ENGINEERING
TOMORROW

Catalogue

Strainers for Industrial Refrigeration

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ELIMINATOR® filter drier with replaceable solid core, type DCR 51

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Strainer
Type FIA 15-200, 52 bar (754 psi)

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Strainer
Type FIA 15-200, 52 bar (754 psi)



FIA strainers are a range of angleway and straightway strainers, which are carefully designed to give favourable flow conditions. The design makes the strainer easy to install, and ensures quick strainer inspection and cleaning.

FIA strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of undesirable system breakdowns and reduces wear and tear on plant components.

FIA strainers are equipped with a screen mesh of stainless steel, available in sizes 100, 150, 250 and 500µ (microns*), (US 150, 100, 72, 38 mesh*).

* Mesh is the number of threads per inch.
µ (microns) is the distance between two threads (1µ = 1/1000 mm).

Features

- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.
- Modular Concept:
  – Each valve housing is available with several different connection types and sizes.
  – Possible to convert FIA strainers to any other product in the Flexline™ SVL family (shut-off valve, hand operated regulating valve, check & stop valve or check valve) just by replacing the complete top part.
- Fast and easy overhaul service. It is easy to replace the top part and no welding is needed
- Filter net of stainless steel mounted direct without extra gaskets means easy servicing
- Two types of strainer inserts are available:
  - A plain insert of stainless steel.
  - A pleated insert (DN 15-200) with extra large surface, which ensures long intervals between cleaning and low pressure drop.
- FIA 15 – 40 (1/2 – 1 1/2 in):
  A special insert (50µ) can be used in combination with a standard version when cleaning a plant during commissioning.
- FIA 50 – 200 (2 – 8 in):
  A large capacity filter bag (50µ) can be inserted for cleaning plant during commissioning.
- FIA 80-200 (3 – 8 in) can be equipped with a magnetic insert for detention of iron particles and other magnetic particles.
- Each strainer clearly marked with type, size and performance range
- Housing and bonnet of low temperature steel in accordance with the requirements of the Pressure Equipment Directive and those of other international classification authorities
- Temperature range:
  -60 – 150 °C / -76 – 302 °F
- Max. working pressure:
  52 bar g / 754 psi g
- Classification: DNV, CRN, BV, EAC etc.
  To get an updated list of certification on the products please contact your local Danfoss Sales Company

Design

Connections
Available with the following connections:

- Butt-weld DIN (EN 10220)
  DN 15 – 200 (1/2 – 8 in)
- Butt-weld ANSI (B 36.10 Schedule 80),
  DN 15 – 40 (1/2 – 1 1/2 in)
- Butt-weld ANSI (B 36.10 Schedule 40),
  DN 50 – 200 (2 – 8 in)
- Butt-weld GOST (8734-75 and 8732-78),
- DN 15 – 150 (1/2 – 6 in)
- Socket Weld (ANSI B 16.11),
  DN 15 – 50 (1/2 – 2 in)
- FPT Female Pipe Thread, NPT
  (ANSI/ASME B 1.20.1),
  DN 15 – 32 (1/2 – 1 1/4 in)

Strainer Insert
A filter grid and filter net of stainless steel ensure long element life. The filter net offers a very high degree of cleanability.

Housing
The strainer housing is made of special, cold resistant steel.

Pressure Equipment Directive (PED)
FIA strainers are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked.
For further details / restrictions - see Installation Instruction

Nominal bore	DN ≤ 25 (1 in)	DN 32 – 80 mm (1 1/4 – 3 in)	DN 100 – 200 mm (4 – 8 in)
Classified for	Fluid group I		
Category	Article 3, paragraph 3	II	III

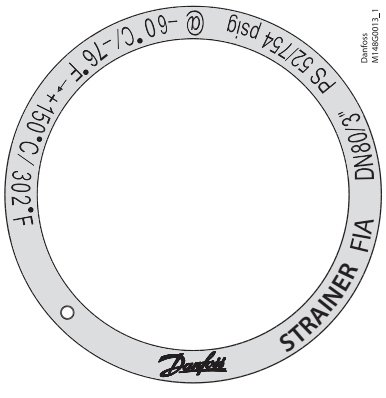
Installation / Maintenance
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.

Install the strainer with the cover in downward position.

Danfoss recommends replacement / cleaning of the strainer when the differential pressure loss >0.5 bar (7.3 psi) in the liquid line and >0.05 bar (0.7 psi) in the suction line. The max. permissible differential pressure is 1 bar (15 psi).

For further information refer to installation instruction for FIA.

Identification:



Example of marking ring, FIA

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.
- *Temperature range*
  -60 – 150 °C / -76 °F – 302 °F.
- *Max. working pressure:*
  52 bar g / 754 psi g.

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Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.

The following recommendations of aperture size apply in general to refrigeration installations:

All lines
First start up: **50**µ
(Use strainer insert with removable insert for FIA DN15-40 or separate filter bag for FIA DN 50-200. 50µ insert should normally be removed after the first 24 hours of operation)

Liquid Lines
Ahead of pumps: ..... **500**µ [38 mesh]
After pumps: ..... **150**µ [100 mesh] / 250µ [72 mesh]
In front of AKVA valves ..... **100**µ [150 mesh]

Protection of automatic regulation equipment
Generally ..... **150**µ [100 mesh] / 250µ [72 mesh]
Sensitive equipment, e.g.
suction regulators with low temperature ..... **250**µ [72 mesh]

Definition
Mesh is the number of threads per inch. µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Suction Lines
Ahead of screw compressor ..... **250**µ [72 mesh]
Ahead of piston compressor ..... **150**µ [100 mesh]

Flow coefficient (DIN/ANSI)

Connection size (DN) / **FIA**	µ	**mesh**	**wire** mm	**wire** in.	**free space** %	**screen area**			
						Plain inserts		Pleated inserts	
						cm^2	in^2	cm^2	in^2
15 - 20 (½" - ¾")	100		0.068	0.003	35	25	3.9	45	7.0
	150	100	0.10	0.004	36	25	3.9	45	7.0
	250	72	0.10	0.004	51	25	3.9	45	7.0
	500	38	0.16	0.006	57.6	25	3.9	45	7.0
25 - 40 (1" - 1½")	100		0.068	0.003	35	71	11	160	25.0
	150	100	0.10	0.004	36	71	11	160	25.0
	250	72	0.10	0.004	51	71	11	160	25.0
	500	38	0.16	0.006	57.6	71	11	160	25.0
50 (2")	100		0.068	0.003	35	71	11	200	31.2
	150	100	0.10	0.004	36	87	13.5	200	31.2
	250	72	0.10	0.004	51	87	13.5	200	31.2
	500	38	0.16	0.006	57.6	87	13.5	200	31.2
65 (2½")	150	100	0.10	0.004	36	127	19.7	305	47.6
	250	72	0.10	0.004	51	127	19.7	305	47.6
	500	38	0.16	0.006	57.6	127	19.7	305	47.6
80 (3")	150	100	0.10	0.004	36	205	31.8	450	70.2
	250	72	0.10	0.004	51	205	31.8	450	70.2
	500	38	0.16	0.006	57.6	205	31.8	450	70.2
100 (4")	150	100	0.10	0.004	36	370	57.4	790	123.2
	250	72	0.10	0.004	51	370	57.4	790	123.2
	500	38	0.16	0.006	57.6	370	57.4	790	123.2
125 (5")	150	100	0.10	0.004	36	510	79.1	1105	172.4
	250	72	0.10	0.004	51	510	79.1	1105	172.4
	500	38	0.16	0.006	57.6	510	79.1	1105	172.4
150 (6")	150	100	0.10	0.004	36	726	112.5	1600	249.6
	250	72	0.10	0.004	51	726	112.5	1600	249.6
	500	38	0.16	0.006	57.6	726	112.5	1600	249.6
200 (8")	150	100	0.10	0.004	36	1315	203.8	2900	453.1
	250	72	0.10	0.004	51	1315	203.8	2900	453.1
	500	38	0.16	0.006	57.6	1315	203.8	2900	453.1

Selection of strainer size
(Continued)

K_v values

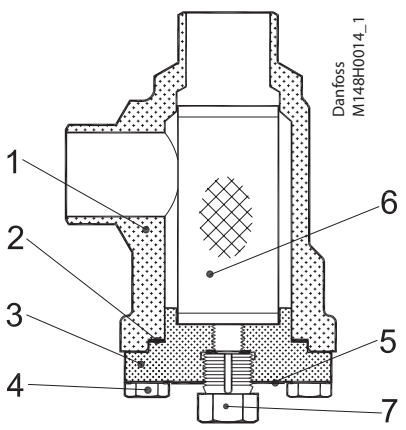
DN	FIA angle - plain filter net				FIA angle - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	3.3	3.4	3.5	3.7	4.2		
20	6.9	7.1	7.3	7.7	8.8		
25	13.8	14.0	14.5	15.2	17.2	17.9	
32	23.0	23.8	24.7	25.5	29.2	30.5	
40	25.1	25.5	26.4	28.1	31.4	32.6	
50	45.1	45.9	47.6	50.2	56.7	58.8	62.0
65		56.1	57.8	60.4	69.3	71.4	74.6
80		104.6	108.0	113.1	129.2	133.4	139.7
100		162.4	167.5	176.0	200.6	206.9	217.4
125		275.4	283.9	298.4	340.2	350.7	368.6
150		362.1	373.2	391.9	447.3	462.9	
200		572.9	590.8	620.5	704.9	730.0	

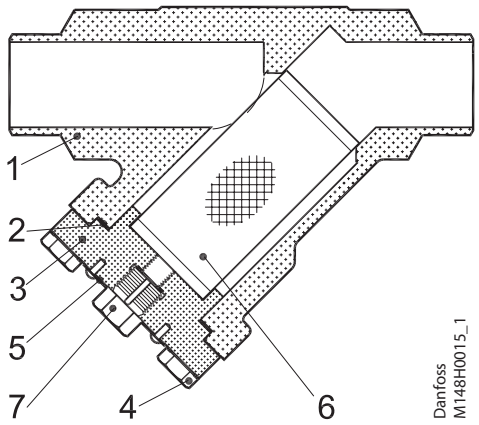
DN	FIA straight - plain filter net				FIA straight - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	2.5	2.6	2.7	2.8	3.3		
20	5.3	5.4	5.6	5.9	6.9		
25	10.5	10.7	11.1	11.6	13.8	14.5	
32	17.6	18.2	18.9	19.5	23.9	24.7	
40	19.2	19.5	20.2	21.5	25.5	26.4	
50	34.5	35.1	36.4	38.4	45.9	47.6	50.2
65		42.9	44.2	46.2	56.1	57.8	60.4
80		80.0	82.6	86.5	104.6	108.0	113.1
100		124.2	128.1	134.6	162.4	167.5	176.0
125		210.6	217.1	228.2	275.4	283.9	298.4
150		276.9	285.4	299.7	362.1	374.0	
200		438.1	451.8	474.5	570.8	587.3	

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Material specification

FIA 15 – 40 (1/2 in – 1 1/2 in)



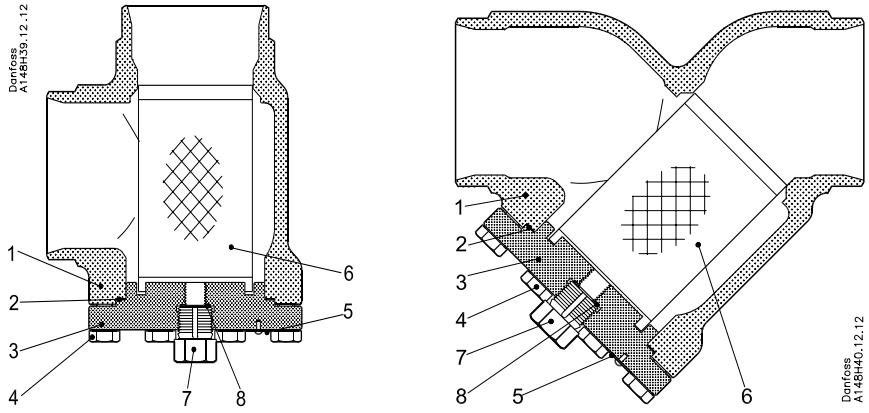


FIA 15 – 40 (1/2 – 1 1/2 in)

No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	Stainless steel	A2-70	A2-70	Type 308
5	Marking label	Aluminium			
6	Strainer insert	Stainless steel			
7	Pressure relief (screw)	Stainless steel			

Material specification

FIA 50 – 200 (2 in – 8 in)



FIA 50-200 (2 in - 8 in)

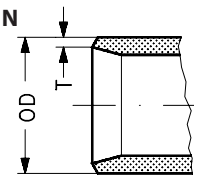
No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 ---------- P285QH+QT, 10222-4		LCC, A352 ---------- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 ---------- P275NL1 or 2 EN10028-3		LF2, A350 ---------- A, A662
4	Bolts	Stainless steel	A2-70	A2-70	Type 308
5	Marking label	Aluminium			
6	Strainer insert	Stainless steel			
7	Pressure relief (screw)	Stainless steel			
8*	Packing washer	Aluminium			

* pos 8 used in FIA 50-200

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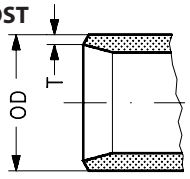
Connections

DIN



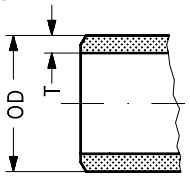
Size [mm]	Size [in]	OD [mm]	T [mm]	OD [in]	T [in]
Butt-weld DIN (EN 10220)					
15	1/2	21.3	2.3	0.839	0.091
20	3/4	26.9	2.3	1.059	0.091
25	1	33.7	2.6	1.327	0.103
32	1 1/4	42.4	2.6	1.669	0.102
40	1 1/2	48.3	2.6	1.902	0.103
50	2	60.3	2.9	2.37	0.11
65	2 1/2	76.1	2.9	3	0.11
80	3	88.9	3.2	3.50	0.13
100	4	114.3	3.6	4.50	0.14
125	5	139.7	4.0	5.50	0.16
150	6	168.3	4.5	6.63	0.18
200	8	219.1	6.3	8.63	0.25

GOST



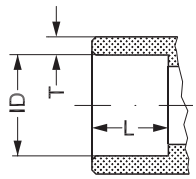
Size [mm]	Size [in]	OD [mm]	T [mm]	OD [in]	T [in]
Butt-weld GOST (8734-75 and 8732-78)					
10	3/8	14	2	0.551	0.079
15	1/2	18	2	0.709	0.079
20	3/4	25	2.5	0.984	0.098
25	1	32	3	1.260	0.118
32	1 1/4	38	3	1.496	0.118
40	1 1/2	45	3	1.772	0.118
50	2	57	3.5	2.244	0.138
65	2 1/2	76.1	2.9	3	0.11
80	3	88.9	3.2	3.50	0.13
100	4	108	4	4.252	0.157
125	5	133	4	5.236	0.157
150	6	159	4.5	6.260	0.177

ANSI



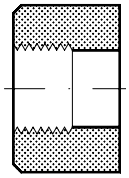
Size [mm]	Size [in]	OD [mm]	T [mm]	OD [in]	T [in]
Butt-weld ANSI (B 36.10 Schedule 80)					
15	1/2	21.3	3.7	0.839	0.146
20	3/4	26.9	4.0	1.059	0.158
25	1	33.7	4.6	1.327	0.181
32	1 1/4	42.4	4.9	1.669	0.193
40	1 1/2	48.3	5.1	1.902	0.201
Butt-weld ANSI (B 36.10 Schedule 40)					
50	2	60.3	3.9	2.37	0.15
65	2 1/2	73.0	5.2	2.87	0.20
80	3	88.9	5.5	3.50	0.22
100	4	114.3	6.0	4.50	0.24
125	5	141.3	6.6	5.56	0.26
150	6	168.3	7.1	6.63	0.28
200	8	219.1	8.2	8.63	0.32

SOC



Size [mm]	Size [in]	ID [mm]	T [mm]	ID [in]	T [in]
Socket welding ANSI (B 16.11)					
15	1/2	21.8	6.0	0.858	0.235
20	3/4	27.2	4.6	1.071	0.181
25	1	33.9	7.2	1.335	0.284
32	1 1/4	42.7	6.1	1.743	0.240
40	1 1/2	48.8	6.6	1.921	0.260
50	2	61.2	6.2	2.41	0.24

