

LEAPING INTO TECHNOLOGY MOTORIZED BALL VALVES

Increasing the performance of the refrigeration system is now possible using **Castel motorized ball valves**.

The new generations of refrigeration systems are increasingly technologically advanced, seeing an increase in sensors and controls that act in all parts of the circuit, managing the different areas of the system as needed.

Today a ball valve no longer has the sole purpose of sectioning a part of the system in the event of faults or maintenance, but it plays a key role in **controlling efficiency**.

The ball valve today assumes a function almost as a solenoid valve but with less pressure drop (it's possible to install a smaller ball valve with the same Kv), it is bi-flow and tolerates higher temperatures than a solenoid valve. In order to take advantage of this new task, the ball valve must be controlled by an intelligent system capable of performing operations that would not be possible by relying on man, such as heat recovery, bypass of heat exchangers, defrosting for flooded heat exchangers etc.

Castel is up to this technological challenge by developing and providing its customers with the tools to make the most of the solutions that technology makes available today.

Castel offers a **wide range** of ball valves that can be installed on commercial refrigeration systems and for civil and industrial air conditioning. The ball valves are available in two- and three-way models.

2-WAY BALL VALVE

The valves with ball shutter can be installed in all sections of a refrigerating system, in compliance with working pressure, temperature and Kv factor (flow coefficient).

The specific design of Castel valves with ball shutter:

- ensures the **internal pressure equilibrium** when the valve is closed
- permits the **two-directional flow** of the refrigerant
- blow-out proof stem.

The arc welding of the body and the seal gaskets, assembled on the stem, ensure perfect hermetic seal of the valve.

Castel has developed **three different families** of ball valves according to the type of refrigerant fluid used:

- HCFC, HFC, HFO: connections from 1/4" to 4.1/4". Maximum working pressure 45 bar.
- HFC, HFO, HC: connections from 1/4" to 3.5/8". Maximum working pressure from 35 to 50 bar.
- CO₂ (R744): connections from 1/4" to 73mm. Maximum working pressure from 60 to 140 bar.

The material of the connections is copper, K65 or stainless steel and depends on the working pressures.

2-ways ball valves are available in versions with or without charging connection and can be with full port or reduced port.

All the ball valves are **tested with helium** to detect body leakage or seat leakage when the valve is closed.

Using proper flange adapters, the valves can be connected with electric actuator in order to control the valve remotely.

Castel has a wide range of actuators that can be used. The choice of the actuator depends on the size of the valve and on the supply voltage (24VAC or 230VAC).

The operating torque is from 10 to 100Nm.

Using the auxiliary contacts option is possible to set the valve in all positions between 0 to 90°

3-WAY BALL VALVE

The 3-way valves with ball shutter act as changeover valves, not allowing for bi-direction flow of the refrigerant fluid.

The input is always in the centre position, and the two outputs in the lateral positions.

These valves are coupled directly to actuators and do not require a flanged adapter between the two parts.

Castel has developed **three different families** of ball valves according to the type of refrigerant fluid used:

- HCFC, HFC, HFO: connections from 7/8" to 1.5/8". Maximum working pressure 45 bar.
- HFC, HFO, HC: connections from 7/8" to 1.5/8". Maximum working pressure 50 bar.
- CO₂ (R744): connections from 7/8" to 42mm". Maximum working pressure from 80 to 140 bar.

The material with which the connections are made is copper, K65 or stainless steel and depends on the working pressures.

The 3-way ball valves are **supplied complete with the actuator** and will be chosen according to the refrigerant fluid, the operating pressure and the actuator power supply available in 24VAC or 230VAC versions.

To achieve maximum flexibility, Castel has also developed manual acting 3-way ball valves (without actuator).

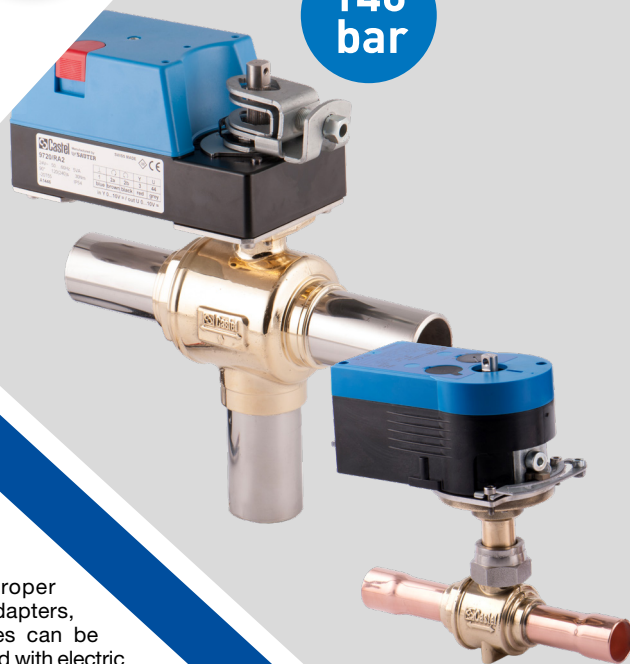
For the customers who use BELIMO brand actuators, Castel has created a dedicated version. Ball valve are supplied with an adapter compatible with the BELIMO actuator (actuator not supplied by Castel).

Castel not only provides a wide range of ball valves, but also receiver valves, valves for hermetic systems, stop valves for split conditioning systems, rotalock valves, capped valves, globe valves and more.

For further information download the 2020 General Catalogue from our web site: www.castel.it



140
bar



45
bar