

# 100% STAINLESS STEEL MOTORIZED BALL VALVES





# SHAPE OF SUSTAINABILITY

Sustainability is part of the responsibilities of each one of us. Castel meets this need by developing cutting-edge products for CO<sub>2</sub> systems and hi-tech solutions that reduce environmental impact, both directly and indirectly.

## Features

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Castel ball valves are composed of a structure and materials designed and tested for be used with CO<sub>2</sub> in subcritical and transcritical applications. The valves are suitable for use in all parts of the system such as liquid lines, suction and gas bypass and can work at pressures up to 150 bar.

- **FULLY STAINLESS STEEL STRUCTURE** allows the valves to reach very high pressure (150 bar)
- **A SINGLE WELD**: body and connections realized from a single mould, thus reducing the risk of leakage. Also models available with access fitting

## Innovation

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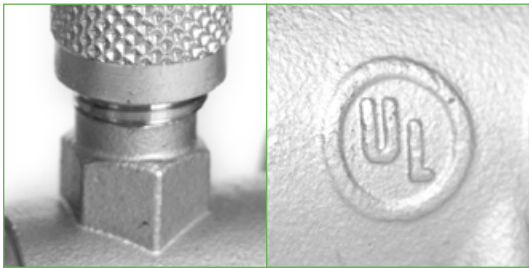
Castel has studied and patented a ball valve producing the valve body from a single mould. This enables the valve body, connection and access fitting, to be a single piece component. With such a design, there is no brazing or welding between the valve body and the connections or access fitting. This reduces drastically the possible areas of leakage and has a more solid and resistant valve structure suitable for high pressures reached in CO<sub>2</sub> transcritical systems.



**PATENT PENDING**  
IT 10202000029099



Version with access fitting  
**UP TO 150 bar** without brazing



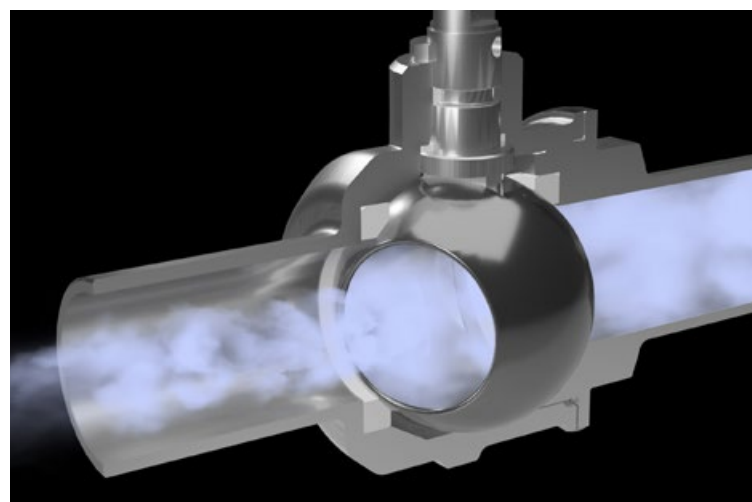
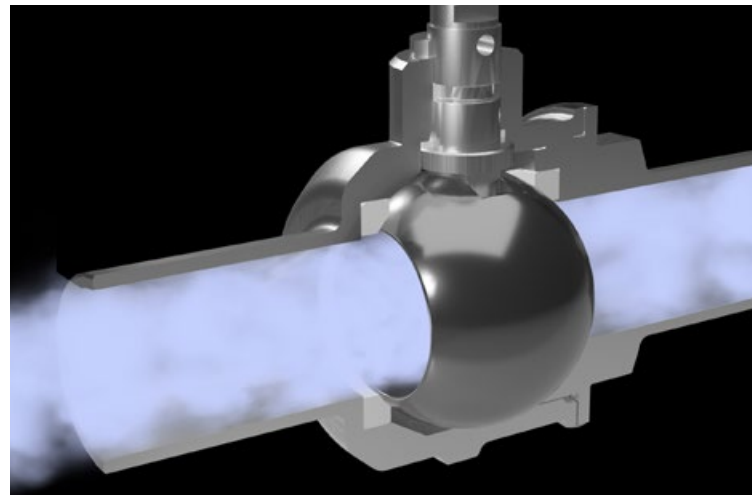
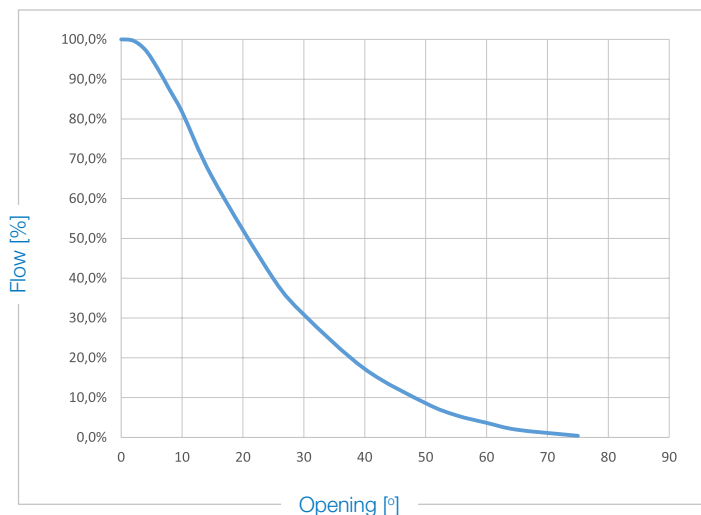
**PED:** Directive 2014/68/EU → **Ps = 150 bar**  
**UL:** UL207 standard → **MWP = 2175 psi**

