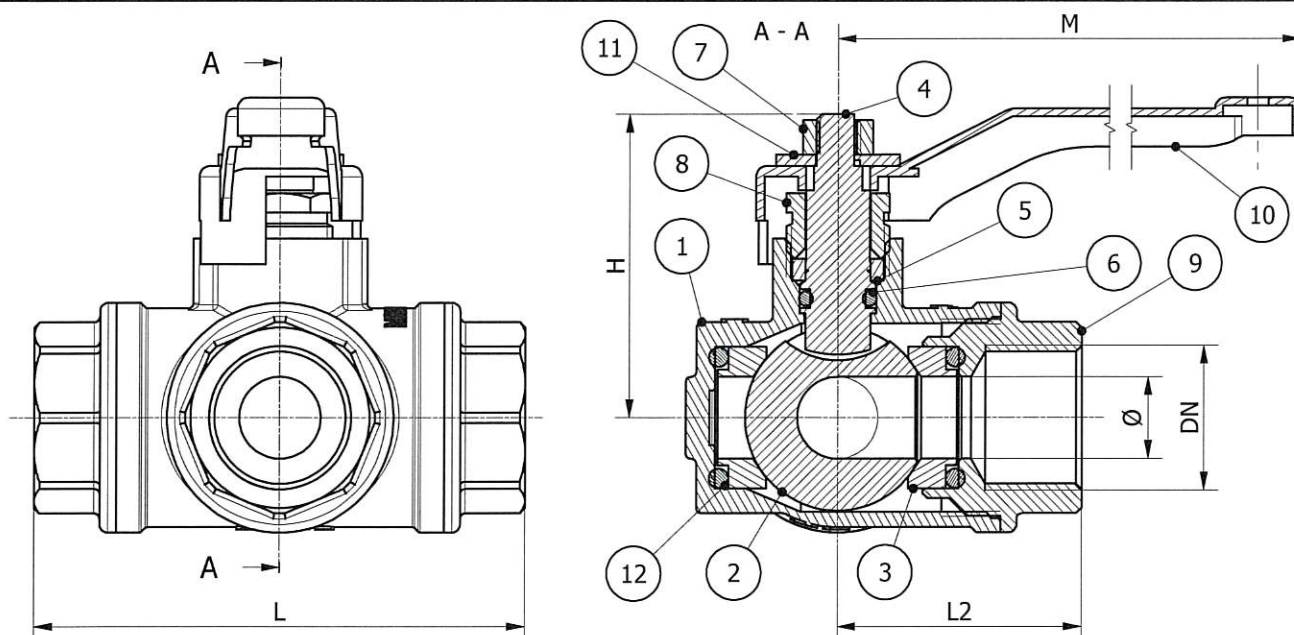
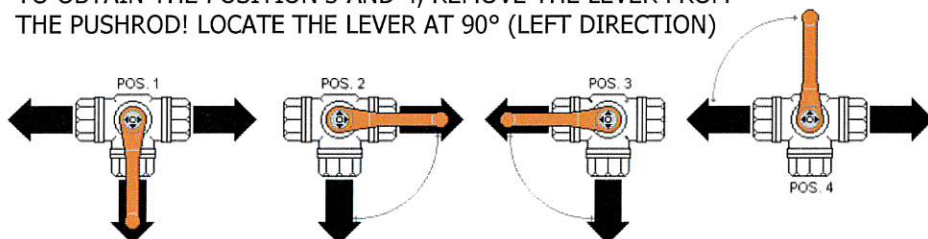




TO OBTAIN THE POSITION 3 AND 4, REMOVE THE LEVER FROM THE PUSHROD! LOCATE THE LEVER AT 90° (LEFT DIRECTION)



