



CJC™ OilAbsorb Filter

Absorbs oil - even emulsified - from all kinds of waste water



OilAbsorb
FilterHouse



OilAbsorb
FilterInsert



Marine



Industry



Type
approved by
Lloyd's Register



www.cjc.dk



Is Your Waste Water really Oil Free?

CJC™ OilAbsorb Filter

CJC™ OilAbsorb Filter has been specially developed for polishing (additional filtration refinement) of bilge water from ships.

The filter should be installed just after the 15 ppm bilge water separator.

In case of break down or malfunction of the bilge water separator, pollution of the over-board system is avoided and thereby ensuring a stable and safe operation of the Oil Discharge Monitor.

CJC™ OilAbsorb Filter is based on a unique absorption principle with specially developed and patented MLC™ (Multiple Layer Cartridge) filter insert.

It is a simple but very effective principle whereby water will pass while the oil will be absorbed in the filter.

Practically all kinds of oil polluted water will be polished (additional filtration refinement) to a value of 5 ppm or better.

CJC™ OilAbsorb Filter has obtained Type Approval by Lloyd's Register.

CJC™ OilAbsorb Filter is specially designed for installation in an engine room where space is very often limited.

With dimensions of **h=134 cm. and w=44 cm.** this means less than half a sqm. floor space.

Dimensions of the filter insert:

h = 25 cm. and w = 38 cm.

It contains no movable parts and no electronic devices, which makes **CJC™ OilAbsorb Filter** safer in operation and in addition easier to maintain.

At normal operational conditions the filter insert should last for about 3 months before replacement is necessary. This can easily be handled by the engine crew.



CJC™ OilAbsorb Filter.

In brief, the CJC™ OilAbsorb Filter offers:

- Absorption of oils - even emulsified - from bilge water and other kinds of waste water.
- A guarantee that bilge water meets the < 15 ppm oil content requirement.
- A high and constant oil holding capacity throughout the lifespan of filter inserts.
- Enhances bilge water system security.
- A compact, easy to install unit.
- Very low maintenance requirements.

- all of which is of importance both to the environment and to the operation of the vessel.



Is Your Waste Water really Oil Free?

CJC™ OilAbsorb Filter



CJC™ Filter Insert DMA 38/25.



CJC™ OilAbsorb Filter Housing.



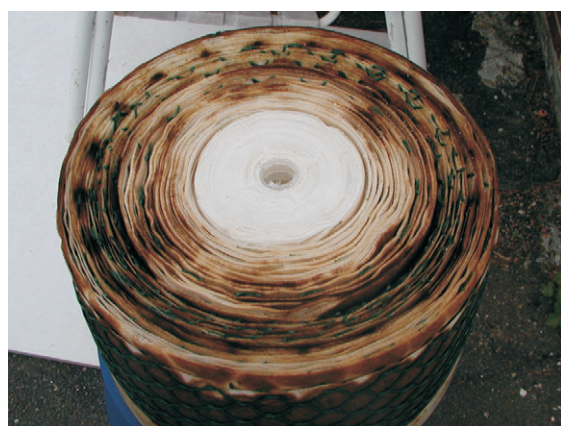
Housing with 4 inserts.



Is Your Waste Water really Oil Free?

CJC™ OilAbsorb Filter

Used Filter Inserts



Test Installation



CERTIFICATE OF TYPE APPROVAL

This is to certify that

Lloyd's Register did undertake the relevant type approval procedures of the equipment detailed below which was found to be in compliance with the essential Pollution Prevention requirements for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits, etc.

Manufacturer	DMA Sorption ApS
Address	Skelstedt 5 2950 Vedbaek Denmark
Type	OIL FILTERING EQUIPMENT (POLLUTION PREVENTION)
Description	Absorb All Oil Filter (Bilge Water Polishing Filter)
Specified Standard	DMA Sorption, Document No. FS 001, Version 001/200803

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue	10 October 2003	Expiry date	9 October 2008
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Certificate No.	SAS P030092
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Signed



Sheet No	1 of 4
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Name

S. James

Surveyor to Lloyd's Register EMEA

A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Project: -

Client: DMA Sorption ApS

Office: Copenhagen

Clients Order Number: -

Date: 19 September 2003

Order Status: Complete

Inspection Dates

First: 29 August 2003

Final: 01 September 2003

This certificate is issued to DMA Sorption ApS

to certify that the undersigned Surveyors attended their works at Skelstedet 5, DK-2950 Vedbæk on 29 August and 1 September 2003 for the purpose of witnessing testing of a bilge water polishing filter, type: All Oil Filter.

The test rig was built in accordance with submitted plans.

The filter was fed with an oily water solution and test samples withdrawn before and after the filter in accordance with submitted test procedure.

Three (3) tests with different grades of oil, Shell Fuel Oil 45, Shell Fuel Oil 77 and Shell Marine Gas Oil W, were witnessed.

The oil was mechanically mixed with water and fed via a hose pump and flow meter through a centrifugal pump into the filter.

