

Bilge water separator MPEB

Flow rate: 1 m³/h up to 10 m³/h

1. Function

The system is intended for separating oil out of oil-water mixtures, in particular bilge water. Solids are also separated. The system is certified in accordance with IMO resolution MEPC.107(49).

The MPEB is a compact built, two-stage separator with continuous, reliable operation. The separation takes place consecutively in a common pressure tank.

Stage 1: Multiphase separator MPS (PPT-BWS)

In the first stage (MPS) multiphase mixtures (water, oil and solids) are separated. This is achieved through flow along the profiled MPS plates and through adhesion forces. Large oil drops form and float upwards into the oil collecting dome. Solids and other heavy substances slide downwards along the profiled MPS plates and collect as sludge at the bottom of the tank.

Stage 2: Mechanical emulsion and foam breaker MESB

In the second stage (MESB) the emulsion from the first stage flows through coalescing elements from the inside to the outside. The finest oil droplets ($\geq 1 \mu\text{m}$) coalesce in a microfibre bed to form large oil drops which rise up into the oil dome. The medium is nearly oil-free at the MESB tank outlet.



2. Certification

Classification	Germanischer Lloyd type approval certificate in accordance with IMO resolution MEPC.107(49) module B
Other certificates	RMRS, USCG
Acceptance classification society	Upon request by customer

3. Designated use

Medium	Bilge water in accordance with IMO resolution MEPC.107(49)
Inlet oil content	max. 100 % (temporary)
Outlet oil content	max. 15 ppm

4. Operating parameters

MPEB Type	1.0	2.5	5.0	10.0
Flow rate [m ³ /h]	1	2.5	5	10
Ambient temperature [°C]	min. 10 - max. 40			
Operating temperature [°C]	min. 15 - max. 50			
Operating pressure [bar]	min. 0.7 - max. 3.5			
Pressure loss ¹ [bar]	max. 1.5			

¹ pressure maintaining valve 0.7 bar not included:

5. Dimensions and weights

MPEB Type	1.0	2.5	5.0	10.0
Size HxWxL [mm]	1400x800x2000	1750x810x2700	2000x900x3000	2000x900x3000
Service space HxWxL [mm]	1600x1300x2600	1750x1310x3700	2000x1400x3900	2000x1400x3900
Volume [l]	420	650	1240	1240
Weight empty/in operation [kg]	500/920	600/1250	920/2160	935/2175

6. Technical data

6.1 Electrical data / Control	
Tension	3x 400 VAC/50 Hz
Protection type	min. IP55
Power consumption ²	
Operation [kW]	max. 3.7 (pump + 1x oil dome heater)
Standby [kW]	max. 6.5 (1x oil dome heater + 1x standstill heater)
Operating modes	auto-stop
Potential-free contacts	- pump operation - oil-in-water alarm + common alarm
Switchgear cabinet colour	RAL 7035

² Depending on the operating/ambient temperature, oil dome or standstill heaters may be switched on automatically

