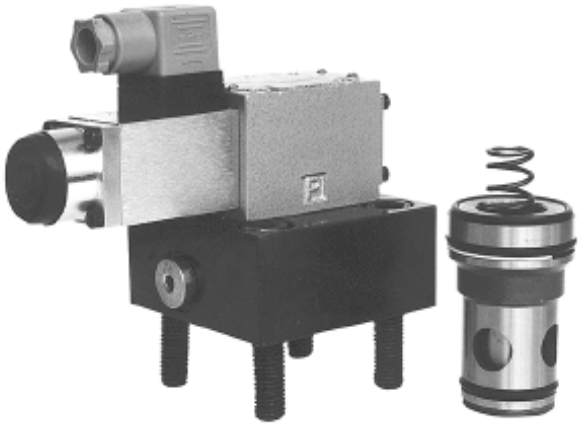
PONAR wadowice	2/2 -way cartridge valve type URZS 25 Cover for cartridge valve type ULZS 25			WK 450 423
	NS25	up to 42 MPa	up to 400 dm³/min	02.2010

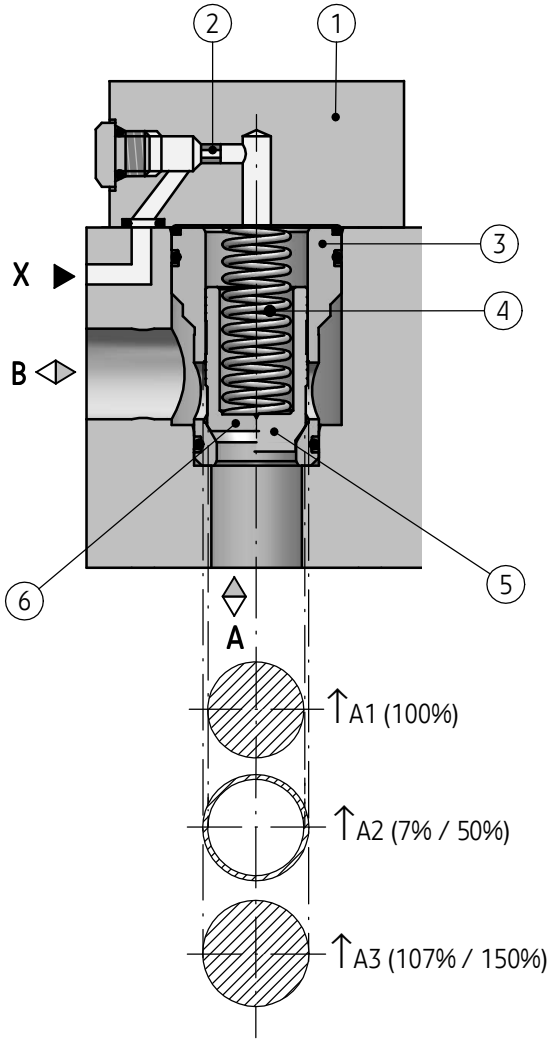
APPLICATION

2/2 way cartridge valve type **URZS 25...** can be used in hydraulic systems as a pilot operated check valve or by combination of several elements as a multiple directional control block.



DESCRIPTION OF OPERATION

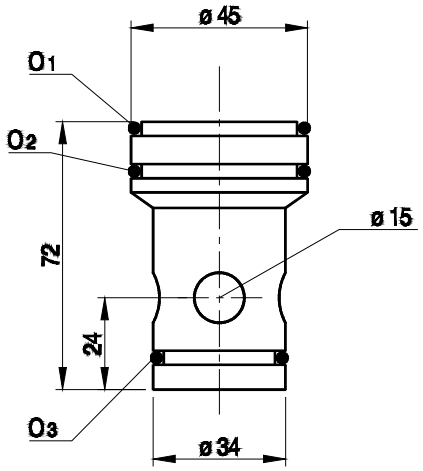
2/2 way cartridge valve is comprised of the cartridge insert and the cover (1) with control bores. The cartridge insert consist of the bushing (3), the spring (4) and the poppet: with a damping nose (5) or without a damping nose (6). The poppet is pressed down to valve seat by means of the spring (4). The valve allows free flow from **A** to **B** or reversely from **B** to **A**. The valve poppet has stages .There are three important areas for its operation. The area of the seat **A1** is assumed as **100 %**. The annular area **A2**, resulting from the poppet staging 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 annular area changes, then the area **A1**, which is regarded as **100 %** also changes. The valve opens in both flow directions if surface **A3** is not affected by pressure (port **X** is unpressuriezd) and pressure force affecting the adequate surfaces **A1** and **A2** exceeds force of the spring (4). If surface **A3** is affected by control pressure the valve poppet is pressed down to its seat, irrespectively of the spring (4) force. The valve may be opened by unloading surface **A3** or by suitably high pressure in port **A** relatively **B**. The orifice (2) fitted in control line **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^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
Recquired filtration	16 μm
Recommended filtration	10 μm