Sample points, before and after the filter, were provided.

The feed of oily water and sampling was carried out in accordance with submitted procedures.

Sampling and analysis of test samples was carried out by Miljølaboratoriet, Storkøbenhavn I/S, a laboratory accredited by the Danish Authorities, DANAK, for this type of testing.

The analysis was carried out to agreed procedures, GC-FID.

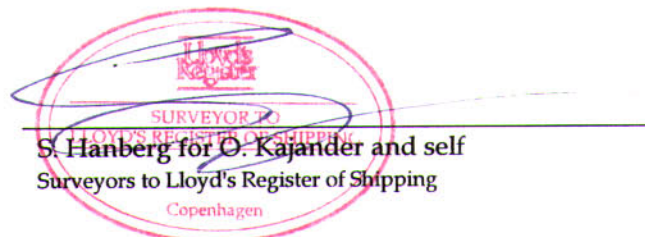
The test analysis reports nos. 12545/03 - 12558/03, 12603/03 - 12612/03, 12614/03, 12615/03 & 12674/03 - 12682/03 have been sighted.

The test analysis reports shows in general that influent of approx. 100 ppm oil in water leaves the filter as effluent with less than or equal to 5 ppm oil in water.

The filter casing is a cylindrical shell with dished ends made from stainless steel. Outside diameter 500 mm and wall thickness 4 mm, height approx. 900 mm. The inside of the filter consists of removable paper cartridges. The filter is provided with a pressure relief valve.

Remarks:

The filter is not considered to be a pressure vessel in terms of LR, Rules for Ships, Part 5, Chapter 11.



SURVEYOR
LLOYD'S REGISTER OF SHIPPING
S. Hanberg for O. Kajander and self
Surveyors to Lloyd's Register of Shipping
Copenhagen

A member of the Lloyd's Register Group

DESIGN APPRAISAL DOCUMENT

Date 10 October 2003	Quote this reference on all future communications MSG/STAT/TGS/SJ
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS P030092

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Equipment type:	Absorb All Oil Filter (Bilge Water Polishing Filter)
Equipment manufactured by:	DMA Sorption ApS
to assembly drawing No's:	FV1000700A/FCS 001/FI 003/FI 002
Filter Cartridge manufactured by:	DMA Sorption ApS
to specification/assembly drawing No:	FM 001
Maximum throughput of system:	≤ 1.2 m ³ /hr
Maximum Pressure:	≤ 3 bar

MANUFACTURERS RECOMMENDATIONS AND OTHER INFORMATION

The system is designed such that the effluent contains not more than 5 ppm oil content irrespective of the oil content (from 0 ppm to 100 ppm) of the influent.
The filter must be inspected regularly for any damage which may influence it's performance.
For influents of oil content up to 100 ppm, the filter to be replaced for every 100-150 m³ purified.
For influents of oil content up to 15 ppm, the filter to be replaced for every 650-1000 m³ purified.
Used filters to be disposed of in accordance with MARPOL 73/78 Annex V.
Pressure increase of 1.0 bar over a period may indicate that replacement of the filter cartridges is needed.

CONDITIONS OF CERTIFICATION

1. The equipment is not to be installed in dangerous zones and spaces.
2. Installation is to be in accordance with manufacturer's installation procedures, Doc No. FI 001/ FI002 or FI 003.
3. Limiting Conditions: The filter to be permanently mounted in the horizontal position and pumps of capacity ≤1.2 m³/hr to be connected to the filter.
4. A copy of this certificate should be carried onboard a ship fitted with this equipment.

TEST RESULTS AND DATA

Test Location:	DMA Sorption ApS, Skelstedet 5, DK-2950 Vedbaek, Denmark.
Method of sample analysis:	ML-G1370
Sample analysed by:	Miljølaboratoriet Storkøbenhavn, Ørnebjergvej 1, 2600 Glostrup, Denmark.

