

**Operation and maintenance**  
**manual for**

**FLANGED CHECK**  
**POPPET**  
**VALVES**

**P/N**  
**6525**

Approved for use by

President of Factory, JAFAR S.A.

Failure to comply with the guidelines and instructions in this Operation and Maintenance Manual releases the manufacturer from all obligations, liability and guarantee.

Due to continuous business development, we reserve the right to introduce modifications and design changes to the presented product.

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## 1 TECHNICAL DESCRIPTION

### 1.1 PRODUCT DESIGNATION AND IDENTIFICATION

The subject of this Operation and Maintenance Manual is:

TYPE 6525 cast iron flanged check poppet valve

- full bore design
- with poppet (closure)
- with poppet seal (NBR)
- with stainless steel spring

### 1.2 USE

The flanged check poppet valves are intended for industrial installations and water supply systems, in both hot and cold water circuits. The valves are intended for overground and underground installations as installed in vertical or horizontal pipelines.

### 1.3 TECHNICAL SPECIFICATION

The flanged check poppet valves are designed to transport potable water, process water and other liquids as approved by the manufacturer.

- Temperature: -10°C to +70 C.
- Available diameters (dimensions): - DN50 to DN250 [mm]
- Maximum medium flow rate:
  - liquid: max. 4 [m/s]
  - gas: max. 30 [m/s]
- nominal pressure ratings (PN):
  - 1.0 MPa
  - 1.6 MPa

The Type 6525 valve connection flange design is acc. to PN-EN 1092-2: 1999 with the sizes compliant with the nominal pressure values.

Installation length of flanged valves (6525) – see the size table.

## 2 DESIGN

### 2.1 DESCRIPTION OF THE VALVE DESIGN

F.A. „JAFAR” S.A. manufactures the Type 6525 check poppet valves for industrial installations. The valve body is made of cast iron and houses a loose poppet, which is the closure, set within the valve centreline in a sliding bush, and pressed to the valve seat by a spring. In absence of medium flow, the valve poppet remains pressed tightly to the sealing seat. In the operating conditions, the poppet is held in the open position by the dynamic force of the liquid stream, or in the closed position, where it seals off the valve seat under the back pressure and the spring. Install the valves according to the direction of flow marked with the arrow on the valve body. All inner and outer cast-iron surfaces of the valve are epoxy powder coated.

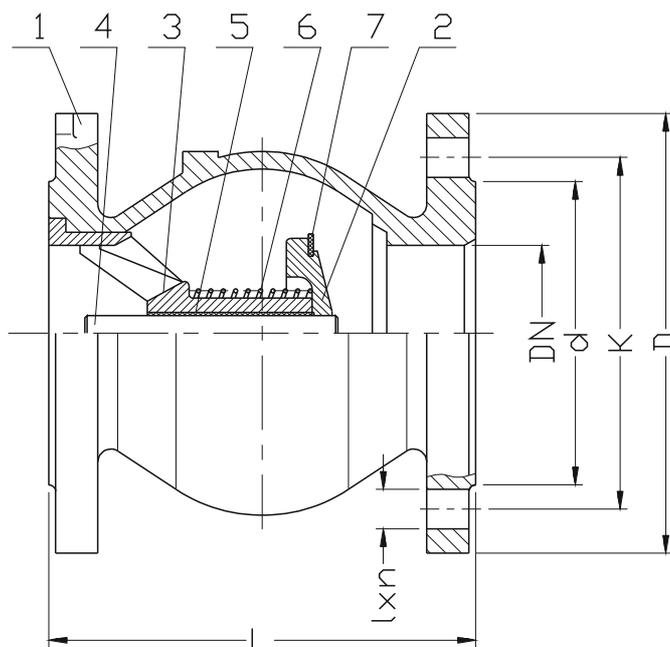
## 2.2 MATERIALS

The table below lists the structural materials of the check poppet valves.

