TOTAL INGENIEROS S.A.C

VENTAS, PROYECTOS, SERVICIOS EN INGENIERIA Y SISTEMAS DE REFRIGERACION

Danfoss



ENGINEERING TOMORROW

Data Sheet

Semi-hermetic filter drier Types DCR CO2

Danfoss ELIMINATOR® lter drier with replaceable solid core.
Designed for subcritical and transcritical CO2 applications





Danfoss ELIMINATOR® lter driers with replaceable solid core, type DCR, are for use in liquid and / or suction lines in CO2 refrigeration systems.

They o er a high system reliability by design and performance with a high ow rate, in a lightweight shape.

All solid cores have an optimized uniform grain size ensuring e ective dirt removal and low pressure drop. The robust solid cores withstand pressure surge and vibration.

Features

•Easy handling - compact design.
•Cartridge design – Ease of serviceability.
•Optimized core plate, inlet and outlet design o ers higher ow capacity.

DCR housing and top cover:

•PED approved for PS up to 90 bar/1305 Psig.
•No welded joints – High Product Reliability.
•DCR housing (including core holder) are made entirely of steel and are thus compatible with CO
•100% leak tested. 2.
•Zinc-chromated steel top covers with drain plug for Liquid evacuation.

Inserts for DCR housing:

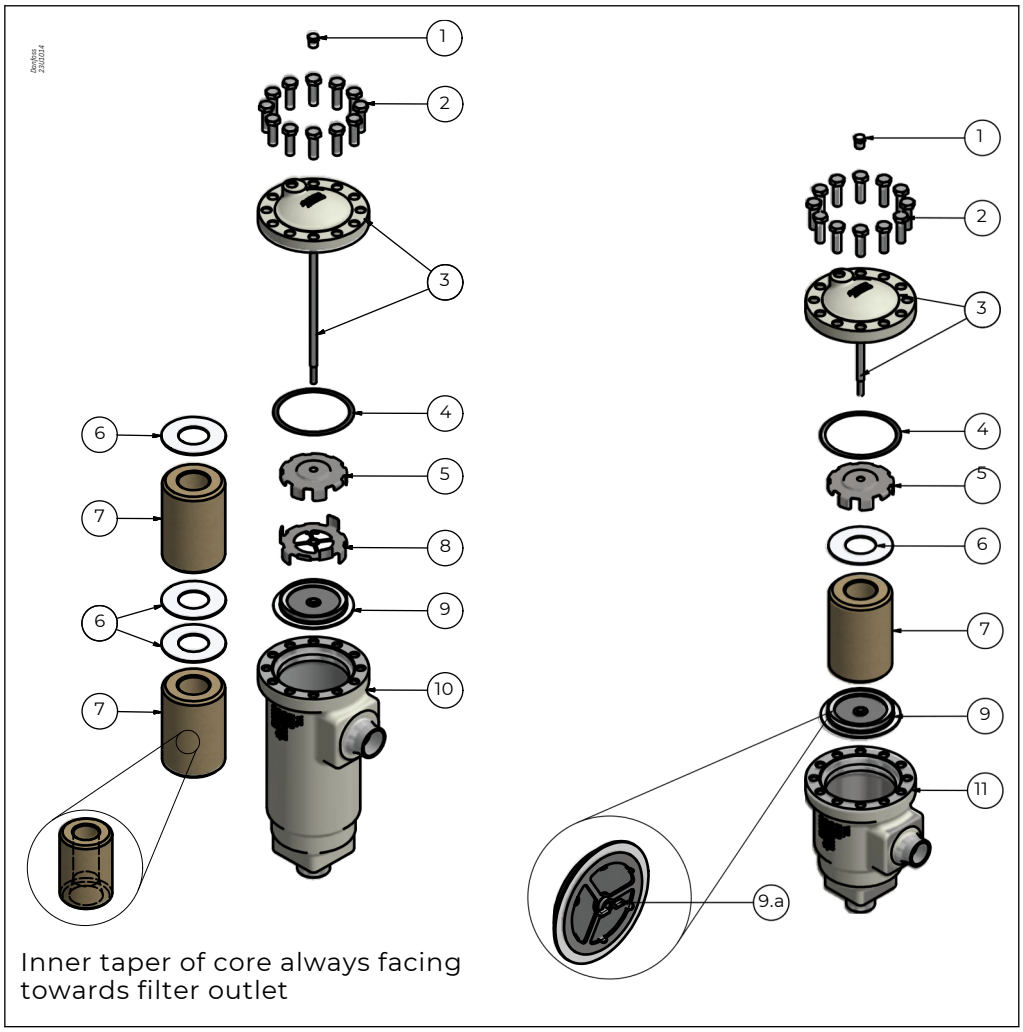
•48 - DM - 100% molecular sieve solid core Provides high moisture adsorption at low and high condensing temperatures.
•48 - DC - 80% molecular sieve and 20% activated alumina solid core adsorbs moisture and acid in the system.
•48 - F strainer Retains dirt particles larger than 15 µm.
•48 - DA - 30% molecular sieve and 70% activated alumina solid core suitable after compressor burnout.
•All solid cores have an optimized uniform grain size ensuring e ective dirt removal and low pressure drop. The robust solid cores withstand pressure surge and vibration.

