

### DATA SHEET - SERVICE MANUAL

#### APPLICATION

Mobile 3 way 2 position directional valves **3/2 URER6...** are intended for hydraulic systems where a connection of one of the ports is carried out as an alternative to the two others. The valves are used for in-line mounting in any position.



#### DESCRIPTION OF OPERATION

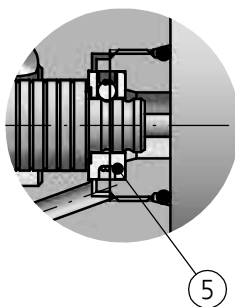
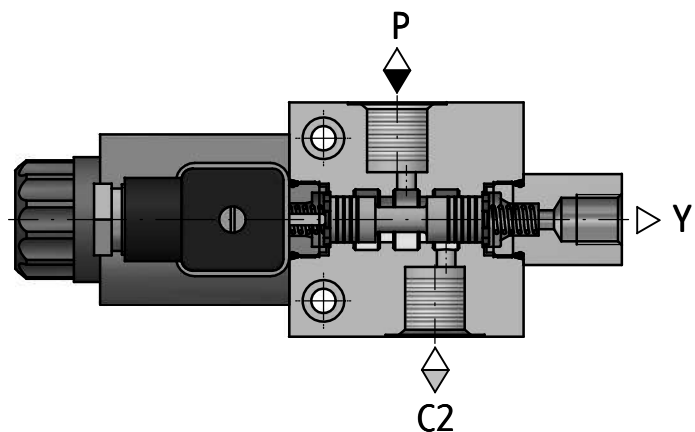
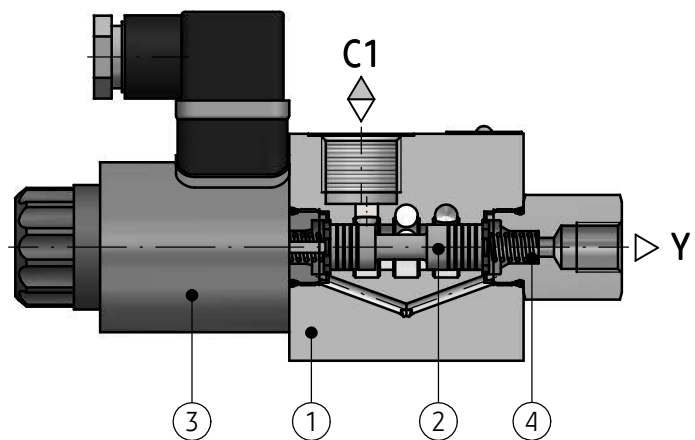
A directional valve **3/2URER6...** consists of a housing (1), spool (2), solenoid (3) and return spring (4). Connection of **P** port with one of two ports (**C1** or **C2**) is obtained by realizing a suitable spool (2) position. The spool (2) is shifted to working position by means of the solenoid (3). The return spring (4) pushes back the spool (2) and holds it in start position.

At version **3/2URER6...Y...** port **Y** is to be connected to tank.

In version **3/2URER6.../...OF...** (without springs, with detent) the spool (2) is positioned and hold by means of the detent (5). Its shift results from energizing of one of the solenoids.

In version **3/2URER6.../O...** (without spring, without detent) the spool is positioned and hold by the energized solenoid.

3/2URER6-12/B G2 Y G24 N Z4



## TECHNICAL DATA

Hydraulic fluid	mineral oil	
<b>Required filtration</b>	<b>16 µm</b>	
<b>Recommended filtration</b>	<b>10 µm</b>	
Nominal fluid viscosity	37 mm <sup>2</sup> /s in temperature 55 °C	
Viscosity range	2,8 do 328 mm <sup>2</sup> /s	
Fluid temperature range (in tank)	recommended	40 °C to 55 °C
	maximum	-20 °C to +70 °C
Ambient temperature range	- 20 °C to +50 °C	
<b>Max operating pressure (in port P1, P2, A, B, C, D)</b>	with drain port Y connected to tank	<b>35 MPa</b>
	without drain port (port Y plugged)	<b>21 MPa</b>
<b>Max pressure in port Y</b>	<b>21 MPa</b>	
Max switching frequency	15000 on/h	
Weight of one section	with 1 solenoid or hand lever operated	max 2 kg
	with 2 solenoids	max 2,5 kg
<b>Nominal supply voltage for solenoids</b>	<b>DC</b>	<b>12V , 24V</b>
Supply voltage tolerance	±10%	
Power requirement	30 W	
Insulation	<b>IP 65</b>	
Solenoid coil temperature	max 150 °C	

