

# MACON Ball valves

## 2-way ball valve with a square flange and round holes/male end – 316L stainless steel

**Model 64376** Plastic handle cover

**Model 64377** Stainless steel handle



### Specifications

**Dimensions:** DN40, DN50 and DN70

**Connection:** Square flange/male thread (MACON)

**Operating pressure:** 10 bar

**Temperature:** - 20°C to +90°C

**Material:** 316L stainless steel

PTFE + EPDM gaskets

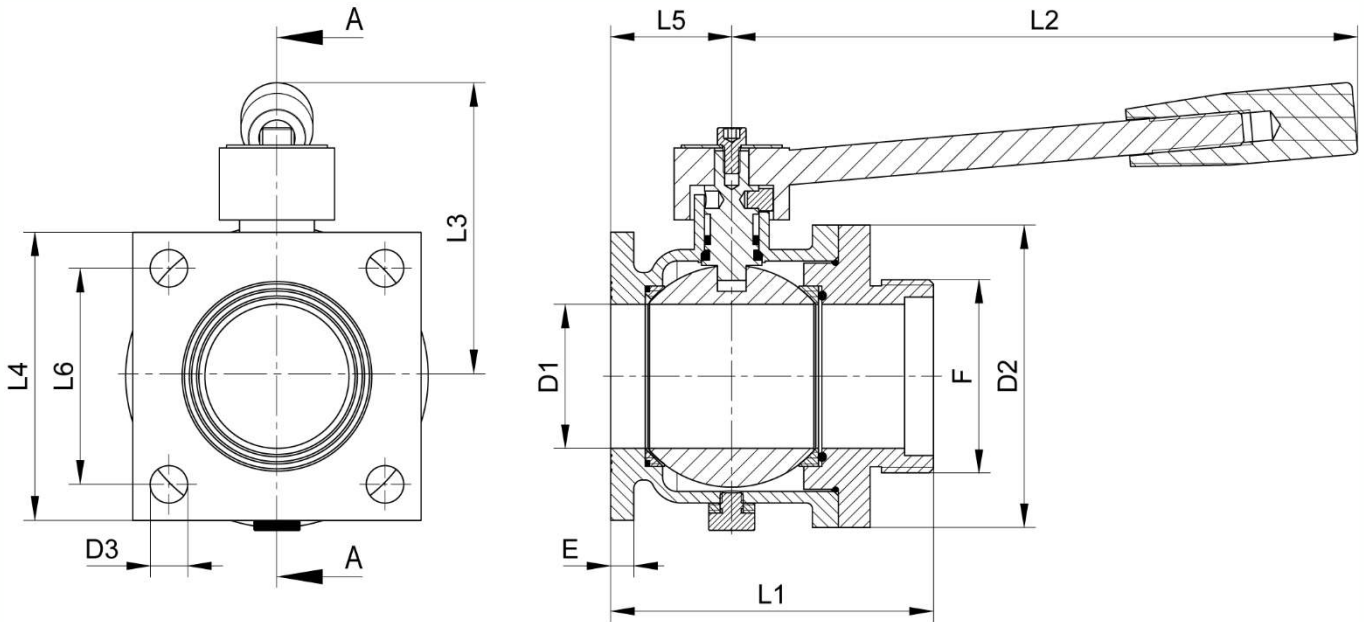
(FKM with BNIC certification on request)