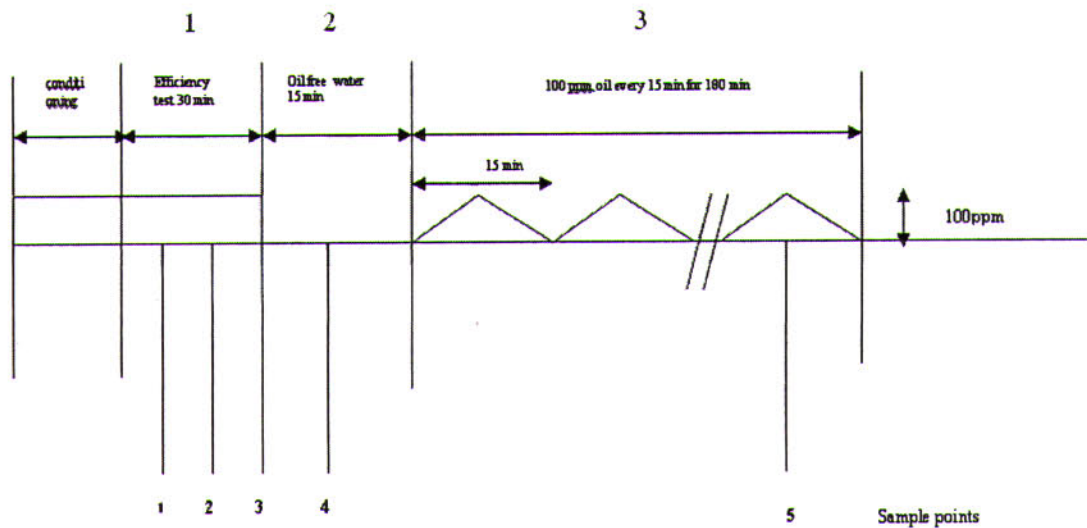
DESIGN APPRAISAL DOCUMENT

Date 10 October 2003	Quote this reference on all future communications MSG/STAT/TGS/SJ
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Test oil (A)
 Relative density 0.980 at 15°C
 Viscosity (min) 35 centistokes at 80°C
 Viscosity (max) 45 centistokes at 80°C
 Flashpoint 80 °C
 Ash content 0.10 %
 Water content at start of test 0.5 %

Test oil (B)
 Relative density 0.840 at 15°C
 Viscosity (min) 1.9 centistokes at 80°C
 Viscosity (max) 3.7 centistokes at 80°C
 Flashpoint 61 °C
 Ash content 0.01 %
 Water content at start of test 0.015 %

Test oil (C)
 Relative density 0.980 at 15°C
 Viscosity (min) 65 centistokes at 80°C
 Viscosity (max) 77 centistokes at 80°C
 Flashpoint 80 °C
 Ash content 0.10 %
 Water content at start of test 0.5 %



DESIGN APPRAISAL DOCUMENT

Date 10 October 2003	Quote this reference on all future communications MSG/STAT/TGS/SJ
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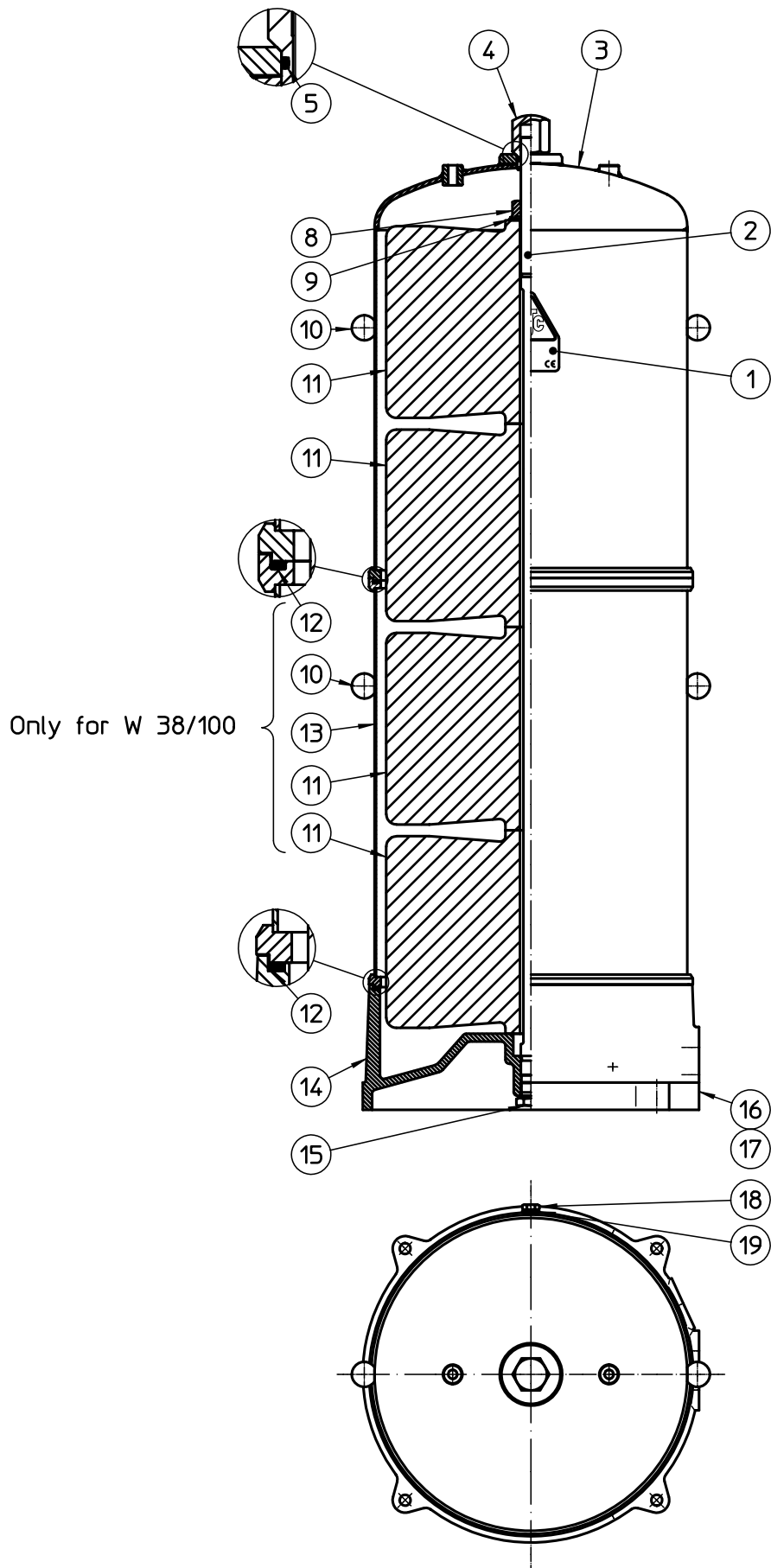
Sample	Test oil (A)		Test oil (B)		Test oil (C)	
	Influent	Effluent	Influent	Effluent	Influent	Effluent
1	107 ppm	1.25 ppm	89 ppm	5.3 ppm	105 ppm	2.7 ppm
2	127 ppm	1.52 ppm	71 ppm	4.1 ppm	112 ppm	2.2 ppm
3	86 ppm	0.88 ppm	105 ppm	4.1 ppm	128 ppm	1.6 ppm
4	0.47 ppm	1.35 ppm	0.53 ppm	1.2 ppm	0.076 ppm	1.5 ppm
5	127 ppm	0.51 ppm	105 ppm	1.1 ppm	210 ppm	0.72 ppm