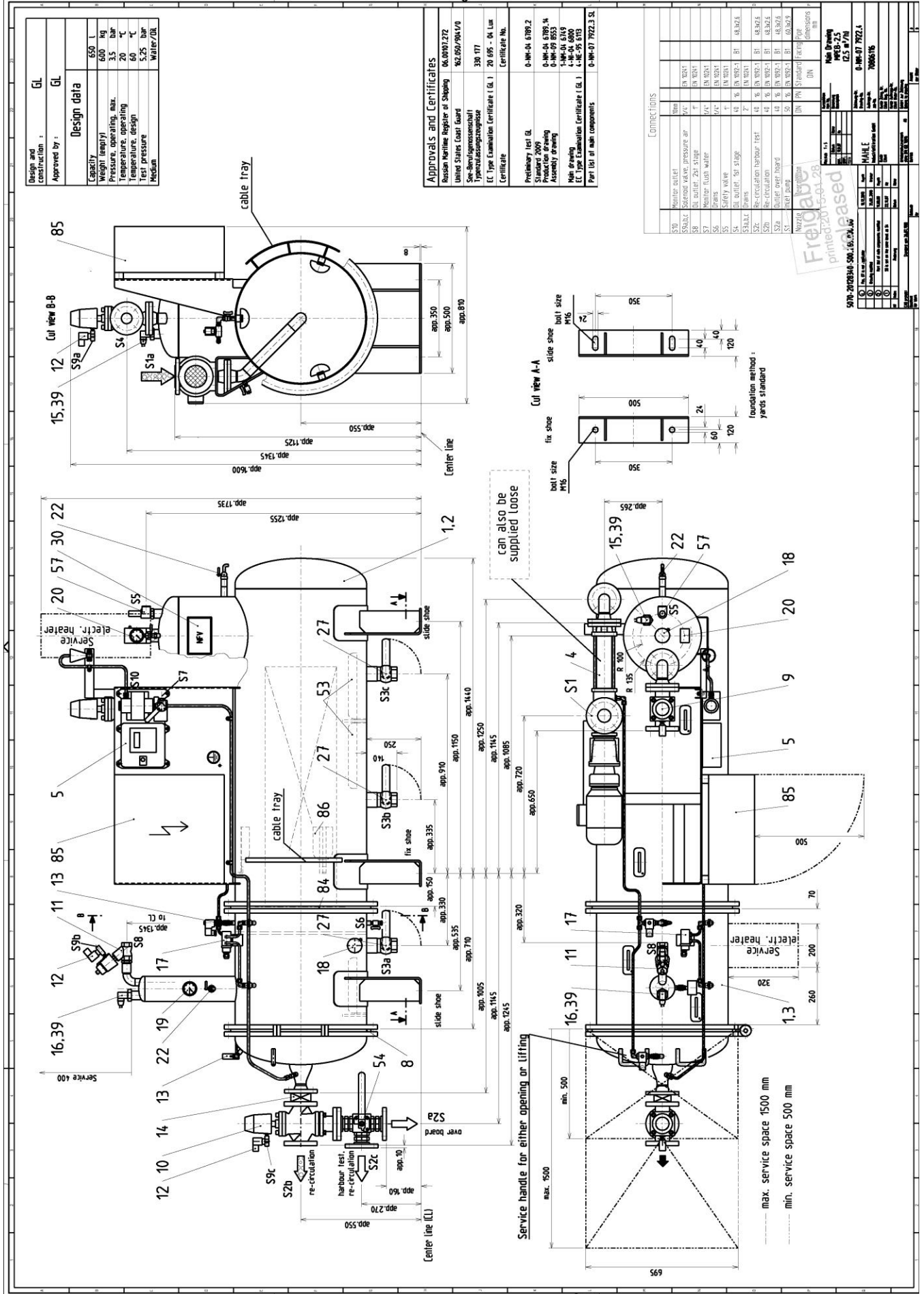
6.2 Tank	
Design pressure [bar]:	3.5
Design temperature [°C]:	60
Test pressure [bar]:	5.25
Safety valve [bar]:	3.8
Design code:	GL
Material:	steel
Corrosion allowance [mm]:	1
Outside	sandblasted SA 2½, coated*
Inside	sandblasted SA 2½ zinc sacrificial anodes
Colour:	RAL 5019

* (double coating comprising primer coat and top coat – dry layer thickness: 120µm)

6.3 Pump				
MPEB Type	1.0	2.5	5.0	10.0
	built-on			
Dry run protection	optional			
Flow rate [m ³ /h]	1	2.5	5	10
Suction height [m]	max. 6			
Discharge pressure [bar]	max. 3			

6.4 Built-in components				
First-stage PPT-BWS	<i>profiled phase separator plates</i>		no consumables	
Second-stage MESB	<i>coalescing elements order numbers</i>			
	70806184	70806181	70806178	70806175

6.5 Options available upon request
3x 440 VAC/60 Hz or 3x 690 VAC/50 Hz
Colour/coating
Transfer pump
Control and cabling options
ICA-options
Piping package (oil drain, safety valve, sludge discharge/drain)



Design and construction:	GL
Approved by:	GL
Design data	
Capacity	650 L
Weight (empty)	500 kg
Pressure, operating, max.	20 bar
Temperature, operating, max.	60 °C
Temperature, design	60 °C
Test pressure	5,25 bar
Medium	Water/Oil

Approvals and Certificates	
Russian Maritime Register of Shipping	06.00107.272
United States Coast Guard	62.250/7941/0
Sw. Register of Shipping	330 177
EC Type Examination Certificate (GL)	20 695 - 04, Low
Certificate No.	
Preliminary Test GL	0-1M-01 6780.2
Standard 2009	0-1M-01 6780 %
Assembly drawing	0-1M-09 6553
Non-drawing	1-1M-01 6119
EC Type Examination Certificate (GL)	4-1E-01 6100
Part list of main components	0-1M-07 7922.3 SL

