

Data Sheet

# Strainer Type **FIA**

Reliable filtration up to 65 bar



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 50, 100, 150, 250 and 500 $\mu$  (microns).

### 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.
- Quick and easy maintenance. Replacement of top part does not require welding.
- Filter net of stainless steel mounted direct without extra gaskets means easy servicing.
- Two types of strainer inserts are available:
  - A plain insert made 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 42CrMo4 bolts to withstand high pressure.

## Media

### **Refrigerants**

Applicable to HCFC, HFC, R717 (Ammonia), R744 (CO<sub>2</sub>) and flammable refrigerants.

For further information refer to the product instruction for FIA.

### **New refrigerants**

Danfoss products are continually evaluated for use with new refrigerants depending on market requirements.

When a refrigerant is approved for use by Danfoss, it is added to the relevant portfolio, and the R number of the refrigerant (e.g. R513A) will be added to the technical data of the code number. Therefore, products for specific refrigerants are best checked at [store.danfoss.com/en/](https://store.danfoss.com/en/), or by contacting your local Danfoss representative.

**Product specification**

**Pressure and temperature data**

Table 1: Temperature and pressure

Description	Values
Temperature range	-60 °C /+150 °C (-76 °F /+302 °F)
Max working pressure	65 bar (943 psig)

**Connections**

Figure 1: DIN

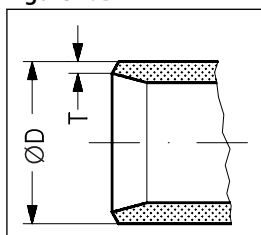


Table 2: Butt-weld DIN (EN 10220)

Size	Size	øD	T	øD	T
mm	in.	mm	mm	in.	in.
15	½	21.3	2.3	0.839	0.091
20	¾	26.9	2.3	1.059	0.091
25	1	33.7	2.6	1.327	0.103
32	1¼	42.4	2.6	1.669	0.102
40	1½	48.3	2.6	1.902	0.103
50	2	60.3	2.9	2.37	0.11
65	2½	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

Figure 2: ANSI

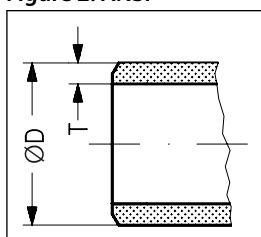


Table 3: Butt-weld ANSI (B 36.10 Schedule 80)

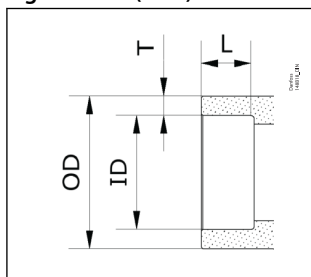
Size	Size	øD	T	øD	T
mm	in.	mm	mm	in.	in.
15	½	21.3	3.7	0.839	0.146
20	¾	26.9	4.0	1.059	0.158
25	1	33.7	4.6	1.327	0.181
32	1¼	42.4	4.9	1.669	0.193
40	1½	48.3	5.1	1.902	0.201

## Strainer, type FIA

**Table 4: Butt-weld ANSI (B 36.10 Schedule 40)**

Size	Size	øD	T	øD	T
mm	in.	mm	mm	in.	in.
50	2	60.3	3.9	2.37	0.15
65	2½	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

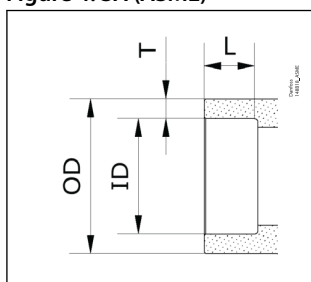
**Figure 3: SD (DIN)**



**Table 5: Socket-Brazing DIN (EN 1254-5)**

Size		ID	L	ØD	T
mm	in.	mm	mm	mm	mm
15	½	16	8	21.3	2.65
20	¾	22	11	26.9	2.45
25	1	28	11	33.7	2.85
32	1¼	35	15	42.4	3.7
40	1½	42	15	48.3	3.15
50	2	54	13.5	60.3	3.15
65	2½	64	13.5	73	4.5
80	3	76.1	15	88.9	6.4
100	4	108	17.5	118	5
125	5	133	20	145	6