Functions

Danfoss ELIMINATOR® lter driers with replaceable solid core, type DCR protect CO 2 refrigeration, systems from moisture, acids, and solid particles. With these contaminants eliminated, systems are safer from harmful chemical reactions and from abrasive impurities.

Figure 1: DCR CO

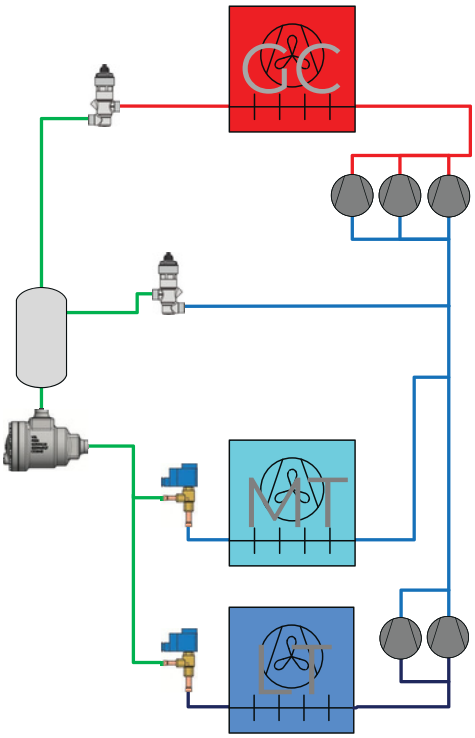
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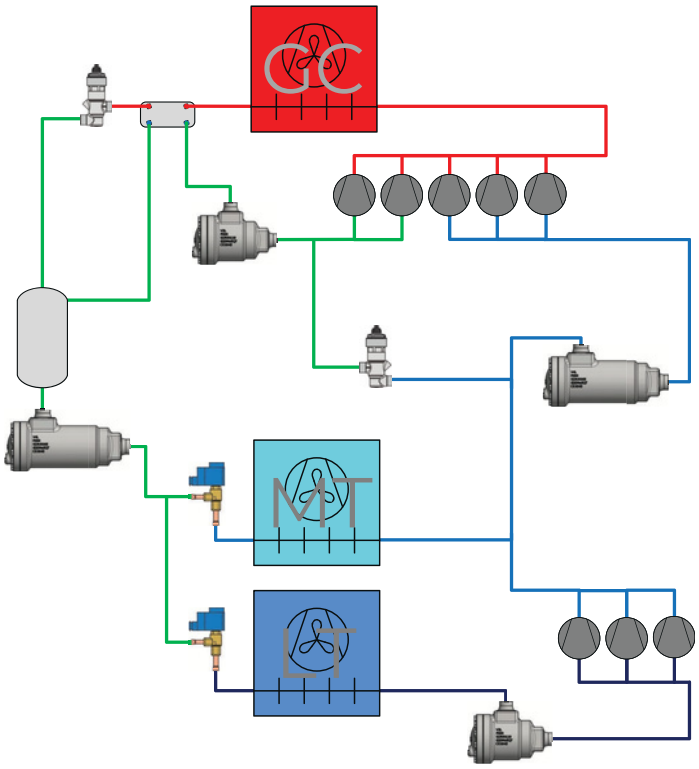
1	Plug for cover	7	Core
2	Cover Bolts	8	Core plate middle
3	Cover plate & core shaft	9	Core holder assembly
4	Cover gasket	9.a	Wing nut
5	Core plate bottom	1	Housing for 2 cores
6	Core felt gasket	0	Housing for 1 core
		1	
		1	

