

90 bar CO₂ REPLACEABLE CORE FILTER DRIERS



SHAPE OF SUSTAINABILITY

Sustainability is part of the responsibilities of each one of us. Castel meets this need by developing cutting-edge products for CO₂ systems and hi-tech solutions that reduce environmental impact, both directly and indirectly.

INCREASE THE EFFICIENCY

USING THE ACCESSIBLE FILTER DRIERS

Application

The market trend is to increase the pressure of the CO₂ systems and consequently it's necessary to find, in the supply chain, components suitable for higher pressures. This is because CO₂ is a high-pressure refrigerant and **to guarantee the efficient operation, the system must work at high pressures.**

When the refrigeration plant is stopped, the ambient temperature

can reach and exceed the critical temperature and consequently the pressure can exceed the critical pressure.

For this reason, systems are typically designed to withstand pressures up to 90 bar and consequently the components must be rated accordingly.

ALUMINIUM COUNTER-FLANGE COVER

- available with NPT thread for access fitting (SAE on request)

- Filter body: **HIGH QUALITY PIPE** suitable to withstand high pressures employed

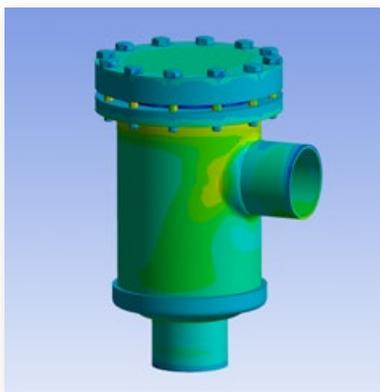
- **STEEL CONNECTIONS**





Main features

Castel has carried out an in-depth study on the choice of materials and the sizing of the components through the use of CAE technology (Finite Element Analysis



software simulator).

These studies are necessary to place on the market more and more safe and reliable components.

Considering the pressures involved, the position of the filter in the circuit and the task it must perform, Castel has decided to approve both sizes (one and two cartridges) as risk Category II according to PED Directive.

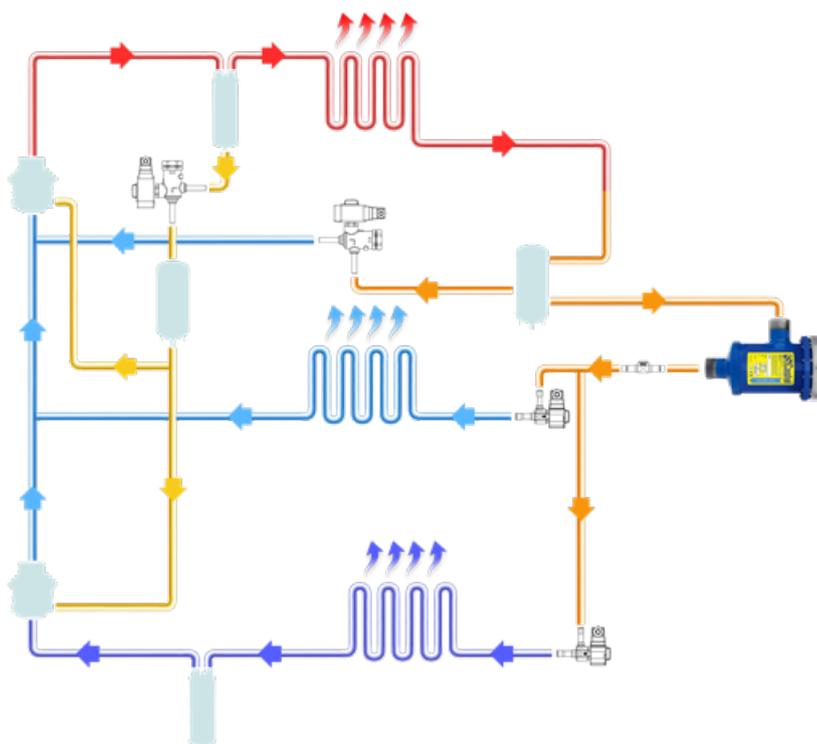
The one cartridge model (4431E), considering its volume and pressure rating, would be risk category I, Castel has decided to homologate it in Cat.II in order to have the following advantages:

- **Traceability**, all materials are traced by the lot number on the label of each product
- **Welding operators and procedures** qualified by a Third Party
- Products provided with a **Declaration of Conformity**

Other features

- **Screws**: stainless steel (A4-80)
- **Double welded flange**
- 100% production **Helium tested**
- **External leakage** at PS
- **Hydraulic test**: 1,43 x PS
- **Burst pressure**: 3 x PS (according to UL)
- Cartridges model: 4490/##

CO₂ applications often create a highly corrosive environment by attacking the components most susceptible to oxidation. This is why the materials have been chosen to withstand the harshest conditions.





Part number		Connections			Cores type	N° of cores	Nominal volume [cm ³]	PS [bar]	MWP [psi] UL	TS [°C]		Package Pcs
		ODS		W						min.	max.	
Threaded cover	Blinde cover	Ø [in.]	Ø [mm]	Ø [mm]								
4431E/5AF	4431E/5BF	5/8"	16	21,3	4490/B 4490/AB 4490/BB 4490E	1	800	90	1300	-40	+80	1
4431E/7AF	4431E/7BF	7/8"	22	26,9								
4431E/9AF	4431E/9BF	1.1/8"	-	33,7								
4431E/11AF	4431E/11BF	1.3/8"	35	42,4								
4431E/13AF	4431E/13BF	1.5/8"	-	48,3								
4431E/M42AF	4431E/M42BF	-	42									
4431E/17AF	4431E/17BF	2.1/8"	54	60,3		2	1600	90	1300	-40	+80	1
4432E/7AF	4432E/7BF	7/8"	22	26,9								
4432E/9AF	4432E/9BF	1.1/8"	-	33,7								
4432E/11AF	4432E/11BF	1.3/8"	35	42,4								
4432E/13AF	4432E/13BF	1.5/8"	-	48,3								
4432E/M42AF	4432E/M42BF	-	42									
4432E/17AF	4432E/17BF	2.1/8"	54	60,3								

CARTRIDGES/ACCESSORIES

Drawing	Part number		Dehydrating charge	Note	Nominal volume	Package pcs
					[cm ³]	
	4490/B	(2)	100% Molecular sieve	High capacity core	800	15
	4490/AB	(2)	80% Molecular sieve + 20% activated alumina	Anti- acid core		
	4490/BB	(2) NEW	25% Molecular sieve + 75% activated alumina	Motor burnout core		
	4490/E	(1) NEW	100% Molecular sieve	High capacity core		
	114933	NEW	-	Cover gasket	-	20

- (1) Supplied with cover gasket
(2) Supplied without cover gasket

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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 CO₂ (R744) filled systems.

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