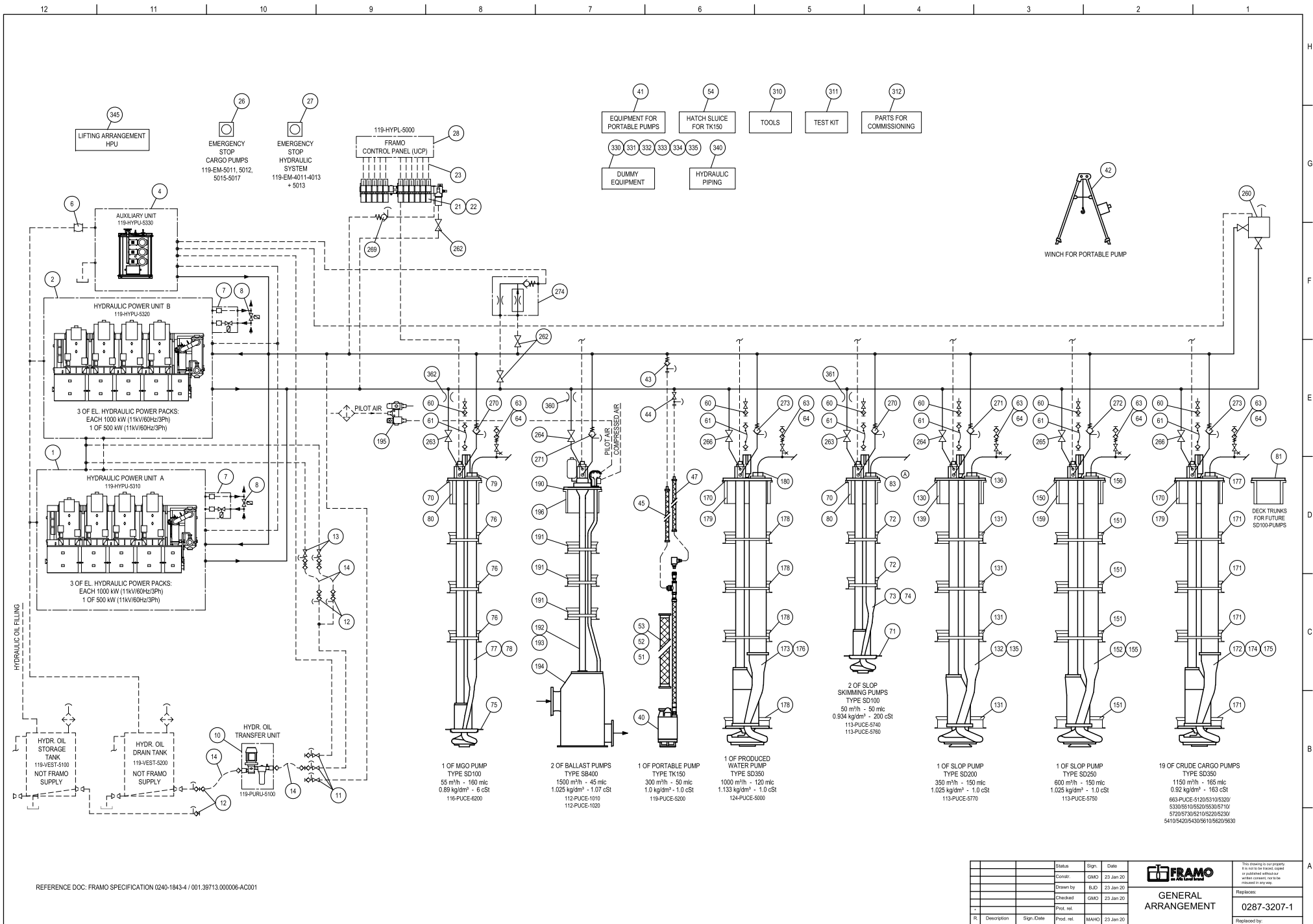




Customer / Yard: Shanghai Waigaoqiao Shipbuilding

Hull no.: H1498, Fast4ward

Classification: BV

CONTENTS

Chapter 1

FRAMO SUPPLY

- Supply list
- General arrangement
- Equipment drawings

Chapter 2

TECHNICAL DATA

- Technical system data
- Pump specifications
- Performance diagrams

Chapter 3

SYSTEM DRAWINGS

- Hydraulic diagrams
- Electrical diagrams

Chapter 4

SPECIAL INSTRUCTIONS

Chapter 5

APPENDICES

Chapter 1 FRAMO SUPPLY

General arrangement drawing no.: 0287-3207-1

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Power pack unit w / equipment</u>					
1	1	A106718-BV	Hydraulic power unit A Tag no.: 119-HYPU-5310	0363-4416-2 001.39713.000006-AC003	
2	1	A106719-BV	Hydraulic power unit B Tag no.: 119-HYPU-5320 Foundation drawing for HPU A + B Mechanical handling of HPU main components Lifting arrangement, complete unit	0363-4417-2 001.39713.000006-AC004 0363-3926-1 001.39713.000006-AO001 0363-3925-3 001.39713.000006-AD001 0363-3924-3 001.39713.000006-EC003	
4	1	A98152	Auxiliary hydraulic unit Tag no.: 119-HYPU-5330	0345-3497-1 001.39713.000006-AC008	
6	1	A25976-BV	Flexible bellow for overflow pipe, DN65	0247-0855-4 001.39713.000006-AD056	
7	2	A98154	Cooling water accessories (ANSI, 230V)	0300-2527-1 001.39713.000006-AD002	
8	2	A106720	Cooling water bypass valve (ANSI, 230V)	0247-1145-3 001.39713.000006-AD048	
<u>Transfer unit w / equipment</u>					
10	1	A95381	Oil filling / transfer unit Tag no.: 119-PURO-5100	0344-2379-3 001.39713.000006-AD003	
11	4	A95318	Snap-on coupling w/ LP ball valve Tag no: 119-SPSV- 0546/0547/0548/0549	0247-1102-3 001.39713.000006-AD004	
12	4	A95305	Snap-on coupling w/o ball valve Tag no: 119-SPSV-0551/0552/ 0555/0557	0247-1099-3 001.39713.000006-AD004	
13	2	A91790	Snap-on coupling w/HP ball valve Tag no: 119-SPSV-0550/0556	0247-1092-3 001.39713.000006-AD004	
14	4	A91784-BV	Flexible hose w/snap-on coupling L = 4 m, 119-SPFH- 0501/0502/0503/0504	0247-1094-3 001.39713.000006-AD055	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
 Date/sign.: 17JAN20/GMO
 Page: 3
 Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Control system w / equipment</u>					
21	2	A55192	Remote control valve assembly, 12 valves	0125-1367-3 001.39713.000006-AD005	
22	1	A55191	Remote control valve assembly, 11 valves	0125-1378-3 001.39713.000006-AD005	
23	35	A91545	Cables for remote control valve L = 25 m	0381-3800-3 001.39713.000006-BD003	A A