Item	Part designation	Material	Reference standard
1	Body	Cast iron, EN-GJL-250	PN-EN 1561: 2012
2	Guide (DN50-125)	Brass/bronze	PN-EN 1982: 2010
2	Guide (DN150-250)	Cast iron, EN-GJL-250	PN-EN 1561: 2012
3	Closure assembly (DN50-100)	Brass/bronze	PN-EN 1982: 2010
3	Closure assembly (DN125-250)	Cast iron, EN-GJL-250	PN-EN 1561: 2012
4	Guide spindle (DN125-250)	Brass/bronze	PN-EN 1982: 2010
5	Spidle guides	Brass/bronze	PN-EN 1982: 2010
6	Spring	Stainless steel, 1.4305	PN-EN 10088-1: 2014
7	Seal	NBR	PN-ISO 1629: 2005

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## 2.3 DIMENSIONS



DN	k	l x n	D	L	d	Kv	Weight
	PN16 (PN10)						
[mm]						[m <sup>3</sup> /h]	[kg]
50	125	4x19	165	100	98	100	5,7
65	145	4x19	185	120	118	160	8,7
80	160	8x19 (4x19)	200	136	132	230	10,8
100	180	8x19	220	175	156	390	13,5
125	210	8x19	250	200	184	625	21,0
150	240	8x23	285	234	211	900	30,0
200	295	12x23 (8x23)	340	300	260	1100	49,0
250	355 (350)	12x28 (12x23)	405	370	319	1800	81,0

## 2.4 REFERENCE STANDARDS

PN-EN 1074-1: 2002	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. General requirements
PN-EN 1074-3: 2002	Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Check valves.
PN-89/H-02650	Valves and pipelines. Pressure and temperature ratings.
PN-EN 1092-2: 1999	Flanges and their joints. Circular flanges for pipes, valves, fittings and accessories, PN designated. Cast iron flanges.
PN-EN 19: 2005	Industrial valves. Marking of metallic valves
PN-EN 12266-1: 2012	Industrial valves. Testing of metallic valves. Pressure tests, test procedures and acceptance criteria. Mandatory requirements.
PN-EN 558: 2012	Industrial valves. Face-to-face and centre-to-face dimensions of metal valves for use in flanged pipe systems. PN-designated valves.
PN-EN ISO 6708: 1998	Pipework components. Definition and selection of DN (nominal size).
PN-EN 1559-1: 2011	Founding. Technical conditions of delivery. General.
PN-EN 1561: 2012	Founding. Grey cast iron.
PN-EN 1370: 2012	Founding. Surface roughness inspection by visual tactile comparators.
PN-ISO 965-1: 2001	General purpose ISO metric threads. Tolerances. Principles and basic data.
PN-EN ISO 4762: 2006	Hexagon socket head cap screws.
DIN 6912: 2006	Hexagon socket low head cap screws.
PN-EN 10204: 2006	Metallic products. Types of inspection documents.
PN-ISO 1629: 2005	Rubbers and latices. Nomenclature.
PN-EN ISO 1872-1: 2000	Plastics. Polyethylene (PE) moulding and extrusion materials. Designation system and basis for specifications.
PN-EN ISO 1873-1: 2000	Plastics. Polypropylene (PP) moulding and extrusion materials. Designation system and basis for specifications.
PN-EN ISO 1874-1: 2010	Plastics. Polyamide (PA) moulding and extrusion materials. Designation system and basis for specification.
PN-EN ISO 12944-5: 2009	Paints and varnishes. Corrosion protection of steel structures by protective paint systems. Protective paint systems.