### Use a ball valve as a control valve is now possible

The size of the ball orifice hole is the same size as the ODS connections. It makes Castel ball valves also suitable as flow control valves.

These ball valves, thanks to the high quality of the ball material and design, and the high performance of the sealing seats, are not only able to help effectively isolate all portions of the refrigeration circuit, but they are also able to guarantee the constant flow rate over time. A high quality valve is required for high quality control.

### Flow capacity vs. rotation





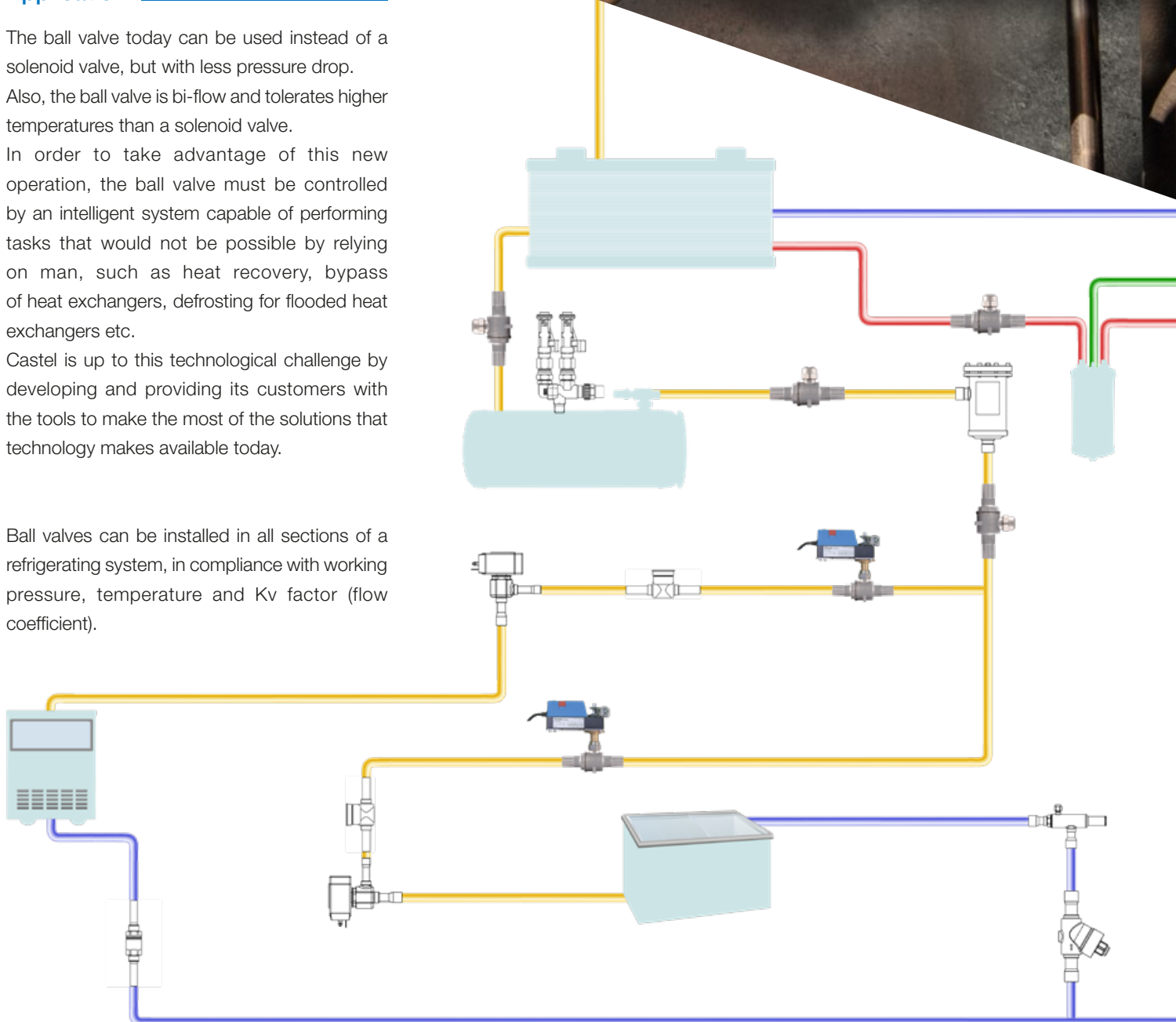