**Figure 4: SA (ASME)**



**Table 6: Socket-Brazing ASME (ASME B16.50)**

Size	ID	L	ØD	T
in.	mm	mm	mm	mm
⅝	15.88	8	21.3	2.71
¾	22.23	11	26.9	2.34
1⅛	28.58	11	33.7	2.56
1⅜	34.93	15	42.4	3.74
1⅝	41.28	15	48.3	3.51
2⅛	54	13.5	60.3	3.15
2⅝	66.7	13.5	76.1	4.70
3⅛	79.38	15	88.9	4.76
4⅛	104.78	17.5	114.3	4.76

## 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

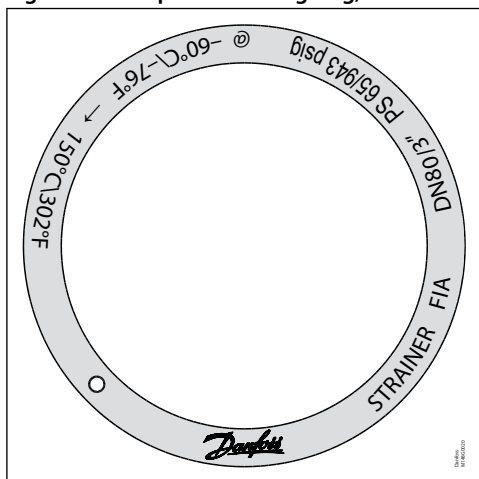
The strainer is designed to resist high internal pressures. However, the piping system in general should be designed to avoid liquid traps and reduce the risk of hydraulic pressure caused by thermal expansion.

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.

Figure 5: Example of marking ring, FIA



## Selection of strainer size

Micron specification ( $\mu$ ) 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:

Table 7: All lines

First start up: (Use strainer element with removable insert for FIA DN15-40 or separate filter bag for FIA DN 50-200. 50 $\mu$ insert should normally be removed after the first 24 hours of operation)	50 $\mu$
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Table 8: Liquid Lines

Ahead of pumps:	500 $\mu$
After pumps:	150 $\mu$ / 250 $\mu$
In front of AKVA valves:	100 $\mu$

Table 9: Protection of automatic regulation equipment

Generally	150 $\mu$ / 250 $\mu$
Sensitive equipment, e.g. suction regulators with low temperature	250 $\mu$

Table 10: Suction Lines

Ahead of screw compressor	250 $\mu$
Ahead of piston compressor	150 $\mu$

## Strainer, type FIA

**Table 11: Flow coefficient (DIN/ANSI)**

Connection size (DN)	μ	Wire	Wire	Free space	Screen area			
		mm	in.		%	Plain elements		Pleated elements
FIA					cm <sup>2</sup>	in <sup>2</sup>	cm <sup>2</sup>	in <sup>2</sup>
15 - 20 (½" - ¾")	50	0.25	0.01	35	-	-	45	7
	100	0.068	0.003	35	25	3.9	45	7.0
	150	0.10	0.004	36	25	3.9	45	7.0
	250	0.10	0.004	51	25	3.9	45	7.0
	500	0.16	0.006	57.6	25	3.9	45	7.0
25 - 40 (1" - 1½")	50	0.25	0.01	35	-	-	160	25
	100	0.068	0.003	35	71	11	160	25.0
	150	0.10	0.004	36	71	11	160	25.0
	250	0.10	0.004	51	71	11	160	25.0
	500	0.16	0.006	57.6	71	11	160	25.0
50 (2")	50	0.25	0.01	35	-	-	200	31.2
	100	0.068	0.003	35	71	11	200	31.2
	150	0.10	0.004	36	87	13.5	200	31.2
	250	0.10	0.004	51	87	13.5	200	31.2
	500	0.16	0.006	57.6	87	13.5	200	31.2
65 (2½")	50	0.25	0.01	35	-	-	305	47.6
	150	0.10	0.004	36	127	19.7	305	47.6
	250	0.10	0.004	51	127	19.7	305	47.6
	500	0.16	0.006	57.6	127	19.7	305	47.6
80 (3")	50	0.25	0.01	35	-	-	450	70.2
	150	0.10	0.004	36	205	31.8	450	70.2
	250	0.10	0.004	51	205	31.8	450	70.2
	500	0.16	0.006	57.6	205	31.8	450	70.2
100 (4")	50	0.25	0.01	35	-	-	790	123.2
	150	0.10	0.004	36	370	57.4	790	123.2
	250	0.10	0.004	51	370	57.4	790	123.2
	500	0.16	0.006	57.6	370	57.4	790	123.2
125 (5")	50	0.25	0.01	35	-	-	1105	172.4
	150	0.10	0.004	36	510	79.1	1105	172.4
	250	0.10	0.004	51	510	79.1	1105	172.4
	500	0.16	0.006	57.6	510	79.1	1105	172.4
150 (6")	50	0.25	0.01	35	-	-	1600	249.6
	150	0.10	0.004	36	726	112.5	1600	249.6
	250	0.10	0.004	51	726	112.5	1600	249.6
	500	0.16	0.006	57.6	726	112.5	1600	249.6
200 (8")	50	0.25	0.01	35	-	-	2900	453.1
	150	0.10	0.004	36	1315	203.8	2900	453.1
	250	0.10	0.004	51	1315	203.8	2900	453.1
	500	0.16	0.006	57.6	1315	203.8	2900	453.1