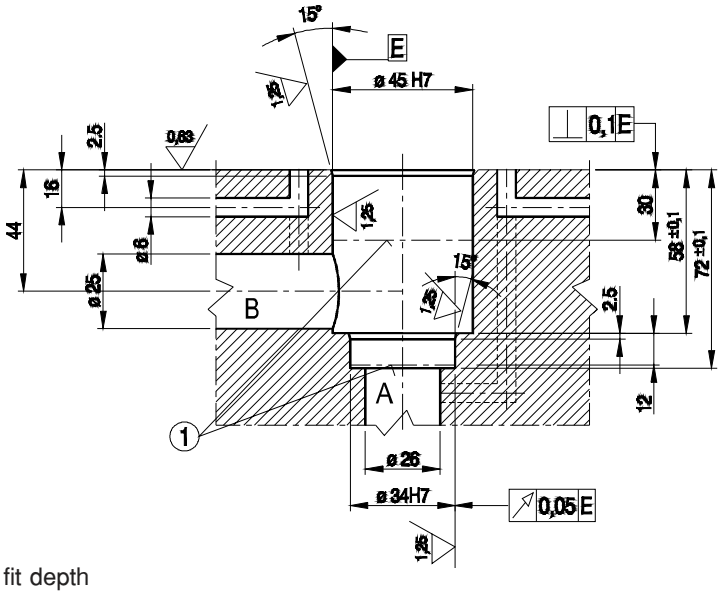
OVERALL DIMENSIONS FOR URZS 25

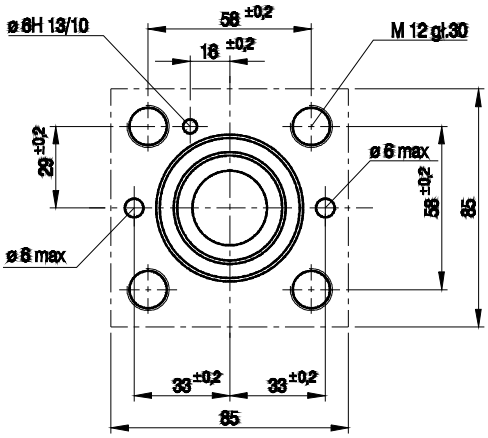


O_1 - O-ring 36.2 × 3 - 1 piece
O_2 - O-ring 39.2 × 3 - 1 piece
O_3 - O-ring 28.2 × 3 - 1 piece

Weight of URZS 25 - 0.2 kg

VALVE SEAT DIMENSIONS FOR URZS 25

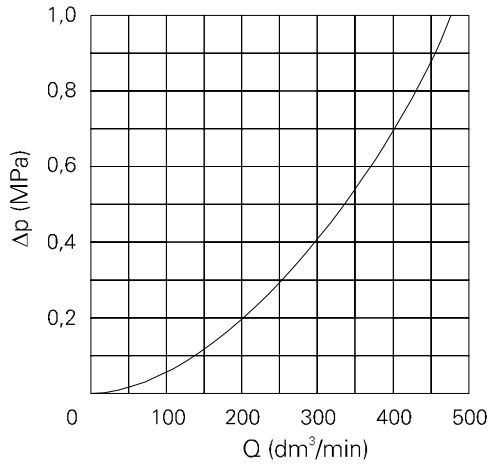




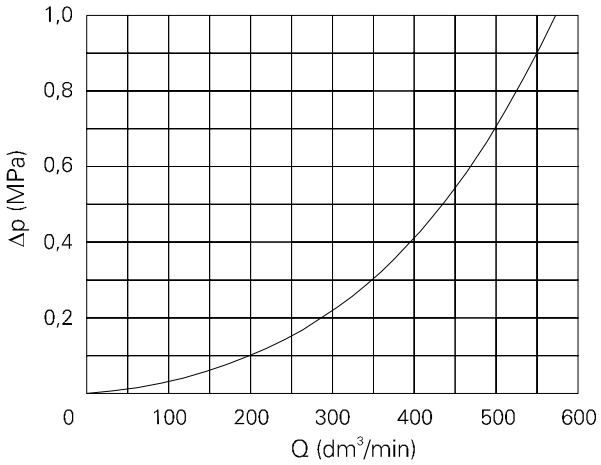
1 - fit depth

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 ν = 41 mm²/s and T = 323 K



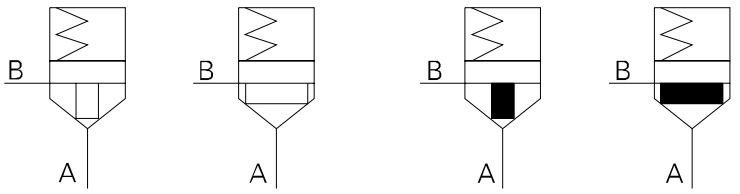
With dumping nose



Without dumping nose

SCHEMES

HYDRAULIC SCHEME FOR URZS 25



2 : 1 =...A...E...

14,3 : 1 =...B...E...

2 : 1 =...A...D...

14,3 : 1 =...B...D...

