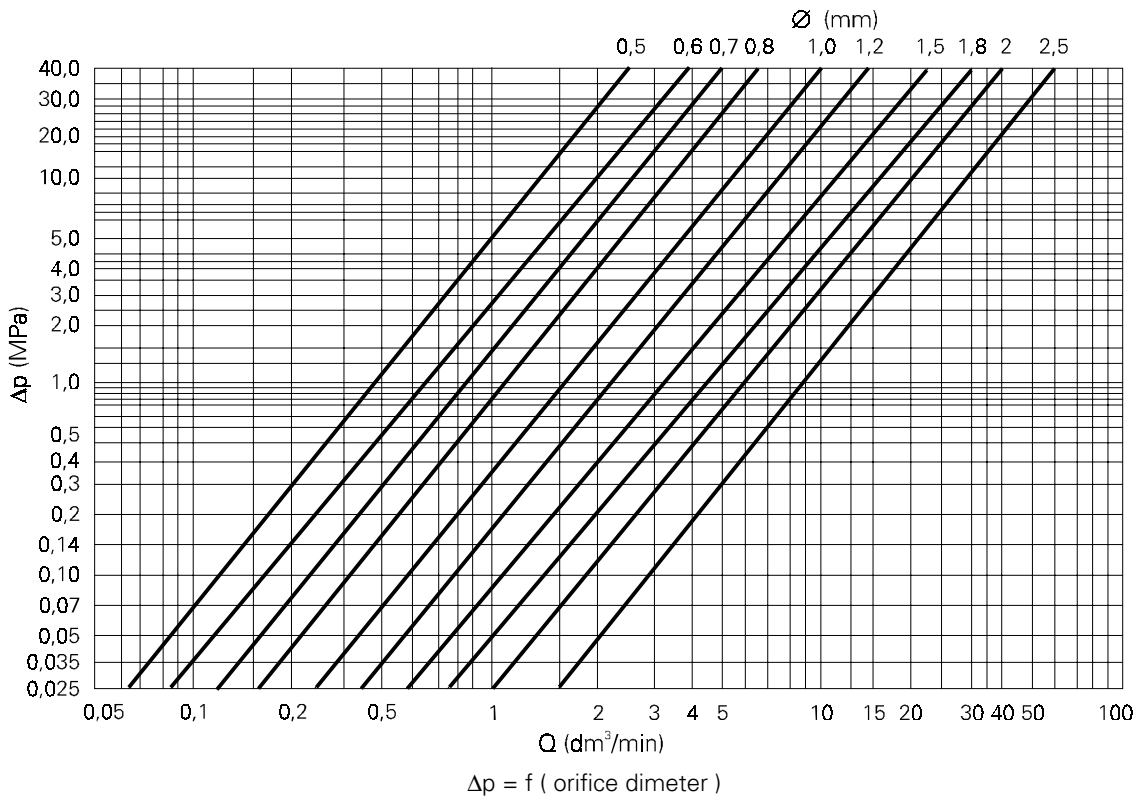
# 1. COVER ULZS 25

## OVERALL DIMENSIONS FOR COVER ULZS 25

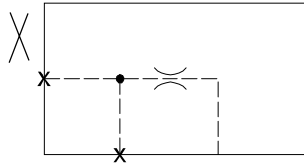


Mounting the cover by means of 4 bolts M12x 50-10.9 PN - 87/M-82302 ( DIN 912-10.9 ).  
 Tightening torque  $M_d = 110$  Nm  
 Mounting bolts must be ordered separately.