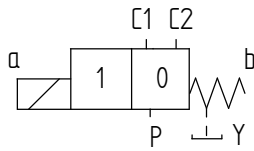
## ASSEMBLY AND APPLICATION REQUIREMENTS

1. Only valve working properly and suitably installed may be connected to an electric system. Only skilled workers are allowed to connect and disconnect electric system.
2. It is forbidden to apply directional spool valve if the supply cable in the gland of plug-in-connector is not properly tightened.
3. It is forbidden to apply directional spool valve if the plug-in-connector is not properly tightened to the solenoid socket and is not secured by screwing bolt tightly.
4. Due to heating solenoid coils, directional spool valves should be placed in order to eliminate the possibility of incidental touch while using, or, they should be equipped with the coil covers (in accordance with the European standards PN - EN ISO 13732-1 and PN - EN 982).

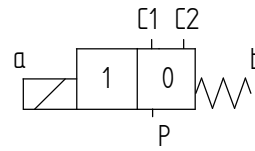
# SCHEMES

## Hydraulic schemes of directional valves 3/2URER6-12/...

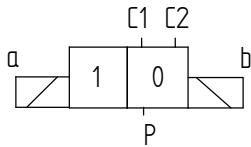
section 3/2URER6-12/...Y...



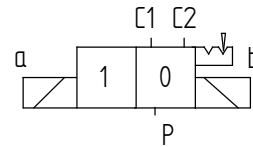
section 3/2URER6-12/...



section 3/2URER6-12/...O...



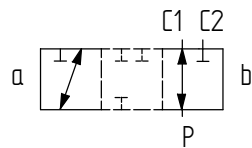
section 3/2URER6-12/...OF...



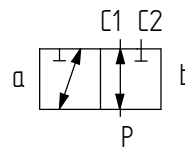
## Hydraulic schemes for spools

working and intermediate positions

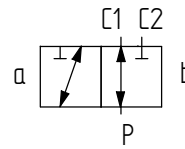
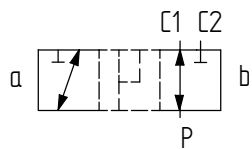
scheme "A"