Connections	
Item	Dimensions
S10 Monitor inlet	RN 10214
S2a,b,c Safety valve pressure air	RN 10214
S7 Monitor flush water	RN 10214
S5 Safety valve	RN 10214
S4 Oil outlet 1st stage	RN 10214
S3a,b,c Slides	RN 10214
S2c Re-circulation harbour test	RN 10214
S2b Re-circulation	RN 10214
S2a Outlet over board	RN 10214
S1 Inlet pump	RN 10214
DN PN Standard Face/pipe dimensions	

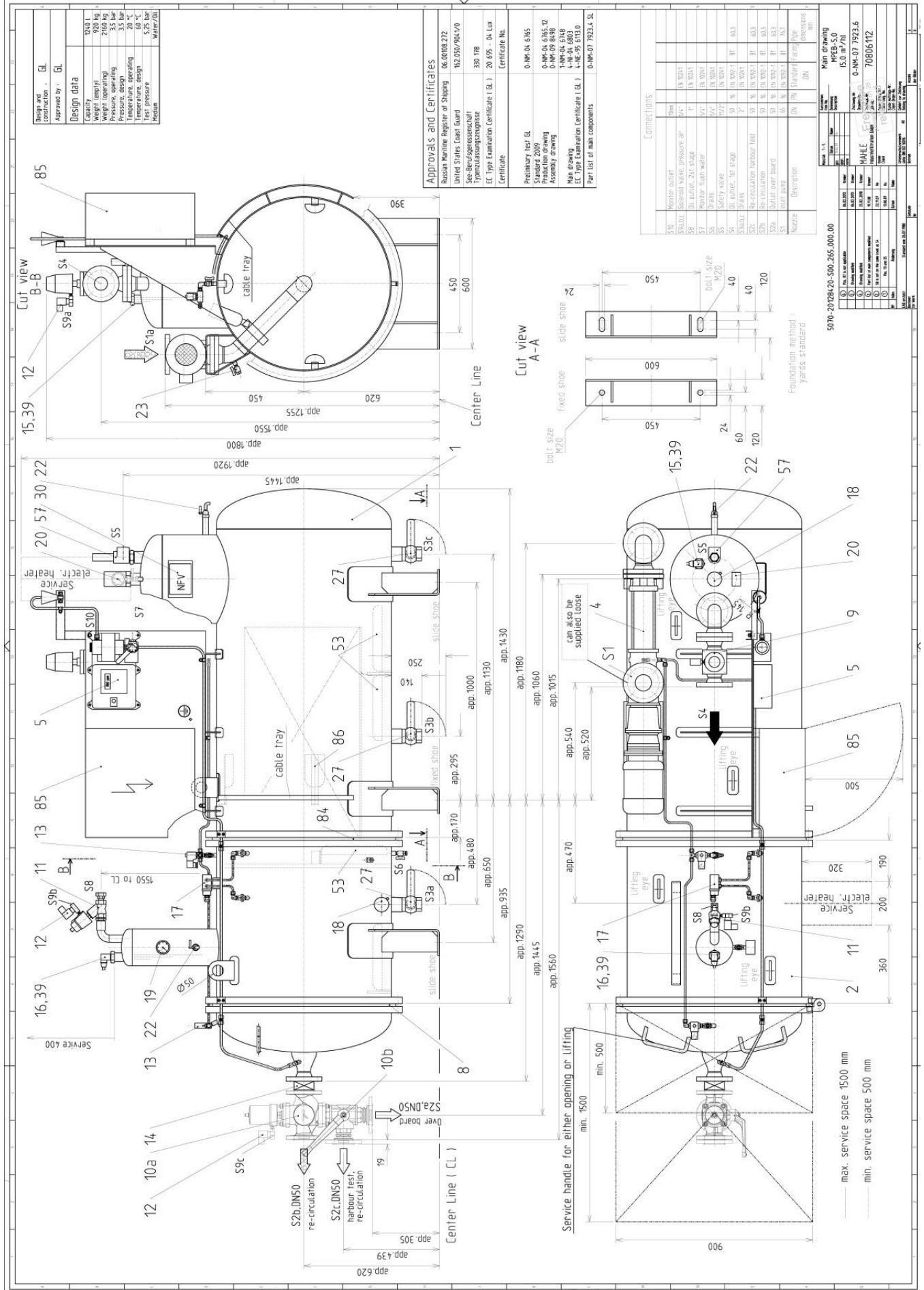
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Scale	1:1
Printed on	0-1M-07 7922.1
Material	70055115
Manufacturer	MAHLE
Part No.	
Rev.	
Drawn by	
Checked by	
Approved by	
Released by	
Released on	