26	5	A100120	Emergency stop (Cargo Pumps)	0381-7151-3 001.39713.000006-BD001	
27	4	A100119	Emergency stop (Hydraulic system)	0381-7151-3 001.39713.000006-BD001	
28	1	A104146	Framo Control Panel (UCP)	0381-7616-2 001.39713.000006-BD002	
<u>Portable pump w / equipment</u>					
40	1	A97681-BV	Portable pump TK150 Flexible hose, L =36 m Tag no.: 119-PUCE-5200	0919-0686-3 001.39713.000006-AC019	
41	1	A94089	Equipment for portable pump operation	0125-1417-3 A94089 001.39713.000006-AD006	
42	1	A97683	Portable winch FM1500	0911-1235-4 001.39713.000006-AD054	
43	12	A101045	Non-return valve - LP snap-on	0179-0846-4 001.39713.000006-AD007	
44	12	A101024	Ball valve - HP snap-on	0179-0847-3 001.39713.000006-AD007	
45	3	41319-BV	Return hose, L = 18 m	0253-0437-3 001.39713.000006-AD008	
47	3	A94043-BV	Pressure hose, L = 18 m	0910-0315-3 001.39713.000006-AD008	
51	1	A37701	Bolt/gasket (for ANSI B16.5 150#)	0911-0589-4 A37701 001.39713.000006-AD009	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 4
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
52	1	A97682-BV	Cargo hose 5", L = 18 m Nitrile / Neoprene ANSI B16.5 150# / ANSI B16.5 150#	0910-0215-3 001.39713.000006-AD008	
53	1	A35098-BV	Cargo hose 5", L = 36 m Nitrile / Neoprene ANSI B16.5 150# / TK150-flange	0910-0214-3 001.39713.000006-AD008	
54	1	A97680	Hatch sluice for TK150 Operation of hatch sluice Hatch / sluice arrangement	0911-1224-1 001.39713.000006-AC029 1150-0035-4 001.39713.000006-FB005 0911-1233-2 001.39713.000006-EC002	
<u>Equipment for cargo pump</u>					
60	25	88781	Snap-on coupling for air/inert gas connection	0257-1018-4 001.39713.000006-AD010	
61	2	A97685-BV	Purging hose L = 6,0 m	0910-0328-4 001.39713.000006-AD050	
63	23	A96792	Cargo purging valve	0321-0388-2 001.39713.000006-AD011	
64	23	A31206	Welding flange for purging valve	0321-0285-4 001.39713.000006-AD012	
<u>Cargo pump SD100</u>					
70	3	A27323	Set of bolts and gasket, SD100	0366-1044-4 A27323 001.39713.000006-AD013	
71	2	A95964	Bottom support, SD100 Material: 254SMO	0378-2845-4 001.39713.000006-AD014	
72	2	A84664	Intermediate support, SD100 Material: 254SMO	0378-2443-4 001.39713.000006-AD015	
73	2	A107043	Slop skimming pump SD100 Pipe stack split Orientation of hydraulic conn.: 0° L = 9303 mm, A1 = 3940 mm Tank no. Slop tank SB Tag no. 113-PUCE-5740 Tank no. Slop tank PS Tag no. 113-PUCE-5760	0378-3212-3 001.39713.000006-AC039 0378-3213-4 001.39713.000006-AC040	

FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 5
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
74	2	A82361	Split list for SD100 for item 73	0378-2475-4 A82361 001.39713.000006-AD016	
75	1	A68300	Bottom support, SD100 Material: AISI316L	0378-1661-4 001.39713.000006-AD017	
76	3	3024031	Intermediate support, SD100 Material: AISI316L	0378-2443-4 001.39713.000006-AD018	
77	1	A107044	MGO pump SD100 Pipe stack split Orientation of hydraulic conn.: 180° L = 33503 mm, A1 = 7340 mm A2 = 14110 mm, A3 = 22480 mm Tank no. MGO-tank Tag no. 116-PUCE-6200	0378-3214-3 001.39713.000006-AC044 0378-3215-4 001.39713.000006-AC045	
78	1	A77753	Split list for SD100 for item 77	0378-2169-4 A77753 001.39713.000006-AD019	
79	1	A51544	Cargo flange, SD100, for item 77 B = 102,3 mm, C = 114,3 mm Material: AISI 316L	0378-1254-4 001.39713.000006-AD020	
80	3	A94152	Deck trunk, SD100 H = 500 mm, thickness=25mm Material: S355J2G3	0378-2842-4 001.39713.000006-AD021	
81	8	A94152	Deck trunk for future SD100-pumps H = 500 mm, thickness=25mm Material: S355J2G3	0378-2842-4 001.39713.000006-AD022	
82	8	A99215	Blinding kit for trunk for future SD100-pumps.	0378-2961-4 A99215 001.39713.000006-AD023	
83	2	A106145	Cargo flange, SD100 B = 102,3 mm, C = 114,3 mm Material: 254SMO	0378-1254-4 001.39713.000006-AD020	