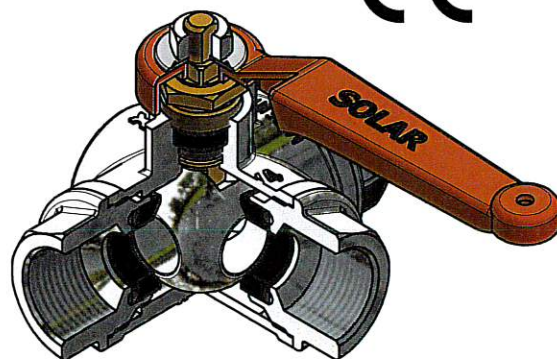
| DN | 1/4" | 3/8" | 1/2" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"    |
|----|------|------|------|------|-----|--------|--------|-------|
| L  | 76   | 76   | 82   | 90   | 106 | 120    | 142    | 165   |
| L2 | 38   | 38   | 41   | 45   | 53  | 60     | 71     | 82.5  |
| Ø  | 10   | 10   | 10   | 15   | 20  | 25     | 32     | 40    |
| I  | 18   | 18   | 17   | 18.5 | 20  | 23.5   | 28.5   | 32    |
| H  | 52   | 52   | 52   | 55.5 | 64  | 76.5   | 93.5   | 103.5 |
| M  | 115  | 115  | 115  | 115  | 150 | 150    | 240    | 240   |
| PN | 16   |      |      |      |     |        |        |       |

IN ACCORDING TO DIRECTIVE PED 2014/68/EU

| Ref. | parts          | Material               | Q.ty |
|------|----------------|------------------------|------|
| 1    | Body           | EN12420-CW617N         | 1    |
| 2    | Ball           | EN12164-CW614N         | 1    |
| 3    | Seat           | P.T.F.E.+CARBOGRAPHYTE | 4    |
| 4    | Pushrod        | EN12164-CW614N         | 1    |
| *5   | Gasket         | P.T.F.E.+CARBOGRAPHYTE | 1    |
| 6    | O-Ring         | FKM 70 RD 7271         | 1    |
| 7    | Nut            | STEEL ZINCKED          | 1    |
| 8    | Nut            | EN12164-CW614N         | 1    |
| 9    | Sleeve         | EN12420-CW617N         | 1    |
| 10   | Lever          | Steel painted          | 1    |
| 11   | Flux indicator | EN 7639 SGALSI 1       | 1    |
| 12   | O-ring         | EPDM                   | 4    |

\*:absent for 1 1/2" - 2" (seal with two O-rings)

CE



### STANDARD VALVE FEATURES

#### VALVE WITH SEALS IN P.T.F.E. REINFORCED CARBOGRAPHYTE

-Working temperature: **MIN. -20°C / MAX. up to a peak of +180°C**;  
below 0 °C only in absence of ice or with antifreeze additives max 50%,  
over 100 °C only in absence of steam

-Max. pressure: **16 bar** (40 bar from **-10 °C to +100 °C**)

-Threaded ends: ISO 228/1

We don't assume the responsibility if you use products which are not consistent with the material used for the construction of our valves.

To be used as a guide only, IDROSFER reserve the right to change these data without notice.

# ASSEMBLY, USE AND MAINTENANCE INSTRUCTION

IN ACCORDING TO DIRECTIVE PED 2014/68/EU

EQUIPMENT PRESSURE DESCRIPTION: TWO AND THREE-WAY BALL VALVE FOR SOLAR SYSTEMS, WITH BRASS BODY FLOATING BALL

**NOT DANGEROUS FLUIDS, GROUP 2, TAB. 9**

## USE

The intercepted fluids are not dangerous fluids (group 2) and must be compatible with the construction materials of ball valve: brass, PTFE, PTFE reinforced carbographe, FPM, EPDM, NBR, FKM.

Mixture with water and antifreeze liquids (glycol) max. 50%.

