Castel®
Italian technology

POLYHEDRA

REPLACEABLE SOLID CORE FILTER DRIERS

MECHANICAL FILTERS WITH REPLACEABLE FILTERING BLOCK

CERTIFIED BY UNDERWRITERS LABORATORIES INC.
For refrigeration plants that use
HCFC, HFC, HFO, HC refrigerants.

APPLICATIONS

The filters in series 4411/XXAF, 4411/XXCF and 4412/XXAF, illustrated in this leaflet, are designed for installation on liquid line and on suction line of commercial refrigeration systems and civil and industrial air conditioning plants that use the following refrigerant fluids:

- HCFC (R22)
- HFC (R134a, R404A, R407C, R410A, or R507)
- HFO and HFO/HFC mixtures (R1234yf, R1234ze, R448A, R449A, R450A, R452A, R452B, R454B, R513A)
- HC (R290, R600, R600A; R1270)

belonging to Groups 1 and 2, as defined in Article 13, Chapter 1, Point (a), (b) of Directive 2014/68/EU, with reference to EC Regulation No. 1272/2008.

For specific applications with refrigerant fluids not listed above, please contact Castel Technical Department.

OPERATION

Dehydrating filters, liquid line: A large ring area between the cartridge and the inner surface of the filter allows for the accumulation of solid particles and prevents clogging. Before leaving the filter, the refrigerant fluid must pass through the mesh sieve in which cartridges are mounted. This eliminates the danger that small particles of drying material be dragged into circulation.

Mechanical filters, suction line: Good filtering of the refrigerant on the low-pressure side of the system is an absolute guarantee of protection for the compressor. System cleanliness is ensured by micro filtering cores, which filter out every kind of impurities derived from manufacture and assembly of the refrigerating system.

CONSTRUCTION

Dehydrating filters, liquid line: are manufactured with an aluminium cover, zinc plated steel screws, and the steel body is equipped with brazing connections, machined from a steel bar EN 10025 S355JR.

They are sold in the configuration equipped with 1/4" NPT threaded cover for mounting access fitting with valve core not included in the supply.

Cartridges in series 4490, type A and type B: are made from moulding a dehydrating filler, made completely from 3 Å molecular sieves, with a suitable binder.

Cartridges in series 4490, type AA and type AB: are made from moulding a dehydrating filler, made from 80% 3 Å molecular sieves and 20% activated alumina, with a suitable binder.

Cartridges must be ordered separately from the filter. They are supplied in individual packages, which are hermetically sealed in metal containers, suitable for long-term storage of the cartridge. Each cartridge is supplied with two synthetic gaskets to be used as a seal between the two cartridges and between the cartridge and its covers.

Mechanical filters, suction line: are manufactured with an aluminium cover, stainless steel screws, and the steel body is equipped with brazing connections machined from a steel bar EN 10025 S355JR.

Sold in the configuration equipped with 1/4" NPT threaded cover for mounting access fitting, with valve core kit G9150/R05 included in the supply.

Cartridge 4495: characterized by a large filter surface, these consist of metal mesh fabric with a controlled porosity filter sieve insert, which can retain solid particles to 20 microns. At both ends, soft felt gaskets ensure perfect seal with the plastic cups.

Cartridges in series 4495 must be ordered separately from the filter. They are supplied in individual packages, which are hermetically sealed in metal containers. These types of packaging are suitable for long-term storage of the cartridge.

