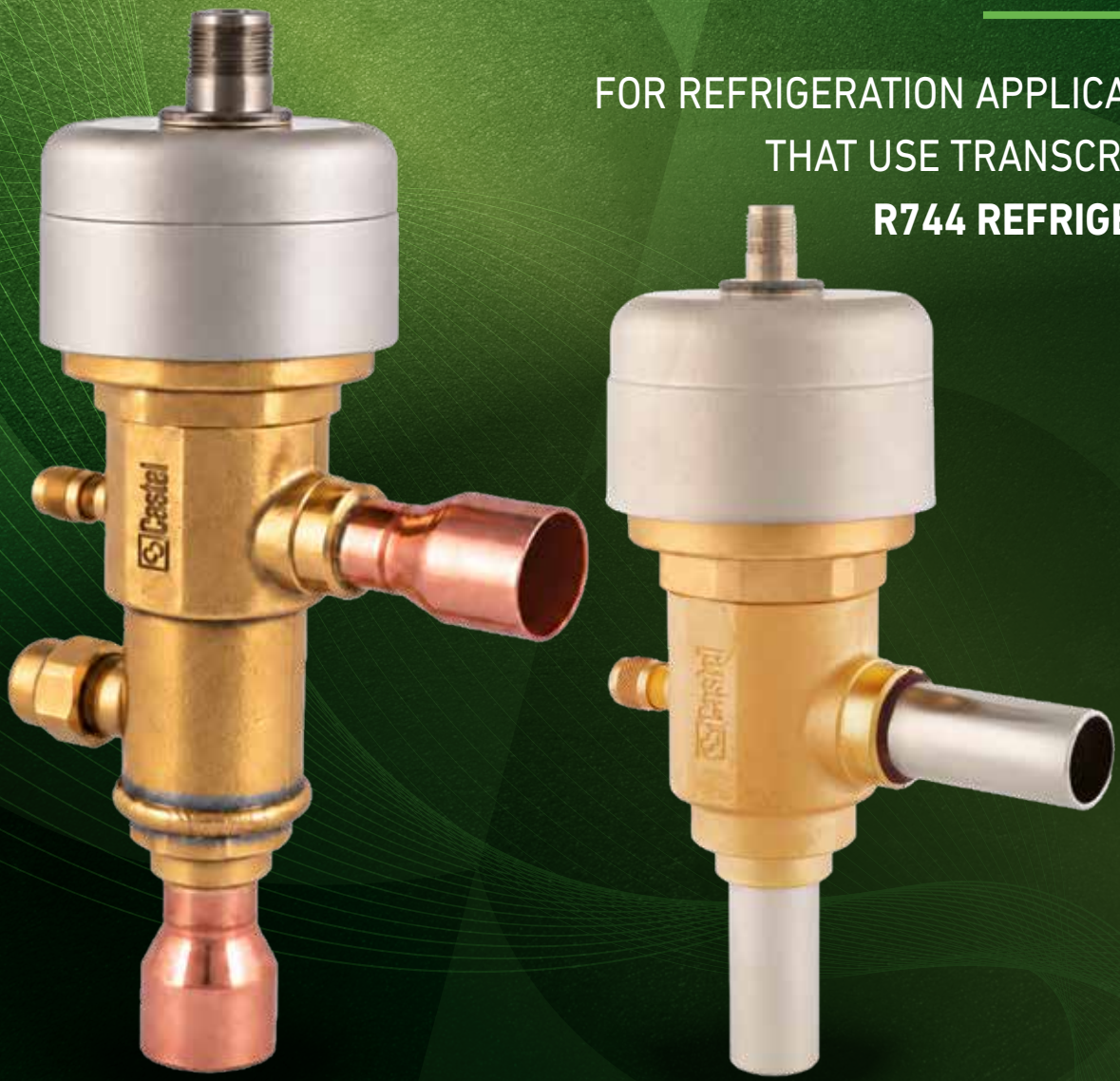
Castel®
Italian technology

GO GREEN
R744 • NATURAL REFRIGERANT

HIGH PRESSURE AND FLASH GAS BY-PASS VALVES 34-E

FOR REFRIGERATION APPLICATIONS
THAT USE TRANSCRITICAL
R744 REFRIGERANT



FUTURE PROOF TECHNOLOGY

Maximum efficiency and versatility stepper valves 34-E series for CO_2 systems with reduced environmental impact