working positions



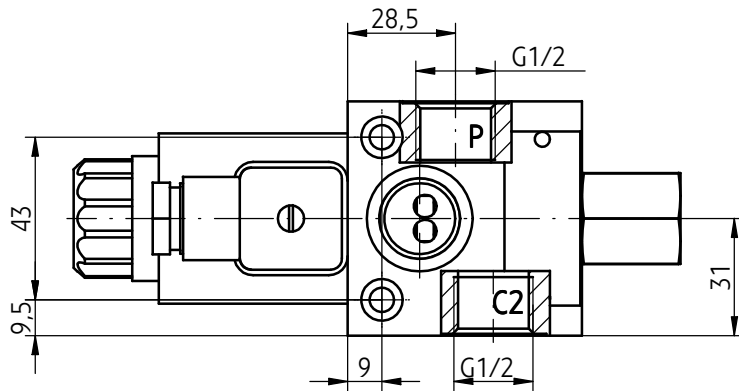
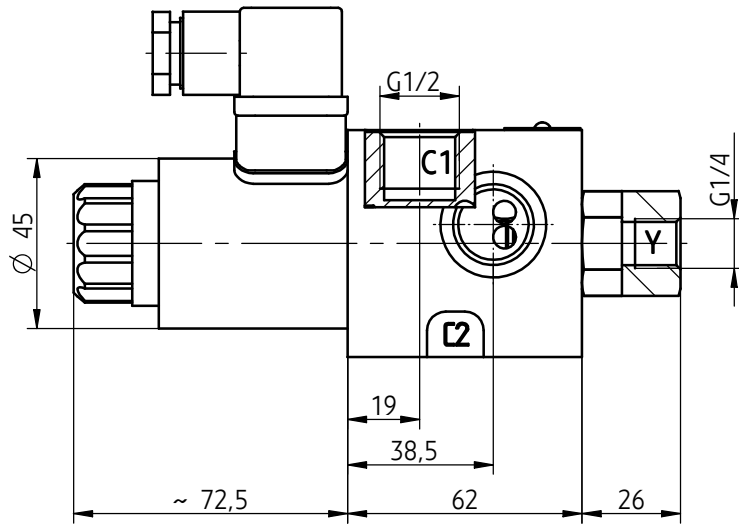
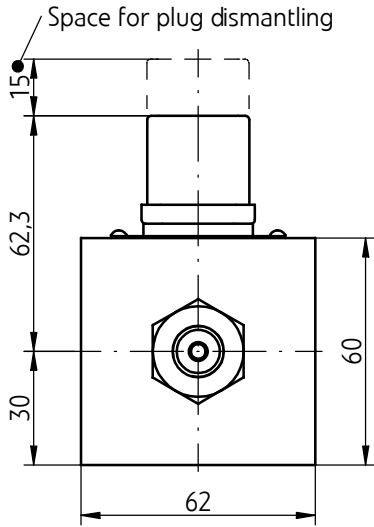
scheme "B"



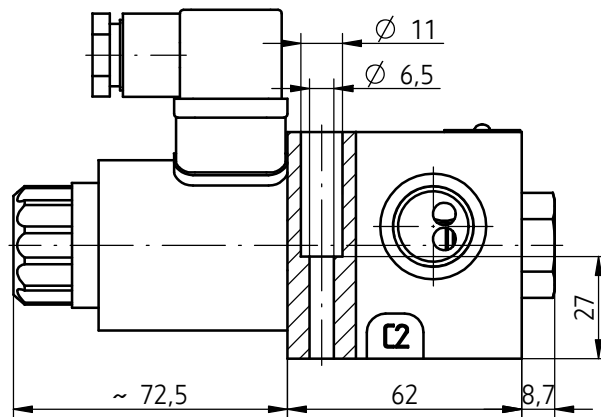
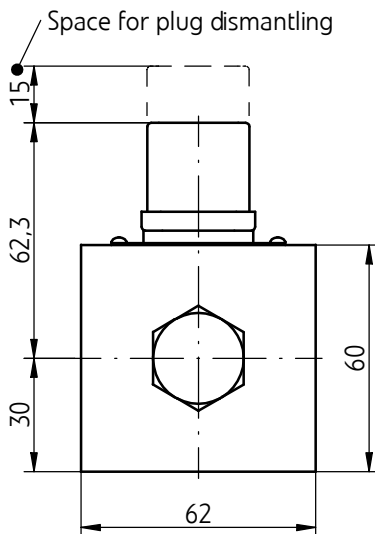
# OVERALL AND CONNECTION DIMENSIONS

type 3/2URER6-12/...