HOW TO ORDER URZS 25

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

URZS 25 – – – – / *

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

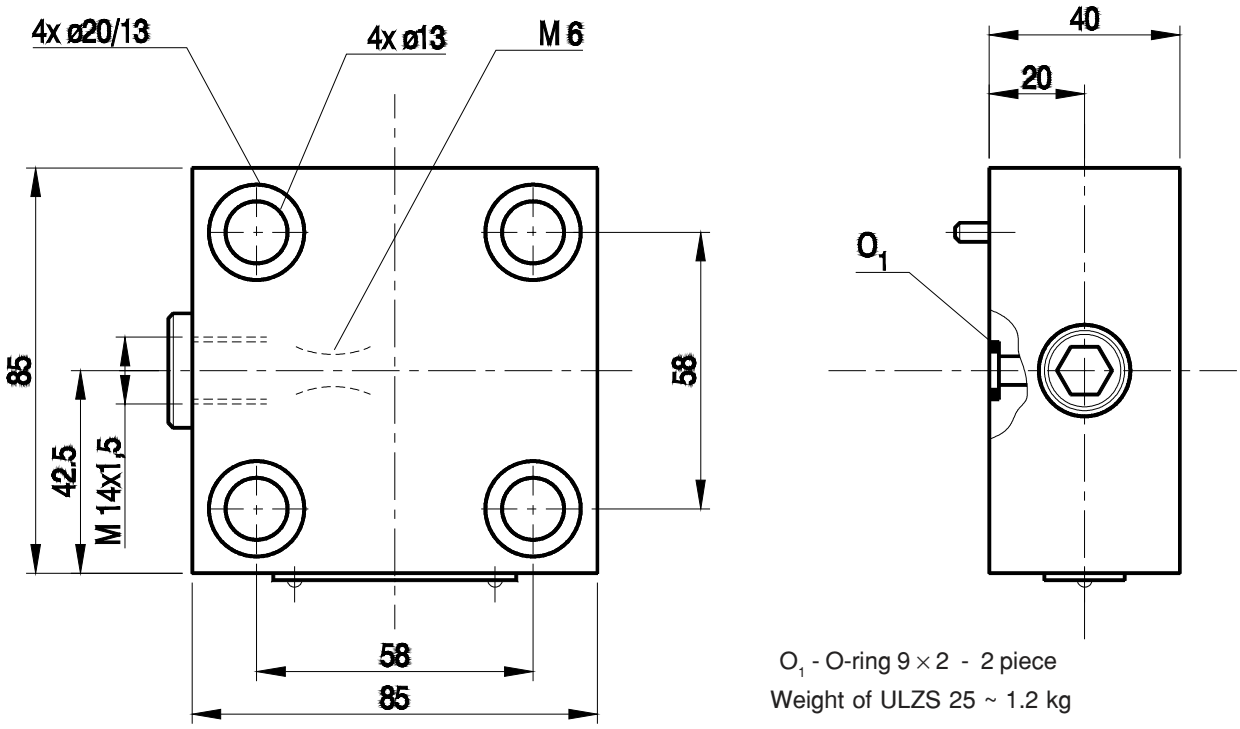
Valve poppet
without dumping nose = E
with dumping nose = D

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

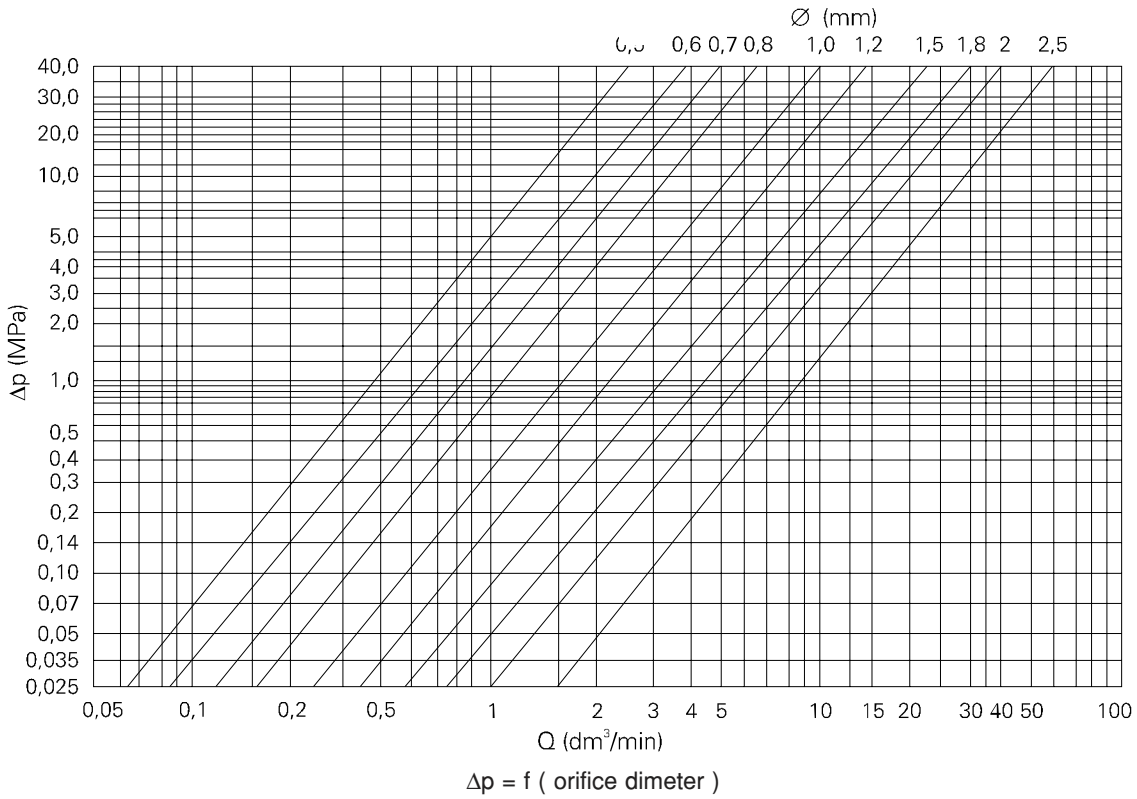
1. COVER ULZS 25 D
OVERALL DIMENSIONS FOR COVER ULZS 25 D