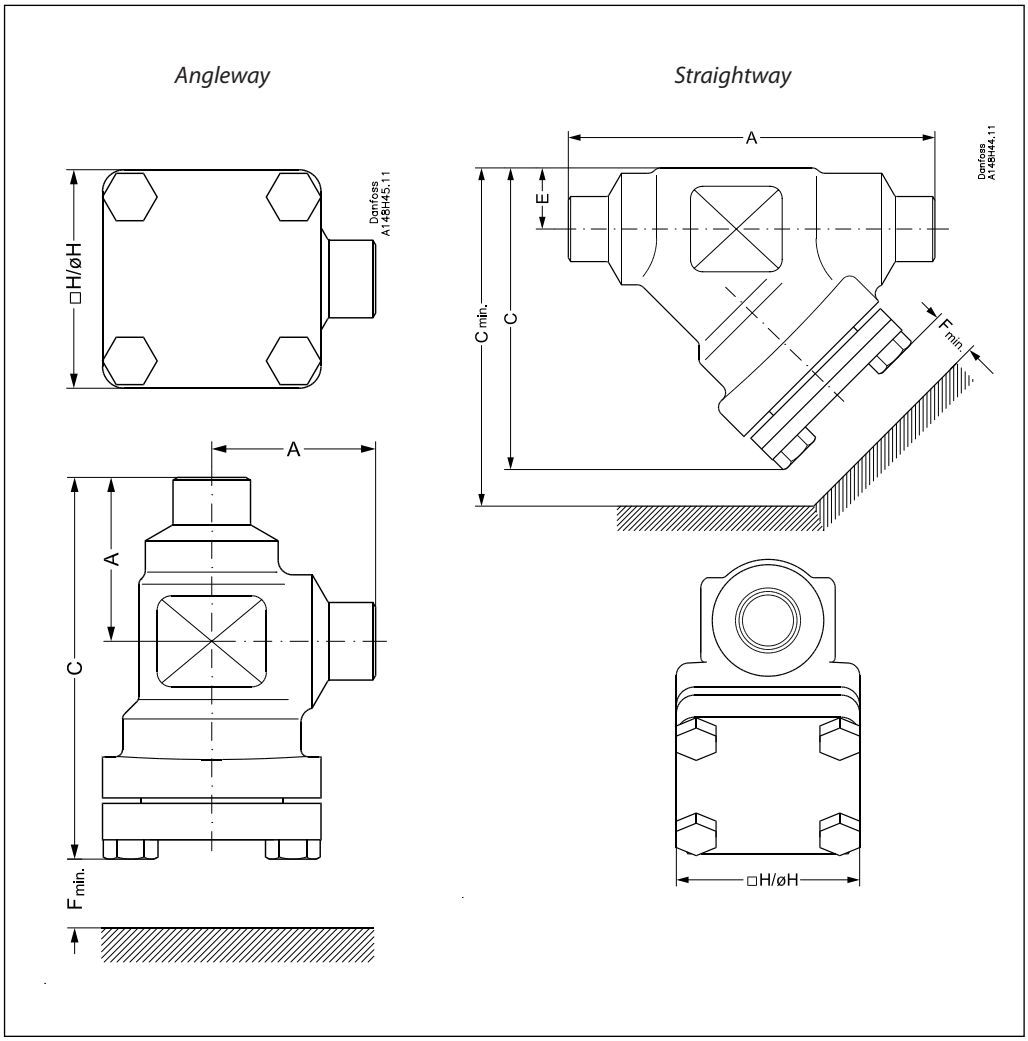
FPT



Size [mm]	Size [in]	Inside pipe tread
FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1)		
15	1/2	(½ × 14 NPT)
20	3/4	(¾ × 14 NPT)
25	1	(1 × 11.5 NPT)
32	1 1/4	(1¼ × 11.5 NPT)

Dimensions and weights

FIA 15 - 65



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA 15 – 20	[mm]	45	105	60	68	1.1 kg
(1/2 – 3/4 in)	[in]	1.77	4.13	2.36	2.68	2.4 lbs
FIA 25 – 40	[mm]	55	132	70	95	1.7 kg
(1 – 1 1/2 in)	[in]	2.17	5.20	2.76	3.74	3.7 lbs
FIA 50	[mm]	60	132	77	92	2.8 kg
(2 in)	[in]	2.36	5.20	3.03	3.62	6.2 lbs
FIA 65	[mm]	70	152	90	107	3.8 kg
(2 1/2 in)	[in]	2.76	5.98	3.54	4.21	8.4 lbs

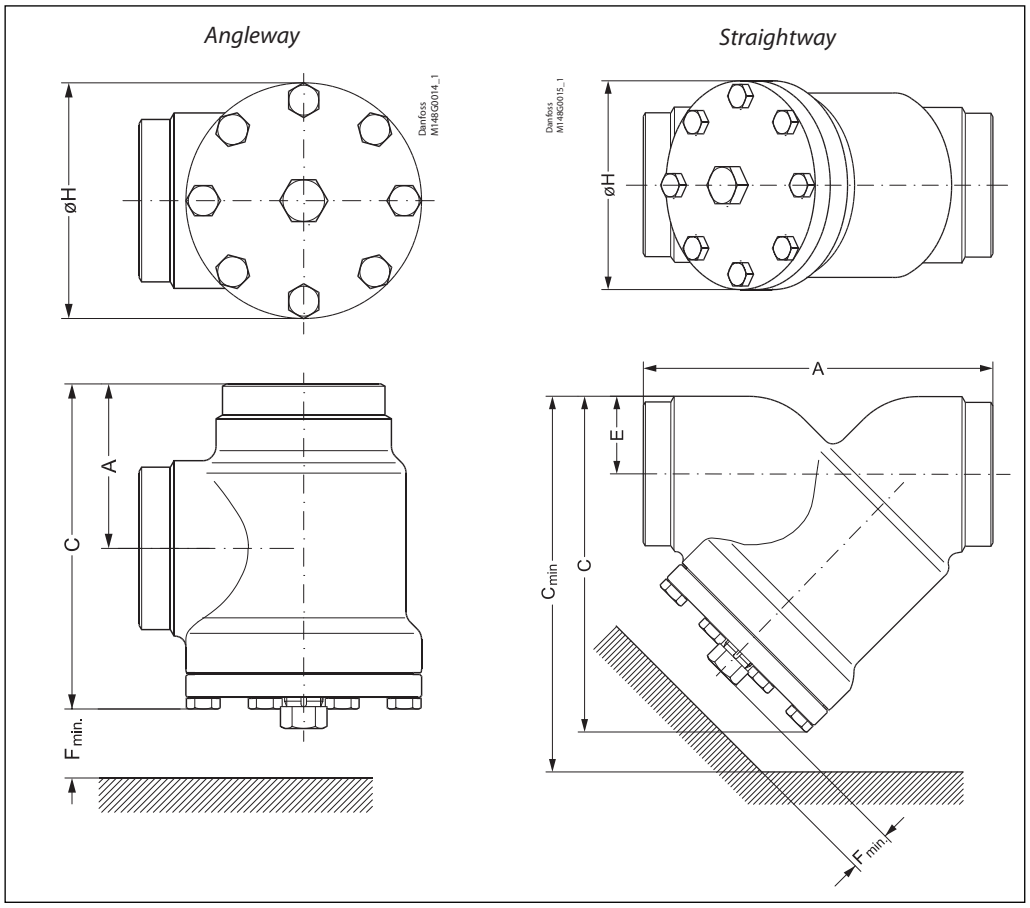
Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 15 – 20	[mm]	120	99	133	60	20	68	1.4 kg
(1/2 – 3/4 in)	[in]	4.72	3.90	5.24	2.36	0.79	2.68	3.1 lbs
FIA 25 – 40	[mm]	155	129	177	70	26	95	2.4 kg
(1 – 1 1/2 in)	[in]	6.10	5.08	6.97	2.76	1.02	3.74	5.3 lbs
FIA 50	[mm]	148	138	184	77	32	92	3.5 kg
(2 in)	[in]	5.83	5.43	7.24	3.03	1.26	3.62	7.7 lbs
FIA 65	[mm]	176	165	219	90	40	107	5.3 kg
(2 1/2 in)	[in]	6.93	6.50	8.62	3.54	1.57	4.21	11.7 lbs

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Dimensions and weights

FIA 80 - 200



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA 80	[mm]	90	189	129	133	7.3 kg
(3 in)	[in]	3.54	7.44	5.08	5.24	16.1 lbs
FIA 100	[mm]	106	223	156	163	11.9 kg
(4 in)	[in]	4.17	8.78	6.14	6.42	26.2 lbs
FIA 125	[mm]	128	268	192	190	21.2 kg
(5 in)	[in]	5.04	10.6	7.56	7.48	46.7 lbs
FIA 150	[mm]	145	303	219	223	30.5 kg
(6 in)	[in]	5.71	11.93	8.62	8.78	67.2 lbs
FIA 200	[mm]	180	372	276	280	68 kg
(8 in)	[in]	7.09	14.65	10.87	11.02	150 lbs

Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 80	[mm]	216	204	271	129	48	133	8.6 kg
(3 in)	[in]	8.50	8.03	10.67	5.08	1.89	5.24	19 lbs
FIA 100	[mm]	264	256	337	156	60	163	14.9 kg
(4 in)	[in]	10.39	10.08	13.27	6.14	2.36	6.42	32.8 lbs
FIA 125	[mm]	322	313	408	192	74	190	26.9 kg
(5 in)	[in]	12.68	12.32	16.06	7.56	2.91	7.48	59.3 lbs
FIA 150	[mm]	370	370	482	219	91	223	51 kg
(6 in)	[in]	14.57	14.57	18.98	8.62	3.58	8.78	112 lbs
FIA 200	[mm]	464	465	605	276	117	280	95 kg
(8 in)	[in]	18.27	18.31	23.82	10.87	4.61	11.02	209 lbs

Strainer, type FIA 15-200, 52 bar (754 psi)

Ordering

The table below is used to identify the strainer required. Please note that you have to order **FIA strainer without insert, a strainer insert** and **accessories.**

Example:
FIA 50 D ANG + FIA-X 50 150µ Strainer insert + Filter Bag = **148H5912** + **148H3130** + **148H3150**

Size mm	Size in.	Type	FIA Without strainer insert	Strainer insert 100µ 150 mesh	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh	Strainer insert 500µ 38 mesh	Pleated Strainer insert 150µ 100 mesh	Pleated Strainer insert 250µ 72 mesh	Pleated Strainer insert 500µ 38 mesh
Butt-weld DIN (EN 10220) - Angleway										
15	½	FIA 15 D ANG	**148B5242**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 D ANG	**148B5342**							
25	1	FIA 25 D ANG	**148B5442**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 D ANG	**148B5543**							
40	1½	FIA 40 D ANG	**148B5624**							
50	2	FIA 50 D ANG	**148B5712**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA 65 D ANG	**148B5812**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	FIA 80 D ANG	**148B5905**	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	FIA 100 D ANG	**148B6006**	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	FIA 125 D ANG	**148B6105**	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	FIA 150 D ANG	**148B6202**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	FIA 200 D ANG	**148B6302**	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-
Butt-weld DIN (EN 10220) - Straightway										
15	½	FIA 15 D STR	**148B5243**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 D STR	**148B5343**							
25	1	FIA 25 D STR	**148B5443**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 D STR	**148B5544**							
40	1½	FIA 40 D STR	**148B5625**							
50	2	FIA 50 D STR	**148B5713**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA 65 D STR	**148B5813**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	FIA 80 D STR	**148B5906**	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	FIA 100 D STR	**148B6007**	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	FIA 125 D STR	**148B6106**	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	FIA 150 D STR	**148B6203**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	FIA 200 D STR	**148B6303**	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-
Butt-weld ANSI (B 36.10 Schedule 80) - Angleway										
15	½	FIA 15 A ANG	**148B5244**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 A ANG	**148B5344**							
25	1	FIA 25 A ANG	**148B5444**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 A ANG	**148B5545**							
40	1½	FIA 40 A ANG	**148B5642**							
Butt-weld ANSI (B 36.10 Schedule 80) - Straightway										
15	½	FIA 15 A STR	**148B5247**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 A STR	**148B5347**							
25	1	FIA 25 A STR	**148B5447**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 A STR	**148B5552**							
40	1½	FIA 40 A STR	**148B5644**							
Butt-weld ANSI (B 36.10 Schedule 40) - Angleway										
50	2	FIA 50 A ANG	**148B5714**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA 65 A ANG	**148B5814**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	FIA 80 A ANG	**148B5907**	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	FIA 100 A ANG	**148B6008**	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	FIA 125 A ANG	**148B6107**	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	FIA 150 A ANG	**148B6204**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	FIA 200 A ANG	**148B6304**	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-
Butt-weld ANSI (B 36.10 Schedule 40) - Straightway										
50	2	FIA 50 A STR	**148B5716**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA 65 A STR	**148B5815**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	FIA 80 A STR	**148B5908**	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	FIA 100 A STR	**148B6009**	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	FIA 125 A STR	**148B6108**	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	FIA 150 A STR	**148B6205**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	FIA 200 A STR	**148B6305**	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-

D = Butt-weld DIN ANG = Angleway
A = Butt-weld ANSI STR = Straightway

* 60 mesh

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Strainer, type FIA 15-200, 52 bar (754 psi)

Ordering *(continued)*

Size mm	Size in.	Type	FIA Without strainer insert	Strainer insert 100µ 150 mesh	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh	Strainer insert 500µ 38 mesh	Pleated Strainer insert 150µ 100 mesh	Pleated Strainer insert 250µ 72 mesh	Pleated Strainer insert 500µ 38 mesh
Butt-weld GOST - Angleway										
150	6	FIA 150 G ANG	**148B6206**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
Butt-weld GOST - Straightway										
150	6	FIA 150 G STR	**148B6207**	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1) - Angleway										
15	½	FIA 15 FTP ANG	**148B5246**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 FTP ANG	**148B5346**							
25	1	FIA 25 FTP ANG	**148B5446**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 FTP ANG	**148B5547**							
FPT inside pipe thread, NPT (ANSI/ASME B 1.20.1) - Straightway										
15	½	FIA 15 FTP STR	**148B5249**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 FTP STR	**148B5349**							
25	1	FIA 25 FTP STR	**148B5449**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 FTP STR	**148B5549**							
Socket welding ANSI (B 16.11) - Angleway										
15	½	FIA 15 SOC ANG	**148B5245**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 SOC ANG	**148B5345**							
25	1	FIA 25 SOC ANG	**148B5445**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 SOC ANG	**148B5546**							
40	1½	FIA 40 SOC ANG	**148B5643**							
50	2	FIA 50 SOC ANG	**148B5715**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
Socket welding ANSI (B 16.11) - Straightway										
15	½	FIA 15 SOC STR	**148B5248**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA 20 SOC STR	**148B5348**							
25	1	FIA 25 SOC STR	**148B5448**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA 32 SOC STR	**148B5548**							
40	1½	FIA 40 SOC STR	**148B5645**							
50	2	FIA 50 SOC STR	**148B5717**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**

SOC = Socket welding
FPT = Inside pipe thread
G = Butt-weld GOST

ANG = Angleway
STR = Straightway

* 60 mesh

Accessories

Part	Accessory for	Code number
Magnet insert	FIA 80-100	**148H3447**
	FIA 125-200	**148H3448**

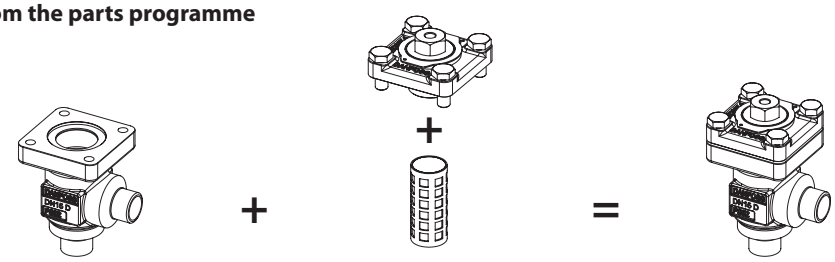
Part	Accessory for	Code number
Strainer insert µ150 with removable insert µ50 for the first start up	FIA 15-20	**148H3301**
	FIA 25-40	**148H3302**

Part	Accessory for	Code number
Filter bag	FIA 50	**148H3150**
	FIA 65	**148H3151**
	FIA 80	**148H3152**
	FIA 100	**148H3153**
	FIA 125	**148H3154**
	FIA 150	**148H3155**
	FIA 200	**148H3156**

Part	Accessory for	Code number
Purge valve complete	FIA 50 - 300	**148B3745**
Blind nut with gasket		**148H3450**

Ordering FIA strainers from the parts programme

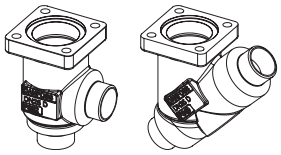
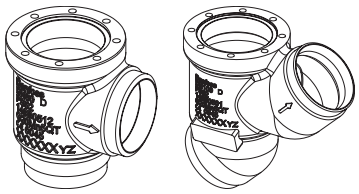
Example
(select from table 1 and 2)



Strainer housing, size 25 (1 in.), DIN butt weld, angleway,
148B5452
Table 1

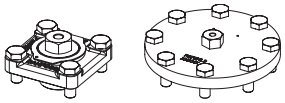
Top part, FIA, size 25 (1 in.)
148B5484
+
Strainer insert, 250µ, 72 mesh
148H3127
Table 2

Table 1
SVL valve housings w/different connections

	DN 15-65 mm (½ - 2½ in.)	*DN 80-125 mm (3 - 5 in.)*
		

Sizes [DN]		Valve Housing SVL										
		DIN-Butt weld		ANSI-Butt weld		GOST-Butt-weld		SOC		FPT		T
mm	in.	ANG	STR	ANG	STR	ANG	STR	ANG	STR	ANG	STR	ANG
15	½	148B5252	148B5253	148B5254	148B5255	148B5391	148B5392	148B5256	148B5257	148B5258	148B5259	
20	¾	148B5352	148B5353	148B5354	148B5355	148B5393	148B5394	148B5356	148B5357	148B5358	148B5359	
25	1	148B5452	148B5453	148B5454	148B5455	148B5498	148B5499	148B5456	148B5457	148B5458	148B5459	
32	1¼	148B5576	148B5577	148B5578	148B5579	148B5593	148B5594	148B5580	148B5581	148B5582	148B5583	
40	1½	148B5652	148B5653	148B5654	148B5655	148B5681	148B5682	148B5656	148B5657			
50	2	148B5741	148B5742	148B5743	148B5744	148B5759	148B5760	148B5745	148B5746			
65	2½	148B5816	148B5817	148B5818	148B5819	148B5816	148B5817					
80	3	148B5912	148B5913	148B5914	148B5915	148B5912	148B5913					
100	4	148B6014	148B6015	148B6016	148B6017	148B6033	148B6034					
125	5	148B6112	148B6113	148B6114	148B6115	148B6133	148B6134					

Table 2
FIA complete top part including gaskets and bolts

FIA 15-65	FIA 80-125
	

Sizes [DN]		Complete top part FIA		Strainer insert 100µ 150 mesh	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh	Strainer insert 500µ 38 mesh	Pleated Strainer insert 150µ 100 mesh	Pleated Strainer insert 250µ 72 mesh	Pleated Strainer insert 500µ 38 mesh
mm	in.									
15	½	148B5284	+	148H3122	148H3124	148H3126	148H3128	148H3303	-	-
20	¾									
25	1	148B5484	+	148H3123	148H3125	148H3127	148H3129	148H3304	148H3269	-
32	1¼									
40	1½									
50	2	148B5748	+	148H3157	148H3130	148H3138	148H3144	148H3179	148H3184	148H3189
65	2½	148B5832	+	-	148H3131	148H3139	148H3145	148H3180	148H3185	148H3190
80	3	148B5922	+	-	148H3119	148H3120	148H3121	148H3181	148H3186	148H3191
100	4	148B6024	+	-	148H3132	148H3140	148H3146	148H3182	148H3187	148H3192
125	5	148B6122	+	-	148H3133	148H3141	148H3147	148H3183	148H3188	148H3193

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ENGINEERING
TOMORROW

Strainer
Type FIA 250-300, 52 bar (754 psi)

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ENGINEERING
TOMORROW

Strainer
Type FIA 250-300, 52 bar (754 psi)



FIA 250-300 (10-12 in.) strainers are a range of angleway strainers, which are carefully designed to give favourable flow conditions. The design makes the strainer easy to install, and ensures quick strainer inspection and cleaning.