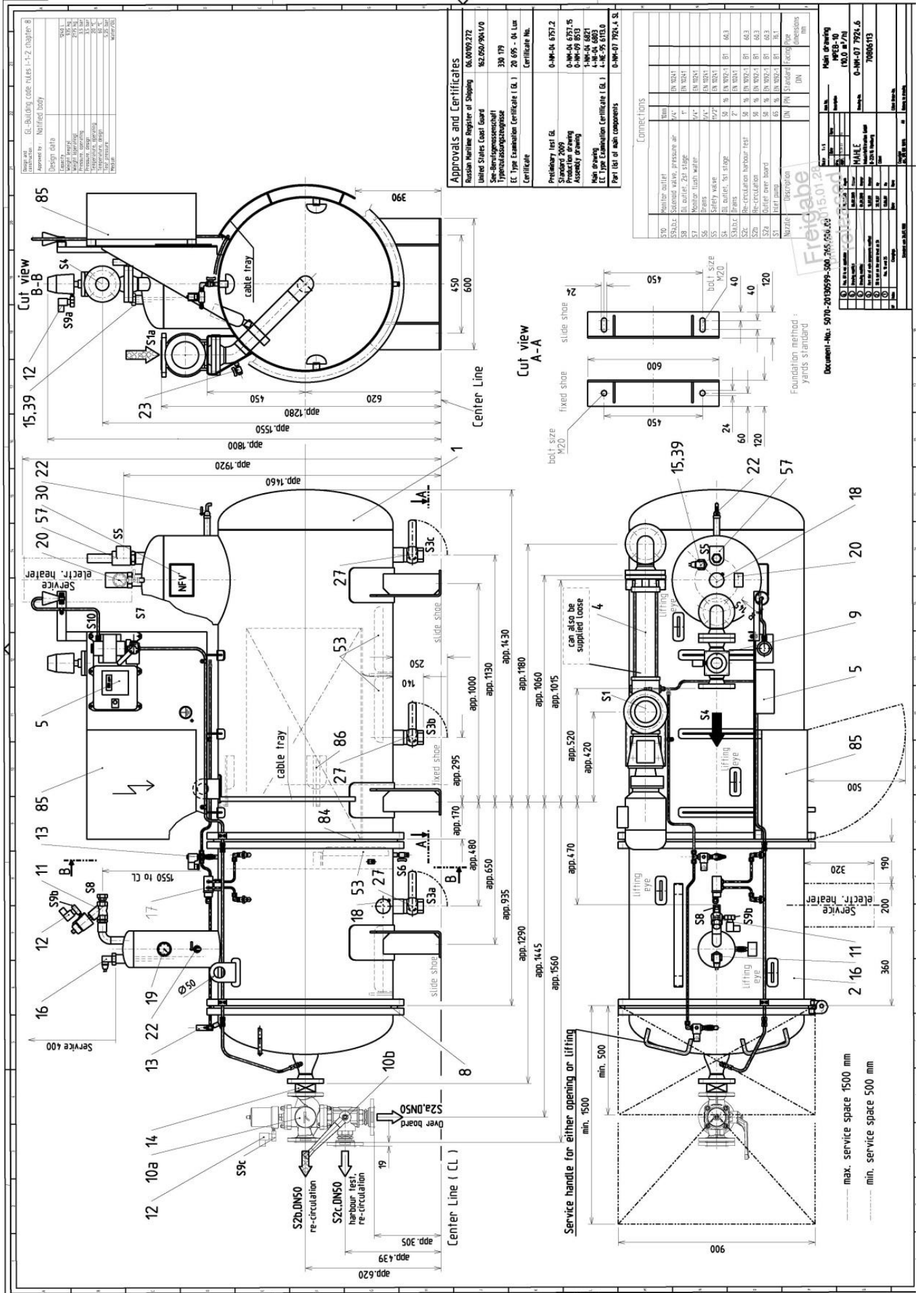
Freightbay
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Can also be supplied loose

Service handle for either opening or lifting

max. service space 1500 mm
min. service space 500 mm





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