San James
 Principal Surveyor
 Tanker & Gas Section
 Statutory Services
 Marine Support Group.


Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).



Article No. Pos.	Filter size	Parts list
1	W 38/50	a
2	W 38/100	b

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Scale:	 C.C. JENSEN A/S LØVHOLMEN 13, DK-5700 SVENDBORG, DENMARK FAX NO +45 62 22 46 15 PHONE +45 63 21 20 14	Constr.	TIK	04.04.02
Customer:		Drawn	HLF	04.04.02
Project:		Appr.		
Ref.:		CJC Oil Absorb Filter type W 38/- Assembly drawing	Rev. 4	HLF
		Drawing no.	46 140 01-3	

CJC™ Oil Absorb Filter
W38/-
Drawing No.: 46 140 01-3

Pos.	Article No.	Description	Qty.
1	FD35138	Logo Plat, CJC	1
2		Stay bolt	1
	FD1200136-1	W38/50 680mm	
	FD1200136-2	W38/100 1200mm	
3	FB4800142	Filterhouse f.W38	1
4	FD2300121	Top Nut NV41 3/4" Stainless	1
5	FD34016	O-ring ø28,17x3,53 NBR 70	1
8	FD2300125	Nut 3/4"	1
9	FD30340	Face plate ø55xø27,5x2mm FZB	1
10	FD35106	Ball Handle M10xø32	
		For W38/50	2
		For W38/100	4
11	PD5600601	DMA Filter insert 38/25	
		For W38/50	2
		For W38/100	4
12	FD34033	O-ring 390x5,0 NBR 70	
		For W38/50	1
		For W38/100	2
13	FB5900914	Lower Housing only for W38/100	1
14	FC1600141	Filterbase W38	1
15	FD32448	Plug 3/4" Stainless	1
16	FD35156	Set of name plates	1
17	FD30022	Rivets 2-5 mm	4
18	FD2200703	Air Screw 1/4"	1
19	FD34097	Usitring 1/4" 14,7X22X1,5NBR	1