THE MAX PRESSURES IN ACCORDING TO THE WORKING TEMPERATURES ARE THE FOLLOWING:

| * temperature °C                      | PN 16  | Ball's tightness seats |
|---------------------------------------|--------|------------------------|
| * from -20 °C up to a peak of +180 °C | 16 bar | PTFE + CARBOGRAPHITE   |

### \* MATERIAL RESISTENCE'S DATA

## WARNING!

IT IS USEFUL TO EMPTY THE BALL VALVE AND THE SYSTEM COMPLETELY WHEN THE INTERCEPTED FLUID COULD SOLIDIFY AT TEMPERATURES LOWER THAN 0°C (FOR EX., WATER) AND INCREASE ITS VOLUME DAMAGING ITS SEALING.

## ASSEMBLY

Before installing make sure the pipe into which the valve is screwed does not show impurities that may damage the ball and the seat tightness causing leaking.

To seal the threadings use a dope compatible with the intercepted fluid without exceeding to avoid useless efforts when assembling.

After installing make sure the valve does not undergo stresses due to an exceeding anchorage distance or to unparallel pipes, then, support the pipes with the proper clamps.

The valve must be manoeuvred exclusively with the lever handle supplied with the kit without using any other supplementary lever handles.

Turn the lever handle by 90° clockwise to close the valve until it reaches its beat.

Turn the lever handle by 90° anticlockwise to open the valve until it reaches its beat.

The ball valve must always be fully open or fully closed.

Any intermediate position of the valve may cause long-lasting bucklings of the tightness seats which make the intercepted fluid leak.

To avoid water hammering on the pipes manoeuvre the valve by a gradual rotation.

When testing the systems never use pressures higher than the nominal pressure shown on the valves; that could buckle the seats and the gaskets and damage their sealing irremediably.

## MAINTENANCE

Before take a valve apart, make sure that the pipe are not under pressure.

Every six months check the valve visually to verify there are no defects that may cause problems when using it and, if the case, replace it. Before acting on the valve make sure that the pipes are not under pressure.

We are not responsible in case of tampering of our valves without our authorization, in this case the warranty expires.

## WASTE DISPOSAL

After replacement of the valve, it must be disposed according to the laws (about the waste disposal) of the Country of destination.

The waste (disused valve) can also be identified as recyclable material.

## LIST OF INCOMPATIBLE SUBSTANCES

Many chemical substances react in a dangerous way when they come in touch with others.

Please find below a list of the main incompatible substances, by way of a non-limiting example.

