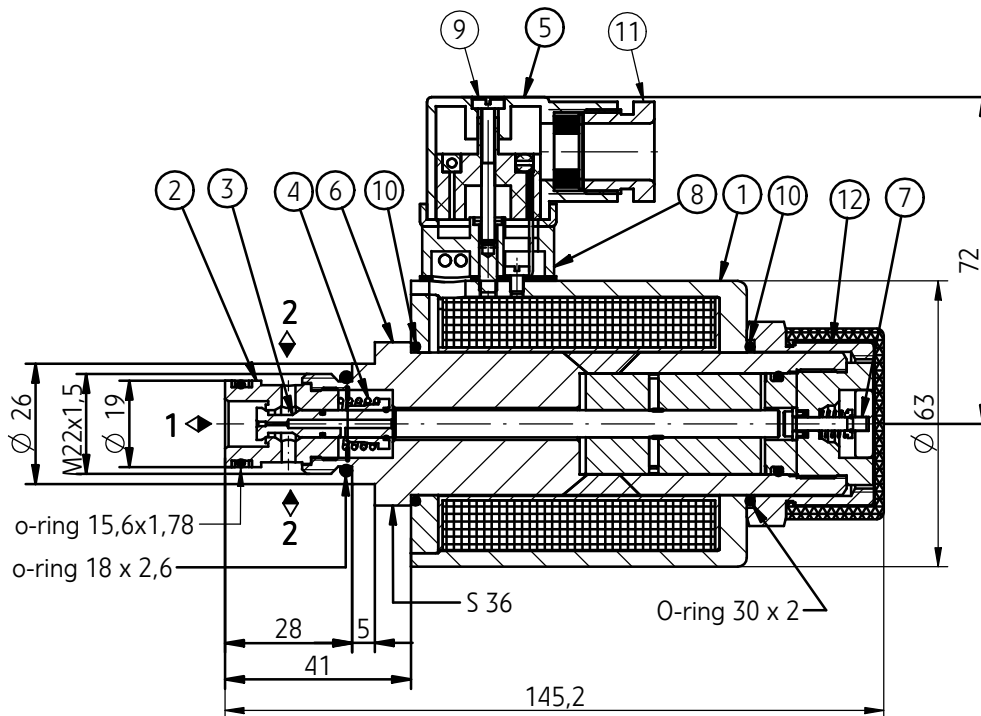


### CATALOGUE - SERVICING INSTRUCTION

#### APPLICATION

The Two-way directional control valves are designed as direct operated components for subplate mounting. These valves are mainly used in hazardous areas especially in mining industry. It is certified with  $\text{Ex}$  I M1 Ex ia I, and can work with outlet explosion proof circuit "a" or "b" of the power pack permitted for group 1 gas explosion at maximum parameter  $U_i=15V$ ,  $I_i=1,6A$ .

#### OVERALL DIMENSIONS



#### DESCRIPTION OF OPERATION

The directional valve is switched by changing position of the spool (3) which moving along its axis separates or connects port in the sleeve (2). Opening of flow is secured by putting voltage on coil (1). The return of the spool to dead position are secured by spring (4) and switching off the current. The coil can be placed in each angle position to the sleeve (6). An optional emergency button (7) permits movement of the spool without solenoid. The valve is equipped with explosion proof solenoid type EMSGI – 45. Solenoid is assembled with sleeve (6) and emergency button (7). There is a coil (1) on the sleeve (6). Outside of coil mounted is socket (8). Inside the socket are diodes. Electrical connection is realized by using plug (5). Use bolt (9) to support the plug. Power lead must be sealed and immobilized in both types using gland (11). Sealing rings (10) protect the coil against external impacts and prevent from turning coil after tightening up the nut (12).

## TECHNICAL DATA

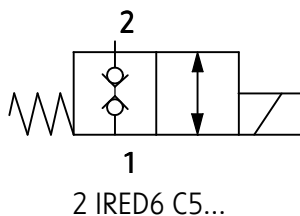
|  |                                    |
|--|------------------------------------|
| Hydraulic Fluid                          | Mineral Oil                        |
| Relative humidity of air                 | To 95%                             |
| Viscosity range                          | From 2,8 to 328 mm <sup>2</sup> /s |
| Optimum working temperature              | From 40 to 55°C                    |
| Working temperature range                | From -20 to 60°C                   |
| <b>Required filtration</b>               | <b>16 μm</b>                       |
| Recommended Filtration                   | 10 μm                              |
| <b>Maximum pressure</b>                  | <b>32 MPa</b>                      |
| <b>Maximum flow</b>                      | <b>20 dm<sup>3</sup>/min</b>       |
| <b>Supply voltage</b>                    | <b>12 V</b>                        |
| Supply current                           | 110 mA                             |
| Weight                                   | 1,5 kg                             |
| <b>Scope of insulation</b>               | <b>IP 64</b>                       |
| <b>Characteristic of explosion proof</b> | <b>⊕ I M 1 Ex ia I</b>             |