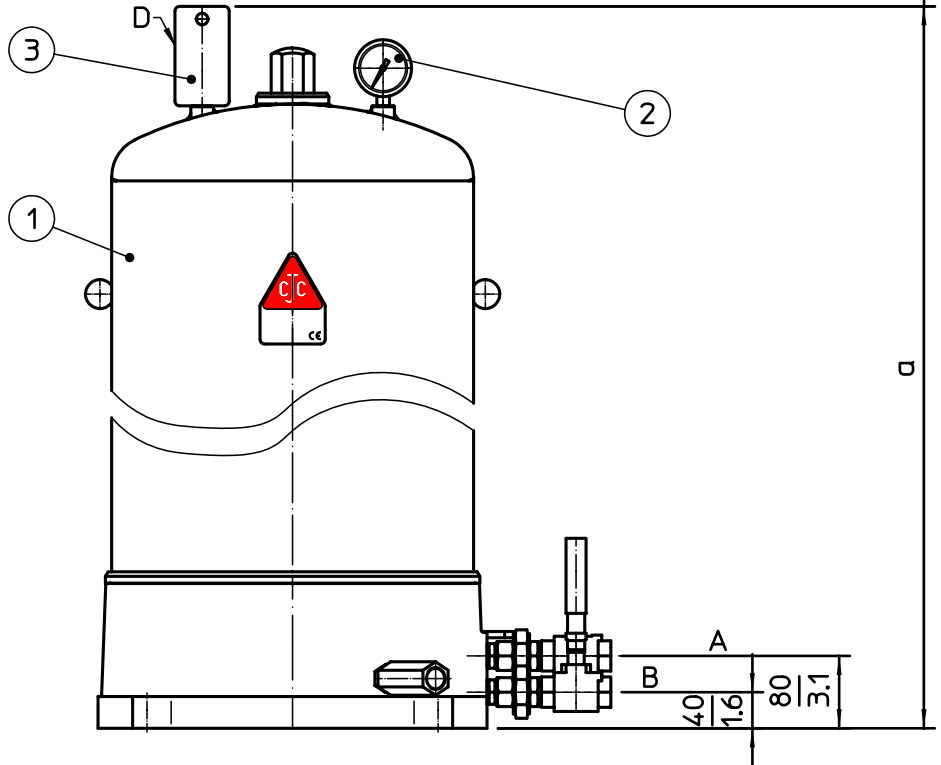
Part no.: FA7614001-X

Filter size



Free height

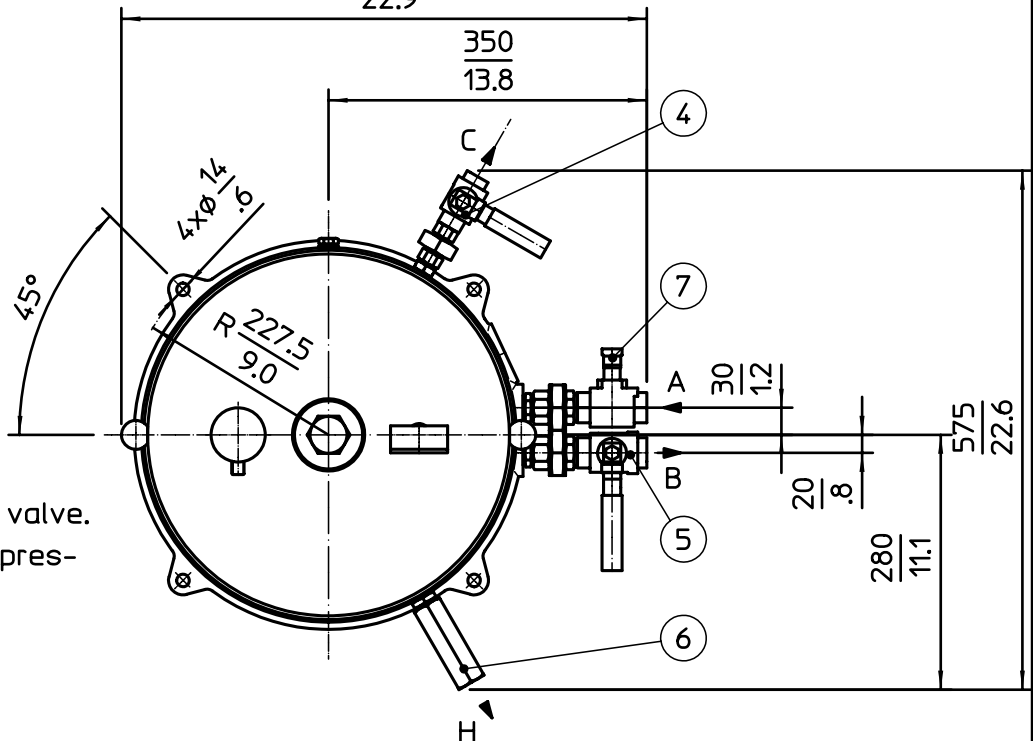
590
23.2



X	Filter size	a mm/inch.	Weight kg/lbs
1	38/50	800/31.5	73/161
2	38/100	1320/52.0	99/218

Design pressure 2.5 bar/40 psi
Design temp. 60°C/140°F

580
22.9



A= 3/4" BSP, Water inlet
B= 3/4" BSP, Water outlet
C= 1/2" BSP, Drain valve
D= 1/4" BSP, Aut. vent
H= 3/4" BSP, Pressure relief valve.
To be connected to non pressurized line !


Measurements in mm and inches.

Weight:

Filter (X) kg/lbs
Misc. 4/7.7 kg/lbs

Total kg/lbs

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Customer:		Constr.	TIK	04.04.02
Project:	CJC Oil Absorb Filter type W 38/- General arrangement	Drawn	HLF	04.04.02
Ref.:		Appr.		
		Rev. 2	HLF	04.08.19
		Drawing no.	76 140 01-6	

CJC™ OilAbsorb Filter
Type W38/-
Drawing No.: 76 140 01-4

Item group: F4511

Pos.	Article No.	Description	Qty.
1	46 140 01-3 #1	CJC™ Oil Absorb Filter	1
2	FD33002	Pressure gauge ø63 0-4B ned. stainless	1
3	FD33003	CJC Aut. Air Vent	1
4	FD32639	Ball Valve ½" BSP 316	1
5	FD32085	Connector - water outlet 3/4"	1
6	FD32451	Safety Valve	1
7	FD32755	Connector - Water inlet 3/4"	1