Applications

Smaller CO2 system



Larger CO2 system



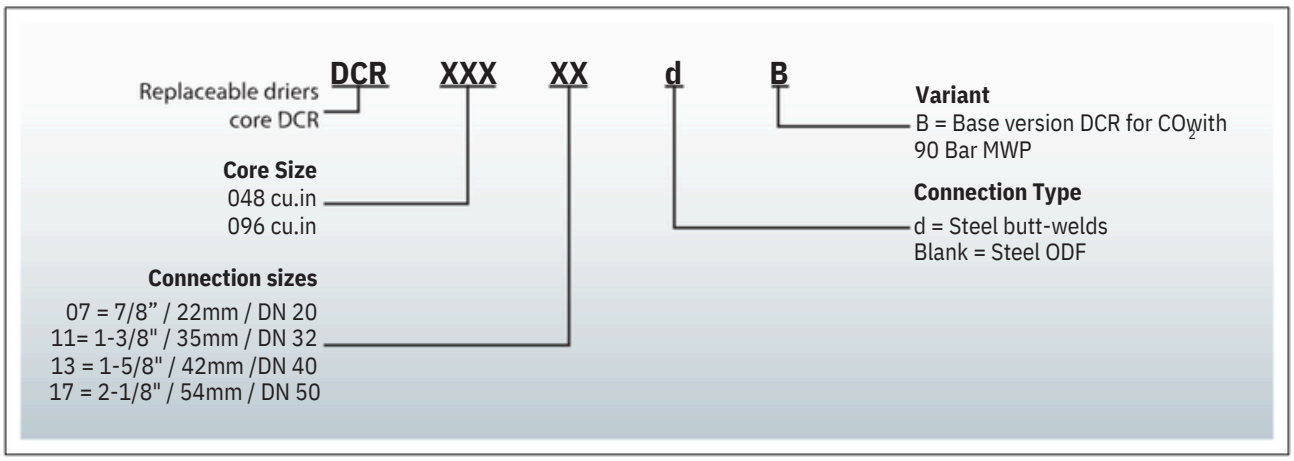
Product Speci cation

Technical data

Table 1: Technical data

Parameter	Speci cation
Maximum working pressure	90/1305 bar/psig
Temperature range	- 55 to 100 °C / -67 to 212 F
Housing material	G20Mn5+QT 1.6220 EN10213-3
Cover material	G20Mn5+QT 1.6220 EN10213-3
Gasket material	Gra lit-EM
Core holder material	11SMn30 1.0715 EN 10087
M12 Bolt material	A2-70

Indenti cation



Core selection

Table 2: Core selection

Refrigerant and oil types		DC	DM	DA
Refrigerant	CO2 (R744)	Recommended	Recommended	Recommended
Oil	Mineralor AB	Recommended	Recommended	Recommended
	POEor PAG, pure	Recommended	Recommended	Recommended
	POEor PAG, with additives	Not recommended (1)	Recommended	Recommended

(1) DC lter driers cores contain activated alumina, which is a polar material used for acid adsorption. Many oil additives are also polar substances and can be adsorbed by the activated alumina, rendering them useless, and reducing the drier's acid capacity, though this is not harmful to the system.