**Table 12: k<sub>v</sub> values for FIA angle - plain filter net/pleated filter net**

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	

## Strainer, type FIA

Table 13:  $k_v$  values for FIA straight - plain filter net/pleated filter net

DN	FIA straight - plain filter net				FIA straight - pleated filter net		
	$\mu 100$	$\mu 150$	$\mu 250$	$\mu 500$	$\mu 150$	$\mu 250$	$\mu 500$
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	

## Material specification

Figure 6: FIA 15 - 40 (½ in. - 1 ½ in.)

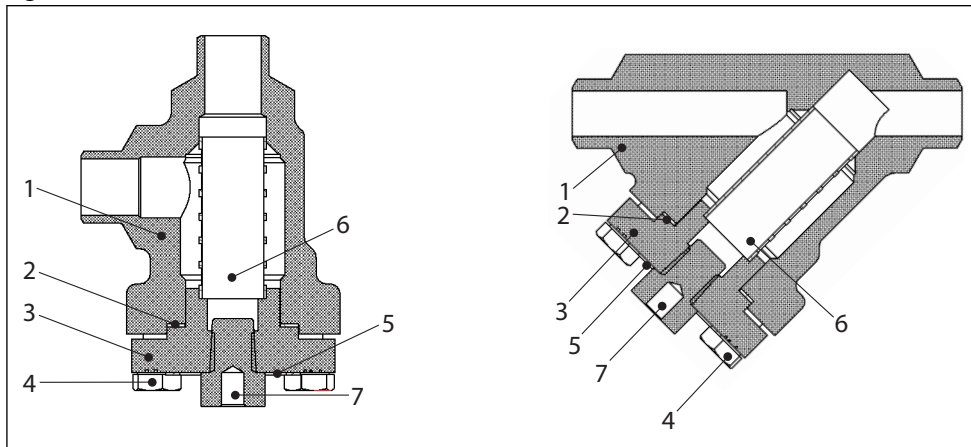


Table 14: FIA 15 - 40 (½ in. - 1 ½ in.)

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	42CrMo4, 10269		A193
5	Marking label	Aluminium			
6	Strainer insert	Stainless steel			
7	Pressure relief screw NPT ¼"	Stainless steel			



## Strainer, type FIA

Figure 7: FIA 50 - 200 (2 in. - 8 in.)