#1 See [OilAbsorb Filter] under [Spares] under [W38]

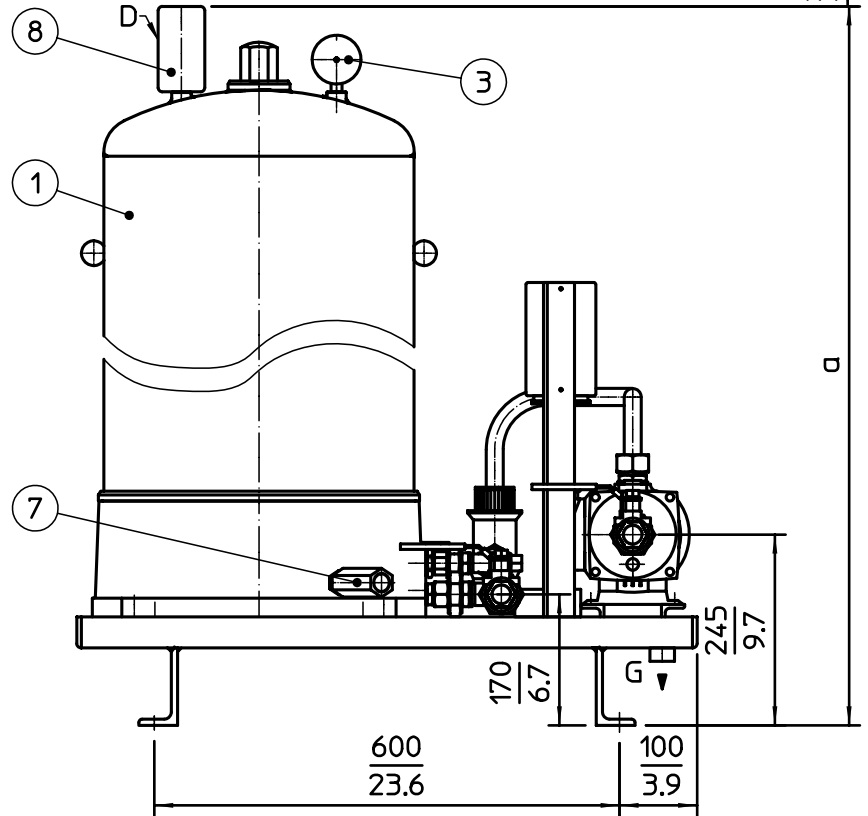
Part no.: FA7614301-X

Filter size

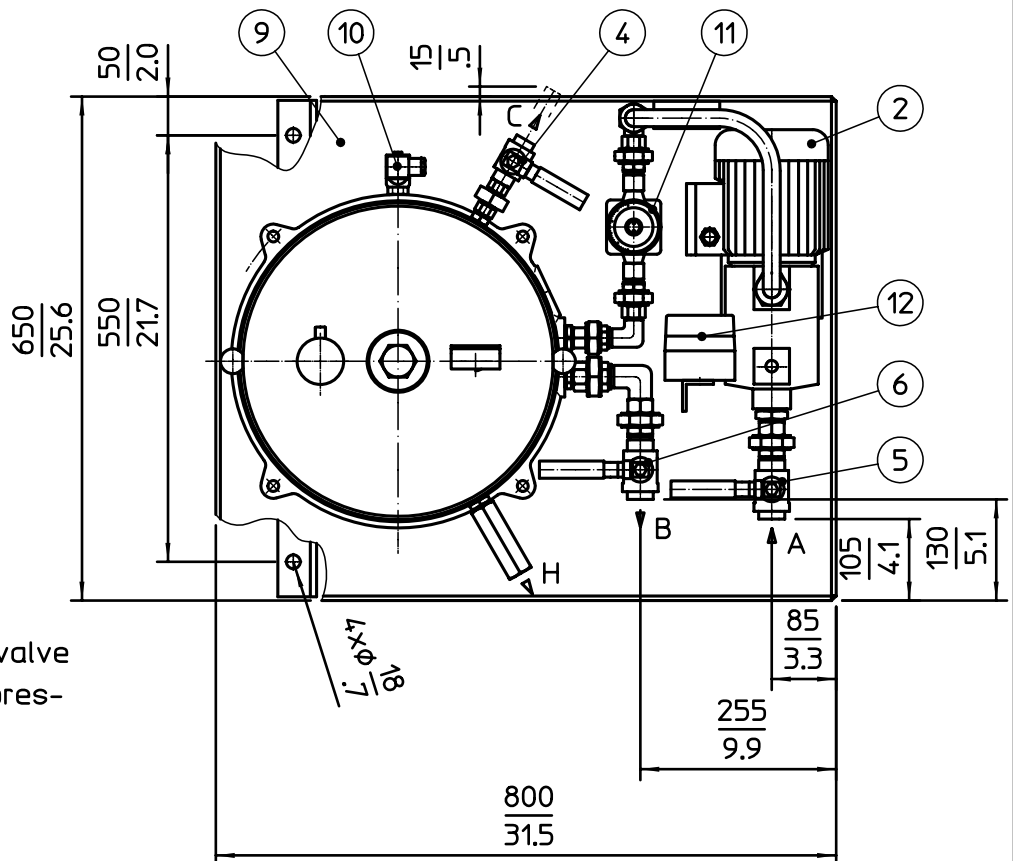
Free height

590
23.2

X	Filter size	a mm/inch.	Weight kg/lbs
1	38/50	1060/36.5	73/161
2	38/100	1580/57.0	99/218