FIA strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of undesirable system breakdowns and reduces wear and tear on plant components.

FIA 250-300 (10-12 in.) strainers are equipped with a screen mesh of stainless steel, available in sizes 150 and 250 (microns*), (US 100 and 72 mesh*).

* Mesh is the number of threads per inch.
µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Features

- Applicable to HC, HCFC, HFC, R717 (Ammonia) and R744 (CO_2)
- Available with DIN and ANSI connections.
- Filter net of stainless steel mounted direct. without extra gaskets means easy servicing.
- FIA 250-300 (10-12 in.) can be equipped with a magnetic insert for detention of iron particles and other magnetic particles.
- Each strainer clearly marked with type, size and performance range.
- Housing and bonnet of low temperature steel in accordance with the requirements of the Pressure Equipment Directive and those of other international classification authorities.
- Temperature range: –60/+150°C (–76/+302°F)
- Max. working pressure: 40 bar g (580 psi g)
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.

Design

Connections
Available with the following connections:

- Butt-weld DIN (EN 10220)
  DN 250 - 300 (10-12 in.)
- Butt-weld ANSI (B 36.10 Schedule 40),
  DN 250 - 300 (10-12 in.)

Strainer Insert
A filter grid and filter net of stainless steel ensure long element life. The filter net offers a very high degree of cleanability.

Housing
The strainer housing is made of special, cold resistant steel.

Pressure Equipment Directive (PED)
FIA strainers are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked.
For further details / restrictions - see Installation Instruction

Nominal bore	DN 250 mm (10 in.)	DN 300 (12 in.)
Classified for	Fluid group I	
Category	III	IV

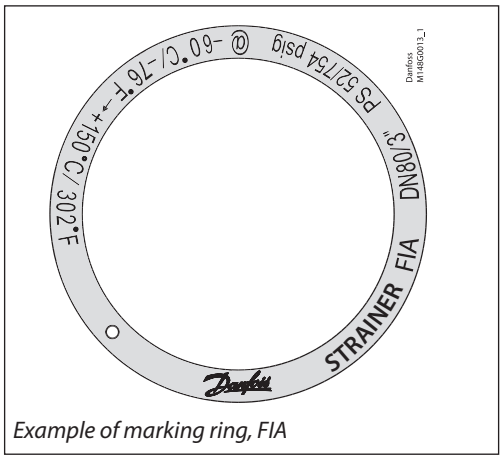
Installation/Maintenance
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.

Install the strainer with the cover in downward position.

Danfoss recommends replacement/cleaning of the strainer when the differential pressure loss >0.5 bar (7.3 psi) in the liquid line and >0.05 bar (0.7 psi) in the suction line. The max. permissible differential pressure is 1 bar (15 psi).

For further information refer to installation instruction for FIA.

Identification:

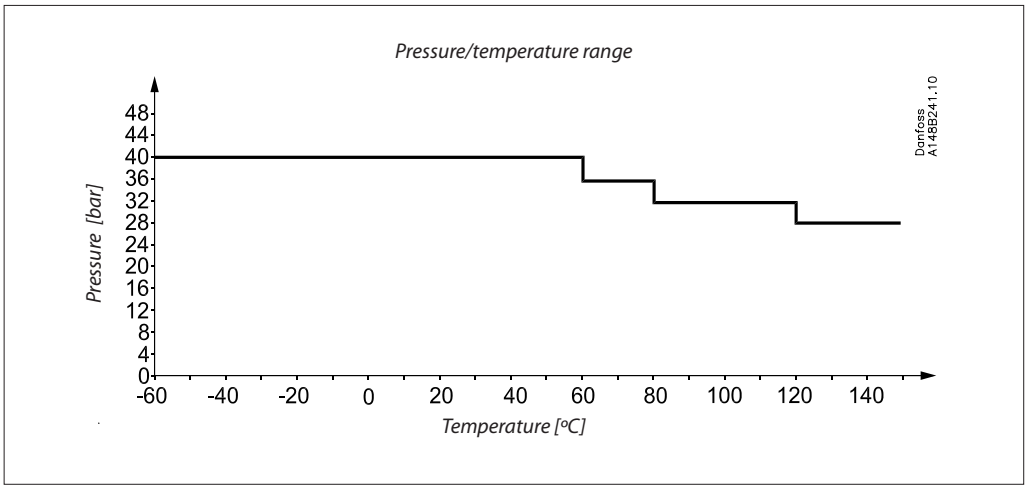


Example of marking ring, FIA

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Technical data

- *Refrigerants*
  Applicable to HC, HCFC, HFC, R717 (Ammonia) and R744 (CO2)
- *Pressure range*
  40 bar g (580 psi g) at –60°C to +60°C (–76°F to +140°F)
  36 bar g (522 psi g) at +60°C to +80°C (+140°F to +176°F)
  32 bar g (464 psi g) at +80°C to +120°C (+176°F to +248°F)
  28 bar g (406 psi g) at +120°C to +150°C (+248°F to +302°F)
- *Temperature range*
  –60/+150°C (–76/+302°F)



Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.

The following recommendations of aperture size apply in general to refrigeration installations:

Liquid Lines
After pumps: ..... **150**µ [100 mesh] / 250µ [72 mesh]
In front of AKVA valves ..... **100**µ [150 mesh]

Protection of automatic regulation equipment
Generally ..... **150**µ [100 mesh] / 250µ [72 mesh]
Sensitive equipment, e.g.
suction regulators with low temperature ..... **250**µ [72 mesh]

Definition
Mesh is the number of threads per inch.
µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Suction Lines
Ahead of screw compressor ..... **250**µ [72 mesh]
Ahead of piston compressor ..... **150**µ [100 mesh]

Flow coefficient (DIN/ANSI)

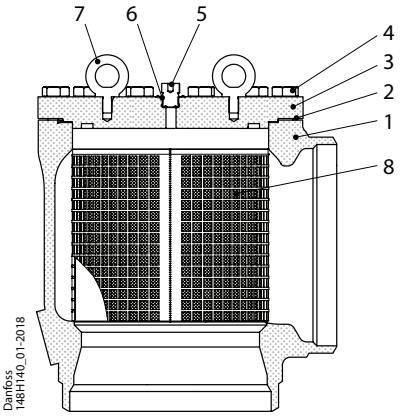
Connection size (DN) / **FIA**	µ	**mesh**	**wire** mm	**wire** in.	**free space** %	**screen area** Plain inserts cm²	**screen area** Plain inserts in²
250 (10″)	150	100	0.10	0.004	36	1800	70.9
	250	72	0.10	0.004	51	1800	70.9
300 (12″)	150	100	0.10	0.004	36	2590	102.0
	250	72	0.10	0.004	51	2590	102.0

K_v values

DN	**FIA angle - plain filter net**	
	µ150	µ250
250	784.5	808.9
300	1062.3	1095.4

Material specification

FIA 250-300 (10-12 in.)

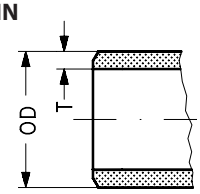


FIA 250-300 (10-12 in.)

No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 ---------- P285QH+QT, 10222-4		LCC, A352 ---------- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 ---------- P275NL1 or 2 EN10028-3		LF2, A350 ---------- A, A662
4	Bolts	Stainless steel	A2-70	A2-70	Type 308
5	Pressure relief screw	Stainless Steel			
6	Packing washer	Stainless steel			
7	Eye bolts DIN 580	Steel			
8	Strainer insert	Stainless Steel			

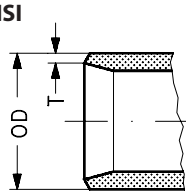
Connections

DIN



Size mm	Size in.	OD mm	T mm	OD in.	T in.
Butt-weld DIN (EN 10220)					
250	10	273	6.3	10.75	0.25
300	12	323.9	7.1	12.75	0.28

ANSI

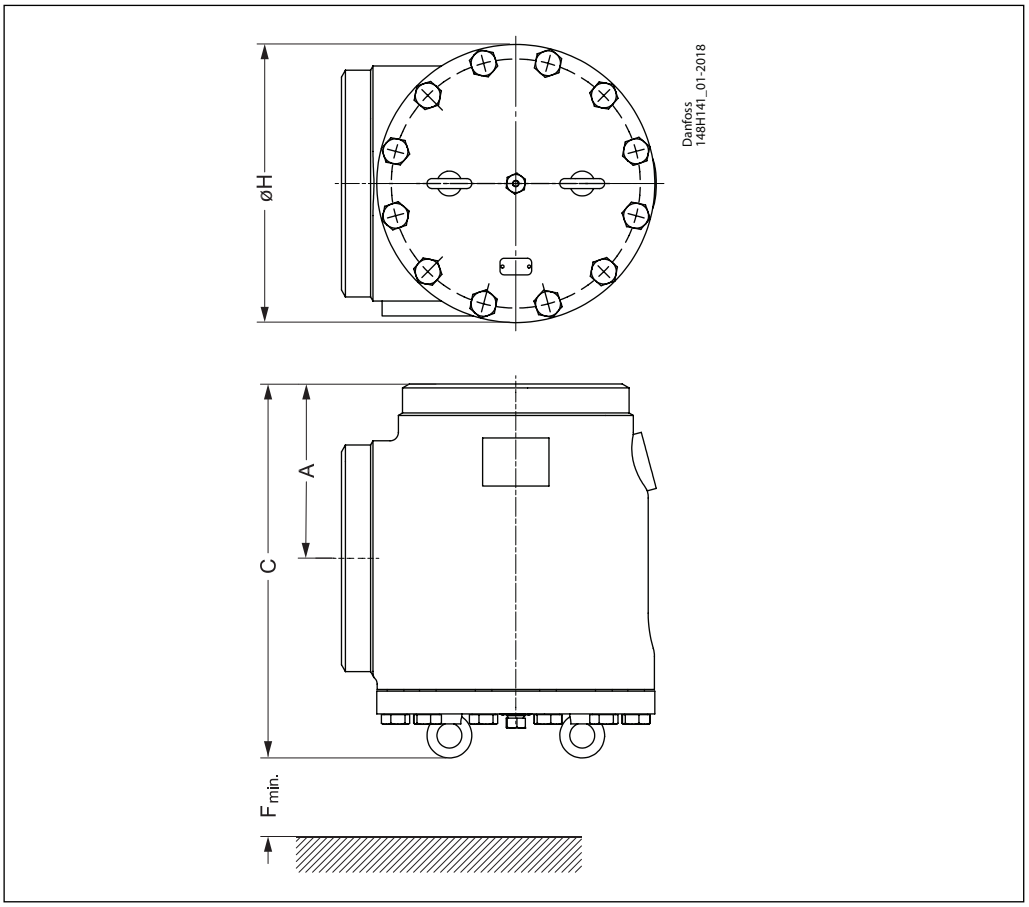


Size mm	Size in.	OD mm	T mm	OD in.	T in.
Butt-weld ANSI (B 36.10 Schedule 40)					
250	10	273	9.3	10.75	0.25
300	12	323.9	9.5	12.75	0.28

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Dimensions and weights

FIA 250-300



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA 250	mm	210	450.5	334	285	89.6 kg
(10")	in.	8.27	17.74	13.14	11.22	197.5 lbs
FIA 300	mm	240	510.5	384	340	122 kg
(12")	in.	9.45	20.1	15.12	13.39	269 lbs

Ordering

The table below is used to identify the strainer required. Please note that you have to order **FIA strainer without insert and a strainer insert.**

Example:
FIA 250 D ANG + 150µ Strainer insert = **148H3171** + **148H3136**

Size		Type	FIA Without strainer insert	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh
mm	in.				
Butt-weld DIN (EN 10220) - Angleway					
250	10	FIA 250 D ANG	**148H3171**	**148H3136**	**148H3175**
300	12	FIA 300 D ANG	**148H3172**	**148H3137**	**148H3176**
Butt-weld ANSI (B 36.10 Schedule 40) - Angleway					
250	10	FIA 250 A ANG	**148H3173**	**148H3136**	**148H3175**
300	12	FIA 300 A ANG	**148H3174**	**148H3137**	**148H3176**

D = Butt-weld DIN
A = Butt-weld ANSI
ANG = Angleway

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ENGINEERING
TOMORROW

Strainer
Type FIA 15-200, 65 bar (943 psi)

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ENGINEERING TOMORROW

Strainer
Type FIA 15-200, 65 bar (943 psi)



FIA strainers are a range of angleway and straightway strainers, which are carefully designed to give favourable flow conditions. The design makes the strainer easy to install, and ensures quick strainer inspection and cleaning.

FIA strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of undesirable system breakdowns and reduces wear and tear on plant components.

FIA strainers are equipped with a screen mesh of stainless steel, available in sizes 100, 150, 250 and 500µ (microns*), (US 150, 100, 72, 38 mesh*).

* Mesh is the number of threads per inch.
µ (microns) is the distance between two threads
(1µ = 1 /1000 mm).

Features

- Modular Concept:
  – Each valve housing is available with DIN and ANSI butt weld connection and in several different sizes.
  – Possible to convert FIA strainers to any other product in the SVL family (Shut-off valve, regulating valve, check & stop valve or check valve) just by replacing the complete top part.
- Fast and easy overhaul service. It is easy to replace the top part and no welding is needed.
- Filter net of stainless steel mounted direct without extra gaskets means easy servicing.
- Two types of strainer inserts are available:
  - A plain insert of stainless steel.
  - A pleated insert (DN 15-200) with extra large surface, which ensures long intervals between cleaning and low pressure drop.
- FIA 15-40 (½ – 1 ½ in.):
  A special insert (50µ) can be used in combination with a standard version when cleaning a plant during commissioning.
- FIA 50-200 (2 - 8 in.):
  A large capacity filter bag (50µ) can be inserted for cleaning plant during commissioning.
- FIA 65-200 (2½ - 8 in.) can be equipped with a magnetic insert for detention of iron particles and other magnetic particles.
- Each strainer clearly marked with type, size and performance range
- Housing and bonnet of low temperature steel in accordance with the requirements of the Pressure Equipment Directive and those of other international classification authorities
- Classification: DNV, CRN, BV, EAC etc.
  To get an updated list of certification on the products please contact your local Danfoss Sales Company.
- Equipped with 42CrMo5 bolts to withstand high pressure.

Technical data

- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and flammable refrigerants.
  For further information refer to the product instruction for FIA.
- *Temperature range*
  –60/+150°C (–76/+302°F).
- *Max. working pressure*
  65 bar (943 psig)

Design

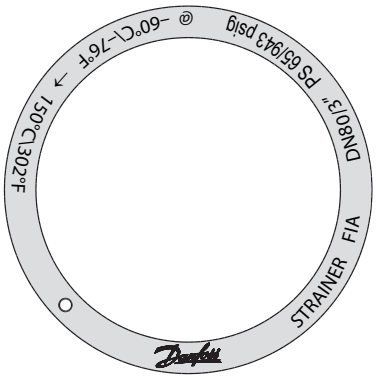
Strainer Insert
A filter grid and filter net of stainless steel ensure long element life. The filter net offers a very high degree of cleanability.

Housing
The strainer housing is made of special, cold resistant steel.

Installation/Maintenance
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.
Install the strainer with the cover in downward position.

Danfoss recommends replacement/cleaning of the strainer when the differential pressure loss >0.5 bar (7.3 psi) in the liquid line and >0.05 bar (0.7 psi) in the suction line. The max. permissible differential pressure is 1 bar (15 psi).

For further information refer to installation instruction for FIA.



Example of marking ring, FIA

Pressure Equipment Directive (PED)
SVL valves are approved according to the European standard specified in the Pressure Equipment Directive and are CE marked.