O_1 - O-ring 9 × 2 - 2 piece
Weight of ULZS 25 ~ 1.2 kg

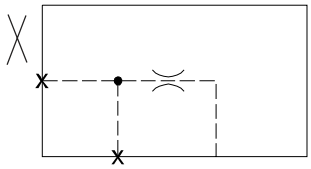
Mounting the cover by means of 4 bolts M12× 50-10.9 PN - 87/M-82302 (DIN 912-10.9).
Tightening torque M_d = 110 Nm
Mounting bolts must be ordered separately.

ORIFICE SELECTION CHART FOR ULZS 25 D



Δp = f (orifice dimeter)

HYDRAULIC SCHEME FOR ULZS 25 D



HOW TO ORDER ULZS 25 D

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

ULZS 25 D/ – – – *

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

Control port
with orifice = no designation
without orifice = X

Orifice diameter

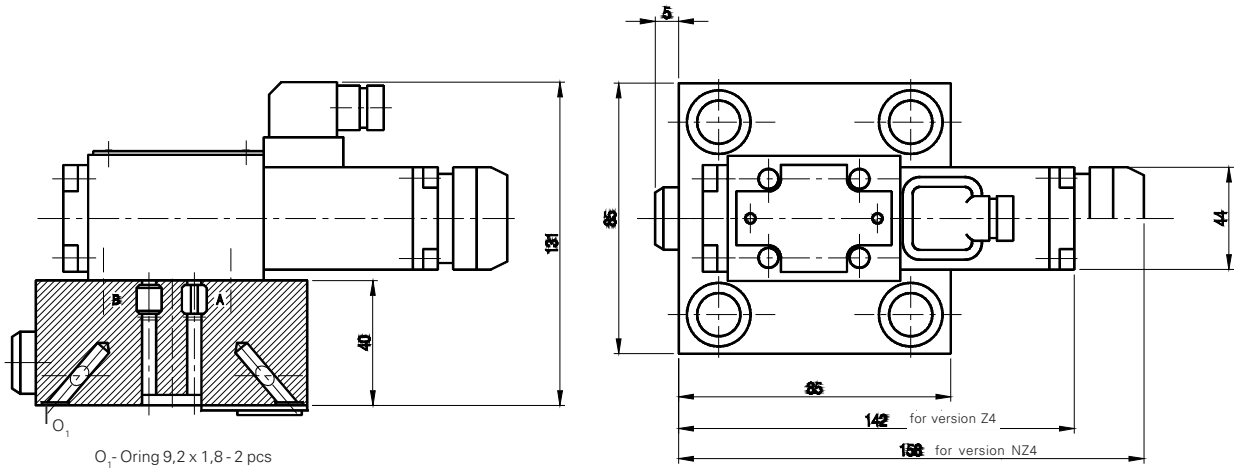
ϕ 0.5 mm	= 05
ϕ 0.6 mm	= 06
ϕ 0.7 mm	= 07
ϕ 0.8 mm	= 08
ϕ 1.0 mm	= 10
ϕ 1.2 mm	= 12
ϕ 1.5 mm	= 15
ϕ 2.0 mm	= 20
ϕ 2.5 mm	= 25

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



O_1 - Oring 9,2 x 1,8 - 2 pcs

HOW TO ORDER ULZS 25 WE

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

ULZS 25WE			/					*

Unloading method
directional valve in de-energized position closed = **A**
directional valve in de-energized position opened = **B**

Series number
(10-19) - connection and installation dimensions unchanged = 1X
series 12 = **12**

Control line
without orifice = **no designation**
with orifice in line **A**
(applicable only for wersion ULZS25WE**A**...) = A
with orifice in line **B**
(applicable only for wersion ULZS25WE**B**...) = B
with orifice in line T = T
with orifice in line P = P

Orifice diameter

ϕ 0,5 mm	= 05
ϕ 0,6 mm	= 06
ϕ 0,7 mm	= 07
ϕ 0,8 mm	= 08
ϕ1,0 mm	= 10
ϕ1,2 mm	= **12**
ϕ1,5 mm	= 15
ϕ 2,0 mm	= 20
ϕ 2,5 mm	= 25

Supply voltage for solenoids

12V DC	= G12
24V DC	= **G24**
110V DC	= G110
110V AC 50Hz (plug-in connector with rectifier)	= W110R
230V AC 50Hz (plug-in connector with rectifier)	= **W230R**

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

Sealing
NBR (for fluids on mineral oil base) = **no designation**
FKM (for fluids on phosphate ester base) = V

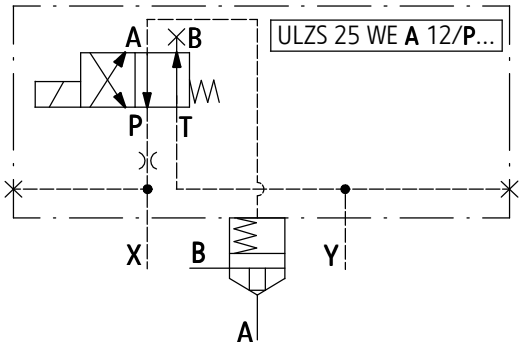
Electrical connection - plug-in connector
DIN 43650-A/ISO 4400 without LED = **Z4**
DIN 43650-A/ISO 4400 with LED = Z4L