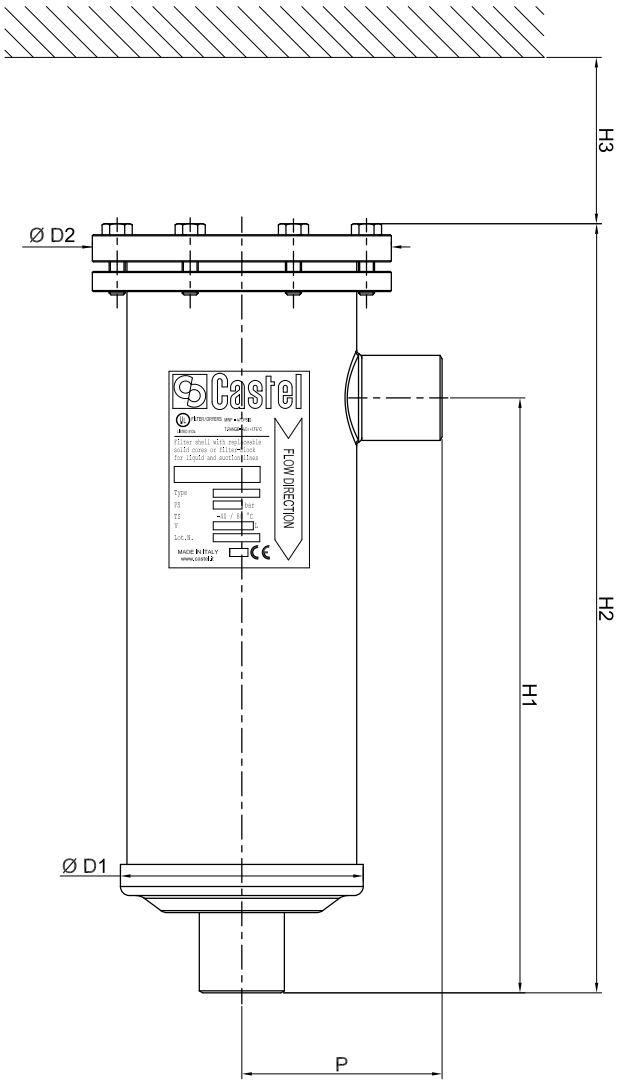
General characteristics of filter driers with replaceable solid core													
Catalogue Number	Core Cat. Number	Number of Cores	Core Filtering Surface [cm^2]	Nominal Volume		Connections			PS [bar]	TS [°C]		TA [°C]		Risk category according to PED Recast
				[cu.in]	[cm3]	ODS		W		min.	max.	min.	max.	
						Ø [in.]	Ø [mm]	Ø [mm]						
4411/5AF	4490/A - 4490/B ; 4490/AA - 4490/AB	1	420	48	800	5/8"	16	21,3	50 (1)	– 40	+ 80	– 20	+ 50	2
4411/7AF						7/8"	22	26,9						
4411/9AF						1.1/8"	–	33,7						
4411/11AF						1.3/8"	35	42,4						
4411/13AF						1.5/8"	–	48,3						
4411/M42AF						–	42	48,3						
4411/17AF						2.1/8"	54	60,3						
4412/7AF		2	840	96	1600	7/8"	22	26,9						
4412/9AF						1.1/8"	–	33,7						
4412/11AF						1.3/8"	35	42,4						
4411/13AF						1.5/8"	–	48,3						
4412/M42AF						–	42	48,3						
4412/17AF						2.1/8"	54	60,3						

* MWP = 470 psi according to UL approval

General characteristics of mechanical block filters												
Catalogue Number	Number of Cores	Filtering block		Connections			PS [bar]	TS [°C]		TA [°C]		Risk category according to PED Recast
		Cat. Number	Filtering Surface [cm^2]	ODS		W		min.	max.	min.	max.	
				Ø [in.]	Ø [mm]	Ø [mm]						
4411/5CF	1	4495/C	820	5/8"	16	21,3	50 (1)	– 40	+ 80	-20	+50	2
4411/7CF				7/8"	22	26,9						
4411/9CF				1.1/8"	–	33,7						
4411/11CF				1.3/8"	35	42,4						
4411/13CF				1.5/8"	–	48,3						
4411/M42CF				–	42	48,3						
4411/17CF				2.1/8"	54	60,3						

* MWP = 470 psi according to UL approval

Dimensions and weights												
Catalogue Number		Connections			Dimensions [mm]						Weight [g]
Solid core filters	Mechanical filters	ODS		W	Ø D_1	Ø D_2	H_1	H_2	H_3	P	
		Ø [in.]	Ø [mm]	Ø [mm]							
4411/5AF	4411/5CF	5/8"	16	21,3	121	149	150	237	185	95	3810
4411/7AF	4411/7CF	7/8"	22	26,9							3860
4411/9AF	4411/9CF	1.1/8"	–	33,7							3920
4411/11AF	4411/11CF	1.3/8"	35	42,4			155	242		100	4050
4411/13AF	4411/13CF	1.5/8"	–	48,3			167	254		112	4190
4411/M42AF	4411/M42CF	–	42	48,3							
4411/17AF	4411/17CF	2.1/8"	54	60,3			158	245		103	4150
4412/7AF	-	7/8"	22	26,9	121	149	292	379	324	95	5280
4412/9AF		1.1/8"	–	33,7							
4412/11AF		1.3/8"	35	42,4			297	384		100	5320
4411/13AF		1.5/8"	–	48,3			309	396		112	5380
4412/M42AF		–	42	48,3							
4412/17AF		2.1/8"	54	60,3			300	387		103	5400