For further details / restrictions - see Installation guide.

	SVL		
Nominal bore	DN≤ 25 mm (1 in.)	DN32-80 mm (1¼ - 3 in.)	DN100 - 200 mm (4-8 in.)
Classified for	Fluid group I		
Category	Article 3, paragraph 3	II	III

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Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.

The following recommendations of aperture size apply in general to refrigeration installations:

All lines

First start up: **50**µ
(Use strainer element with removable insert for FIA DN15-40 or separate filter bag for FIA DN 50-200. 50µ insert should normally be removed after the first 24 hours of operation)

Liquid Lines

Ahead of pumps: ..... **500**µ [38 mesh]
After pumps: ..... **150**µ [100 mesh] / 250µ [72 mesh]
In front of AKVA valves ..... **100**µ [150 mesh]

Protection of automatic regulation equipment

Generally ..... **150**µ [100 mesh] / 250µ [72 mesh]
Sensitive equipment, e.g.
suction regulators with low temperature ..... **250**µ [72 mesh]

Definition
Mesh is the number of threads per inch. µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Suction Lines

Ahead of screw compressor ..... **250**µ [72 mesh]
Ahead of piston compressor ..... **150**µ [100 mesh]

Flow coefficient (DIN/ANSI)

Connection size (DN) / **FIA**	µ	**mesh**	**wire** mm	**wire** in.	**free space** %	**screen area** Plain elements cm²	Plain elements in²	Pleated elements cm²	Pleated elements in²
15 - 20 (1/2" - 3/4")	100		0.068	0.003	35	25	3.9	45	7.0
	150	100	0.10	0.004	36	25	3.9	45	7.0
	250	72	0.10	0.004	51	25	3.9	45	7.0
	500	38	0.16	0.006	57.6	25	3.9	45	7.0
25 - 40 (1" - 1 1/2")	100		0.068	0.003	35	71	11	160	25.0
	150	100	0.10	0.004	36	71	11	160	25.0
	250	72	0.10	0.004	51	71	11	160	25.0
	500	38	0.16	0.006	57.6	71	11	160	25.0
50 (2")	100		0.068	0.003	35	71	11	200	31.2
	150	100	0.10	0.004	36	87	13.5	200	31.2
	250	72	0.10	0.004	51	87	13.5	200	31.2
	500	38	0.16	0.006	57.6	87	13.5	200	31.2
65 (2 1/2")	150	100	0.10	0.004	36	127	19.7	305	47.6
	250	72	0.10	0.004	51	127	19.7	305	47.6
	500	38	0.16	0.006	57.6	127	19.7	305	47.6
80 (3")	150	100	0.10	0.004	36	205	31.8	450	70.2
	250	72	0.10	0.004	51	205	31.8	450	70.2
	500	38	0.16	0.006	57.6	205	31.8	450	70.2
100 (4")	150	100	0.10	0.004	36	370	57.4	790	123.2
	250	72	0.10	0.004	51	370	57.4	790	123.2
	500	38	0.16	0.006	57.6	370	57.4	790	123.2
125 (5")	150	100	0.10	0.004	36	510	79.1	1105	172.4
	250	72	0.10	0.004	51	510	79.1	1105	172.4
	500	38	0.16	0.006	57.6	510	79.1	1105	172.4
150 (6")	150	100	0.10	0.004	36	726	112.5	1600	249.6
	250	72	0.10	0.004	51	726	112.5	1600	249.6
	500	38	0.16	0.006	57.6	726	112.5	1600	249.6
200 (8")	150	100	0.10	0.004	36	1315	203.8	2900	453.1
	250	72	0.10	0.004	51	1315	203.8	2900	453.1
	500	38	0.16	0.006	57.6	1315	203.8	2900	453.1

Selection of strainer size
(Continued)

K_v values

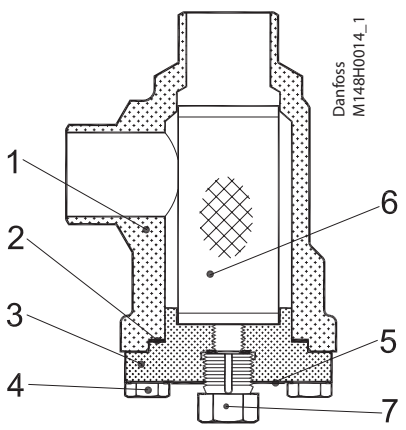
DN	FIA angle - plain filter net				FIA angle - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	3.3	3.4	3.5	3.7	4.2		
20	6.9	7.1	7.3	7.7	8.8		
25	13.8	14.0	14.5	15.2	17.2	17.9	
32	23.0	23.8	24.7	25.5	29.2	30.5	
40	25.1	25.5	26.4	28.1	31.4	32.6	
50	45.1	45.9	47.6	50.2	56.7	58.8	62.0
65		56.1	57.8	60.4	69.3	71.4	74.6
80		104.6	108.0	113.1	129.2	133.4	139.7
100		162.4	167.5	176.0	200.6	206.9	217.4
125		275.4	283.9	298.4	340.2	350.7	368.6
150		362.1	373.2	391.9	447.3	462.9	
200		572.9	590.8	620.5	704.9	730.0	

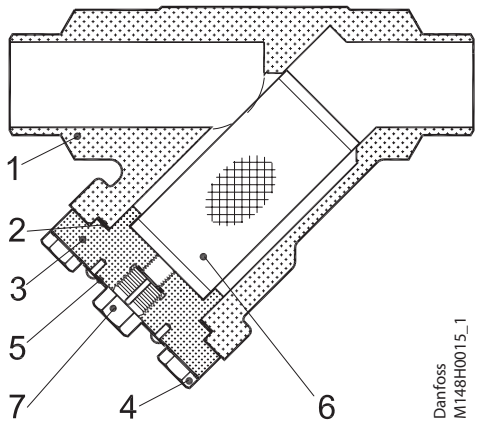
DN	FIA straight - plain filter net				FIA straight - pleated filter net		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	2.5	2.6	2.7	2.8	3.3		
20	5.3	5.4	5.6	5.9	6.9		
25	10.5	10.7	11.1	11.6	13.8	14.5	
32	17.6	18.2	18.9	19.5	23.9	24.7	
40	19.2	19.5	20.2	21.5	25.5	26.4	
50	34.5	35.1	36.4	38.4	45.9	47.6	50.2
65		42.9	44.2	46.2	56.1	57.8	60.4
80		80.0	82.6	86.5	104.6	108.0	113.1
100		124.2	128.1	134.6	162.4	167.5	176.0
125		210.6	217.1	228.2	275.4	283.9	298.4
150		276.9	285.4	299.7	362.1	374.0	
200		438.1	451.8	474.5	570.8	587.3	

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Material specification

FIA 15 - 40 ($^1/_2$ in. - 1 $^1/_2$ in.)



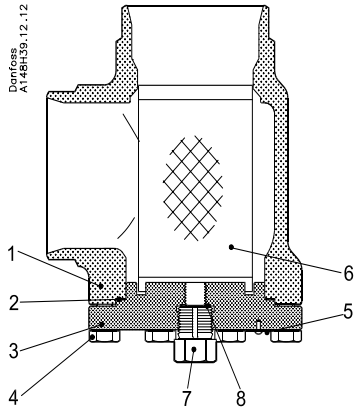


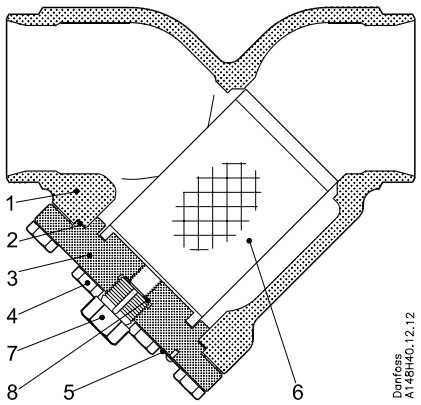
FIA 15-40 ($^1/_2$ in. - 1$^1/_2$ in.)

No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	High temperature steel	42CrMo5 10269		A193
5	Marking label	Aluminium			
6	Strainer element	Stainless steel			
7	Pressure relief (screw)	Stainless steel			

Material specification

FIA 50 - 200 (2 in. - 8 in.)





FIA 50-200 (2 in. - 8 in.)

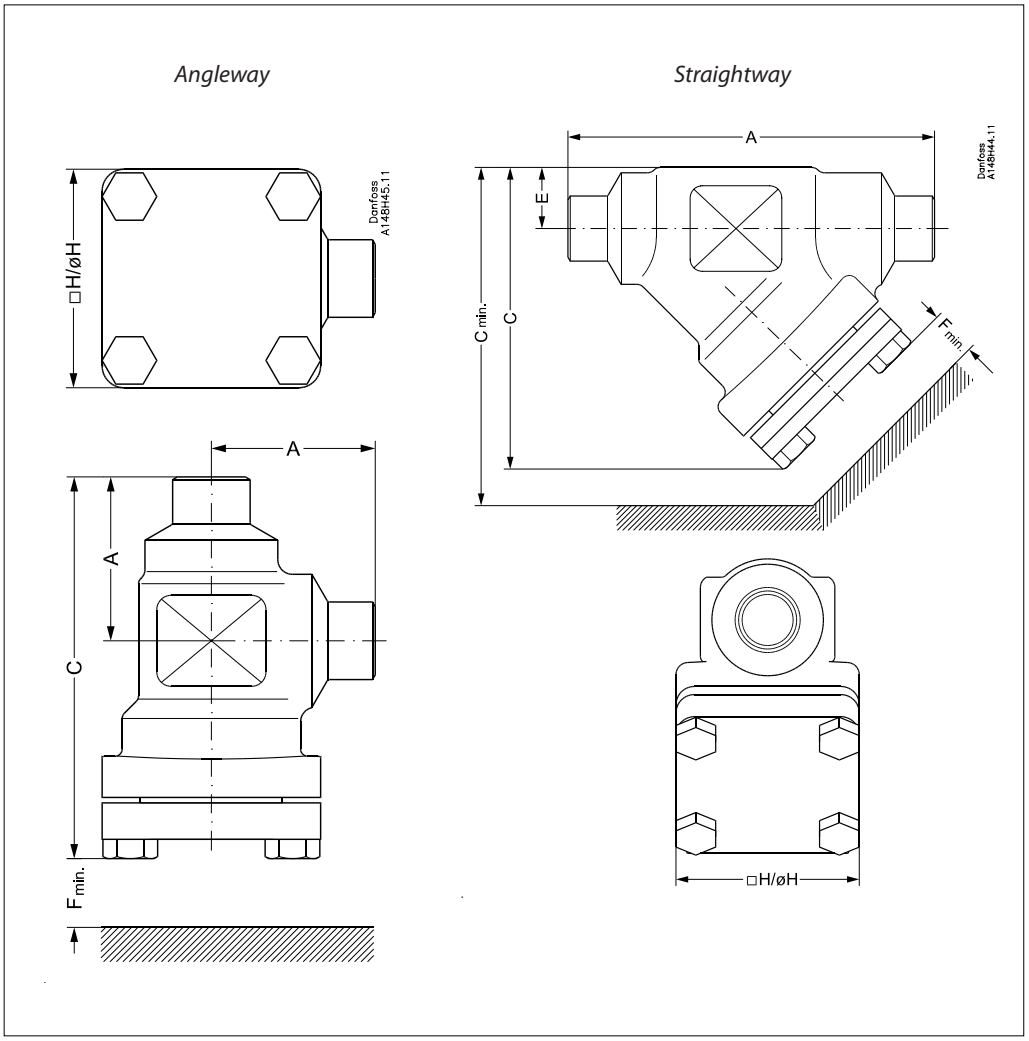
No.	Part	Material	DIN	ISO	ASTM
1	Housing	Steel	G20Mn5QT, 10213-3 --- P285QH+QT, 10222-4		LCC, A352 --- LF2, A350
2	Gasket	Fibre, Non-asbestos			
3	Cover	Steel	P285QH EN10222-4 --- P275NL1 or 2 EN10028-3		LF2, A350 --- A, A662
4	Bolts	High temperature steel	42CrMo5 10269		A193
5	Marking label	Aluminium			
6	Strainer element	Stainless steel			
7	Pressure relief (screw)	Stainless steel			
8*	Packing washer	Aluminium			

* pos 8 used in FIA 50-200

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Dimensions and weights

FIA 15 - 65



Angleway

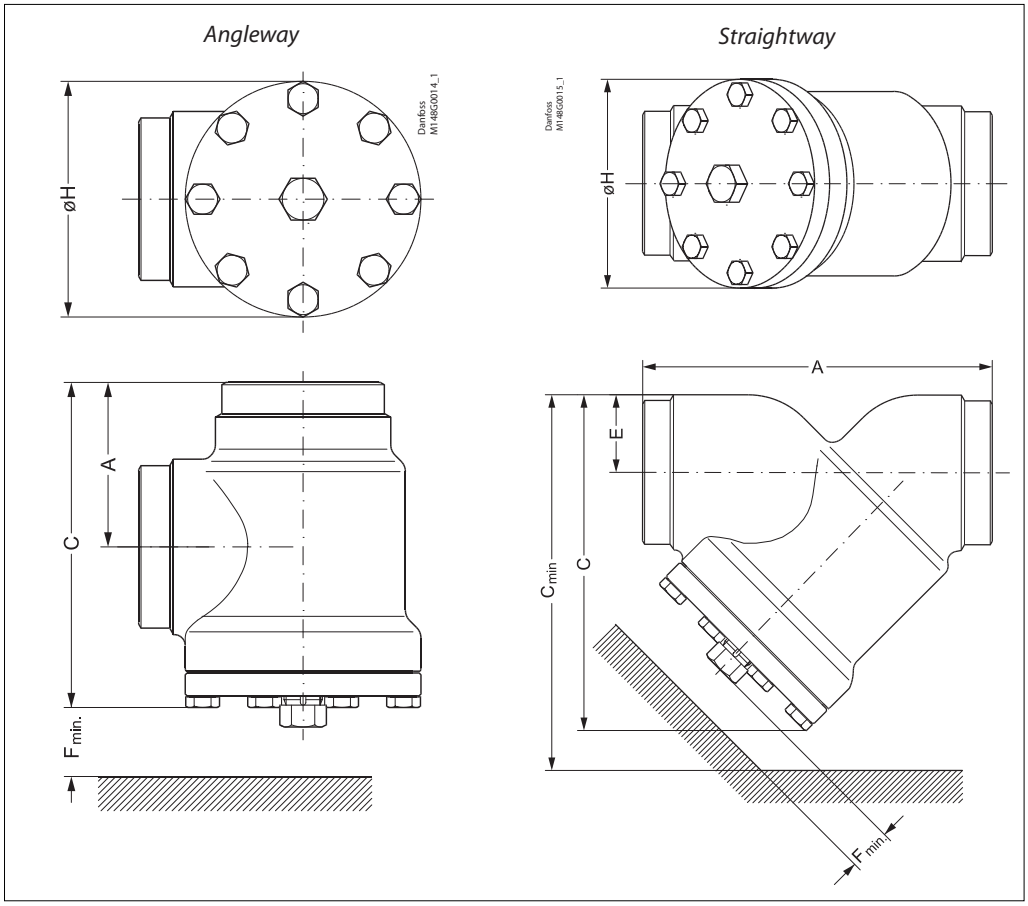
Strainer size		A	C	H	$F_{min.}$	Weight
FIA 15-20	mm	45	105	60	68	1.1 kg
($^1/_2$" - $^3/_4$")	in.	1.77	4.13	2.36	2.68	2.4 lbs
FIA 25-40	mm	55	132	70	95	1.7 kg
(1" - 1$^1/_2$")	in.	2.17	5.20	2.76	3.74	3.7 lbs
FIA 50	mm	60	132	77	92	2.8 kg
(2")	in.	2.36	5.20	3.03	3.62	6.2 lbs
FIA 65	mm	70	152	90	107	3.8 kg
(2$^1/_2$")	in.	2.76	5.98	3.54	4.21	8.4 lbs

Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 15-20	mm	120	99	133	60	20	68	1.4 kg
($^1/_2$" - $^3/_4$")	in.	4.72	3.90	5.24	2.36	0.79	2.68	3.1 lbs
FIA 25-40	mm	155	129	177	70	26	95	2.4 kg
(1" - 1$^1/_2$")	in.	6.10	5.08	6.97	2.76	1.02	3.74	5.3 lbs
FIA 50	mm	148	138	184	77	32	92	3.5 kg
(2")	in.	5.83	5.43	7.24	3.03	1.26	3.62	7.7 lbs
FIA 65	mm	176	165	219	90	40	107	5.3 kg
(2$^1/_2$")	in.	6.93	6.50	8.62	3.54	1.57	4.21	11.7 lbs

Dimensions and weights

FIA 80 - 200



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA 80	mm	90	189	129	133	7.3 kg
(3")	in.	3.54	7.44	5.08	5.24	16.1 lbs
FIA 100	mm	106	223	156	163	11.9 kg
(4")	in.	4.17	8.78	6.14	6.42	26.2 lbs
FIA 125	mm	128	268	192	190	21.2 kg
(5")	in.	5.04	10.6	7.56	7.48	46.7 lbs
FIA 150	mm	145	303	219	223	30.5 kg
(6")	in.	5.71	11.93	8.62	8.78	67.2 lbs
FIA 200	mm	180	372	276	280	68 kg
(8")	in.	7.09	14.65	10.87	11.02	150 lbs