Design pressure 2.5 bar/40 psi
Design temp. 60°C/140°F



A=3/4" BSP, Water inlet
B=3/4" BSP, Water outlet
C=1/2" BSP, Drain valve
D=1/4" BSP, Aut. vent
G=3/4" BSP, Drain, drip pan
H=3/4" BSP, Pressure relief valve
To be connected to non pres-
surized line !


Measurements in mm and inches.

Weight:

Filter (X) kg/lbs
Misc. 65/2.6 kg/lbs

Total kg/lbs

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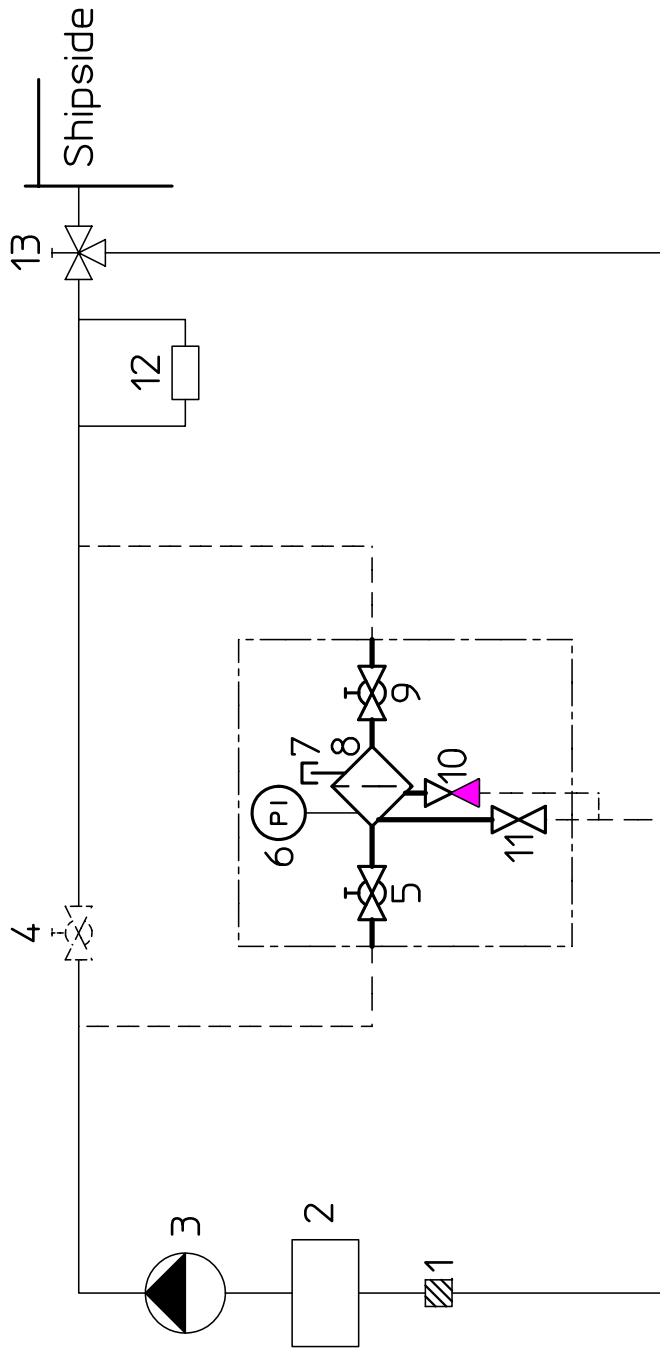
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Customer:		Constr.	TIK	04.08.25
Project:	CJC Oil Absorb Filter type W 38/- CH-DEP General arrangement	Drawn	mn	04.08.25
Ref.:		Appr.		
		Rev. 1		
		Drawing no.	76 143 01-6	

CJC™ OilAbsorb Filter
Type W38/- CH-DEP
Drawing No.: 76 143 01-6

Item group: F4511

Pos.	Article No.	Description	Qty.
1	46 140 01-3 #1	CJC™ Oil Absorb Filter W 38/-	1
2	FD32865	Pump type CH2-50	1
3	FD33002	Pressure gauge ø63 0-4B ned. stainless	1
4	FD32639	Ball Valve ½" BSP 316	1
5	FD32653	Shut off valve - water inlet 3/4"	1
6	FD32653	Shut off valve - water outlet 3/4"	1
7	FD32755	Safety Valve	1
8	FD33003	CJC Aut. Air Vent	1
9	FB5901163	Drip Pan	1
10	FD33045	Pressure Switch	1
11	FD32866/4711	Adjustable flow restrictor	1
12	FD31343/002	Manuel motor starter	1