Dimensions and Weights

Figure 2: Dual core housing with DN connection

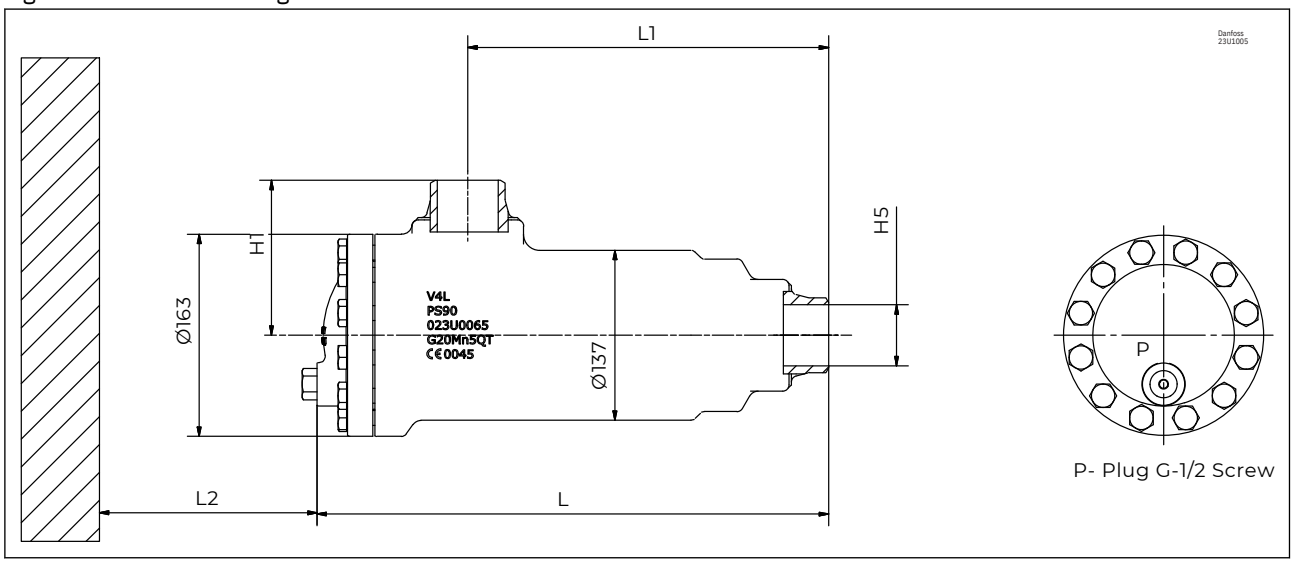


Figure 3: Dual core housing with ODF Connection

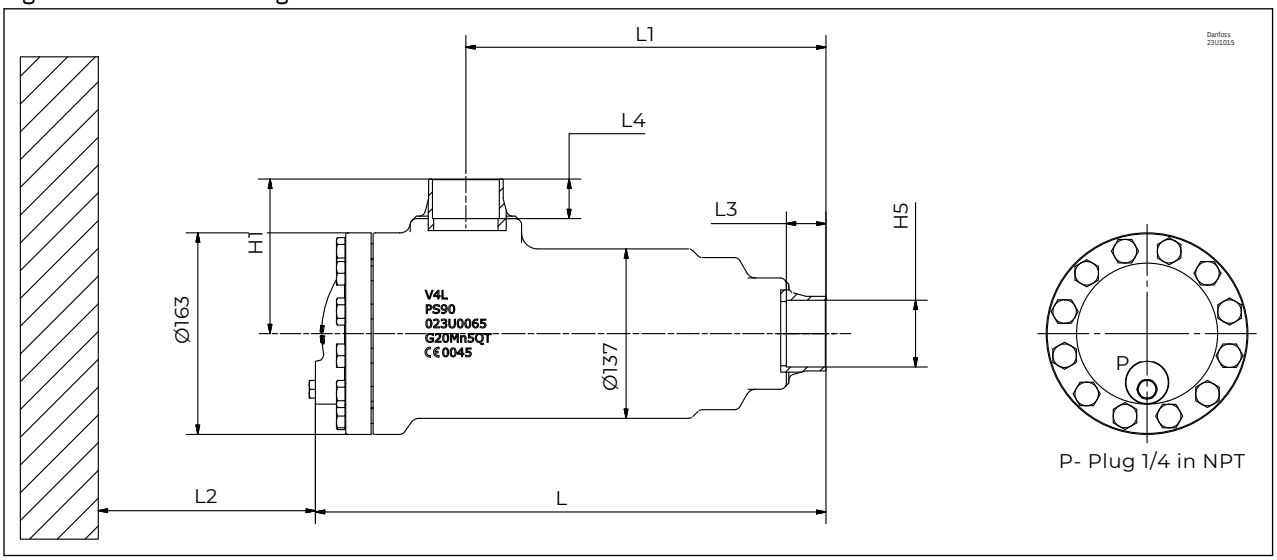


Figure 4: Single core housing with DN Connection

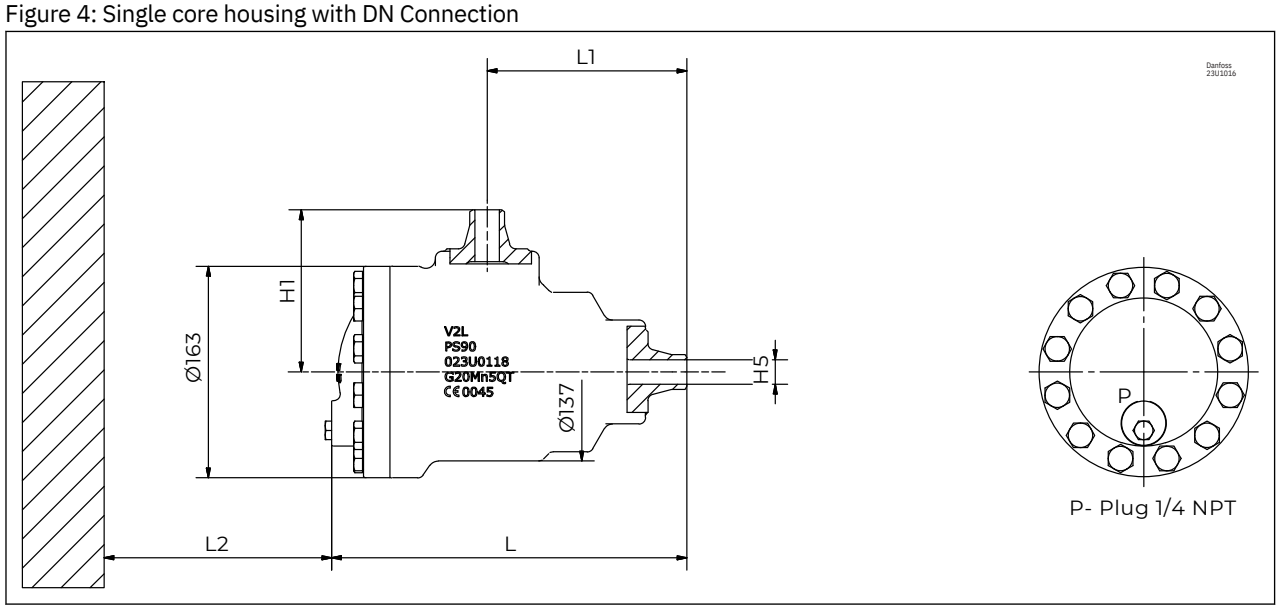


Figure 5: Single core housing with ODF Connection

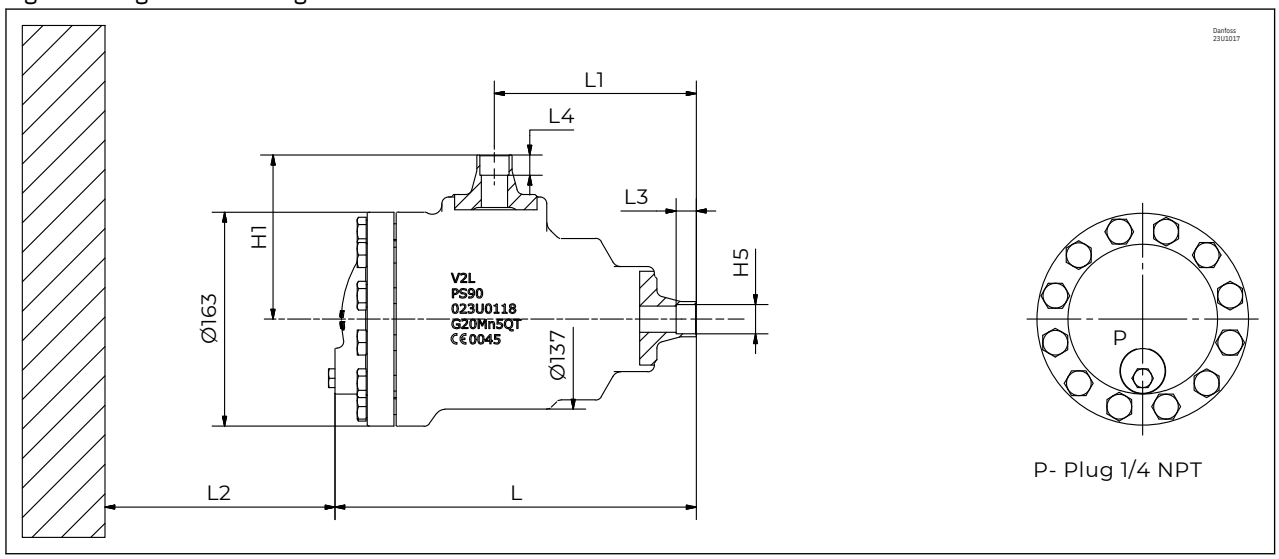


Table 3: Dimension and Weight

Type of DCR	Number of core	Dimension in mm / [in.]							Net Weight