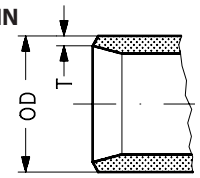
Straightway

Strainer size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA 80	mm	216	204	271	129	48	133	8.6 kg
(3")	in.	8.50	8.03	10.67	5.08	1.89	5.24	19 lbs
FIA 100	mm	264	256	337	156	60	163	14.9 kg
(4")	in.	10.39	10.08	13.27	6.14	2.36	6.42	32.8 lbs
FIA 125	mm	322	313	408	192	74	190	26.9 kg
(5")	in.	12.68	12.32	16.06	7.56	2.91	7.48	59.3 lbs
FIA 150	mm	370	370	482	219	91	223	51 kg
(6")	in.	14.57	14.57	18.98	8.62	3.58	8.78	112 lbs
FIA 200	mm	464	465	605	276	117	280	95 kg
(8")	in.	18.27	18.31	23.82	10.87	4.61	11.02	209 lbs

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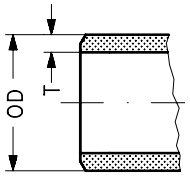
Connections

DIN



Size mm	Size in.	OD mm	T mm	OD in.	T in.			k_v-angle m^3/h	k_v-straight m^3/h	C_v-angle USgal/min	C_v-straight USgal/min
Butt-weld DIN (EN 10220)											
15	½	21.3	2.3	0.839	0.091			7.0	4.9	8.1	5.7
20	¾	26.9	2.3	1.059	0.091			14.6	10.2	16.9	11.8
25	1	33.7	2.6	1.327	0.103			24.8	17.4	28.8	20.2
32	1¼	42.4	2.6	1.669	0.102			42.6	29.8	49.4	34.6
40	1½	48.3	2.6	1.902	0.103			45.2	31.6	52.4	36.7
50	2	60.3	2.9	2.37	0.11			80	65	93	76
65	2½	76.1	2.9	3	0.11			120	97	140	113
80	3	88.9	3.2	3.50	0.13			182	152	211	176
100	4	114.3	3.6	4.50	0.14			313	278	363	323
125	5	139.7	4.0	5.50	0.16			514	470	596	545
150	6	168.3	4.5	6.63	0.18			785	597	911	693
200	8	219.1	6.3	8.63	0.25			1168	1024	1355	1188

ANSI



Size mm	Size in.	OD mm	T mm	OD in.	T in.			k_v-angle m^3/h	k_v-straight m^3/h	C_v-angle USgal/min	C_v-straight USgal/min
Butt-weld ANSI (B 36.10 Schedule 80)											
15	½	21.3	3.7	0.839	0.146			7.0	4.9	8.1	5.7
20	¾	26.9	4.0	1.059	0.158			14.6	10.2	16.9	11.8
25	1	33.7	4.6	1.327	0.181			24.8	17.4	28.8	20.2
32	1¼	42.4	4.9	1.669	0.193			42.6	29.8	49.4	34.6
40	1½	48.3	5.1	1.902	0.201			45.2	31.6	52.4	36.7
Butt-weld ANSI (B 36.10 Schedule 40)											
50	2	60.3	3.9	2.37	0.15			80	65	93	76
65	2½	73.0	5.2	2.87	0.20			120	97	140	113
80	3	88.9	5.5	3.50	0.22			182	152	211	176
100	4	114.3	6.0	4.50	0.24			313	278	363	323
125	5	141.3	6.6	5.56	0.26			514	470	596	545
150	6	168.3	7.1	6.63	0.28			785	597	911	693
200	8	219.1	8.2	8.63	0.32			1168	1024	1355	1188

Ordering

Size [DN]	Parts Program				
	Housing				Top complete
	ANG		STR		FIA
	DIN	ANSI	DIN	ANSI	
6					
10					
15	148B6622	148B6612	148B6642	148B6632	148B5783
20	148B6623	148B6613	148B6643	148B6633	148B5783
25	148B6624	148B6614	148B6644	148B6634	148B5784
32	148B6625	148B6615	148B6645	148B6635	148B5784
40	148B6626	148B6616	148B6646	148B6636	148B5784
50	148B6627	148B6617	148B6647	148B6637	148B5785
65	148B6628	148B6618	148B6648	148B6638	148B5786
80	148B6629	148B6619	148B6649	148B6639	148B5787
100	148B6630	148B6620	148B6650	148B6640	148B5788
125	148B6631	148B6621	148B6651	148B6641	148B5789
150					
200					

Size [DN]	Complete valve			
	FIA			
	ANG		STR	
	DIN	ANSI	DIN	ANSI
6				
10				
15				
20				
25				
32				
40				
50				
65				
80				
100				
125				
150	148B6669	148B6671	148B6670	148B6672
200	148B6677	148B6679	148B6678	148B6680

Strainer element

FIA Size		Strainer insert 100µ 150 mesh	Strainer insert 150µ 100 mesh	Strainer insert 250µ 72 mesh	Strainer insert 500µ 38 mesh	Pleated Strainer insert 150µ 100 mesh	Pleated Strainer insert 250µ 72 mesh	Pleated Strainer insert 500µ 38 mesh
mm	in.							
15	½	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾							
25	1	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼							
40	1½							
50	2	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
80	3	-	**148H3119**	**148H3120**	**148H3121**	**148H3181**	**148H3186**	**148H3191**
100	4	-	**148H3132**	**148H3140**	**148H3146**	**148H3182**	**148H3187**	**148H3192**
125	5	-	**148H3133**	**148H3141**	**148H3147**	**148H3183**	**148H3188**	**148H3193**
150	6	-	**148H3134**	**148H3142**	**148H3148**	**148H3226**	**148H3293***	-
200	8	-	**148H3135**	**148H3143**	**148H3149**	**148H3297**	**148H3294***	-

* 60 mesh

Accessories

Part	Accessory for	Code number
Magnet insert	FIA 65-100	**148H3447**
	FIA 125-200	**148H3448**

Part	Accessory for	Code number
Strainer element µ150 with removable element µ50 for the first start up	FIA 15-20	**148H3301**
	FIA 25-40	**148H3302**

Part	Accessory for	Code number
Filter bag	FIA 50	**148H3150**
	FIA 65	**148H3151**
	FIA 80	**148H3152**
	FIA 100	**148H3153**
	FIA 125	**148H3154**
	FIA 150	**148H3155**
	FIA 200	**148H3156**

Part	Accessory for	Code number
Purge valve complete	FIA 50 - 300	**148B3745**
Blind nut with gasket		**148H3450**

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ENGINEERING
TOMORROW

Strainers in stainless steel
Type FIA SS

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ENGINEERING TOMORROW

Strainers in stainless steel
Type FIA SS



In certain specific areas such as outdoor applications and corrosive atmospheres, such as coastal installations, there is a need for high surface protection to prevent failure due to corrosion.

Today's food safety standards often call for daily treatment with detergents to protect against bacteria growth, again producing a need for high surface protection.

FIA SS strainers are a range of angle-way and straight-way strainers which are carefully designed to give favourable flow conditions.

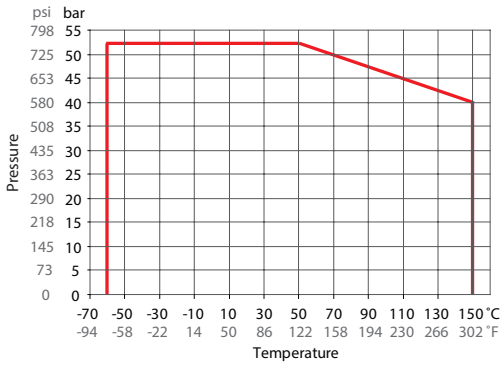
The design makes the strainer easy to install, and ensures quick strainer inspection and cleaning.

FIA SS strainers are used ahead of automatic controls, pumps, compressors etc., for initial plant start-up and where permanent filtration of the refrigerant is required. The strainer reduces the risk of undesirable system breakdowns and reduces wear and tear on plant components.

Features

- Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.
- Designed to give favourable flow conditions.
- Housing is made of special cold resistant stainless steel approved for low temperature operations.
- Easy to disassemble for inspection and service.
- Butt-weld DIN and ANSI connections.
- Max. operating pressure: 52 bar g (754 psig)
- Temperature range: –60/+150°C (–76 +302°F).
- Compact and light valves for easy handling and installation.
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.

Pressure and temperature range



Design

Connections
Available with the following connections:

- Butt-weld DIN (EN 10220)
  DN 15 - 65 (½ - 2½ in.)
- Butt-weld ANSI (B 36.19M)
  DN 15 - 65 (½ - 2½ in.)

Strainer Insert
A filter grid and filter net of stainless steel ensure long element life. The filter net offers a very high degree of cleanability.

Housing
Made of stainless steel approved for low temperature operations.

Pressure Equipment Directive (PED)
FIA SS strainers are approved in accordance with the European standard specified in the Pressure Equipment Directive and are CE marked.
For further details / restrictions - see Installation Instruction.

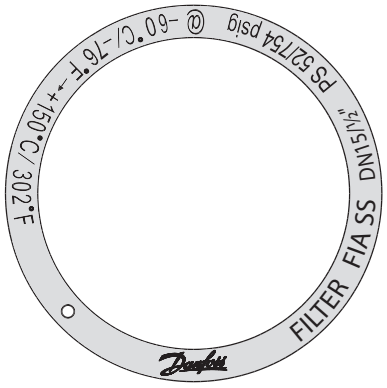
Installation/Maintenance
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.

Install the strainer with the cover in downward position.

Danfoss recommends replacement/cleaning of the strainer when the differential pressure loss >0.5 bar (7.3 psi) in the liquid line and >0.05 bar (0.7 psi) in the suction line. The max. permissible differential pressure is 1 bar (15 psi).

For further information refer to installation instruction for FIA SS.

Identification:



Example of marking ring, FIA SS

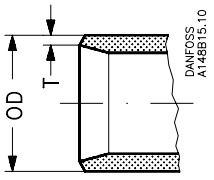
	FIA SS	
Nominal bore	DN ≤ 25 (1 in.)	DN 32-65 mm (1¼ - 2½ in.)
Classified for	Fluid group I	
Category	Article 3, paragraph 3	II

Technical data

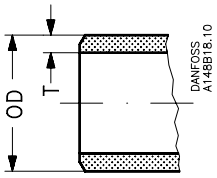
- *Refrigerants*
  Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO_2) and all flammable refrigerants.
  For further information please see installation instruction for FIA SS.
- *Temperature range*
  –60°C/+150°C (–76°F/+302°F).
- *Max. working pressure:*
  52 bar g (754 psi g).

Connections

DIN



ANSI



Size		OD	T
Butt-weld DIN (EN 10220)			
15	mm	21.3	2.3
½	in.	0.839	0.091
20	mm	26.9	2.3
¾	in	1.059	0.091
25	mm	33.7	2.6
1	in.	1.327	0.103
32	mm	42.4	2.6
1¼	in.	1.669	0.102
40	mm	48.3	2.6
1½	in.	1.902	0.103
50	mm	60.3	2.9
2	in.	2.37	0.11
65	mm	76.1	2.9
2½	in.	3	0.11

Size		OD	T
Butt-weld ANSI (B 36.19M, SCHEDULE 40)			
15	mm	21.3	2.8
½	in.	0.839	0.11
20	mm	26.9	2.9
¾	in	1.06	0.11
25	mm	33.7	3.5
1	in.	1.33	0.14
32	mm	42.4	3.6
1¼	in.	1.67	0.14
40	mm	48.3	3.7
1½	in.	1.9	0.15
Butt-weld ANSI (B 36.19M, SCHEDULE 10)			
50	mm	60.3	2.8
2	in.	2.37	0.11
65	mm	73	3.1
2½	in.	2.87	0.12

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Selection of strainer size

The mesh aperture size of the strainer must satisfy the requirements stated by the suppliers of the equipment to be protected.

The following recommendations of aperture size apply in general to refrigeration installations:

All lines
First start up: **50**µ
(Use filter element with removable insert for FIA SS DN15-40 or separate filter bag for FIA SS DN 50-65. 50µ insert should normally be removed after the first 24 hours of operation)

Liquid Lines
Ahead of pumps: ..... **500**µ [38 mesh]
After pumps: ..... **150**µ [100 mesh] / 250µ [72 mesh]
In front of AKVA valves ..... **100**µ [150 mesh]

Protection of automatic regulation equipment
Generally ..... **150**µ [100 mesh] / 250µ [72 mesh]
Sensitive equipment, e.g.
suction regulators with low temperature ..... **250**µ [72 mesh]

Definition
Mesh is the number of threads per inch.
µ (microns) is the distance between two threads (1µ = 1 /1000 mm).

Suction Lines
Ahead of screw compressor ..... **250**µ [72 mesh]
Ahead of piston compressor ..... **150**µ [100 mesh]

Flow coefficient (DIN/ANSI)

Connection size (DN) **FIA SS**	µ	**mesh**	**wire** [mm]	**wire** [in]	**free space** [%]	**screen area**			
						Plain elements		Pleated elements	
						[cm²]	[in²]	[cm²]	[in²]
15 – 20 (½ – ¾ in)	100		0.068	0.003	35	25	3.9	45	7.0
	150	100	0.10	0.004	36	25	3.9	45	7.0
	250	72	0.10	0.004	51	25	3.9	45	7.0
	500	38	0.16	0.006	57.6	25	3.9	45	7.0
25 – 40 (1– 1 ½ in)	100		0.068	0.003	35	71	11	160	25.0
	150	100	0.10	0.004	36	71	11	160	25.0
	250	72	0.10	0.004	51	71	11	160	25.0
	500	38	0.16	0.006	57.6	71	11	160	25.0
50 (2 in)	100		0.068	0.003	35	71	11	200	31.2
	150	100	0.10	0.004	36	87	13.5	200	31.2
	250	72	0.10	0.004	51	87	13.5	200	31.2
	500	38	0.16	0.006	57.6	87	13.5	200	31.2
65 (2 ½ in)	150	100	0.10	0.004	36	127	19.7	305	47.6
	250	72	0.10	0.004	51	127	19.7	305	47.6
	500	38	0.16	0.006	57.6	127	19.7	305	47.6

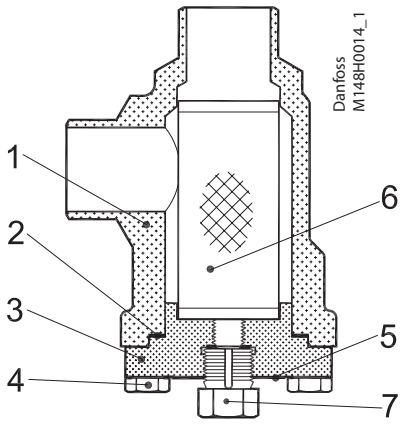
K_v values

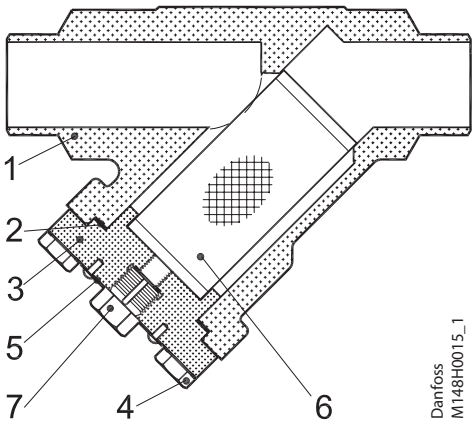
DN	**FIA SS angle - plain filter net**				**FIA SS angle - pleated filter net**		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	3.3	3.4	3.5	3.7	4.2		
20	6.9	7.1	7.3	7.7	8.8		
25	13.8	14.0	14.5	15.2	17.2	17.9	
32	23.0	23.8	24.7	25.5	29.2	30.5	
40	25.1	25.5	26.4	28.1	31.4	32.6	
50	45.1	45.9	47.6	50.2	56.7	58.8	62.0
65		56.1	57.8	60.4	69.3	71.4	74.6

DN	**FIA SS straight - plain filter net**				**FIA SS straight - pleated filter net**		
	µ100	µ150	µ250	µ500	µ150	µ250	µ500
15	2.5	2.6	2.7	2.8	3.3		
20	5.3	5.4	5.6	5.9	6.9		
25	10.5	10.7	11.1	11.6	13.8	14.5	
32	17.6	18.2	18.9	19.5	23.9	24.7	
40	19.2	19.5	20.2	21.5	25.5	26.4	
50	34.5	35.1	36.4	38.4	45.9	47.6	50.2
65		42.9	44.2	46.2	56.1	57.8	60.4

Material specification

FIA SS 15 – 65 (½ in – 2 ½ in)