Manual override of solenoids
without manual override = no designation
with manual override = **N**

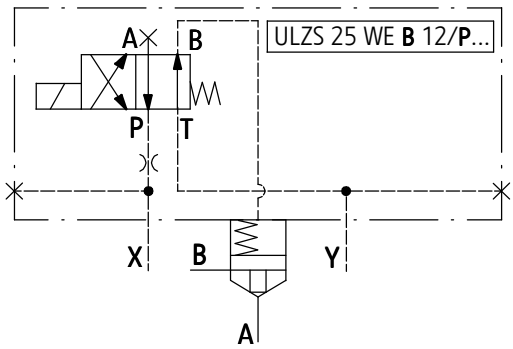
In case of ordering the cover together with the valve, please, quote the codes of the both elements.
Example : ULZS 25 WE A 12 /A 12 W230R + URZS 25 A 10 E 12
<u>The symbols in bold are preferred versions in short delivery time.</u>

SCHEMES

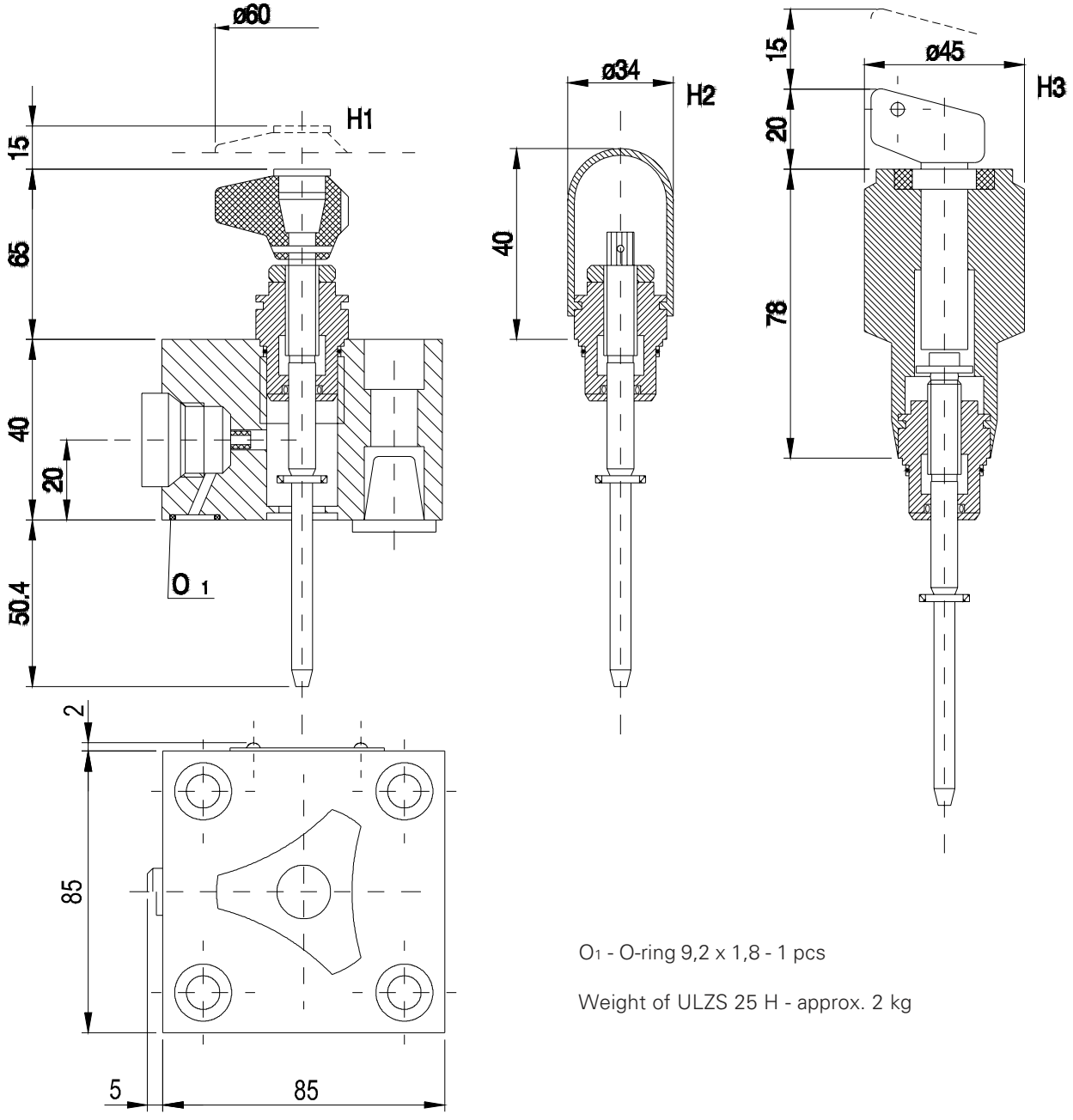
version ULZS 25 WE**A**12/**P**...



version ULZS 25 WE**B**12/**P**...