#1 See [OilAbsorb Filter] under [Spares] under [W38]

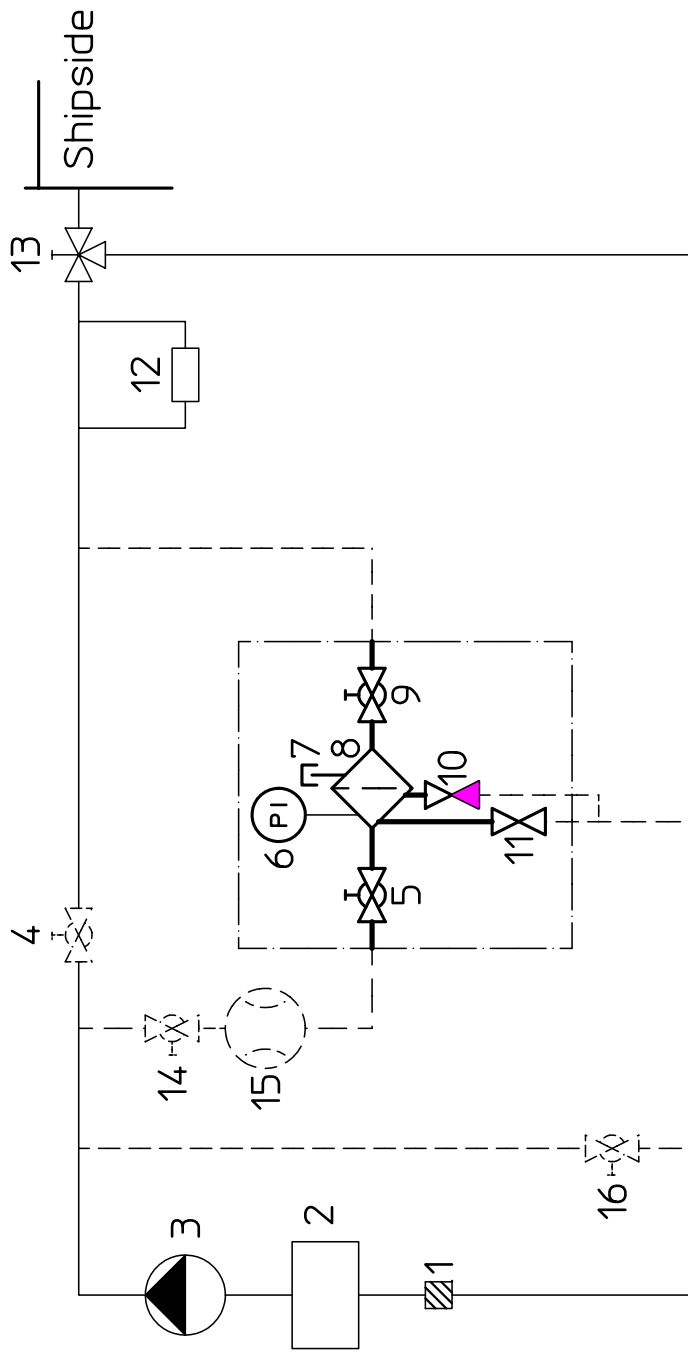


- 1. Strainer.
- 2. Separator.
- 3. Pump.
- 4. Filter By-pass valve.
- 5. Valve. (inlet)
- 6. Pressure gauge. (inlet)
- 7. Air vent.
- 8. CJC Absorb oil filter.
- 9. Valve. (outlet)
- 10. Non return valve.
- 11. Drain valve.
- 12. Oil discharge monitor.
- 13. Three way valve.

_____ existing pipeline
 - - - - - new pipeline

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Yard		TIK	TIK	04.08.20
Hull no.		gj	gj	04.08.20
Yard pos.				
Appr.				
Date		Rev. 1	gj	04.09.16
DMA installation (pump capacity below 1.2 m3 per hour)		Drawing no. 74 015 04-9		




- 10. Non return valve.
- 11. Drain valve.
- 12. Oil discharge monitor.
- 13. Three way valve.
- 14. Shot off valve flowmeter.
- 15. Flowmeter.
- 16. Valve. (return tank)

- 1. Strainer.
- 2. Separator.
- 3. Pump.
- 4. Filter by-pass valve.
- 5. Valve. (inlet)
- 6. Pressure gauge. (inlet)
- 7. Air vent.
- 8. CJC Absorb oil filter.
- 9. Valve. (outlet)

— existing pipeline
 - - - new pipeline

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Yard		TK	TIK	04.08.20
Hull no.		gj	gj	04.08.20
Yard pos.				
Appr.				
Date		Rev. 1	gj	04.09.16
DMA installation (pump capacity above 1.2 m3 per hour)		Drawing no. 74 015 03-9		