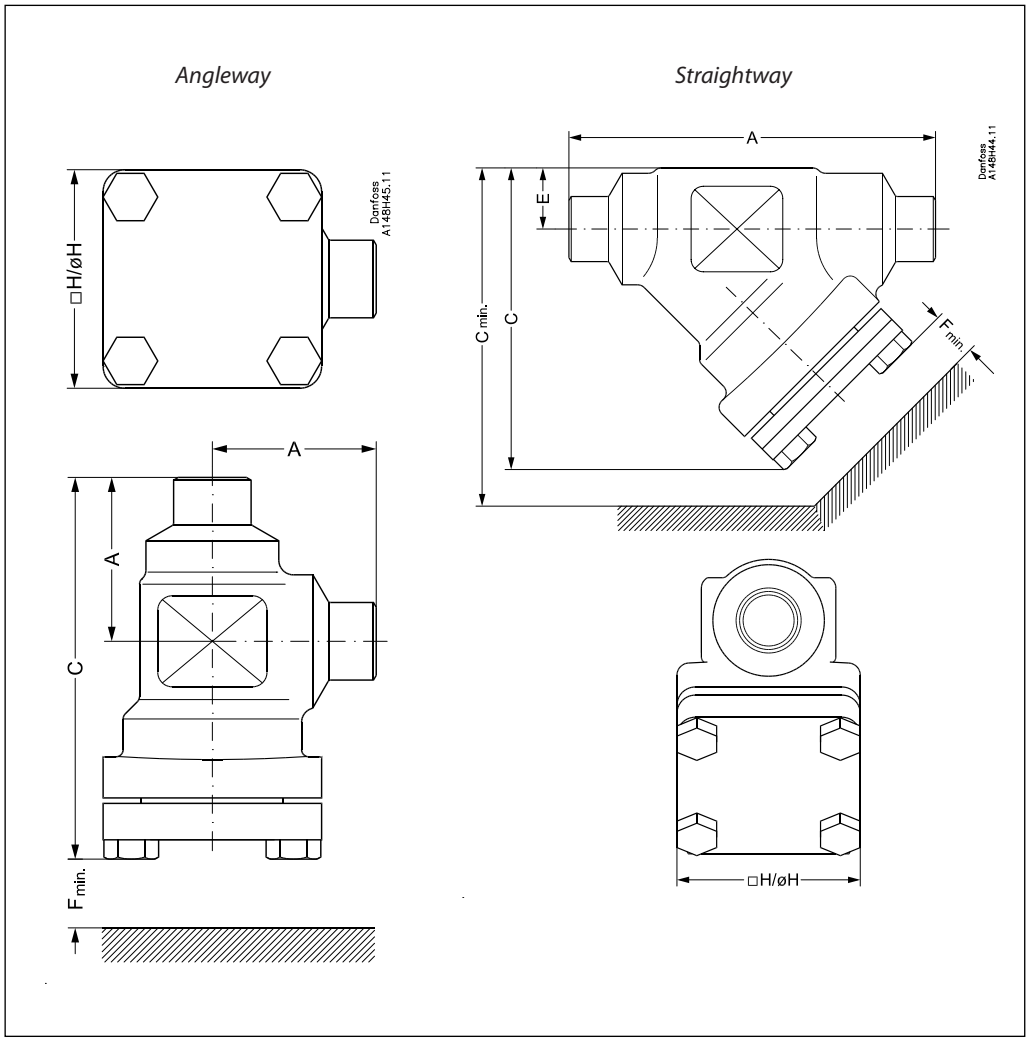
FIA SS 15-65 (½ – 2 ½ in)

No.	Part	Material	DIN	ISO	ASTM
1	Housing	Stainless steel (FIA SS only)	GX5CrNi19-10 EN10213-4		AISI 304
2	Gasket	Fibre, Non-asbestos			
3	Cover	Stainless steel (FIA SS only)	GX5CrNi19-10 EN10213-4		AISI 304
4	Bolts	Stainless steel	A2-70	A2-70	Type 308
5	Marking label	Aluminium			
6	Filter element	Stainless steel			
7	Pressure relief (screw)	Stainless steel			

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Dimensions and weights

FIA SS 15 – 65



Angleway

Strainer size		A	C	H	$F_{min.}$	Weight
FIA SS 15 – 20	[mm]	45	105	60	68	1.1 kg
(1/2 – 3/4 in)	[in]	1.77	4.13	2.36	2.68	2.4 lbs
FIA SS 25 – 40	[mm]	55	132	70	95	1.7 kg
(1 – 1 1/2 in)	[in]	2.17	5.20	2.76	3.74	3.7 lbs
FIA SS 50	[mm]	60	132	77	92	2.8 kg
(2 in)	[in]	2.36	5.20	3.03	3.62	6.2 lbs
FIA SS 65	[mm]	70	152	90	107	3.8 kg
(2 1/2 in)	[in]	2.76	5.98	3.54	4.21	8.4 lbs

Straightway

Valve size		A	C	$C_{min.}$	H	E	$F_{min.}$	Weight
FIA SS 15 – 20	[mm]	120	99	133	60	20	68	1.4 kg
(1/2 – 3/4 in)	[in]	4.72	3.90	5.24	2.36	0.79	2.68	3.1 lbs
FIA SS 25 – 40	[mm]	155	129	177	70	26	95	2.4 kg
(1 – 1 1/2 in)	[in]	6.10	5.08	6.97	2.76	1.02	3.74	5.3 lbs
FIA SS 50	[mm]	148	138	184	77	32	92	3.5 kg
(2 in)	[in]	5.83	5.43	7.24	3.03	1.26	3.62	7.7 lbs
FIA SS 65	[mm]	176	165	219	90	40	107	5.3 kg
(2 1/2 in)	[in]	6.93	6.50	8.62	3.54	1.57	4.21	11.7 lbs

Ordering

The table below is used to identify the strainer required. Please note that you have to order **FIA SS strainer without element, a strainer element** and **accessories.**

Example:
FIA SS 50 D ANG + FIA-X 50 150µ Strainer Element + Filter Bag = **148H5757** + **148H3130** + **148H3150**

Size mm	Size in.	Type	FIA SS Without Filter Element	Filter Element 100µ 150 mesh	Filter Element 150µ 100 mesh	Filter Element 250µ 72 mesh	Filter Element 500µ 38 mesh	Pleated filter element 150µ 100 mesh	Pleated filter element 250µ 72 mesh	Pleated filter element 500µ 38 mesh
Butt-weld DIN (EN 10220) - Angleway										
15	½	FIA SS 15 D ANG	**148B5295**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA SS 20 D ANG	**148B5383**							
25	1	FIA SS 25 D ANG	**148B5492**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA SS 32 D ANG	**148B5587**							
40	1½	FIA SS 40 D ANG	**148B5666**							
50	2	FIA SS 50 D ANG	**148B5757**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA SS 65 D ANG	**148B5851**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
Butt-weld ANSI (B 36.19M SCHEDULE 10) - Angleway										
65	2½	FIA SS 65 A10 ANG	**148B6498**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
Butt-weld DIN (EN 10220) - Straightway										
15	½	FIA SS 15 D STR	**148B5296**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA SS 20 D STR	**148B5384**							
25	1	FIA SS 25 D STR	**148B5493**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA SS 32 D STR	**148B5588**							
40	1½	FIA SS 40 D STR	**148B5667**							
50	2	FIA SS 50 D STR	**148B5758**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA SS 65 D STR	**148B5852**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**
Butt-weld ANSI (B 36.19M SCHEDULE 40) - Straightway										
15	½	FIA SS 15 A40 STR	**148B6493**	**148H3122**	**148H3124**	**148H3126**	**148H3128**	**148H3303**	**148H3363**	-
20	¾	FIA SS 20 A40 STR	**148B6494**							
25	1	FIA SS 25 A40 STR	**148B6495**	**148H3123**	**148H3125**	**148H3127**	**148H3129**	**148H3304**	**148H3269**	-
32	1¼	FIA SS 32 A40 STR	**148B6496**							
40	1½	FIA SS 40 A40 STR	**148B6497**							
Butt-weld ANSI (B 36.19M SCHEDULE 10) - Straightway										
50	2	FIA SS 50 A10 STR	**148B5758**	**148H3157**	**148H3130**	**148H3138**	**148H3144**	**148H3179**	**148H3184**	**148H3189**
65	2½	FIA SS 65 A10 STR	**148B6499**	-	**148H3131**	**148H3139**	**148H3145**	**148H3180**	**148H3185**	**148H3190**

D = Butt-weld DIN
A = Butt-weld ANSI

ANG = Angleway
STR = Straightway

Accessories

Part	Accessory for	Code number
Filter element µ150 with removable element µ50 for the first start up	FIA SS 15-20	**148H3301**
	FIA SS 25-40	**148H3302**

Part	Accessory for	Code number
Filter bag	FIA SS 50	**148H3150**
	FIA SS 65	**148H3151**

Part	Accessory for	Code number
Blind nut with gasket	FIA SS 50 - 65	**148H3450**

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ENGINEERING
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Strainers
type FA

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ENGINEERING
TOMORROW

Strainers
type FA



Strainer type FA with interchangeable filter insert is used in lines carrying fluorinated refrigerants, ammonia, water, brine, oil, and gas.

Features

- Retains contaminants, e.g. slag, and weld beads and swarf.
- Pressure drop insignificant
- Classification: DNV, CRN, BV, EAC etc. To get an updated list of certification on the products please contact your local Danfoss Sales Company.

Technical data

- *Temperature of media*
  -50 – 140 °C
- *Max. working pressure*
  PS = 28 bar
- *Max. test pressure*
  p' = 42 bar
- *Filter insert*
  Stainless steel weave, mesh size 150µ (100 mesh)

Materials

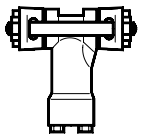
- Gaskets are non asbestos
- Valve housing made of GGG - 40.3

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Ordering

Complete valves





Type	Application	Connection to valve or pipeline	Strainer area [cm²]	Strainer vol. [cm³]	k_v value [1] [m³/h]	Staybolts	Code no.
FA 15	For direct fitting on valve	6 F, TE 12, CVM	40	68	3.3	M12 × 180	**006-0040** [2]
		TEA 20, TEAT 20, TEVA 20			3.3	M12 × 170	**006-0042** [2]
		EVR 15, EVRA 3			3.3	M12 × 188	**006-0043** [2]
		EVRA/T 10-15			3.3	M12 × 107	**006-1012** [2]
FA 20		EVR 20	60	145	7.0	M12 × 240	**006-0046** [2]
		TEA 85, TEAT 85, TEVA 85			7.0	M12 × 206	**006-0048** [2]
		EVRA/T 20			7.0	M12 × 127	**006-1013** [2]
FA 15	For fitting in pipelines	1/4 in weld flanges	40	68	1.9	M12 × 127	**006-0050** [3]
		3/8 in weld flanges			2.6	M12 × 127	**006-0051** [3]
		1/2 in weld flanges			3.5	M12 × 127	**006-0052** [3]
		3/4 in weld flanges			3.5	M12 × 127	**006-0053** [3]
		1/2 in solder flanges			2.6	M12 × 127	**006-0057** [3]
		5/8 in solder flanges			3.4	M12 × 127	**006-0058** [3]
		3/4 in solder flanges			3.2	M12 × 127	**006-0059** [3]
		7/8 in solder flanges			3.5	M12 × 127	**006-0075** [3]
		1 in solder flanges			3.5	M12 × 127	**006-0060** [3]
FA 20		1/2 in weld flanges	60	145	5.1	M12 × 160	**006-0065** [3]
		3/4 in weld flanges			7.4	M12 × 160	**006-0066** [3]
		1 in weld flanges			7.4	M12 × 160	**006-0067** [3]
		5/8 in solder flanges			5.1	M12 × 160	**006-0071** [3]
		1 1/8 in solder flanges			7.3	M12 × 160	**006-0074** [3]

[1] The k_v value is the flow of water in m³/h at a pressure drop in the strainer of 1 bar, ρ =1000 kg/m³.
[2] Code no. with bolts, screws and gaskets but without flanges
[3] Code no. with flanges, bolts, screws and gaskets.

Components / Accessories

Strainer housing without flanges

Type	Strainer area [cm²]	Strainer volume [cm³]	k_v value [1] [m³/h]	Code no.
FA 15	40	68	3.3	**036-0060**
FA 20	60	145	7.0	**036-0061** [2]
FA 20	60	145	7.0	**036-0062** [3]

[1] The k_v value is the flow of water in m³/h at a pressure drop in the strainer of 1 bar, ρ = 1000 kg/m³.
[2] For direct fitting in pipeline.
[3] For direct fitting on to valves.

Single flanges with flange gaskets for FA 15

Version	Type	Code no.
3/8 in weld	T	**006-1120**
	G	**006-1121**
1/2 in weld	T	**006-1122**
	G	**006-1123**
3/4 in weld	T	**006-1124**
	G	**006-1125**
5/8 in solder	T	**006-1162**
	G	**006-1163**
7/8 in solder	T	**006-1176**
	G	**006-1177**

Staybolt set with gaskets

Version	Code no.
M12 × 107 mm	**006-1101**
M12 × 127 mm	**006-1108**
M12 × 160 mm	**006-1136**
M12 × 170 mm	**006-1103**
M12 × 180 mm	**006-1102**
M12 × 188 mm	**006-1104**
M12 × 206 mm	**006-1106**
M12 × 240 mm	**006-1105**

Single flanges with flange gaskets for FA 20 [1]

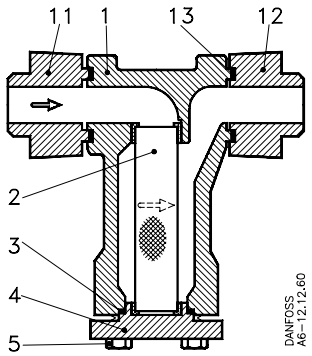
Version	Type	Code no.
3/4 in weld	T	**006-1128**
	G	**006-1129**
1 in weld	T	**006-1130**
	G	**006-1131**
1 1/8 in solder	T	**006-1174**
	G	**006-1175**

[1] Only for code no. **036-0061**.

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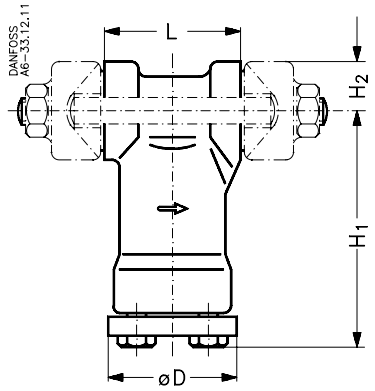
Design

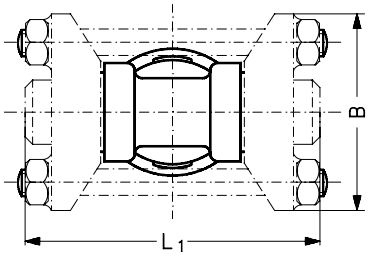
1. Strainer housing
2. Strainer
3. Gasket
4. Cover
5. Screw
11. Flange (tongue)
12. Flange (groove)
13. Flange gasket
14. Flange screw



FA 15 and 20

Dimensions and weights





FA 15 and 20

Type	Code no.	H_1 [mm]	H_2 [mm]	L [mm]	Weld flanges L_1 [mm]	Solder flanges L_1 [mm]	B [mm]	∅ D [mm]	Weight [kg]
FA 15	**006-0040 → 006-0043**	95	20	54				51	1.2
FA 15	**006-0050 → 006-0058**	95	20		116	109	80	51	1.7
FA 20	**006-0046 → 006-0048**	106	26	72				60	2.2
FA 20	**006-0065 → 006-0074**	106	26		142	137	96	60	2.9

ENGINEERING
TOMORROW

ELIMINATOR® filter drier with replaceable solid core
Type DCR

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AI222586433727en-000101 | 2017.02

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ENGINEERING
TOMORROW

ELIMINATOR® filter drier with replaceable solid core
Type DCR



Danfoss ELIMINATOR® filter driers with replaceable solid core, type DCR, are for use in liquid and / or suction lines in refrigeration, freezing and air-conditioning systems.

Besides being able to meet the demanding requirements of high working pressure levels when operating with R410A thanks to replaceable solid cores the DCR programme offers flexibility with respect to different applications.

Available with steel and copper connections.