### ORIFICE SELECTION CHART FOR ULZS 25



# HYDRAULIC SCHEME FOR ULZS 25



## HOW TO ORDER ULZS 25

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



Series number  
 00 = 00  
 (00 - 09) - installation and connection dimensions unchanged

Control port  
 with orifice = no designation  
 without orifice = X

Orifice diameter

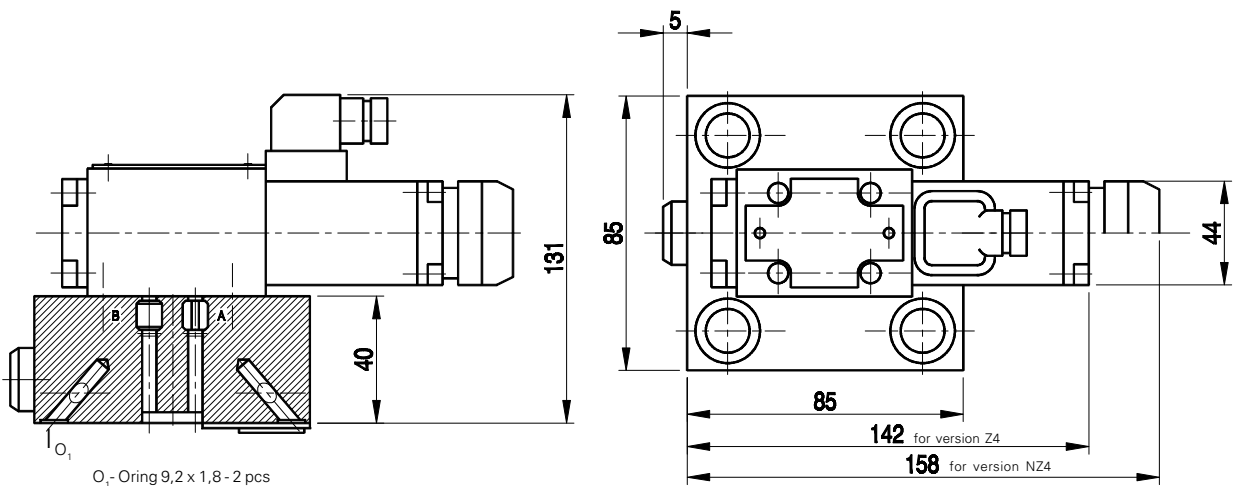
|          |      |
|----------|------|
| φ 0.5 mm | = 05 |
| φ 0.6 mm | = 06 |
| φ 0.7 mm | = 07 |
| φ 0.8 mm | = 08 |
| φ 1.0 mm | = 10 |
| φ 1.2 mm | = 12 |
| φ 1.5 mm | = 15 |
| φ 2.0 mm | = 20 |
| φ 2.5 mm | = 25 |

Additional requirements in clear text  
 ( to be agreed with the manufacturer )

Sealing  
 Fluids on mineral oil base = no designation  
 Fluids on phosphate ester base = V

When ordering the valve together with the cover please specify both codes.  
 Coding example : ULZS 25 / 00 - X - 07 + URZS 25 - A -10 - E - 10

## 2. COVER ULZS25 WE OVERALL DIMENSIONS FOR COVER ULZS 25 WE



# HOW TO ORDER ULZS 25 WE

Orders coded as below should be forwarded to the manufacturer.

|                  |  |   |  |  |  |  |  |  |  |   |
|------------------|--|---|--|--|--|--|--|--|--|---|
| <b>ULZS 25WE</b> |  | / |  |  |  |  |  |  |  | * |
|------------------|--|---|--|--|--|--|--|--|--|---|

De - energized position  
 closed = A  
 open = B

Series number  
 10 = 10  
 (10 - 19) - connection and mounting  
 dimensions unchanged

Control port  
 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  
 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

Further requirements in clear  
 text (to be agreed with the  
 manufacturer)

Sealing  
 Mineral oils = with no code  
 Phosphate ester = V

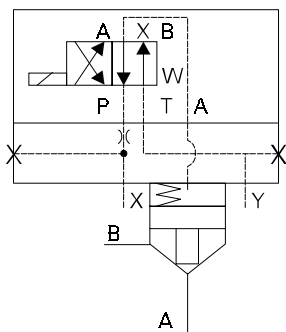
Electrical connection  
 Plug-in connector = Z4  
 Plug-in connector with lamp = Z4L