3/2URER6 - 12/B G2 Y G24 N Z4



3/2URER6-12/B G2 G24 N Z4

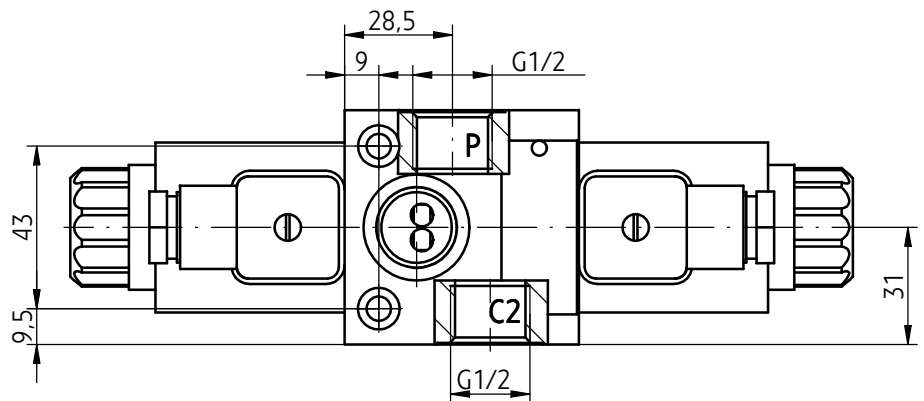
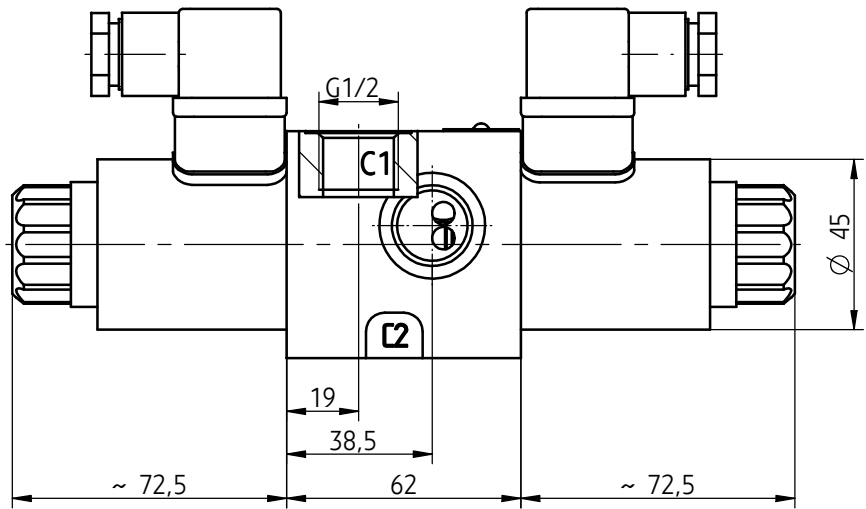
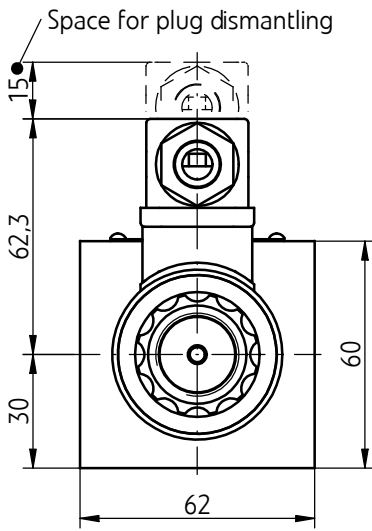


# OVERALL AND CONNECTION DIMENSIONS

type 3/2URER6-12/...O...

type 3/2URER6-12/...OF...