Features

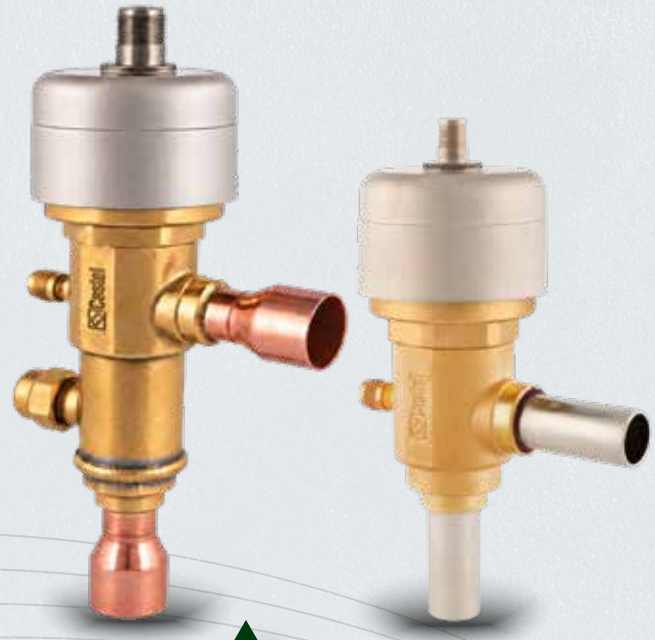
This new solution is designed to maximize the performance of the CO2 system, optimizing the control and management of pressures and temperatures, and at the same time helps to reduce the environmental impact.
CO2, being a natural refrigerant with very low global warming potential (GWP), combined with the operational efficiency of the 34-E valve, represents an environmentally sustainable choice for the refrigeration sector.

Why choose New Valve 34-E

Versatile applications: The 34-E valve can be installed both as a back pressure regulator and as a flash gas bypass valve, thus providing flexibility of use at different points in the refrigeration circuit.

Maximum operating pressure up to 140 bar: The valve is made to operate safetly even in systems characterized by very high pressures, typical of transcritical CO2 systems.

This new solution ensures not only reliability and resistance, but also greater efficiency in CO2 refrigeration systems.



- Maximum working pressure ps 140 bar
- Mopd up to 90 bar
- Minimum/maximum temperature TS -40/+60°C
- K65 and stainless steel connections

Construction

- **Body:** Hot forged brass EN 12420-CW617N
- **Hermetic connector:** Stainless steel EN 10088
- **Internal filter:** Stainless steel EN 10088
- **Connections:** K65 tube for solder connections sizes 5/8"to 1.1/8". Stainless steel tube for solder connections M16 and M22