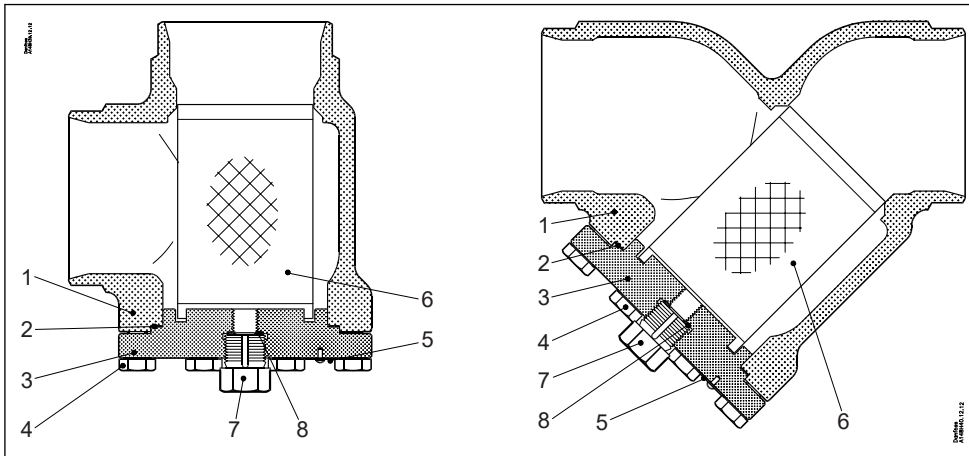


Table 15: FIA 50 - 200 (2 in. - 8 in.)

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 G $\frac{1}{2}$ "	Stainless steel			
8 <sup>(1)</sup>	Packing washer	Aluminium			