## Application

The ball valve today can be used instead of a solenoid valve, but with less pressure drop. Also, the ball valve is bi-flow and tolerates higher temperatures than a solenoid valve.

In order to take advantage of this new operation, the ball valve must be controlled by an intelligent system capable of performing tasks 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.

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





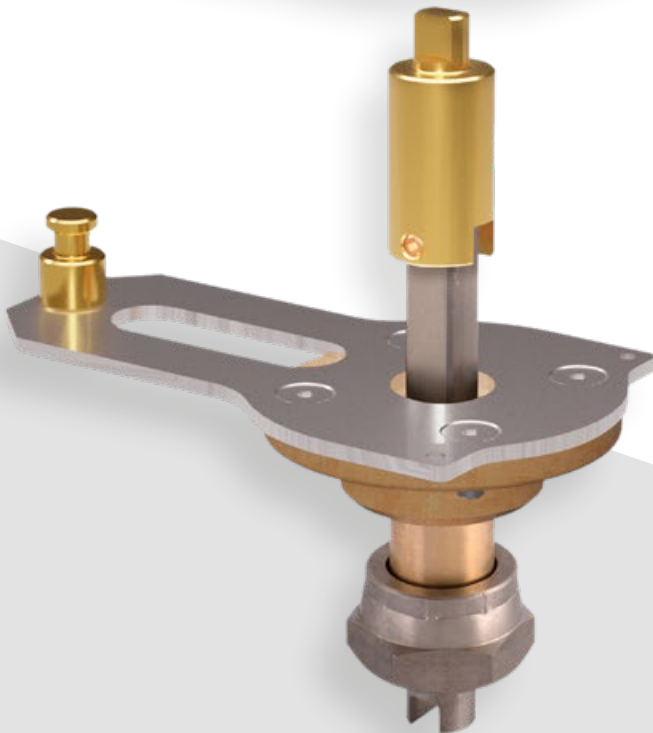
### AUXILIARY SWITCH

It provides a feedback signal, in this way it is possible to know the position of the actuator