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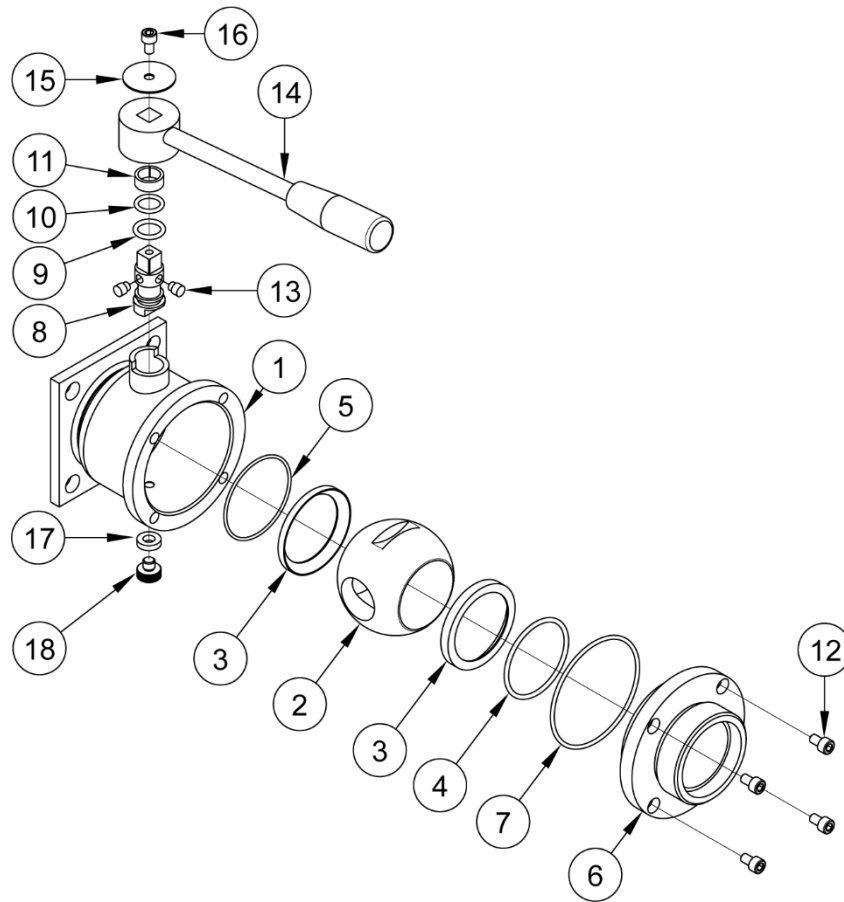
64376/64377-A V0322



**COUPE A-A**

DN (mm)	D1 (mm)	D2 (mm)	D3 (mm)	E (mm)	F (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)
40	40	94	13	8	M55x3	104.5	218	96	100	38	75
50	50	105	13	8	M67x3	112	218	102	100	42	75
70	70	140	13	10	M79x3.5	154	220	120	120	74	90

DN (mm)	Weight (kg)	Plastic handle part number	Stainless steel handle part number
40	94	664376-40	664377-40
50	105	664376-50	664377-50
70	140	664376-10	664377-10



N°	Part Name	Material
1	VALVE BODY WITH FLANGE	AISI 316L
2	BALL	AISI 316L
3	SEAT	PTFE
4	O-RING	EPDM
5	O-RING (not present for DN40)	EPDM
6	MALE END FLANGE	AISI 316L
7	O-RING	EPDM
8	SHAFT	AISI 316L
9	O-RING	EPDM
10	O-RING	EPDM
11	FRICTION RING	PTFE
12	CHC BOLT	STAINLESS STEEL
13	STOP PIN	STAINLESS STEEL
14	HANDLE	STAINLESS STEEL
15	PLATE	STAINLESS STEEL
16	CHC BOLT	STAINLESS STEEL
17	FLAT GASKET	EPDM
18	BLEED SCREW	AISI 316L

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## Use

### Fluids

This valve is suitable for non-abrasive and non-coagulable fluids, as long as the fluids are chemically compatible with the valve parts that they can come into contact with.



Warning: If the ball valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

## Assembly and maintenance instructions

### Installation

You can install the ball valve in any position. However, check that all fluids can flow through it freely, so that no fluid remains inside the valve when it is in use.

The hole inside the ball is designed so that no fluid is trapped inside the ball when the valve is shut. The valve body is equipped with a bleed plug.

Check that there is enough space to move the ball valve's handle and to carry out maintenance operations where you are planning to install the ball valve.

Check that all piping is perfectly aligned and that the piping support structure is dimensioned so that the valve is not subject to any external stresses.

The piping support structure must only support the pipes, not the ball valve.

#### How to install a valve with a square flange:

You can attach the valve onto a square flange on a tank using a flange gasket and four bolts. See the "Square flange accessories" section.

On its other side you can attach the valve onto a pipe using a compatible MACON connection: female threaded end + nut + gasket.