<sup>(1)</sup> pos 8 used in FIA 50-200

## Dimensions and weights

Figure 8: FIA 15 - 65 Angleway/Straightway dimensions

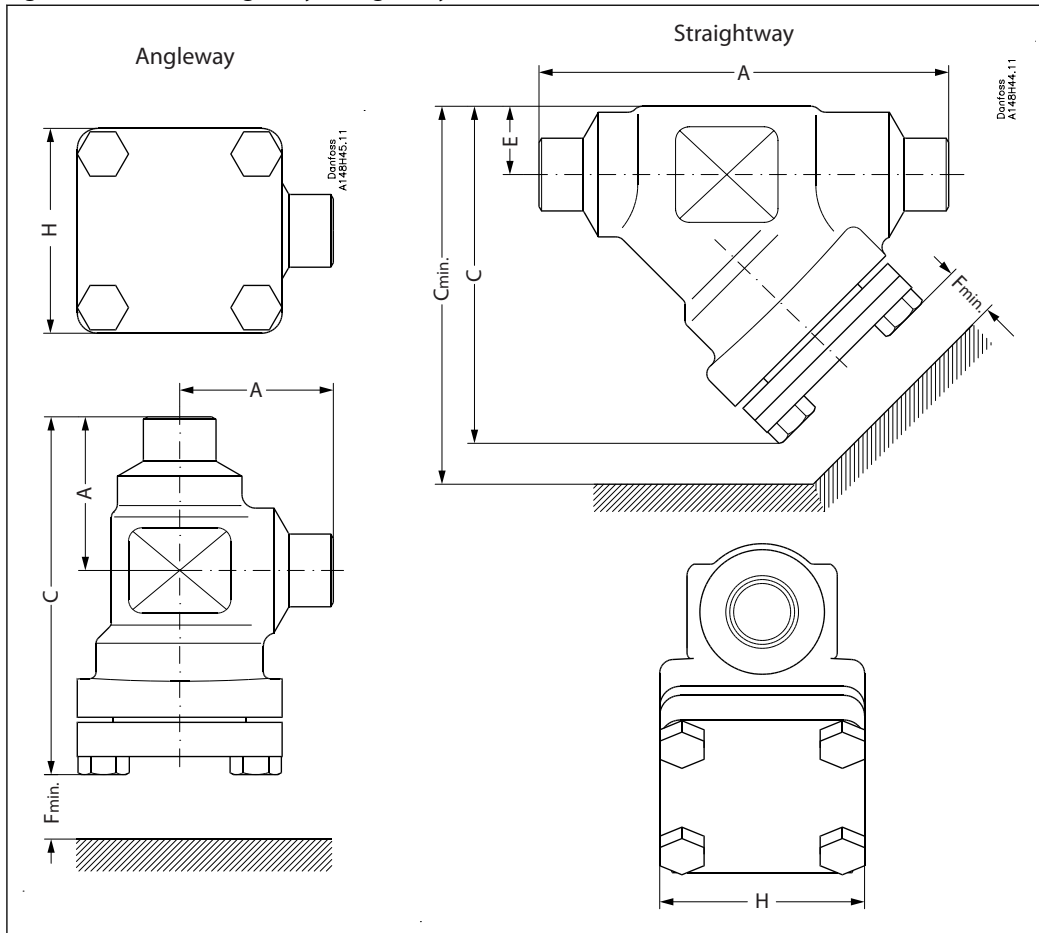


Table 16: Angleway

Strainer size		A	C	H	F <sub>min.</sub>	Weight
FIA 15-20 (½" - ¾")	mm	45	105	60	68	1.1 kg
	in.	1.77	4.13	2.36	2.68	2.4 lbs
FIA 25-40 (1" - 1½")	mm	55	132	70	95	1.7 kg
	in.	2.17	5.20	2.76	3.74	3.7 lbs
FIA 50 (2")	mm	60	132	77	92	2.8 kg
	in.	2.36	5.20	3.03	3.62	6.2 lbs
FIA 65 (2½")	mm	70	152	90	107	3.8 kg
	in.	2.76	5.98	3.54	4.21	8.4 lbs

Table 17: Straightway

Strainer size		A	C	C <sub>min.</sub>	H	E	F <sub>min.</sub>	Weight
FIA 15-20 (½" - ¾")	mm	120	99	133	60	20	68	1.4 kg
	in.	4.72	3.90	5.24	2.36	0.79	2.68	3.1 lbs
FIA 25-40 (1" - 1½")	mm	155	129	177	70	26	95	2.4 kg
	in.	6.10	5.08	6.97	2.76	1.02	3.74	5.3 lbs
FIA 50 (2")	mm	148	138	184	77	32	92	3.5 kg
	in.	5.83	5.43	7.24	3.03	1.26	3.62	7.7 lbs
FIA 65 (2½")	mm	176	165	219	90	40	107	5.3 kg
	in.	6.93	6.50	8.62	3.54	1.57	4.21	11.7 lbs

**NOTE:**

Specified weights are approximate values only.