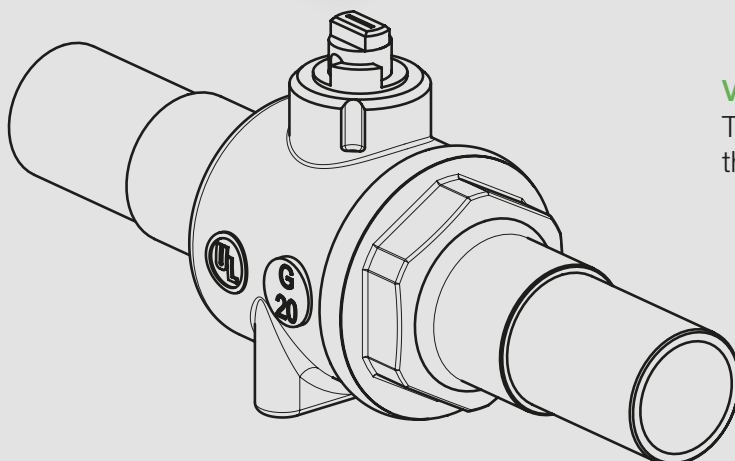
### ACTUATOR

Supply voltage (24VAC or 230VAC)  
Operating torque from 10 to 100Nm  
It's possible to set the valve in all positions between 0° to 90°



### ADAPTER

Wide assortment of adapters: they allow the connection with actuators from Castel and other popular brands



### VALVE

The choice of the actuator depends on the size of the valve


**STAINLESS STEEL BALL VALVES - MOTORIZATION COUPLING SCHEME**

Part number		Connection	Ball port Ø	Kv	PS	UL MWP	TS [°C]		Part number				
W/O Access Fitting	With Access Fitting						W	min.	Max	Actuator	Voltage [V] (50/60 Hz)	Torque [Nm]	Adapter
		Ø [mm]	[m <sup>3</sup> /h]	[bar]	[psi]	[°C]							
6588E/M10	6588E/M10A	10	10	3	150	2176	-40	+150	9700/RA2	24	10	9901/X58	9750/X01
6588E/M12	6588E/M12A	12		5									
6588E/M16	6588E/M16A	16	15	17									
6588E/M18	6588E/M18A	18											
6588E/M22	6588E/M22A	22	19	29					9700/RA2 ---	24 ---	9901/X73 ---	9750/X01 ---	
6588E/M28	6588E/M28A	28	25	51					9700/RA6	230			9901/X74
6588E/M35	6588E/M35A	35	32	86					9720/RA2 ---	24 ---	30	9901/X75	9750/X02
6588E/M42	6588E/M42A	42	40	117									
6588E/M48	6588E/M48A	48,3											
6588E/M60	6588E/M60A	60,3	50	214					9730/RA2 ---	24 ---	60	9901/X76	internal
					9730/RA6	230							

LOOKING FOR MORE CO<sub>2</sub> PRODUCTS? VISIT US ON [CASTEL.IT](http://CASTEL.IT)

**GO GREEN**

R744 • NATURAL REFRIGERANT



ISO 14001

Castel has always been aware of environmental sustainability issues and gives its contribution to a cleaner environment, supplying the refrigeration and air conditioning industry with state-of-the-art and environment-friendly technology. With its commitment and steady research in its laboratories, Castel has developed a whole range of products using natural refrigerants, which reduce emissions to the minimum. The large range of products belonging to the Castel "GoGreen" line has been developed to be used in CO<sub>2</sub> (R744) filled systems.

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