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

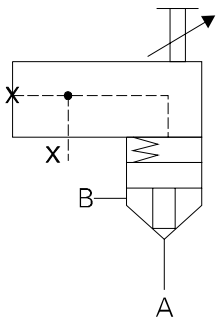


O_1 - O-ring 9,2 x 1,8 - 1 pcs

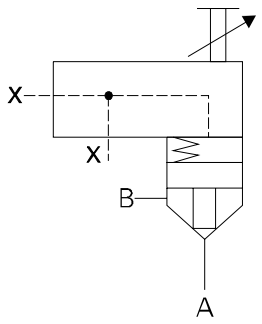
Weight of ULZS 25 H - approx. 2 kg

DIAGRAMS FOR ULZS 25 H

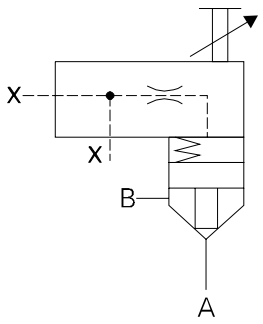
ULZS - 25H.../...



ULZS - 25H.../F



ULZS - 25H.../FX



HOW TO ORDER ULZS 25 H

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

ULZS	25		+	/				*

Nominal size of valve cover (NS)

NS25	= 25

Type of adjustment element

adjustment element 1	= H1
adjustment element 2	= **H2**
adjustment element 3	= H3

Series number

(10-19) - connection and installation dimensions unchanged	= 1X
series 12	= **12**

Control method

internal control	= no designation
possible external control	= **F**

Control line

without orifice	= **no designation**
with orifice	= X

Orifice diameter

ϕ 0,5 mm	= 05
ϕ 0,6 mm	= 06
ϕ 0,7 mm	= 07
ϕ 0,8 mm	= 08
ϕ1,0 mm	= 10
ϕ1,2 mm	= **12**
ϕ1,5 mm	= 15
ϕ 2,0 mm	= 20
ϕ 2,5 mm	= 25

Sealing

NBR (for fluids on mineral oil base)	= **no designation**
FKM (for fluids on phosphate ester base)	= V

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

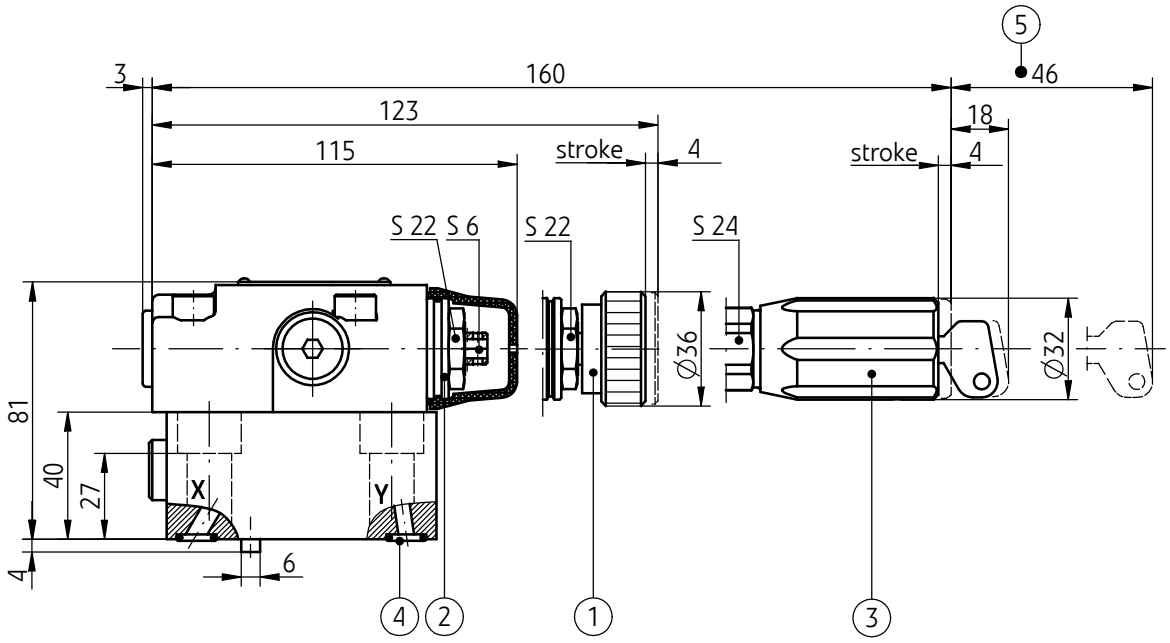
In case of ordering the cover together with the valve, please, quote the codes of the both elements.
Example : ULZS 25 H2 - 12 /F 12 + URZS25 A 10 E 12

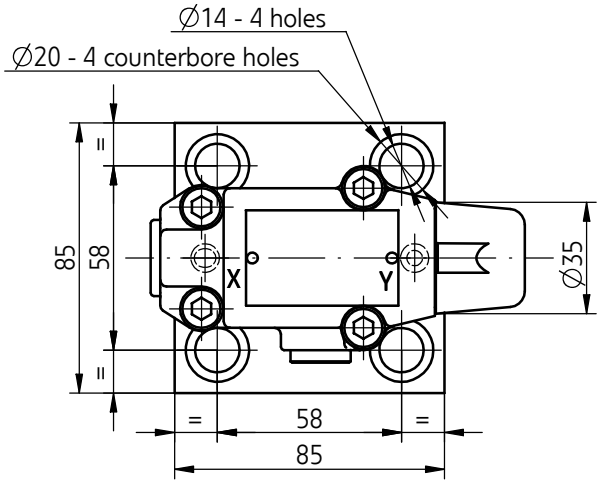
The symbols in bold are preferred versions in short delivery time.