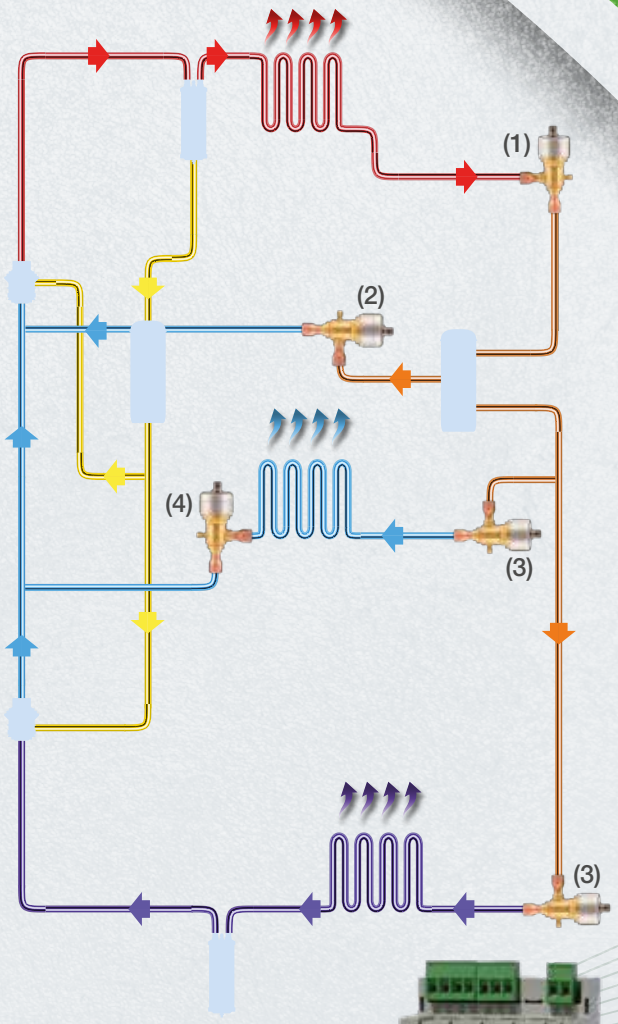
Example of a transcritical CO2 system

High Pressure Valve (1): The high pressure valve regulates the high pressure in the system according to the controller indications. This design allows to optimize the gas cooler outlet pressure and the intermediate receiver pressure independently.

Flash Gas By-Pass Valve (2): The Flash Gag By-Pass Valve controls the receiver pressure in a transcritical CO2 refrigeration system, keeping it at a safe level for all components installed in the liquid line.

Expansion Valve (3): 34-E as an evaporator expansion valve is used on bigger air cooled evaporators or plate heat exchangers to control liquid injection according to measured superheat.

Pressure Regulator (4): With 34-E valves, it is possible to obtain an accurate pressure control in the evaporator.



CONTROL DRIVER

The Valves 34-E can be driven by utilizing the Castel Driver Interface Board. By providing either a 0-10VDC a system controller, the Driver translates this signal in to a suitable stepper motor sequence to position the valve proportionally.

- **DIN RAIL INSTALLATION**
- **VISUAL FEEDBACK**
- **SMARTZEROING LOGIC**
- **SELECTABLE INPUT SIGNAL**



VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS

Drawing	Part number	Connections ODS Ø [in.]	Kv [m³/h]	MOPD [bar]	PS [bar]	TS [°C] min.	TS [°C] max.
	34117E/5	5/8"	0,7	90	130	-40	+60
	34217E/7	7/8"	1,5				
	34217E/9	1.1/8"					
	34317E/7	7/8"	3				
	34317E/9	1.1/8"					
	34417E/7	7/8"	4,2				
	34417E/9	1.1/8"					

VALVES WITH K65 COPPER ALLOY ODS CONNECTIONS AND INTEGRATE BALL VALVE

Drawing	Part number	Connections ODS Ø [in.]	Kv [m³/h]	MOPD [bar]	PS [bar]	TS [°C] min.	TS [°C] max.
	34127E/5	5/8"	0,7	90	130	-40	+60
	34227E/7	7/8"	1,5				
	34227E/9	1.1/8"					
	34327E/7	7/8"	3				
	34327E/9	1.1/8"					
	34427E/7	7/8"	4,2				
	34427E/9	1.1/8"					

VALVES WITH STAINLESS STEEL CONNECTIONS

Drawing	Part number	Connections ODS Ø [in.]	Kv [m³/h]	MOPD [bar]	PS [bar]	TS [°C] min.	TS [°C] max.
	34118E/M16	16	0,7	90	140	-40	+60
	34218E/M22	22	1,5				
	34318E/M22	22	3				
	34418E/M22	22	4,2				

VALVES WITH STAINLESS STEEL CONNECTIONS AND INTEGRATE BALL VALVE

Drawing	Part number	Connections ODS Ø [in.]	Kv [m³/h]	MOPD [bar]	PS [bar]	TS [°C] min.	TS [°C] max.
	34128E/M16	16	0,7	90	140	-40	+60
	34228E/M22	22	1,5				
	34328E/M22	22	3				
	34428E/M22	22	4,2				

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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_2 (R744) filled systems.

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