|                                                   |                                                                                                                                                                |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acetylene                                         | with copper (piping), halogens, silver, mercury and their compounds                                                                                            |
| Acetone                                           | with concentrated mixtures of sulphuric and nitric acid                                                                                                        |
| Acetic acid                                       | with chromic acid, nitric acid, hydroxyls, ethylene glycol, perchloric acid, peroxides and permanganates                                                       |
| Chromic acid                                      | with acetic acid, naphthalene, camphor, alcohol, glycerol, turpentine and inflammable fluids                                                                   |
| Nitric acid                                       | with acetic, chromic and cyanogenic acid, aniline, carbon, hydrogen sulphide, fluids, gases and substances that are promptly nitrated                          |
| Oxalic acid                                       | with silver and mercury                                                                                                                                        |
| Perchloric acid                                   | with acetic anhydride, bismuth and its alloys, alcohol, paper, wood, fats and other organic substances                                                         |
| Hydrogen sulphide                                 | with nitric acid and oxidants.                                                                                                                                 |
| Sulphuric acid                                    | with chlorates, perchlorates, permanganates and water.                                                                                                         |
| Alcohols and Polyols                              | with nitric acid.                                                                                                                                              |
| Anhydrous ammonia                                 | with mercury, halogens, calcium hypochlorite and hydrogen fluoride                                                                                             |
| Ammonium nitrate                                  | with acids, metal powders, sulphur, combustible materials                                                                                                      |
| Aniline                                           | with nitric acid and hydrogen peroxide                                                                                                                         |
| Silver                                            | with acetylene, oxalic acid, tartaric acid and ammoniac compounds                                                                                              |
| Arsenic (materials containing)                    | with any reducing agent                                                                                                                                        |
| Azides                                            | with water.                                                                                                                                                    |
| Chlorine dioxide                                  | with ammonia, methane, phosphine, hydrogen sulphide                                                                                                            |
| Bromine                                           | with ammonia, acetylene, butadiene, butane, hydrogen, sodium carbide, turpentine and                                                                           |
| Activated carbon                                  | with all oxidizing agents, calcium hypochlorite                                                                                                                |
| Cyanides                                          | with acids and alkali                                                                                                                                          |
| Chlorates                                         | with ammonia salts, acids, metal powders, sulphur, finely pulverized organic and flammable compounds and carbon                                                |
| Chlorine                                          | with ammonia, acetylene, butadiene, petrol and other by-products of oil, hydrogen, sodium carbide, turpentine and finely pulverized metals                     |
| Chloroform                                        | with sodium and potassium                                                                                                                                      |
| Chlorides                                         | with sulphuric acid                                                                                                                                            |
| Dichloromethane                                   | with sodium and potassium                                                                                                                                      |
| Chlorine dioxide                                  | with ammonia, methane, phosphine, hydrogen sulphide                                                                                                            |
| Fluorine                                          | with all other chemical substances                                                                                                                             |
| (White) phosphorus                                | with air, oxygen, alkali, reducing agents                                                                                                                      |
| Hydrocarbons in general                           | with fluorine, chlorine, formic acid, chromic acid, sodium peroxide                                                                                            |
| Hydrogen sulphate                                 | with nitric acid vapours and oxidizing gasses                                                                                                                  |
| Iodine                                            | with acetylene and ammonia                                                                                                                                     |
| Hypochlorite                                      | with acids, activated carbon                                                                                                                                   |
| Flammable fluids                                  | with ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide and halogens                                                              |
| Mercury                                           | with acetylene, fulminic acid, hydrogen                                                                                                                        |
| Alkaline metals (e.g. calcium, potassium, sodium) | with water, carbon dioxide, carbon tetrachloride, and other chlorinated hydrocarbons                                                                           |
| Ammonium nitrate                                  | with acids, metal powders, flammable fluids, chlorates, nitrates, sulphur and finely pulverized organic substances or flammable compounds                      |
| Nitrites and Nitrates                             | with acids                                                                                                                                                     |
| Nitroparaffin                                     | with inorganic bases, amines                                                                                                                                   |
| Calcium oxide                                     | with water                                                                                                                                                     |
| Oxygen                                            | with oils, fats, hydrogen, flammable fluids, solids and gasses                                                                                                 |
| Phosphorus pentoxide                              | with water                                                                                                                                                     |
| Potassium perchlorate                             | with sulphuric acid and other acids.                                                                                                                           |
| Potassium permanganate                            | with glycerol, ethylene glycol, benzaldehyde and sulphuric acid                                                                                                |
| Hydrogen peroxide                                 | with chromium, copper, iron, most other metals and their salts, flammable fluids and other combustible materials, aniline and nitromethane                     |
| Sodium peroxide                                   | with any oxidizable substance, such as methanol, glacial acetic acid, acetic anhydride, benzaldehyde, carbon disulphide, glycerol, ethyl acetate and furfural. |
| Potassium                                         | with carbon tetrachloride, carbon dioxide, water, chloroform, dichloromethane                                                                                  |
| Copper                                            | with acetylene, azide and hydrogen peroxide                                                                                                                    |
| Sodium                                            | with carbon tetrachloride, carbon dioxide, water, chloroform, dichloromethane                                                                                  |
| Sodium azide                                      | with lead, copper and other metals. This compound is usually employed as a preservative, but it forms unstable and explosive compounds with metals             |
| Selenium                                          | with reducing agents                                                                                                                                           |
| Sulphides                                         | with strong acids                                                                                                                                              |
| Carbon tetrachloride                              | Sodium, potassium                                                                                                                                              |