APPROVALS

Filters in series 4411/XXAF, 4411/XXCF and 4412/XXAF have been approved by the American certification authority Underwriters Laboratories Inc. These filters are certified UL Listed for the USA with file SA7054, in compliance with American standard UL 207.

Refrigerant flow capacity of filter driers with replaceable solid core [kW]*																				
Catalogue Number	Pressure drop 0,07 bar [kW]																			
	R134A	R22	R32	R404A	R407C	R410A	R507	R1234YF	R1234ZE	R448A	R449A	R450A	R452A	R452B	R454B	R513A	R290	R600	R600A	R1270
4411/5AF	83	90	127	59	85	87	57	60	73	78	77	66	60	101	103	69	99	113	99	103
4411/7AF	145	158	223	103	149	153	100	105	128	138	136	116	105	177	180	122	175	198	174	181
4411/9AF	198	216	305	141	204	209	137	144	175	188	186	158	143	243	246	167	239	270	238	248
4411/11AF	231	252	356	165	238	244	160	168	204	220	217	184	167	283	287	194	278	315	278	289
4411/13AF 4411/M42AF 4411/17AF	248	270	382	177	255	262	171	180	219	235	232	198	179	303	308	208	298	338	298	310
4412/7AF	145	158	223	103	149	153	100	105	128	138	136	116	105	177	180	122	175	198	174	181
4412/9AF	224	244	345	160	231	236	155	162	198	213	210	179	162	274	278	188	270	305	269	280
4412/11AF	304	331	468	216	313	321	210	220	268	289	285	242	219	372	377	255	366	414	365	380
4411/13AF 4412/M42AF 4412/17AF	331	361	510	236	341	350	229	240	292	315	310	264	239	405	412	278	399	452	398	414

Refrigerant flow capacity of filter driers with replaceable solid core [kW]*																				
Catalogue Number	Pressure drop 0,14 bar [kW]																			
	R134A	R22	R32	R404A	R407C	R410A	R507	R1234YF	R1234ZE	R448A	R449A	R450A	R452A	R452B	R454B	R513A	R290	R600	R600A	R1270
4411/5AF	99	108	153	71	102	105	69	72	87	94	93	79	71	121	123	83	119	135	119	124
4411/7AF	188	205	290	134	194	199	130	137	166	179	177	150	136	231	234	158	227	257	226	217
4411/9AF	257	281	397	184	265	272	178	187	227	245	241	206	186	315	320	216	310	351	309	297
4411/11AF	300	328	463	214	310	317	208	218	265	286	282	240	217	368	373	253	362	410	361	347
4411/13AF 4411/M42AF 4411/17AF	322	351	496	230	332	340	223	233	284	306	302	257	232	394	400	271	388	439	387	372
4412/7AF	188	205	290	134	194	199	130	137	166	179	177	150	136	231	234	158	227	257	226	217
4412/9AF	291	317	449	207	300	307	201	211	257	277	273	232	210	356	362	245	351	397	350	336
4412/11AF	395	430	608	281	407	417	273	286	349	375	370	315	285	483	491	332	475	538	474	456
4411/13AF 4412/M42AF 4412/17AF	447	487	689	319	461	472	309	324	395	425	419	357	323	547	556	376	539	610	537	497

*Maximum values of the refrigerant flow capacity at which the drier can be used when fluid dehydration is not the a major problem, provided that the original moisture is limited before the installation of the drier.
The maximum refrigerant flow capacities are referred to a total pressure drop of 0,07 bar / 0,14 bar , inlet and outlet connections included, (according to ARI STANDARD 710-2009 - with liquid temperature at + 30 °C and evaporating temperature at - 15 °C).

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LOW GWP

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.

ISO 14001

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