Features

DCR housing:

- PED approved for PS up to 46 bar
- DCR housing (incl. core holder) are made entirely of steel and are thus compatible with all refrigerants
- DCR housings have undergone phosphate pre-treatment and have a corrosion-resistant powder-paint finish
- DCR housings are helium leak tested

Top covers for DCR housings:

- Zinc-chromated steel top covers with or without external access connection

Inserts for DCR housings - strainer

48 - F strainer - compatible with all refrigerants:

- Retains dirt particles larger than 15 µm
- For use direct in DCR housings
- Utilised in the suction or liquid line

Inserts for DCR housings - solid cores

48 - DM - 100% molecular sieve solid core suitable for HFC (R134a, R404A, R507, R407C and R410A) refrigerants:

- Provides high moisture adsorption at low and high condensing temperatures
- Effective protection against impurities

48 - DC - 80% molecular sieve and 20% activated alumina solid core suitable for HCFC (R22) refrigerants and compatible with HFC (R134a, R404A, R507, R407C and R410A) refrigerants:

- Adsorbs moisture and acid in the system throughout the entire temperature range

48 - DA - 30% molecular sieve and 70% activated alumina solid core suitable after compressor burnout and compatible with HCFC (R22) / HFC (R134a, R404A, R507, R407C and R410A) refrigerants:

- High acid adsorption and standard water adsorption

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

Approvals

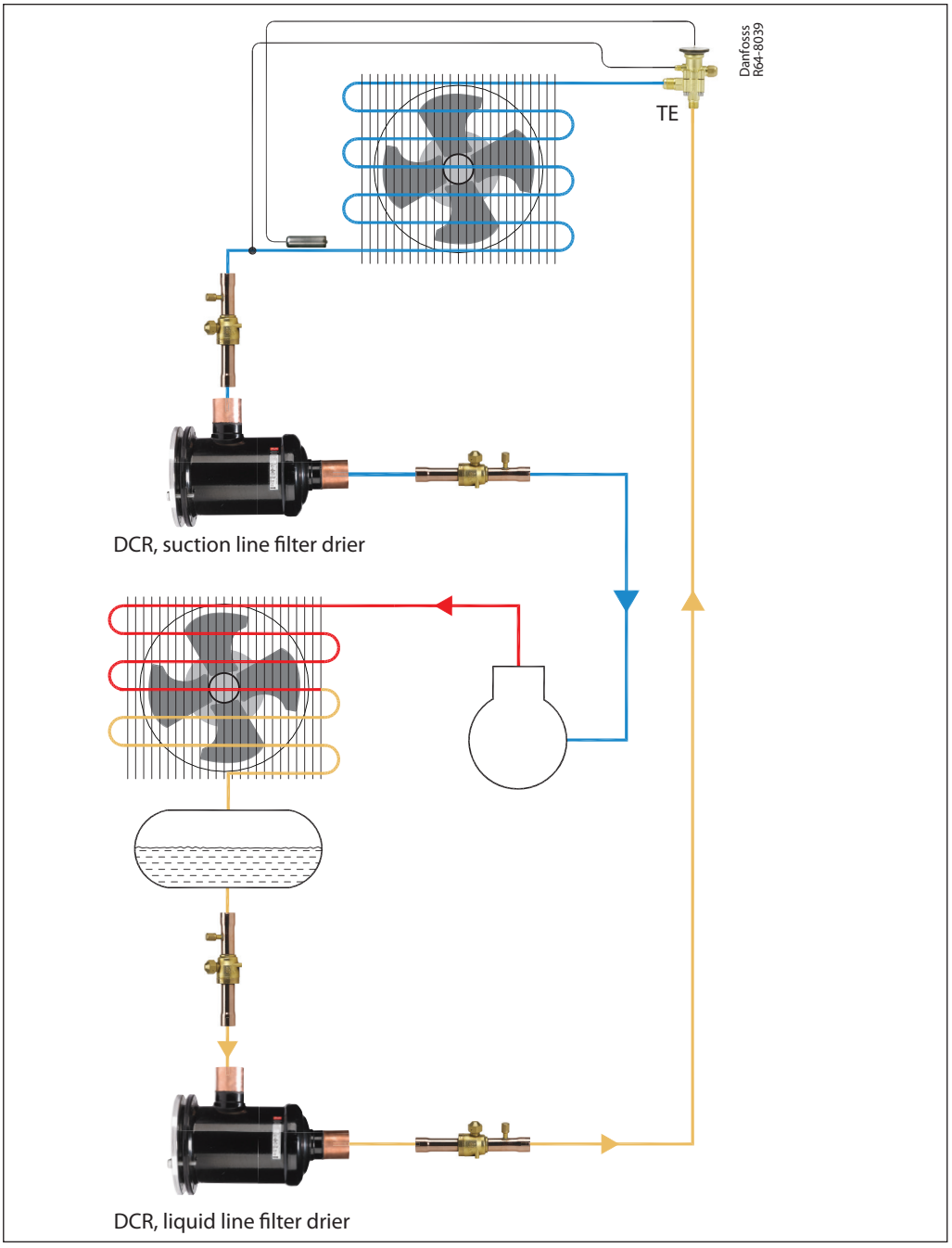
CE marked in accordance with the European Pressure Equipment Directive - 97/23/EC

UL US listed 207 and C22.2 no. 140.3
EN 12284

Introduction

Danfoss ELIMINATOR® filter driers with replaceable solid core, type DCR, protect refrigeration, freezing and air-conditioning systems from moisture, acids, and solid particles.

With these contaminants eliminated, systems are safer from harmful chemical reactions and from abrasive impurities.



Technical data

Type	Maximum working pressure PS [bar]	Temperature range
DCR 048	46	- 40 – 70 °C
DCR 096	46	- 40 – 70 °C
DCR 144	35[1]) / 46[2])	- 40 – 70 °C
DCR 192	28[1]) / 40[2])	- 40 – 70 °C

[1]) For usage with strainer or as a receiver application
[2]) For "*drier*" application using all the permissible cores

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Capacitiy

Drying and liquid capacity , type 48-DM

Type	№ of cores	Drying capacity [kg refrigerant] [1]										Liquid capacity [kW] [2]					Max. working pressure PS
		R134a		R404A		R507		R22/R407C		R410A		R134a	R404A	R507	R22 / R407C	R410A	
		[°C]															
		24	52	24	52	24	52	24	52	24	52						[bar]
DCR 0485	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	80.6	59.4	57.5	84.5	87.9	46
DCR 0487	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	128.0	92.5	89.6	132.6	136.8	46
DCR 0489	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	184.3	132.6	128.4	190.4	195.9	46
DCR 04811	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	249.3	180.5	174.8	258.5	266.8	46
DCR 04813	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	304.1	222.0	215.1	317.1	328.5	46
DCR 04817	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	434.3	324.1	314.3	459.4	480.7	46
DCR 04821	1	82.5	78.0	88.7	84.0	90.3	83.4	82.7	76.4	75.2	69.3	320.4	234.4	227.1	334.5	346.8	46
DCR 0967	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	119.6	85.7	83.0	123.2	126.6	46
DCR 0969	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	189.5	136.4	131.9	195.6	201.2	46
DCR 09611	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	259.7	187.2	181.4	268.6	276.7	46
DCR 09613	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	331.9	240.8	233.3	344.7	356.1	46
DCR 09617	2	165.0	155.0	177.3	168.1	180.5	166.8	165.3	152.8	150.5	138.7	477.2	349.1	338.3	498.2	516.6	46
DCR 1449	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	184.4	132.7	128.5	190.5	196.0	35[3] / 46[4]
DCR 14411	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	272.5	196.9	190.7	282.2	290.9	35[3] / 46[4]
DCR 14413	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	340.1	246.8	239.1	353.2	364.9	35[3] / 46[4]
DCR 14417	3	247.5	233.9	266.0	252.7	270.8	250.1	248.0	229.1	225.7	208.0	442.3	323.0	313.0	461.3	478.0	35[3] / 46[4]
DCR 19211	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	290.0	211.6	205.0	302.3	313.1	28[3] / 40[4]
DCR 19213	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	359.8	261.7	253.6	374.2	387.0	28[3] / 40[4]
DCR 19217	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	442.5	321.7	311.7	460.2	475.8	28[3] / 40[4]
DCR 19221	4	329.9	311.9	354.7	336.2	361.0	333.5	330.6	305.5	300.9	277.0	505.6	366.0	354.6	524.3	541.0	28[3] / 40[4]

Drying and liquid capacity , type 48-DC

Type	№ of cores	Drying capacity [kg refrigerant] [1]										Liquid capacity [kW] [2]					Max. working pressure PS
		R134a		R404A		R507		R22/R407C		R410A		R134a	R404A	R507	R22 / R407C	R410A	
		[°C]															
		24	52	24	52	24	52	24	52	24	52						[bar]
DCR 0485	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	80.6	59.4	57.5	84.5	87.9	46
DCR 0487	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	128.0	92.5	89.6	132.6	136.8	46
DCR 0489	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	184.3	132.6	128.4	190.4	195.9	46
DCR 04811	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	249.3	180.5	174.8	258.5	266.8	46
DCR 04813	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	304.1	222.0	215.1	317.1	328.5	46
DCR 04817	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	434.3	324.1	314.3	459.4	480.7	46
DCR 04821	1	64.7	61.2	69.6	65.9	70.8	65.4	64.9	59.9	59.0	54.4	320.4	234.4	227.1	334.5	346.8	46
DCR 0967	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	119.6	85.7	83.0	123.2	126.6	46
DCR 0969	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	189.5	136.4	131.9	195.6	201.2	46
DCR 09611	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	259.7	187.2	181.4	268.6	276.7	46
DCR 09613	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	331.9	240.8	233.3	344.7	356.1	46
DCR 09617	2	129.4	122.3	139.1	131.9	141.6	130.8	129.7	119.9	118.1	108.8	477.2	349.1	338.3	498.2	516.6	46
DCR 1449	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	184.4	132.7	128.5	190.5	196.0	35[3] / 46[4]
DCR 14411	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	272.5	196.9	190.7	282.2	290.9	35[3] / 46[4]
DCR 14413	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	340.1	246.8	239.1	353.2	364.9	35[3] / 46[4]
DCR 14417	3	194.1	183.5	208.7	197.8	212.4	196.2	194.6	179.8	177.1	162.2	442.3	323.0	313.0	461.3	478.0	35[3] / 46[4]
DCR 19211	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	290.0	211.6	205.0	302.3	313.1	28[3] / 40[4]
DCR 19213	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	359.8	261.7	253.6	374.2	387.0	28[3] / 40[4]
DCR 19217	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	442.5	321.7	311.7	460.2	475.8	28[3] / 40[4]
DCR 19221	4	258.9	244.7	278.3	263.8	283.2	261.7	259.4	239.7	236.1	217.6	505.6	366.0	354.6	524.3	541.0	28[3] / 40[4]

[1]) Drying capacity is based on following moisture content test standards before and after drying:
- R134a: 1050 – 50 ppm W
- R404A, R507: 1020 – 50 ppm W
- R407C: 1020 – 50 ppm W
- R410A: 1050 – 50 ppm W
- R22: 1050 – 60 ppm

In accordance with ARI 710-2004

[2]) Given in accordance with ARI 710-2004 for:
- t_e= -15 °C
- t_c= 30 °C
- Δp = 0.07 bar

[3]) For usage with strainer or as a receiver application

[4]) For "*drier*" application using all the permissible cores

Refrigerants other than specified in the table please contact Danfoss for the approval.

Capacitiy (continued)

Drying and acid capacity , type 48-DA

Type	Number of cores	Drying capacity [g of water] [1] Evaporating temperature t_e [°C]												Acid capacity [2]
		-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4	
		R22 / R407C			R134a			R404A / R507			R410A			[g]
DCR 048	1	28	19	12	45	38	27	47	30	19	42	35	25	26.6
DCR 096	2	56	37	24	90	77	54	94	60	37	84	70	50	53.3
DCR 144	3	84	56	36	135	115	81	142	90	56	126	105	75	79.9
DCR 192	4	112	74	48	180	153	108	189	120	75	168	140	100	106.5

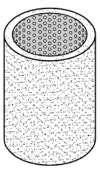
[1]) Drying capacity is expressed during drying in:
- R22: EPD = 10 ppm W, corresponding to a dew point temperature = -50 °C
- R134a: EPD = 50 ppm W, corresponding to a dew point temperature = -37 °C
- R404A: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °C
- R407C: EPD = 10 ppm W, corresponding to a dew point temperature = -40 °C

[2]) Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

Recommended plant capacity in suction line - burn-out, type 48-DA

Type	Recommended plant capacity [kW] Evaporating temperature t_e [°C]											
	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
	Pressure drop Δp [bar]											
	0.04	0.10	0.21	0.04	0.07	0.14	0.04	0.10	0.21	0.04	0.10	0.21
	R22 / R407C			R134a			R404A / R507			R410A		
DCR 0485	3.1	8.9	21.0	3.0	5.4	13.0	2.4	7.1	17.5	3.1	8.9	21.0
DCR 0487	5.8	16.1	37.8	5.6	9.9	23.4	4.5	12.9	31.2	5.8	16.1	37.8
DCR 0489	7.8	21.6	50.7	7.5	13.3	31.5	6.0	17.2	41.8	7.8	21.6	50.7
DCR 04811	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04813	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04817	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 04821	10.0	27.3	63.3	9.6	16.8	39.5	7.7	21.8	51.9	10.0	27.3	63.3
DCR 0965	3.3	9.1	21.4	3.2	5.7	13.4	2.5	7.4	18.0	3.3	9.2	21.6
DCR 0967	5.8	16.2	38.1	5.6	9.9	23.6	4.5	12.9	31.4	5.8	16.2	38.1
DCR 0969	8.7	24.6	58.3	8.4	15.0	35.9	6.8	19.7	48.1	8.7	24.6	58.3
DCR 09611	11.9	33.4	79.3	11.4	20.4	48.9	9.3	26.8	65.4	11.9	33.4	79.3
DCR 09613	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 09617	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 09621	14.1	39.9	95.2	13.6	24.3	58.5	11.0	32.0	78.7	14.1	39.9	95.2
DCR 1445	3.5	10.0	22.8	3.4	6.0	14.0	2.7	7.7	18.9	3.5	10.0	22.8
DCR 1447	6.6	18.9	42.9	6.3	11.2	26.4	5.1	14.5	35.6	6.6	18.9	42.9
DCR 1449	8.8	25.1	57.2	8.4	15.0	35.2	6.8	19.4	47.5	8.8	25.1	57.2
DCR 14411	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14413	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14417	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 14421	13.2	38.1	92.2	12.7	23.0	56.2	10.3	30.7	76.6	13.2	38.1	92.2
DCR 1925	4.2	11.5	27.3	4.0	7.1	16.8	3.2	9.2	22.7	4.2	11.5	27.3
DCR 1927	7.9	21.6	51.4	7.6	13.4	31.6	6.1	17.4	42.7	7.9	21.6	51.4
DCR 1929	10.6	28.9	68.9	10.2	18.0	42.1	8.2	23.3	57.2	10.6	28.9	68.9
DCR 19211	14.8	41.8	99.4	14.3	25.5	61.2	11.6	33.6	82.2	14.8	41.8	99.4
DCR 19213	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1
DCR 19217	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1
DCR 19221	18.0	51.1	122.1	17.4	31.1	75.0	14.1	41.1	101.0	18.0	51.1	122.1

Data given in accordance with ARI-Standard 710-2004 for t_e = 4.4 °C and t_c = 32.2 °C



Strainer mounted in suction line, type 48-F

Refrigerant	R22 / R407C			R134a			R404A / R507			R410A		
Evaporating temperature [°C]	-40	-20	4.4	-30	-20	4.4	-40	-20	4.4	-40	-20	4.4
Pressure drop Δp [bar]	0.04	0.10	0.21	0.04	0.07	0.14	0.04	0.10	0.21	0.04	0.10	0.21
Recommended system capacity [kW]	15	47	113	15	28	69	12	38	93	15	47	113

Strainer mounted in liquid line

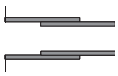
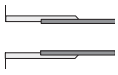
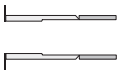
Refrigerant	R22 / R407C	R134a	R404A / R507	R410A
Recommended system capacity [kW]	390	350	260	390

The data given apply to DCR 04811 with 48-F core

Liquid capacity is given in accordance with ARI 710-2004 for:
- t_e = -15 °C
- t_c = 30 °C
- Δp = 0.07 bar

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Type of connector and recommended soldering material

	Copper ODF solder connector **Copper pipe**
	Steel ODF solder connector **Copper pipe**
	Steel butt weld connector **Steel pipe**

Solder connector	Recommended soldering material
Copper	Min. 5% Ag
Steel	Silver-flo 55 + Easy-flow flux

Ordering

DCR housing and insert are ordered separately. Select housing and top cover with all internal parts assembled from table 1 or 2 and required number of inserts from table 3.

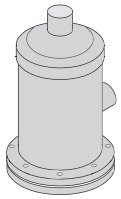


Table 1. Housing with copper connectors + top cover

Type	Number of cores	Copper connectors		Cover type	Max. working pressure PS	Code number
		Solder ODF				
		[in.]	[mm]		[bar]	
DCR 0485s	1	5/8	16	Plug	46	023U7250
DCR 0487s	1	7/8	22	Plug	46	023U7251
DCR 0487s	1	7/8	22	–	46	023U7571
DCR 0489s	1	–	28	Plug	46	023U7252
DCR 0489s	1	1 1/8	–	Plug	46	023U7253
DCR 0489s	1	–	28	–	46	023U7268
DCR 04811s	1	1 3/8	35	Plug	46	023U7254
DCR 04813s	1	1 5/8	–	Plug	46	023U7255
DCR 04813s	1	–	42	Plug	46	023U7256
DCR 04813s	1	–	42	–	46	023U7303
DCR 04817s	1	2 1/8	54	Plug	46	023U7257
DCR 04821s	1	2 5/8	–	Plug	46	023U7276
DCR 0967s	2	7/8	22	Plug	46	023U7258
DCR 0969s	2	–	28	Plug	46	023U7259
DCR 0969s	2	1 1/8	–	Plug	46	023U7260
DCR 0969s	2	1 1/8	–	–	46	023U7278
DCR 09611s	2	1 3/8	35	Plug	46	023U7261
DCR 09613s	2	1 5/8	–	Plug	46	023U7262
DCR 09613s	2	–	42	Plug	46	023U7263
DCR 09613s	2	–	42	–	46	023U7463
DCR 09617s	2	2 1/8	54	Plug	46	023U7264
DCR 09617s	2	2 1/8	54	–	46	023U7290
DCR 09621s	2	2 5/8	–	Plug	46	023U7281
DCR 1449s	3	–	28	Plug	35[1]) / 46[2])	023U7265
DCR 14411s	3	1 3/8	35	Plug	35[1]) / 46[2])	023U7267
DCR 14411s	3	1 3/8	–	–	35[1]) / 46[2])	023U7275
DCR 14413s	3	1 5/8	–	Plug	35[1]) / 46[2])	023U7282
DCR 14413s	3	–	42	Plug	35[1]) / 46[2])	023U7269
DCR 14413s	3	1 5/8	42	–	35[1]) / 46[2])	023U7297
DCR 14417s	3	2 1/8	54	Plug	35[1]) / 46[2])	023U7270
DCR 19211s	4	1 3/8	–	–	28[1]) / 40[2])	023U7083
DCR 19213s	4	1 5/8	–	Plug	28[1]) / 40[2])	023U7272
DCR 19213s	4	–	42	Plug	28[1]) / 40[2])	023U7273
DCR 19213s	4	1 5/8	–	–	28[1]) / 40[2])	023U7082
DCR 19217s	4	2 1/8	54	Plug	28[1]) / 40[2])	023U7274