4. Valve cover ULZS 25 DB

OVERALL AND CONNECTION DIMENSIONS

version ULZS 25 DB...

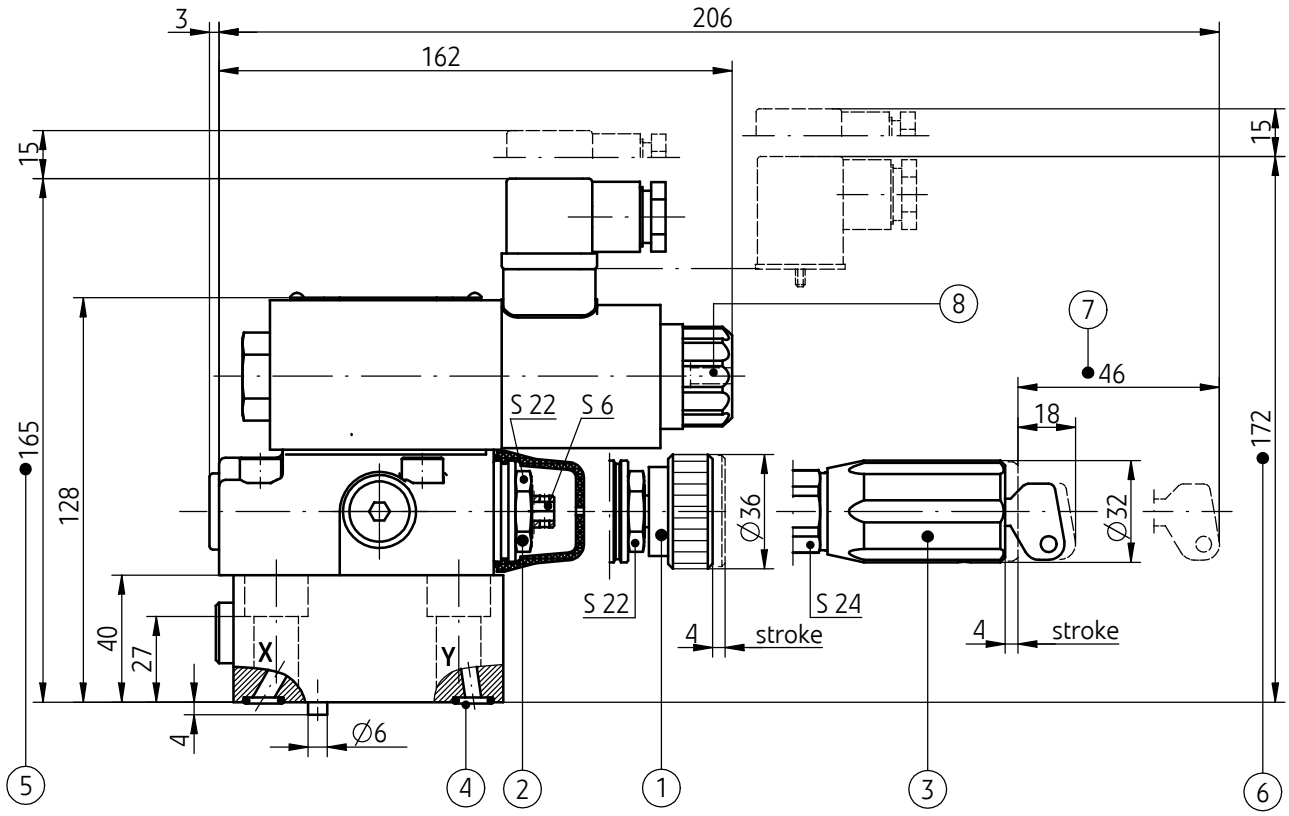


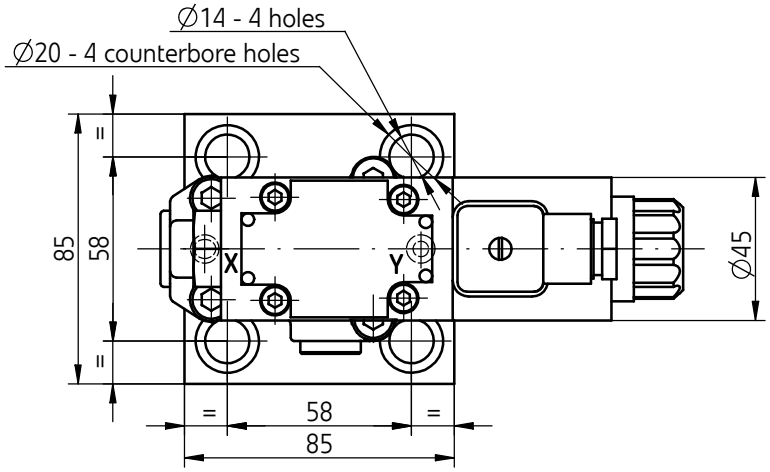


1 - Adjustment ***1*** (handknob)
2 - Adjustment ***2*** (set screw with hexagon socket)
3 - Adjustment ***3*** (lockable handknob)
4 - Sealing ring **o-ring 9 x 2** - 2 pcs/kit (**X**, **Y**)
5 - Space required to remove the key from the lock of the adjustment item 3

OVERALL AND CONNECTION DIMENSIONS

version ULZS 25 DBW...