Version  
 without emergency operator = no code  
 with emergency operator = N

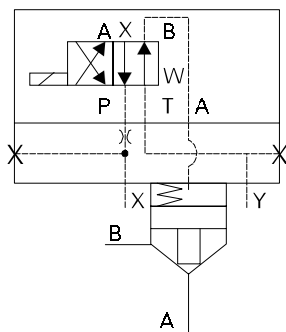
Voltage  
 AC U = 220 V- 50 Hz = W220 - 50  
 AC U = 110 V- 50 Hz = W110 - 50  
 DC U = 110 V = G 110  
 DC U = 24 V = G 24

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 25 WEA / 10 A 06 W220 - 50 NZ4 + URZS 25 - A -10 - E - 10

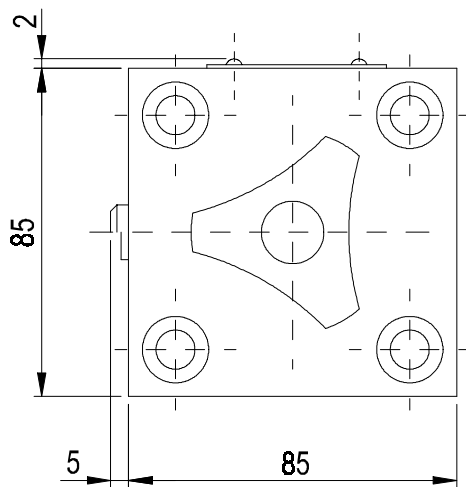
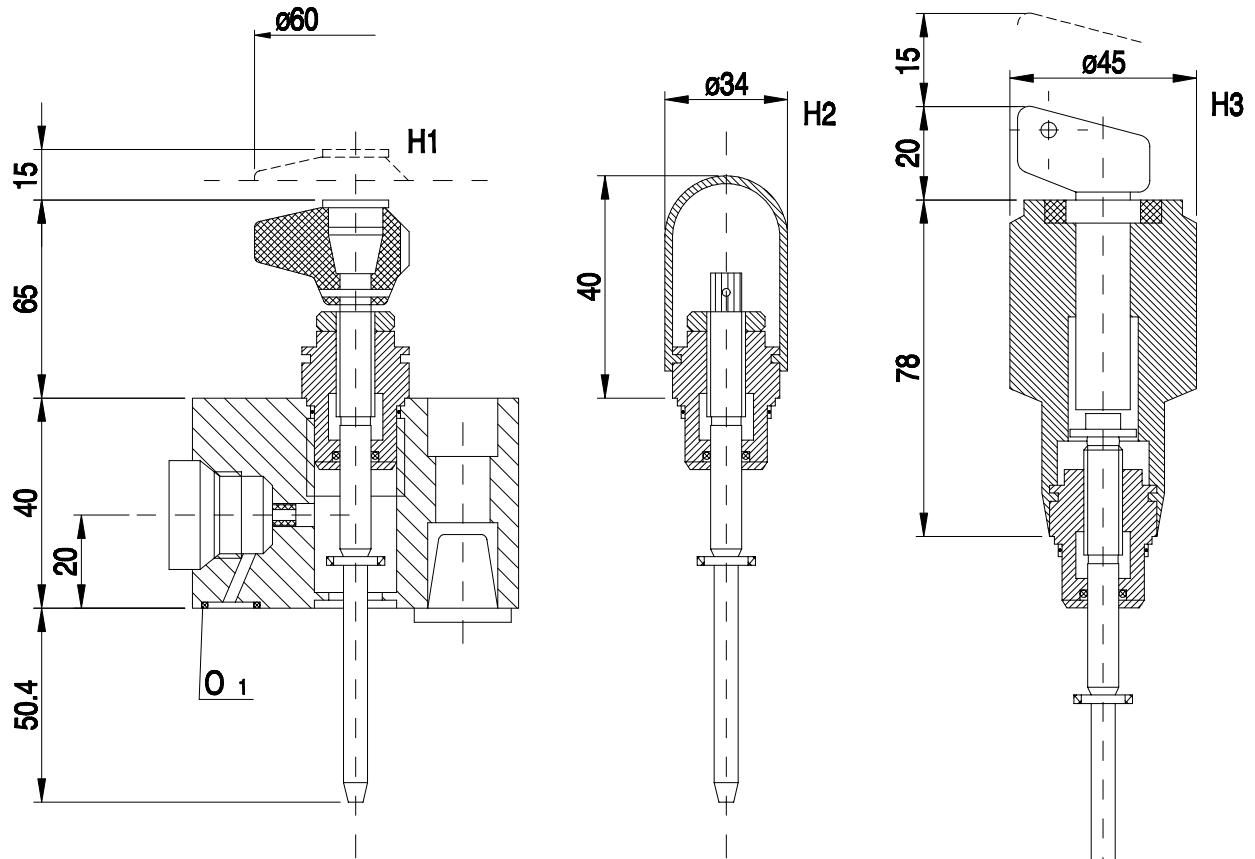