3/2URER6-12/B G2 O G24 N Z4  
 3/2URER6-12/B G2 OF G24 N Z4

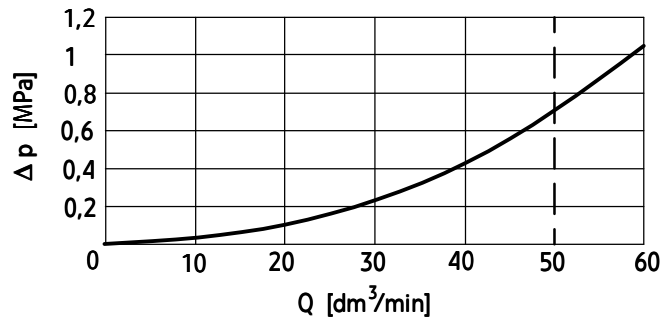


## PERFORMANCE CURVES

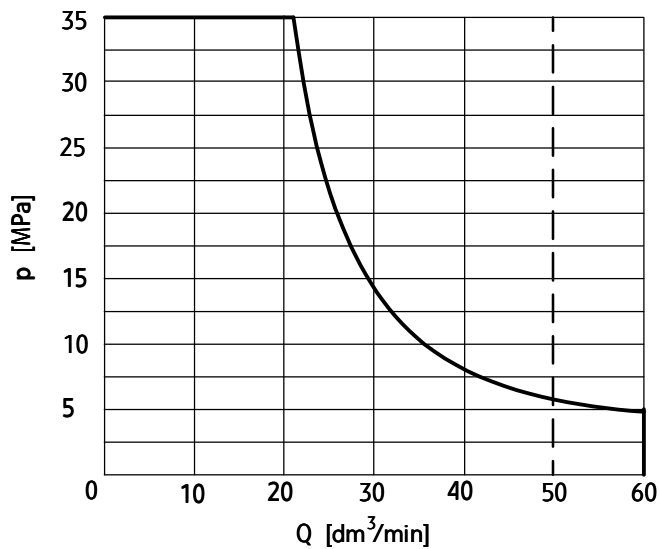
measured at viscosity:  $\nu = 41 \text{ mm}^2/\text{s}$  and temperature  $t = 50^\circ\text{C}$

Performance curves  $\Delta p(Q)$  for directional valves  
type 3/2URER6...

flow resistance performance

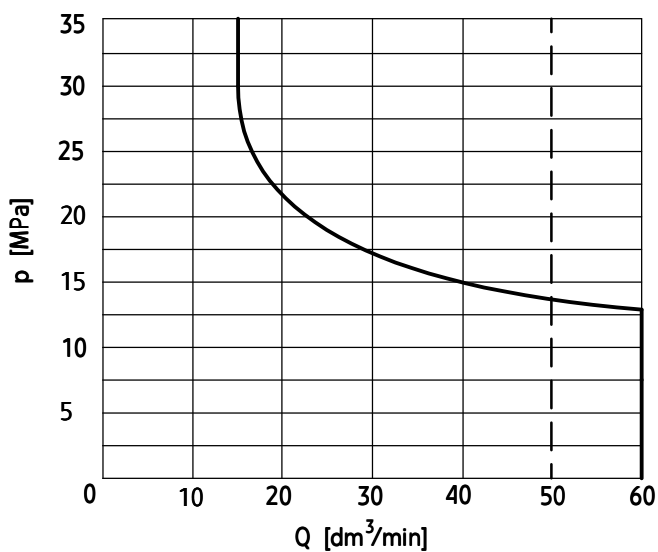


operating limit 3/2URER6-12/A



flow directions:  
P → C1,  
P → C2

operating limit 3/2URER6-12/B



flow directions:  
C1 → P,  
C2 → P

## HOW TO ORDER

**3/2** **URER** **6** **-** **/** **G2** **\***

**Number of ways and spool position**  
**3-way 2-position = 3/2**

**Nominal size (NS)**  
**NS6 = 6**

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

**Spool schemes**  
 scheme A = A  
**scheme B = B**

**Type of connection**  
**BSP treads G 1/2 acc. to DIN 3852 (P, C1, C2) = G2**

**Type of drain**  
 without drain port = no designation  
**with drain port Y** (does not exist for version O, OF) = **Y**

**Spool positioning**  
**with return spring = no designation**  
 without return spring (does not exist for version Y) = O  
 without return spring with detent (does not exist for version Y) = OF

**Supply voltage for solenoids**  
 12V DC = G12  
**24V DC = G24**

**Manual override**  
 solenoid without manual override = no designation  
 solenoid with manual override = **N**

**Type of electric connection**  
**plug-in-connector ISO 4400 (DIN 43650-A) type without LED = Z4**  
 plug-in-connector ISO 4400 (DIN 43650-A) type with LED =Z4L

**Type of sealing**  
**NBR = no designation**  
 FKM = V

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

### NOTES:

Directional valve should be ordered according to the above coding.

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

Coding example in order: 3/2URER6-12/B G2 Y G24 N Z4

PONAR Wadowice S.A.  
ul. Wojska Polskiego 29  
34-100 Wadowice  
tel. +48 33 488 21 00  
fax. +48 33 488 21 03  
[www.ponar-wadowice.pl](http://www.ponar-wadowice.pl)