## 2.5 ORDERING INFORMATION

Water supply system valves are specific purpose industrial valves, therefore orders must include:

- part number (P/N, equal to the product type);
- intended use (e.g. for process water);
- and:
- nominal diameter, acc. to PN-EN ISO 6708: 1998
- nominal pressure, acc. to PN-89/H-02650
- type of body material, acc. to PN-EN 1561: 2000 or PN-EN 1563: 2000
- maximum operating temperature, acc. to PN-89/H-02650

## 2.6 PRODUCTION AND ACCEPTANCE

The flanged check poppet valves are manufactured and accepted in accordance with PN-EN 1074-3:2002 (Valves for water supply. Fitness for purpose requirements and appropriate verification tests. Part 3: Check valves) and PN-EN 12266-1:2007 (Industrial valves. Testing of metallic valves). All valves are leak tested (100%). The tests include external body tightness and closing tightness at high and low pressure values.

## 2.7 MARKINGS

The valve marking is regulated by the following standards: PN-EN 19: 2005, PN-EN-1074-1: 2002.

The valve bodies feature markings on the front and back walls of the body chamber. The marking contains the following data:

- - nominal diameter;
- - nominal pressure;
- - body material type;
- - manufacturer's trade mark;
- - flow direction arrow;

and a boss with the identification marking (e.g. lot number).

### **3 PROTECTION, STORAGE & TRANSPORT**

#### **3.1 PROTECTIVE COATINGS**

All inner and outer cast-iron surfaces are protected with electro-deposited epoxy coat. The coat has been approved for contact with foodstuffs. The anti-corrosion coating layer minimum thickness is 250µm. The casting surface is pre-treated for epoxy coating in accordance with the relevant technical documentation and PN-EN ISO 12944-5: 2001.

#### **3.2 PACKAGING**

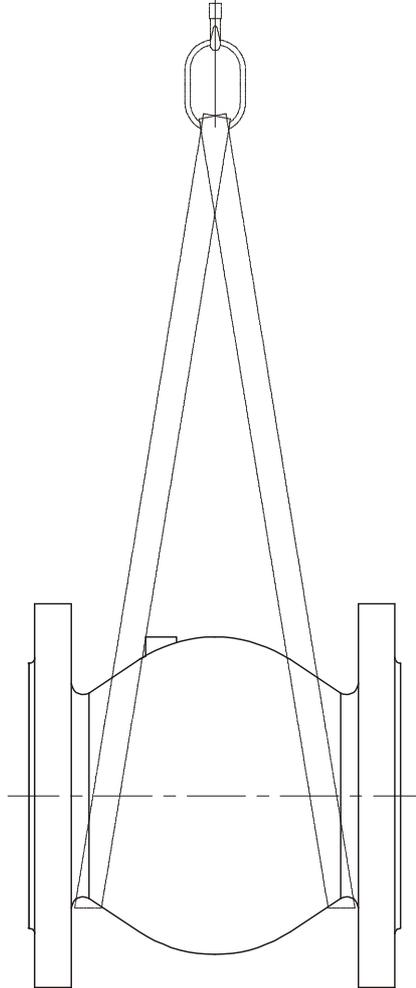
The flanged check poppet valves are packed on EURO pallets (1200x800) and protected with heat-shrunk film.

#### **3.3 STORAGE**

Store the flange check poppet valves in sheltered rooms.

### 3.4 TRANSPORT

Transport the flanged check poppet valves on sheltered vehicles. The following diagram shows an example of vertical handling on belt slings. Belt slings are recommended for handling and assembling DN125 to DN250 valves.