**ULZS - 25WEA 10/P...**



**ULZS - 25WEB 10/P...**

**3. COVER ULZS - 25 H**  
**OVERALL DIMENSIONS FOR COVER ULZS 25 H**

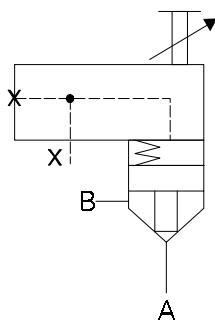


O<sub>1</sub> - O-ring 9,2 x 1,8 - 1 pcs

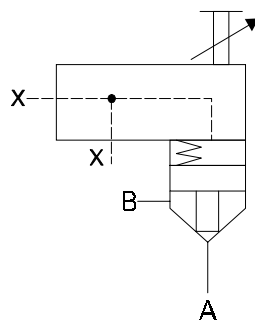
Weight of ULZS 25 H - approx. 2 kg

**DIAGRAMS FOR ULZS 25 H**

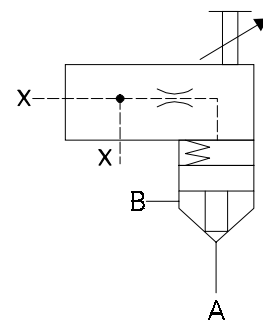
**ULZS - 25H.../...**



**ULZS - 25H.../F**



**ULZS - 25H.../FX**



## HOW TO ORDER ULZS 25 H

Orders coded as below should be forwarded to the manufacturer.

|                |  |   |  |  |  |   |
|----------------|--|---|--|--|--|---|
| <b>ULZS 25</b> |  | / |  |  |  | * |
|----------------|--|---|--|--|--|---|

|              |      |
|--------------|------|
| Adjustment   |      |
| Adjustment 1 | = H1 |
| Adjustment 2 | = H2 |
| Adjustment 3 | = H3 |

|   |
|---|
| Further requirements in clear text (to be agreed with the manufacturer) |
|---|

|  |      |
|--|------|
| Series number  |      |
| 10   | = 10 |
| (10 - 19) - connection and mounting dimensions unchanged |      |

|                 |           |
|-----------------|-----------|
| Sealing         |           |
| Mineral oils    | = no code |
| Phosphate ester | = V       |

|                       |           |
|-----------------------|-----------|
| Pilot supply          |           |
| Internal pilot supply | = no code |
| External pilot supply | = F       |

|                 |      |
|-----------------|------|
| Nozzle diameter |      |
| Dia. 0.5 mm     | = 05 |
| 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 |

|                |           |
|----------------|-----------|
| Control port   |           |
| Without nozzle | = no code |
| With nozzle    | = X       |

In case of ordering the cover together with the valve, please, quote the codes of the both elements.  
 Example : ULZS 25 H1 00/ FX - 07 + URZS 25 - A -10 - E - 10



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