		L	L1	L2	L3	L4	H1	H5	Kg / lb
DCR 04811B	1	275.6 / 10.9	154 / 6.1	250 / 9.8	23.0 / 0.9	23.0 / 0.9	125 / 4.9	35.0 / 1.4	13.8 / 30.4
DCR	1	275.6 / 10.9	154 / 6.1	250 / 9.8	-	-	125 / 4.9	32.6 / 1.3	13.8 / 30.4
04811dB	1	275.6 / 10.9	154 / 6.1	250 / 9.8	15.4 / 0.6	15.4 / 0.6	125 / 4.9	22.23 / 0.9	13.8 / 30.4
DCR 04807B	1	275.6 / 10.9	154 / 6.1	250 / 9.8	-	-	125 / 4.9	18.9 / 0.7	13.8 / 30.4
DCR	2	412.6 / 16.2	291 / 11.5	400 / 15.7	27.0 / 1.1	27.0 / 1.1	125 / 4.9	42.0 / 1.7	19.0 / 42.0
04807dB	2	412.6 / 16.2	291 / 11.5	400 / 15.7	-	-	125 / 4.9	38.1 / 1.5	19.0 / 42.0
DCR 09613B	2	412.6 / 16.2	291 / 11.5	400 / 15.7	32.0 / 1.3	32.0 / 1.3	125 / 4.9	54 / 2.1	19.0 / 42.0
DCR	2	412.6 / 16.2	291 / 11.5	400 / 15.7	-	-	125 / 4.9	49.2 / 1.9	19.0 / 42.0
09613dB	2	412.6 / 16.2	291 / 11.5	400 / 15.7	-	-	125 / 4.9	49.2 / 1.9	19.0 / 42.0
DCR 09617B									
DCR									
09617dB									
DCR									
09617dB									

Ordering

DCR housing and insert are ordered separately. Select housing and top cover from the below table.