[1]) For usage with strainer or as a receiver application
[2]) For "drier" application using all the permissible cores

Ordering (continued)

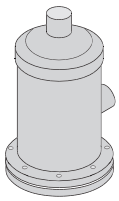


Table 2. Housing with steel connectors + top cover

Type	Number of cores	Steel connectors			Cover type	Max. working pressure PS	Code number
		Solder ODF		Butt weld			
		[in.]	[mm]	[in.]		[bar]	
DCR 0485	1	5/8	16	1/2	Plug	46	023U7050
DCR 0487	1	7/8	22	3/4	Plug	46	023U7051
DCR 0487	1	7/8	22	3/4	–	46	023U7151
DCR 0489	1	–	28	1	Plug	46	023U7052
DCR 0489	1	1 1/8	–	1	Plug	46	023U7053
DCR 04811	1	1 3/8	35	1 1/4	Plug	46	023U7054
DCR 04813	1	1 5/8	–	1 1/2	Plug	46	023U7055
DCR 04813	1	–	42	1 1/2	Plug	46	023U7056
DCR 04817	1	2 1/8	54	2	Plug	46	023U7057
DCR 04821	1	2 5/8	–	2 1/2	Plug	46	023U7076
DCR 0967	2	7/8	22	3/4	Plug	46	023U7058
DCR 0969	2	–	28	1	Plug	46	023U7059
DCR 0969	2	1 1/8	–	1	Plug	46	023U7060
DCR 09611	2	1 3/8	35	1 1/4	Plug	46	023U7061
DCR 09611	2	1 3/8	35	1 1/4	–	46	023U7161
DCR 09613	2	1 5/8	–	1 1/2	Plug	46	023U7062
DCR 09613	2	–	42	1 1/2	Plug	46	023U7063
DCR 09617	2	2 1/8	54	2	Plug	46	023U7064
DCR 1449	3	–	28	1	Plug	35 [1]) / 46 [2])	023U7065
DCR 1449	3	1 1/8	–	1	Plug	35 [1]) / 46 [2])	023U7066
DCR 14411	3	1 3/8	35	1 1/4	Plug	35 [1]) / 46 [2])	023U7067
DCR 14413	3	1 5/8	–	1 1/2	Plug	35 [1]) / 46 [2])	023U7068
DCR 14413	3	–	42	1 1/2	Plug	35 [1]) / 46 [2])	023U7069
DCR 14417	3	2 1/8	54	2	Plug	35 [1]) / 46 [2])	023U7070
DCR 19211	4	1 3/8	35	1 1/4	Plug	28 [1]) / 40 [2])	023U7071
DCR 19213	4	1 5/8	–	1 1/2	Plug	28 [1]) / 40 [2])	023U7072
DCR 19213	4	–	42	1 1/2	Plug	28 [1]) / 40 [2])	023U7073
DCR 19217	4	2 1/8	54	2	Plug	28 [1]) / 40 [2])	023U7074
DCR 19221	4	2 5/8	–	2 1/2	Plug	28 [1]) / 40 [2])	023U7086

[1]) For usage with strainer or as a receiver application
[2]) For "*drier*" application using all the permissible cores

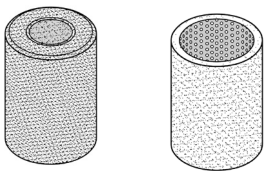


Table 3. Type DCR, inserts

Type	Material	Code number		
		Industrial pack (8 pcs.)		Multi pack (3 pcs.)
		with gasket	without gasket	with gasket
48-DM solid core	100% molecular sieve	023U1392	023U1393	023U1391
48-DC solid core	80% molecular sieve & 20% Al_3O_2	023U4381	023U4382	023U4380
48-DA solid core	30% molecular sieve & 70% Al_3O_2	023U5381	023U5382	023U5380
48-F strainer	Felt-gasket, 15 µm	023U1921	–	–

1) Not for usage with DCR 048 – 192 housings

Core surface

DM 048, DC 048 and DA 048 = 612 cm^2
DM 096, DC 096 and DA 096 = 1225 cm^2
DM 144, DC 144 and DA 144 = 1837 cm^2
DM 192, DC 192 and DA 192 = 2450 cm^2
48-F = 405 cm^2

Core volume

DM 048, DC 048 and DA 048 = 727 cm^3
DM 096, DC 096 and DA 096 = 1454 cm^3
DM 144, DC 144 and DA 144 = 2181 cm^3
DM 192, DC 192 and DA 192 = 2908 cm^3

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Core selection

Refrigerant and oil types		DC	DM	DA
Refrigerant	HFC (R134a, R404A, R507, R407C and R410A)	Recommended	Recommended	Recommended
	HFO (R1234ze, R407F, R407A)	Recommended	Recommended	Recommended
	HCFC (R22)	Recommended	Recommended	Recommended
Oil	Mineral or AB	Recommended	Recommended	Recommended
	POE or PAG, pure	Recommended	Recommended	Recommended
	POE or PAG, with additives	Not recommended[1])	Recommended	Recommended

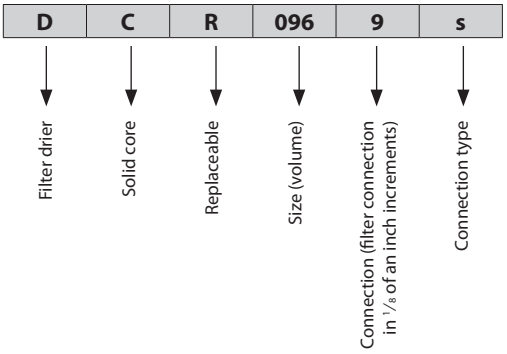
[1]) DC filter driers cores contain activated alumina, which is a polar material used for acid adsorption. Many oil additives are also polar substances and can be adsorbed by the activated alumina, rendering them useless, and reducing the drier's acid capacity, though this is not harmful to the system.

Identification

Type codes

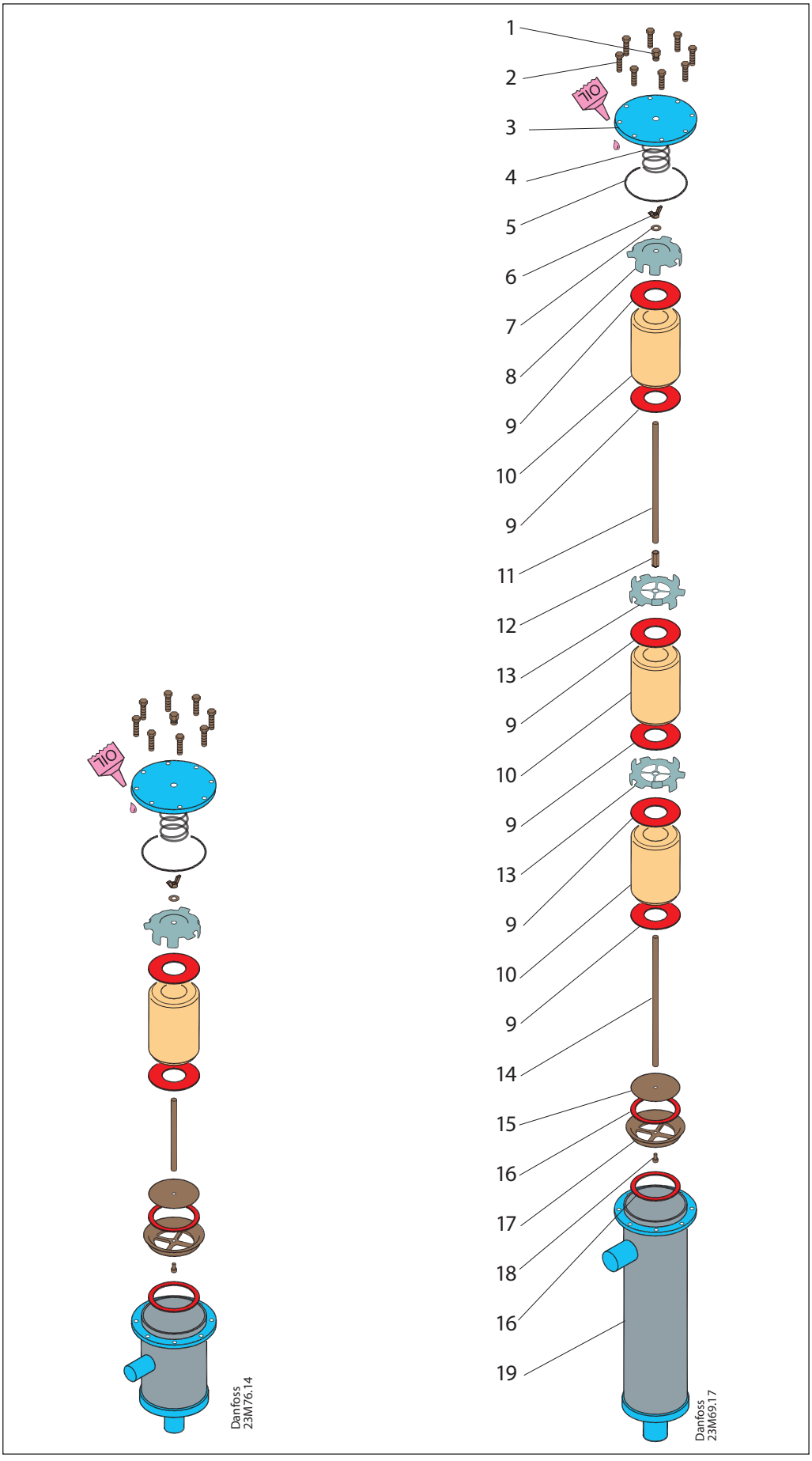
Type	Code	Description
Filter drier	D	Drier
Solid core	C	Solid core
	R	Replaceable
Size (volume)	048	48 in³
	096	96 in³
	144	144 in³
	192	192 in³
Connection (filter connection in 1/8 of an inch increments)	5	5/8 in. / 16 mm
	7	7/8 in. / 22 mm
	9	1 1/8 in. / 28 mm
	11	1 3/8 in. / 35 mm
	13	1 5/8 in. / 42 mm
	17	2 1/8 in. / 54 mm
	21	2 5/8 in.
Connection type	(blank)	Steel connectors
	s	Copper connectors

Example for type codes



Design / Function

Example:

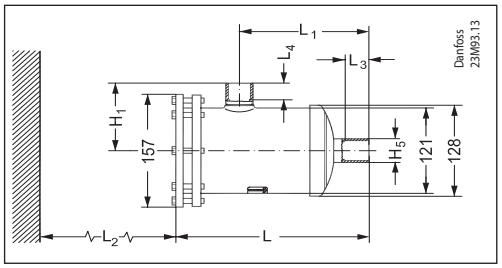


1. Plug 1/4 in. NPT
2. Top cover bolts
   M8 × 35, class 10.9
3. Top cover
4. Spring
5. Top cover gasket
   ø121.8 × ø113.6 × 0.8 mm
6. Wing nut
   M10 (torque max. 3 Nm)
7. Lock washer
8. Top plate
9. Felt gasket
   ø95.5 × ø45.5 × 2 mm
10. Solid core
11. Extension rod
12. Extension nut
13. Core plate
14. Distance rod
15. Wire mesh
16. Felt gasket
    ø95.5 × ø78 × 2 mm
17. Core holder
18. Hex socket head screw M6
19. Filter drier shell

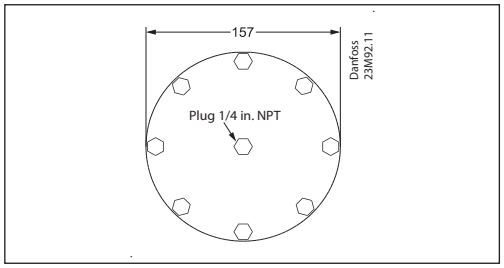
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Dimensions and weights

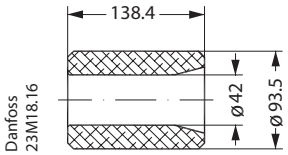
DCR housing



DCR top cover



DCR solid core



48-DM, 48-DC and 48-DA

Type	Number of cores	DCR with steel connectors							DCR with copper connectors							Net weight[1]
		L	L_1	L_2	L_3	L_4	H_1	H_5	L	L_1	L_2	L_3	L_4	H_1	H_5	
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Kg]
DCR 0485(s)	1	242.9	162.7	170	12	12	96.8	21	259.9	179.7	170	12	12	112.8	19	5.2
DCR 0487(s)	1	237	156.8	170	17	17	90.3	27	259.5	179.3	170	17	17	112.8	25	5.2
DCR 0489(s)	1	240.4	160.2	170	22	22	94.3	34	261.9	181.7	170	20	20	115.8	32	5.2
DCR 0489(s)	1	240.4	160.2	170	22	22	94.3	34	261.9	181.7	170	20	20	115.8	32	5.2
DCR 04811(s)	1	242.8	162.6	170	25	25	97.3	42	264.3	184.1	170	25	25	118.8	39	5.2
DCR 04813(s)	1	248	167.8	170	29	29	103.3	48	265.5	185.3	170	29	29	120.8	46	5.2
DCR 04813(s)	1	248	167.8	170	29	29	103.3	48	265.5	185.3	170	29	29	120.8	46	5.2
DCR 04817(s)	1	253.7	173.5	170	33	33	110.8	60	267.7	187.5	170	34	34	124.8	58	5.2
DCR 04821(s)	1	256.5	176.3	170	38	38	115.8	73	269.5	189.3	170	34	34	128.8	71	5.2
DCR 0965(s)	2	381.9	301.7	310	12	12	96.8	21	398.9	318.7	310	12	12	112.8	19	6.6
DCR 0967(s)	2	376	295.8	310	17	17	90.3	27	398.5	318.3	310	17	17	112.8	25	6.6
DCR 0969(s)	2	379.4	299.2	310	22	22	94.3	34	400.9	320.7	310	20	20	115.8	32	6.6
DCR 0969(s)	2	379.4	299.2	310	22	22	94.3	34	400.9	320.7	310	20	20	115.8	32	6.6
DCR 09611(s)	2	381.8	301.6	310	25	25	97.3	42	403.3	323.1	310	25	25	118.8	39	6.6
DCR 09613(s)	2	387	306.8	310	29	29	103.3	48	404.5	324.3	310	29	29	120.8	46	6.6
DCR 09613(s)	2	387	306.8	310	29	29	103.3	48	404.5	324.3	310	29	29	120.8	46	6.6
DCR 09617(s)	2	392.7	312.5	310	33	33	110.8	60	406.7	326.5	310	34	34	124.8	58	6.6
DCR 09621(s)	2	395.5	315.3	310	38	38	115.8	73	408.5	328.3	310	34	34	128.8	71	6.6
DCR 1445(s)	3	523.9	443.7	310	12	12	96.8	21	540.9	460.7	310	12	12	112.8	19	7.8
DCR 1447(s)	3	518	437.8	310	17	17	90.3	27	540.5	460.3	310	17	17	112.8	25	7.8
DCR 1449(s)	3	521.4	441.2	310	22	22	94.3	34	542.9	462.7	310	20	20	115.8	32	7.8
DCR 1449(s)	3	521.4	441.2	310	22	22	94.3	34	542.9	462.7	310	20	20	115.8	32	7.8
DCR 14411(s)	3	523.8	443.6	310	25	25	97.3	42	545.3	465.1	310	25	25	118.8	39	7.8
DCR 14413(s)	3	529	448.8	310	29	29	103.3	48	546.5	466.3	310	29	29	120.8	46	7.8
DCR 14413(s)	3	529	448.8	310	29	29	103.3	48	546.5	466.3	310	29	29	120.8	46	7.8
DCR 14417(s)	3	534.7	454.5	310	33	33	110.8	60	548.7	468.5	310	34	34	124.8	58	7.8
DCR 14421(s)	3	537.5	457.3	310	38	38	115.8	73	550.5	470.3	310	34	34	128.8	71	7.8
DCR 1925(s)	4	663.9	583.7	310	12	12	96.8	21	680.9	600.7	310	12	12	112.8	19	9.1
DCR 1927(s)	4	658	577.8	310	17	17	90.3	27	680.5	600.3	310	17	17	112.8	25	9.1
DCR 1929(s)	4	661.4	581.2	310	22	22	94.3	34	682.9	602.7	310	20	20	115.8	32	9.1
DCR 1929(s)	4	661.4	581.2	310	22	22	94.3	34	682.9	602.7	310	20	20	115.8	32	9.1
DCR 19211(s)	4	663.8	583.6	310	25	25	97.3	42	685.3	605.1	310	25	25	118.8	39	9.1
DCR 19213(s)	4	669	588.8	310	29	29	103.3	48	686.5	606.3	310	29	29	120.8	46	9.1
DCR 19213(s)	4	669	588.8	310	29	29	103.3	48	686.5	606.3	310	29	29	120.8	46	9.1
DCR 19217(s)	4	674.7	594.5	310	33	33	110.8	60	688.7	608.5	310	34	34	124.8	58	9.1
DCR 19221(s)	4	677.5	597.3	310	38	38	115.8	73	690.5	610.3	310	34	34	128.8	71	9.1

[1]) Without core.
For total weight add 0.7 kg per core for 48-DM and 48-DC, 0.8 kg per core for 48-DA or 0.4 kg per strainer 48-F

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