TECHNICAL NEWS

14-E BORN FOR ALL CO_2 APPLICATIONS

Castel proposes a wide range of Solenoid Valves for CO_2 systems.

Solenoid Valves series 14-E are specifically designed to be suitable for CO_2 transcritical and subcritical systems with a maximum working pressure up to 140 bar.

The use of high-performance materials places the 14-E valve as a reliable valve suitable for installation in all refrigeration systems, especially in CO_2 transcritical applications.

Transcritical applications not only feature extremely high working pressures, up to 140bar; they also show very high temperatures at the compressor discharge line. This brand new Solenoid Valves perfectly complies with these extreme conditions

TYPICAL APPLICATIONS OF THE SOLENOID VALVE 14-E

• **Oil line** - it guarantees the return of the oil to the reservoir and keeps high the pressure inside it.
The main purpose of oil in a refrigeration system is to lubricate the moving parts of the compressor.
The oil separator minimizes the amount of oil that enters the system. Once equilibrium is reached between the amount of oil entering the system and the amount returning to the compressors, the oil reservoir and oil level controls act as storage containers for the surplus oil.
The purpose of Solenod Valve 14-E is guarante the return ol the oil to the reservoir, it must be installed between oil separator and oil reservoir

• **Flash gas** - The Solenoid Valve 14-E can also be applied as flash tank pressure regulating valves (flash gas bypass). The purpose of the flash gas valve is to maintain the MT receiver pressure during the system operation. The refrigerant vapour from the MT receiver passes through the Solenoide Valve 14-E and expands the pressure down to the highest pressure level. Mixing with the MT suction vapour and/or the LT discharge vapour, the confluence enters the MT compressors.

• **Hot gas by-pass** - like a capacity control, it adjusts the flow of hot gas according to change of suction pressure. The by-pass Solenoid Valve 14-E is used to prevent the suction pressure from going below the minimum value recommended by the compressor manufacturer and/or like an unloaded start device to limit the inrush current at the start up.

• **Liquid injection** - to decrease the temperature of fluid. It is well known that a too high discharge temperature has harmful consequences on the compressor efficiency and reliability. In order to limit temperature within values which are not dangerous for compressor HT , the solenoid valve 14-E injects saturated refrigerant into the suction line ahead of the compressor in direct response to the temperature of the discharge line.

CASTEL, your consolidated partner for CO_2 applications

Technical data:
Refrigerant: CO_2 (R744)
Series 14_7E with K65 connections ¼", 3/8" and ½"
Series 14_8E with Stainless Steel connections 6, 10 and 12mm
MWP (maximum working pressure):
130 bar for K65 connections

140 bar for Stainless Steel connections
TS min / TS Max: -40°C / 130°C

Download the 2021 General Catalogue from our web site: www.castel.it to see our complete products range for CO_2.

The Best Performance

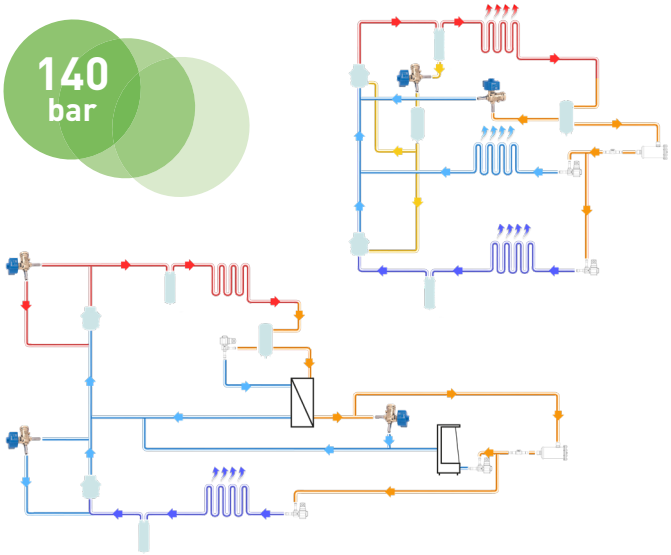
LONG LIFE UP TO 6 MILLION CYCLES

HIGH WORKING PRESSURE UP TO 140 BAR

Connections

COPPER K65 CONNECTIONS 1/4", 3/8",1/2"

STAINLESS STEEL CONNECTIONS 6, 10 AND 12 MM



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