## Strainer, type FIA

Figure 9: FIA 80 - 200 Angleway/Straightway

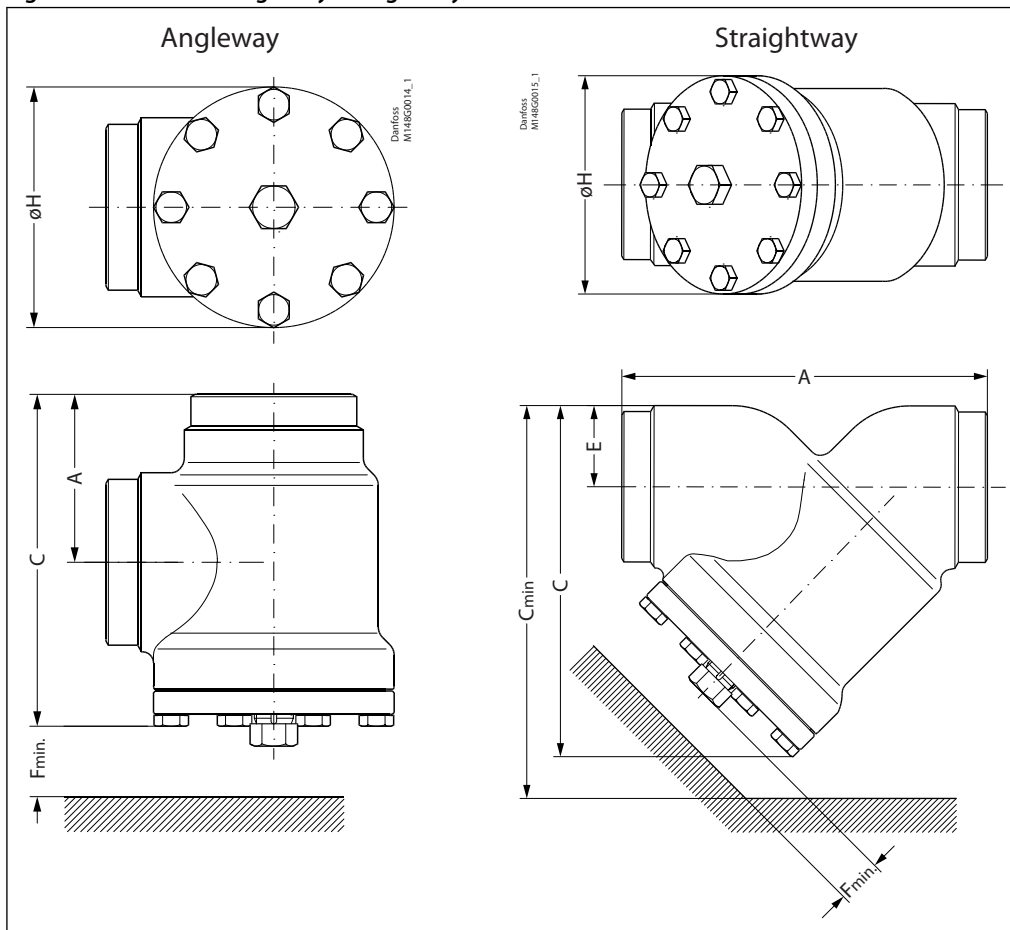


Table 18: Angleway

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

Table 19: Straightway

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

**NOTE:**

Specified weights are approximate values only.

## 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 150 D ANG + FIA 150 150µ Strainer insert + Filter Bag = **148B6669+ 148H3134 + 148H3155**

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

**Table 20: Butt-weld DIN (EN 10220) - Angleway**

Size		Type	FIA Without Strainer insert	FIA: Filter insert-plain				FIA: Filter insert-pleated			
mm	in			100µ	150µ	250µ	500µ	50µ	150µ	250µ	500µ
150	6	FIA 150 D ANG	148B6669	-	148H3134	148H3142	148H3148	148H3419	148H3226	148H3293	-
200	8	FIA 200 D ANG	148B6677	-	148H3135	148H3143	148H3149	-	148H3297	148H3294	-

**Table 21: Butt-weld DIN (EN 10220) - Straightway**

Size		Type	FIA Without Strainer insert	FIA: Filter insert-plain				FIA: Filter insert-pleated			
mm	in			100µ	150µ	250µ	500µ	50µ	150µ	250µ	500µ
150	6	FIA 150 D STR	148B6670	-	148H3134	148H3142	148H3148	148H3419	148H3226	148H3293	-
200	8	FIA 200 D STR	148B6678	-	148H3135	148H3143	148H3149	-	148H3297	148H3294	-

**Table 22: Butt-weld ANSI (B 36.10 Schedule 40) – Angleway**

Size		Type	FIA Without Strainer insert	FIA: Filter insert-plain				FIA: Filter insert-pleated			
mm	in			100µ	150µ	250µ	500µ	50µ	150µ	250µ	500µ
150	6	FIA 150 A ANG	148B6671	-	148H3134	148H3142	148H3148	148H3419	148H3226	148H3293	-
200	8	FIA 200 A ANG	148B6679	-	148H3135	148H3143	148H3149	-	148H3297	148H3294	-

**Table 23: Butt-weld ANSI (B 36.10 Schedule 40) - Straightway**

Size		Type	FIA Without Strainer insert	FIA: Filter insert-plain				FIA: Filter insert-pleated			
mm	in			100µ	150µ	250µ	500µ	50µ	150µ	250µ	500µ
150	6	FIA 150 A STR	148B6672	-	148H3134	148H3142	148H3148	148H3419	148H3226	148H3293	-
200	8	FIA 200 A STR	148B6680	-	148H3135	148H3143	148H3149	-	148H3297	148H3294	-

### Ordering FIA strainers from the parts programme

Please note that you have to order **Strainer housing, complete top part, a strainer insert and accessories**.

**Example:** Stainer housing, FIA 50 D ANG **148B6627**, refer [Table 24](#): FIA strainer valve housings with different connections.

Complete top part, FIA 50 **148B5785** Plain Strainer insert, 100µ, **148H3157** refer [Table 25](#): FIA complete top parts (including gaskets and bolts) and strainer inserts.