## ASSEMBLY AND OPERATION REQUIREMENTS

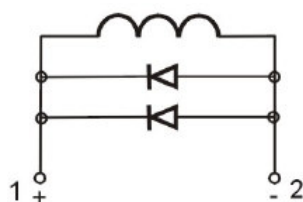
1. Electric connection of the valve must be made according to electric scheme.
2. Conductors of valve must be meet requirements applied in the mining machinery.
3. Only skilled workers can direct connect valve to a electrical system.
4. The plug must be supported by retains screw.
5. During the period of operation must be kept the fluid viscosity and filtration according to requirements defined in serving instruction.
6. In order to ensure the failure free and safe operation must be check:
  - Condition of the electrical connection,
  - The verity proper working of the valve,
  - Cleanness of the hydraulics fluid.
7. Repairing of the broken valve must be done by service workshop.
8. A person that operates the valve has to acquaint with Servicing Instruction.

## SCHEMES

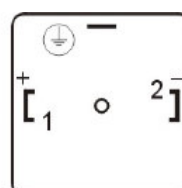
graphical symbol



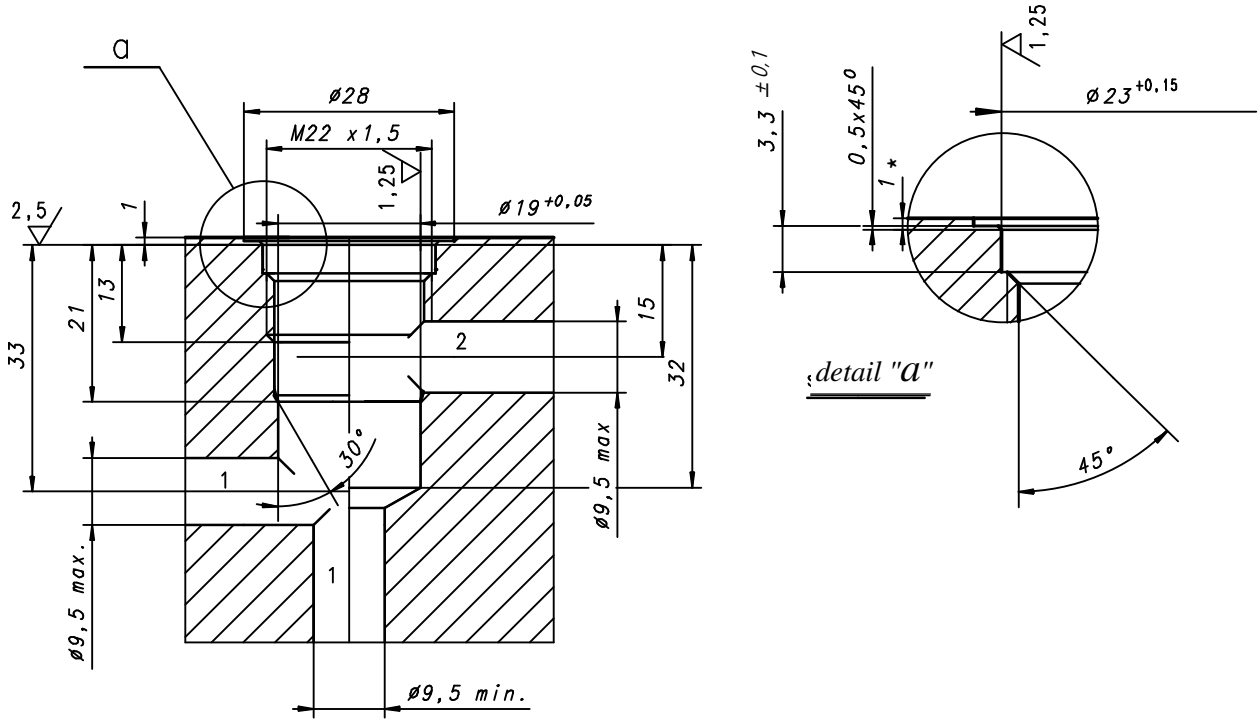
electrical scheme



view of electrical connection



# DIMENSION OF CAVITY



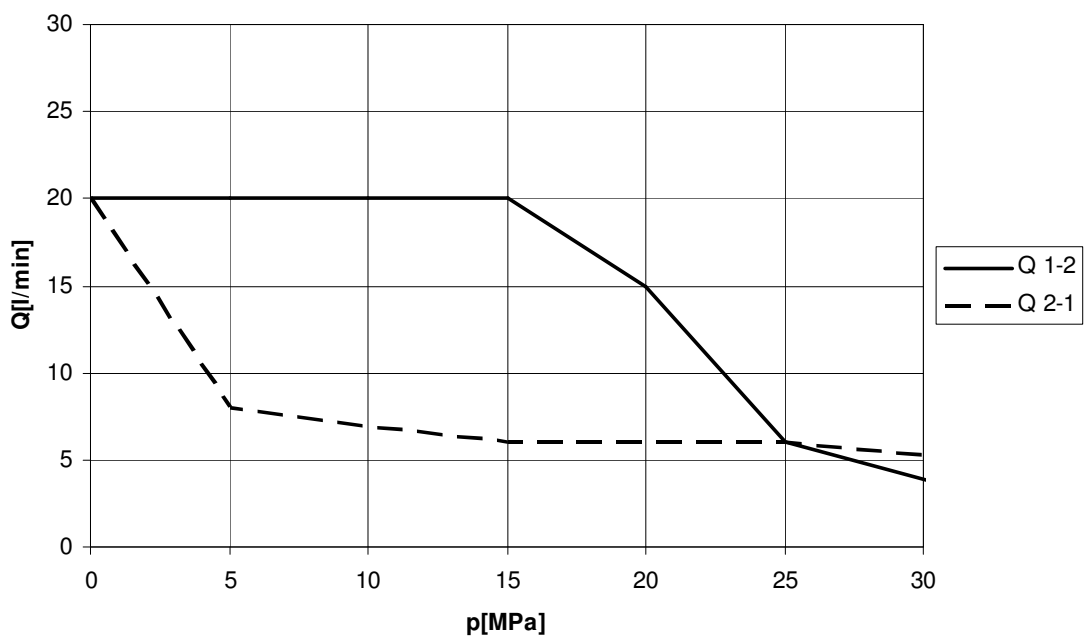
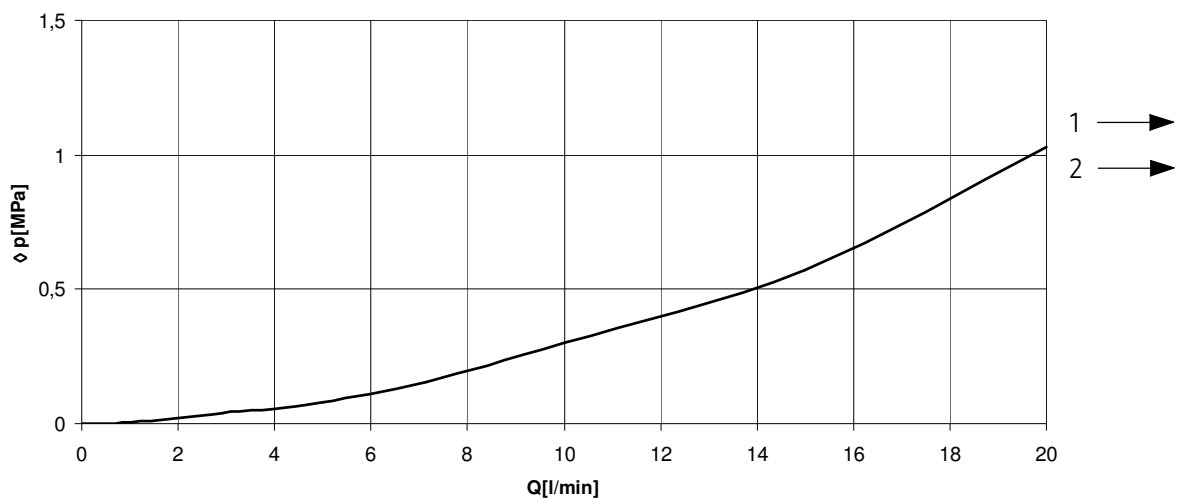
(\*) - max 4,9

$\text{◎} \phi 0,025$  - Applied to all main hole diameters and phase point

Tightening torque of valve 30 Nm.