## 4 ASSEMBLY AND INSTALLATION

### 4.1 ASSEMBLY GUIDELINES

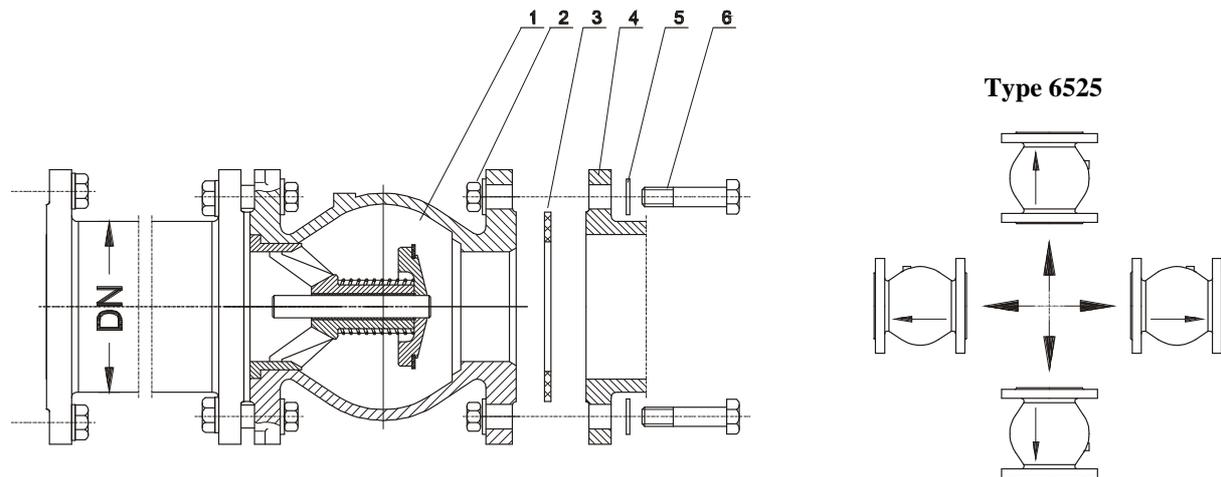
The Type 6525 flanged check poppet valves can be installed in underground or overground pipelines both in horizontal or vertical orientation as shown in the following figure. The flanged valves are suitable for joining with the flanged ends of pipelines with the size equal to that of the valve flanges. Note that the system must not expose the valve to bending or tensile stress from loading with the unsupported pipeline sections. The valve assembled and delivered by the manufacturer is ready for installation. Disassembly of the valve components without proper care may result in loss of integrity.

## 4.2 ASSEMBLY INSTRUCTIONS

Before attempting to install the valve, check the technical and commercial documents delivered with the product to verify that the media and pipeline operating parameters comply with the manufacturer's declaration. Any change in the operating conditions must be consulted with the valve manufacturer beforehand.

Before attempting to assemble the valve, check the inner surfaces of the valve and thoroughly flush with water, if necessary. Some valves, when in the open position, have the opening dimension larger than the body length. To avoid damage and operating malfunctions of the valve, keep the sufficient spacing during the assembly process.

The assembly method is shown in the following figure:



1. Valve; 2. Nut; 3. Gasket; 4. Pipeline flange; 5. Washer; 6. Fastening bolt

### Note:

**Install the valve downstream of a straight pipeline the length of which is at least 5 times the pipeline nominal diameter. The straight pipeline runs upstream and downstream of the valve must stabilise the flow stream. Water hammering may result in damage or bursting.**

## 4.3 OPERATION

The flanged check poppet valves shall be operated according to the requirements for check valves, i.e. in the orientation shown in the permitted orientation diagram. It is recommended to periodically purge the valve with fresh water (once a year) to assure full performance. Hard solids with the size above 5 mm should be filtered out of the transmitted medium to prevent seizure of the poppet inside the body. If the poppet is stuck, start the installation pump for a few seconds. If the problem persists, stop all installation pumps, isolate the medium flow on the valve's pressure side, remove the valve from the system and free the poppet.

## 4.4 OCCUPATIONAL HEALTH AND SAFETY

The valves are eligible for the OHS guidelines and recommendation concerning installation of pipelines and devices for water supply stations, heat power plants, water treatment plants, sewage treatment plants, pumping stations and other facilities, and eligible for the Polish Regulation concerning general OHS laws (use of personal protective equipment for hands, legs and head, and safety garment), especially at work with low or high temperature hazard.

**Misuse of the products is prohibited.**

## 5 WARRANTY TERMS AND CONDITIONS

The product assembled, installed and operated in compliance with this Manual is covered by a commercial warranty from the manufacturer. The warranty terms, conditions and period are specified in the relevant Warranty Sheet.