Filter Bag, FIA 50 **148H3150** refer [Table 26](#): Accessories

**Table 24: FIA strainer valve housings with different connections**

Size		Housing SVL 65 bar							
		DIN-Butt weld		ANSI-Butt weld		SD-Soldering		SA-Soldering	
mm	in	ANG	STR	ANG	STR	ANG	STR	ANG	STR
15	½	148B6622	148B6642	148B6612	148B6632	148B6724	148B6745	148B6713	148B6734
20	¾	148B6623	148B6643	148B6613	148B6633	148B6725	148B6746	148B6714	148B6735
25	1	148B6624	148B6644	148B6614	148B6634	148B6726	148B6747	148B6715	148B6736
32	1¼	148B6625	148B6645	148B6615	148B6635	148B6727	148B6748	148B6716	148B6737
40	1½	148B6626	148B6646	148B6616	148B6636	148B6728	148B6749	148B6717	148B6738
50	2	148B6627	148B6647	148B6617	148B6637	148B6718	148B6739	148B6718	148B6739

## Strainer, type FIA

Size		Housing SVL 65 bar							
		DIN-Butt weld		ANSI-Butt weld		SD-Soldering		SA-Soldering	
mm	in	ANG	STR	ANG	STR	ANG	STR	ANG	STR
65	2½	148B6628	148B6648	148B6618	148B6638	148B6729	148B6750	148B6719	148B6740
80	3	148B6629	148B6649	148B6619	148B6639	148B6730	148B6751	148B6720	148B6741
100	4	148B6630	148B6650	148B6620	148B6640	148B6731	148B6752	148B6721	148B6742
125	5	148B6631	148B6651	148B6621	148B6641	148B6755	-	-	-

**Table 25: FIA complete top parts (including gaskets and bolts) and strainer inserts**

Size		Complete top part	FIA: Filter insert-plain				FIA: Filter insert-pleated			
mm	in		100µ	150µ	250µ	500µ	50µ	150µ	250µ	500µ
15	½	148B5783	148H3122	148H3124	148H3126	148H3128	148H3412	148H3303	148H3363	-
20	¾	148B5783								-
25	1	148B5784	148H3123	148H3125	148H3127	148H3129	148H3413	148H3304	148H3269	-
32	1¼	148B5784								-
40	1½	148B5784								-
50	2	148B5785	148H3157	148H3130	148H3138	148H3144	148H3414	148H3179	148H3184	148H3189
65	2½	148B5786	-	148H3131	148H3139	148H3145	148H3415	148H3180	148H3185	148H3190
80	3	148B5787	-	148H3119	148H3120	148H3121	148H3416	148H3181	148H3186	148H3191
100	4	148B5788	-	148H3132	148H3140	148H3146	148H3417	148H3182	148H3187	148H3192
125	5	148B5789	-	148H3133	148H3141	148H3147	148H3418	148H3183	148H3188	148H3193

## Accessories

**Table 26: Accessories**

Part	Accessory for	Code number
Magnet insert	FIA 65-100	148H3447
	FIA 125-200	148H3448
Strainer element µ150 with removable element µ50 for the first start up	FIA 15-20	148H3301
	FIA 25-40	148H3302
Filter bag	FIA 50	148H3150
	FIA 65	148H3151
	FIA 80	148H3152
	FIA 100	148H3153
	FIA 125	148H3154
	FIA 150	148H3155
	FIA 200	148H3156
Purge valve complete	FIA 50 - 300	148B3745
Blind nut with gasket		148H3450

## Certificates, declarations, and approvals

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

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

**Table 27: Certificates and declarations**

File name	Document type	Approval authority
RU Д-DK.БЛ08.В.00828_19	EAC Declaration	EAC
0045 202 1204 Z 00354 19 D 001(00)	Pressure - Safety Certificate	TÜV
03709-F0 BV	Marine - Safety Certificate	BV
RU Д-DK.РА01.В.32851_20	EAC Declaration	EAC
RU C-DK.БЛ08.В.01095_20	Pressure - Safety Certificate	EAC
TAP0000005 Rev. 1	Marine - Safety Certificate	DNV GL
EU 033F0685.AK	EU Declaration	Danfoss
MD 033F0691.AE	Manufacturers Declaration	Danfoss
MD 033F0686.AH	Manufacturers Declaration	Danfoss
0045 202 1204 Z 00355 19 D 001(00)	Pressure - Safety Certificate	TÜV
033F0453.AD	Manufacturers Declaration	Danfoss
19.10048.266	Marine - Safety Certificate	RMRS
CRN.0C16578.523467890YTN	Pressure - Safety Certificate	TSSA
07 202 STK1 Z 0540-2-D-01	Pressure - Safety Certificate	TUV
0045 202 1201 Z 00424 19 D 001(00)	Pressure - Safety Certificate	TÜV

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