Figure 6: DCR housing with DN connection

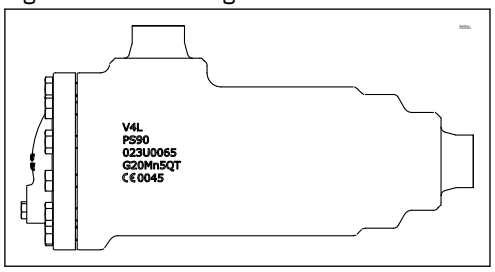


Figure 7: DCR housing with solder ODF

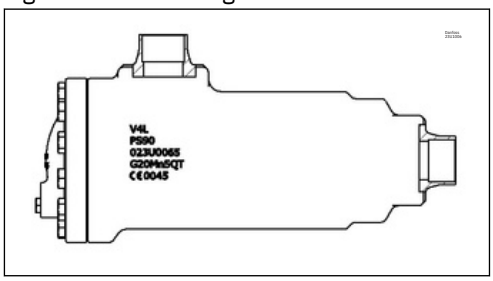


Table 4: DCR Housing with steel connectors + top cover

Type	Number of cores	Steel connectors		Cover type	Max. working pressure PS	Packing type (Qty)	Code number
		Solder ODF	Butt weld				
		[in.]	[mm]		[bar]/ Psig		
DCR 04811B	1	ODF 1⅜"	-	Plug ¼" NPT	90 / 1305	Single	023U100
DCR 04811B	1	ODF 1 ⅜"	-	Plug ¼" NPT	90 / 1305	Industrial (18 pcs)	8
DCR	1	-	DN 32	Plug ¼" NPT	90 / 1305	Single	023U100
04811dB	1	-	DN 32	Plug ¼" NPT	90 / 1305	Industrial	9
DCR	1	ODF ⅞"	-	Plug ¼" NPT	90 / 1305	Single	023U101
04811dB	1	ODF ⅞"	-	Plug ¼" NPT	90 / 1305	Industrial	1
DCR 04807B	1	-	DN 20	Plug ¼" NPT	90 / 1305	Single	023U101
DCR 04807B	1	-	DN 20	Plug ¼" NPT	90 / 1305	Industrial (18 pcs)	2
DCR	2	ODF 1 ⅝"	-	Plug ¼" NPT	90 / 1305	Single	023U101
04807dB	2	ODF 1 ⅝"	-	Plug ¼" NPT	90 / 1305	Industrial (12 pcs)	4
DCR	2	-	DN 40	Plug ¼" NPT	90 / 1305	Single	023U101
04807dB	2	-	DN 40	Plug ¼" NPT	90 / 1305	Industrial (12 pcs)	5
DCR 09613B	2	-	-	Plug ¼" NPT	90 / 1305	Single	023U101
DCR 09613B	2	ODF 2 ⅛"	-	Plug ¼" NPT	90 / 1305	Industrial (12 pcs)	7
DCR	2	ODF 2 ⅛"	DN 50	Plug ¼" NPT	90 / 1305	Single	023U101
09613dB	2	-	DN 50	Plug ¼" NPT	90 / 1305	Industrial (12 pcs)	8
DCR	2	-	DN 50	Plug G ½	90 / 1305	Single	023U099
09613dB	2	-	DN 50	Plug G ½	90 / 1305	Industrial (12)	6
DCR 09617B		-					023U099
DCR 09617B							7
DCR							023U099
09617dB							9
DCR							023U100
09617dB							0
DCR							023U100
09617dB							2
DCR							023U100
09617dB							3
							023U100
							5
							023U100
							6
							023U120
							2
							023U120
							3

Figure 8: DCR insert

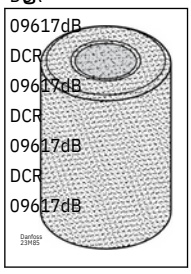


Table 5: DCR core surface and volume

Core	sur face	volume
	[cm2]	[cm3]
DM048, DC 048 and DA	612	727
048 DM096, DC 096 and	1225	1454
DA 096 48-F	405	-

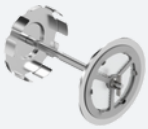
Table 6: DCR inserts code numbers

Type	Material	Code Number
		Industrial pack (8 pieces)
48-DM solid core (1)	100% molecular sieve	023U1393
48-DC solid core (1)	80% molecular sieve & 20% Al_2O_3	023U4382
48-DA solid core (1)	30% molecular sieve & 70% Al_2O_3	023U5382
48-F strainer (1)	Felt gasket,15 µm	023U1921

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Spare parts

Table 7: Spare part list

Part	Description	Code number	Quantity
	Front plate assembly	023U1154	1
	Single core internal parts	023U1155	1
	Two core internal parts	023U1156	1
	1/4" NPT cover	023U1157	1
	1/2" G Thread cover	023U1158	1
	Flat gasket	023U1159	5
	M12 Bolts	023U1160	12

Certi cates, declarations, and approvals

The list contains all certi cates, declarations, and approvals for this product type. Individual code number may have some or all of these approvals, and certain local approvals may not appear on the list.

Some approvals may change over time. You can check the most current status at danfoss.com or contact your local Danfoss representative if you have any questions.

Table 8: Certi cates, declarations, and approvals

Document type	Document topic	Approval authority
Mechanical - Safety Certi cate	c UL us listing	UL
Manufacturers Declaration	RoHS	Danfoss
EU Declaration	PED	Danfoss
Pressure - Safety Certi cate	-	NSW