You must order these connection parts separately:

- female threaded ends: model **64113** (for welding) and model **64125** (for flexible hose connection)
- lock nuts: model **64114**
- connecting gaskets: model **64116** (NR SBR) and model **64117** (FKM).

Clean the installation and check that the equipment is clean and free from foreign bodies that could damage the ball valve.

Pressure test the installation according to the relevant standards (e.g. EN 12266-1), but do not exceed the valve's specifications.

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## Maintenance

You may need to change some of the valve's parts due to wear and tear, or if a fluid has damaged the valve and caused a leak or malfunction.

The user can decide if the ball valve's gaskets should be changed during preventative maintenance and at what frequency, taking into account the conditions in which they will use the valve.

If this is the case see the "Assembly / Disassembly" section below.

## Assembly / Disassembly

*The maintenance and removal/installation of the ball valve must be carried out by personnel who are qualified and trained for this type of intervention.*



Warning: Before you work on the ball valve, check that the installation has been stopped and that the piping is empty and is not pressurised.

Warning: If the ball valve is used with fluids that have a temperature above 60°C then people could burn themselves if they touch it.

Warning: Beware of hazardous materials - follow the instructions provided by the suppliers.

Move the valve handle **14** so that it is in the open position.

Unscrew bolt **16** to remove the plate **15**. Remove the two stop pins **13**.

Unscrew the 4 (or 6) CHC bolts **12** (unscrew the bolts in a criss-cross pattern).

Remove the male threaded end flange **6** and remove the o-rings **7** and **4** as well as the first PTFE seat **3**.

Turn the ball **2** 90° to line the ball's groove up with the valve body's **1** bore and remove the ball **2**.



Mark the initial position of the stop pins **13** and the ball's side groove **2** so that you can reposition these parts correctly during valve reassembly, respecting the opening/closing direction of the valve.

Remove the second PTFE seat **3** and the o-ring **5** (N.B. the DN40 valve does not have this o-ring **5**).

Remove the two stop pins **13**, then push the shaft **8** from the outside towards the inside of the valve's body in order to remove it.

Remove the o-rings **9** and **10** as well as the PTFE friction ring **11**.

Unscrew the bleed screw **18** to change the flat gasket **17**.

Clean the valve's parts and replace the worn gaskets. N.B. EPDM joints are not compatible with most lubricants and greases.

Follow the disassembly steps in reverse order to reassemble the ball valve.

When you reassemble the shaft **8** and the ball **2**, check that you have put them back into their original positions.

Before you reassemble the flange **6**, turn the ball **2** so that it is in the open valve position.



When you tighten the bolts **12** you must keep the valve in the open position and tighten the bolts progressively in a criss-cross pattern without forcing them. This will avoid any risk of seizing and will also avoid deforming the PTFE seats (as if they are deformed this could cause leaks or increase the torque required to open/close the valve).

Pressure test the valve and check that it can be opened and closed once you have finished assembling it and before you put the installation back into service.

## Spare parts

- Complete set of gaskets (parts **3, 4, 5, 7, 9, 10, 11** and **17**):

DN (mm)	PTFE + EPDM set (CE1935/2004)	PTFE + FKM set (CE1935/2004 and BNIC)
40	964374-40	964374-40V
50	964374-50	964374-50V
70	964374-70	964374-70V

- Bleed screw + gasket (parts **18** and **17**): part number **964376-8**

## Square flange accessories

Model **64146**: Gasket for square flanges with round holes - NR SBR

Model **64148**: Gasket for square flanges with round holes - FKM (BNIC)

Model **64147**: Gasket for square flanges with round holes - NR SBR

Model **64149**: Gasket for square flanges with round holes - FKM (BNIC)

Model **64143**: Square flange with oblong holes for welding - 304 stainless steel

Model **64144**: Square flange with threaded holes for welding - 304 stainless steel

Model **64145**: Square flange with round holes for welding - 304 stainless steel

## Standards and compliance

- This valve complies with the European Pressure Equipment Directive (PED) 2014/68/EU (Article 4 paragraph 3). It does not have CE marking.
- This valve complies with EC Directive 1935/2004.
- The FKM gasket is BNIC certified.

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