**PERFORMANCE CURVES** oil viscosity  $\nu = 41 \text{ mm}^2/\text{s}$  at temperature  $50^\circ\text{C}$

Flow curves



## HOW TO ORDER

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

|                 |           |                 |           |            |           |  |          |
|-----------------|-----------|-----------------|-----------|------------|-----------|--|----------|
| <b>2 IRED 6</b> | <b>C5</b> | <b>- 02 / 2</b> | <b>M1</b> | <b>G12</b> | <b>Z4</b> |  | <b>★</b> |
|-----------------|-----------|-----------------|-----------|------------|-----------|--|----------|

### Hydraulic scheme

Scheme C5 = C5

### Unit series

(02-09) - dimension unchanged = 02

### Number of position

Two position = 2

### Mounting method

Port M22 x 1,5 = M1

### Control voltage solenoids

12V DC = G12

### Electrical connection

Plug in connector = Z4

### Sealing

Ruben seal = no code  
 Viton seal = V

### Additional requirements in clear text

(to be advanced with the manufacturer)

Coding example:

**2 IRED 6 C5 - 02/2 M1 G12 Z4**

PONAR Wadowice S.A.  
ul. Wojska Polskiego 29  
34-100 Wadowice  
tel. +48 33 823 44 41 - 45  
fax.+48 33 823 41 69  
[www.ponar-wadowice.pl](http://www.ponar-wadowice.pl)