1 - Adjustment *1* (handknob)
2 - Adjustment *2* (set screw with hexagon socket)
3 - Adjustment *3* (lockable handknob)
4 - Sealing ring **o-ring 9 x 2** - 2 pcs/kit (**X**, **Y**)
5 - Dimension for the valve with electrical connection of a directional valve **12V**, **24V**, **110V DC** (plug-in connector type DIN43650/**ISO4400**)
6 - Dimension for the valve with electrical connection of a directional valve **110V**, **230V AC** (plug-in connector type DIN43650/**ISO4400** with rectifier)
7 - Space required to remove the key from the lock of the adjustment item 3
8 - Manual override

HOW TO ORDER ULZS 25 DB

ULZS	25	DB			+	/					★

Nominal size of valve cover (NS)
NS25 = **25**

Version
without unloading = **no designation**
with unloading = **W**

Unloading method (only applicable for version ULZS25DB**W**...)
directional valve in de-energized position closed = **A**
directional valve in de-energized position opened = **B**

Series number
(10-19) - connection and installation dimensions unchanged = 1X
series 12 = **12**

Adjustment element
handknob = 1
set screw with hexagon socket = **2**
lockable handknob = 3

Settable pressure range
up to 5 MPa = 50
up to 10 MPa = **100**
up to 20 MPa = 200
up to 31,5 MPa = **315**

Supply voltage for solenoid (only applicable for version ULZS25DB**W**...)
12V DC = G12
24V DC = **G24**
110V DC = G110
110V AC 50Hz (plug-in connector with rectifier) = W110R
230V AC 50Hz (plug-in connector with rectifier) = **W230R**

Manual override of solenoid (only applicable for version ULZS25DB**W**...)
solenoid without manual override = no designation
solenoid with manual override = **N**

Electrical connection - plug-in connector (only applicable for version ULZS25DB**W**...)
DIN 43650-A/ISO 4400 without LED = **Z4**
DIN 43650-A/ISO 4400 with LED = Z4L

Sealing
NBR (for fluids on mineral oil base) = **no designation**
FKM (for fluids on phosphate ester base) = V

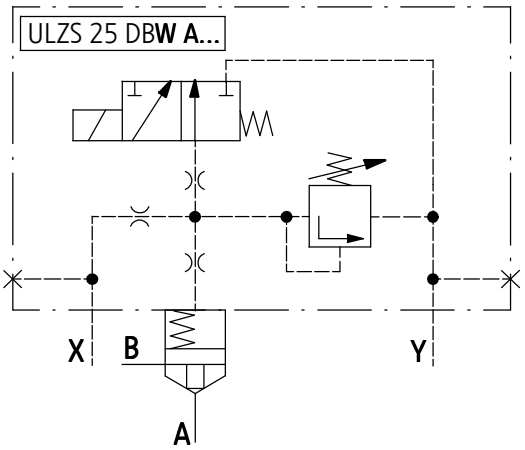
Further requirements in clear text
(to be agreed with the manufacturer)

NOTES:
The valve cover should be ordered according to the above coding.
The symbols in bold are preferred versions in short delivery time.
Coding example of valve cover: ULZS 25 DBW A 12 - 2 /315 G24 Z4
Coding example of valve cover with the valve: ULZS 25 DBW A 12 - 2 /315 G24 Z4 + URZS 25 A 10 E 12

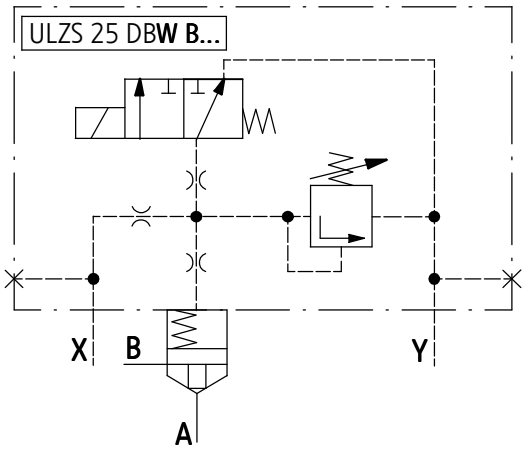
SCHEMES

Graphic symbols for valve covers type **ULZS 25 DB...**

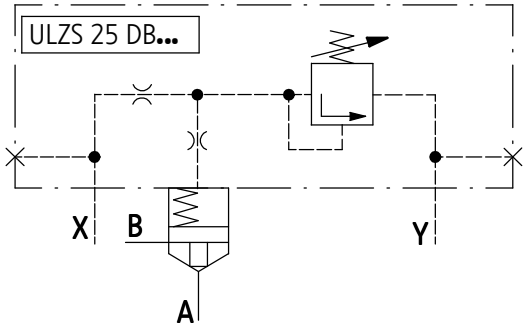
version ULZS 25 DB**W A...**



versionULZS 25 DB**W B...**



version ULZS 25 DB**...**



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