FRAMO SPECIFICATION

O. NO. 618662/1

No. **0240-1843-4**
Date/sign.: 17JAN20/GMO
Page: 6
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Cargo pump SD200</u>					
130	1	A27326	Set of bolts and gasket, SD200	0366-1044-4 A27326 001.39713.000006-AD024	
131	4	A84463	Intermediate/bottom support, SD200 Material: 254SMO	0367-0161-2 001.39713.000006-AD025	
132	1	A106600	Slop pump SD200 Pipe stack split Orientation of hydr. con.: 180° L = 32650 mm, A1= 6665 mm, A2= 15135 mm, A3= 21645 mm Tank no. Slop tank PS Tag no. 113-PUCE-5770	0367-2833-3 001.39713.000006-AC053 0367-2834-4 001.39713.000006-AC054	
135	1	A99631	Split list for SD200	0367-1927-4 A99631 001.39713.000006-AD053	
136	1	A106146	Cargo flange SD200 B=202,7 mm, C=219,1 mm Material: 254SMO	0367-2692-4 001.39713.000006-AD026	
139	1	A33620	Deck trunk, SD200, H=500 mm Material: NV E 36	0367-0589-4 001.39713.000006-AD027	

FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 7
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Cargo pump SD250</u>					
150	1	A46134	Set of bolts and gasket, SD250	0389-0183-4 A46134 001.39713.000006-AD028	
151	4	A89504	Intermediate/bottom support, SD250 Material: 254SMO	0367-0161-2 001.39713.000006-AD029	
152	1	A106601	Slop pump SD250 Pipe stack split Orientation of hydr. con.: 0° L = 32650 mm, A1= 6690 mm, A2= 15160 mm, A3= 21670 mm Tank no.: Slop tank SB Tag no.: 113-PUCE-5750	0389-0951-3 001.39713.000006-AC060 0389-0952-4 001.39713.000006-AC061	
155	1	A99641	Split list for SD250	0389-0718-4 A99641 001.39713.000006-AD052	
156	1	A106148	Cargo flange SD250 B=254,6 mm, C=273,1 mm Material: 254SMO	0389-0872-4 001.39713.000006-AD030	
159	1	A46125	Deck trunk, SD250, H=500 mm thickness=25mm, Material: NV E 36	0389-0179-4 001.39713.000006-AD031	

FRAMO SPECIFICATION

O. NO. 618662/1

No. **0240-1843-4**
Date/sign.: 17JAN20/GMO
Page: 8
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Cargo pump SD350</u>					
170	20	A47309	Set of bolts and gasket, SD350	0365-1241-4 A47309 001.39713.000006-AD032	
171	76	A5636	Intermediate/bottom support, SD350 for item 172, 174, material: AISI316L	0367-0161-2 001.39713.000006-AD033	
178	4	A99430	Intermediate/bottom support, SD350 For item 173, material: 254SMO	0367-0161-2 001.39713.000006-AD034	
172	18	A105830	Crude cargo pump SD350	0365-2314-3 001.39713.000006-AC068	
172A	(1)		Pipe stack split (4 splits) Orientation of hydr. con.: 0° L = 33617 mm, A1= 6810 mm, A2= 14130 mm, A3= 22500 mm Tank no. 1 C Tag no.: 663-PUCE-5120	0365-2315-4 001.39713.000006-AC069	
172B	(12)		Pipe stack split (4 splits) Orientation of hydr. con.: 0° L = 33503 mm, A1= 6810 mm, A2= 15179,5 mm, A3= 23547,5 mm Tank no. 2 SB Tag no.: 663-PUCE-5210 Tank no. 2 P Tag no.: 663-PUCE-5230 Tank no. 3 SB Tag no.: 663-PUCE-5310 Tank no. 3 PS Tag no.: 663-PUCE-5330 Tank no. 4 SB Tag no.: 663-PUCE-5410 Tank no. 4 PS Tag no.: 663-PUCE-5430 Tank no. 5 SB Tag no.: 663-PUCE-5510 Tank no. 5 PS Tag no.: 663-PUCE-5530 Tank no. 6 SB Tag no.: 663-PUCE-5610 Tank no. 6 C Tag no.: 663-PUCE-5620 Tank no. 7 SB Tag no.: 663-PUCE-5710 Tank no. 7 PS Tag no.: 663-PUCE-5730	0365-2316-4 001.39713.000006-AC069	

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
172C	(4)		Pipe stack split (4 splits) Orientation of hydr. con.: 0° L = 33554 mm, A1= 6810 mm, A2= 15184,5 mm, A3= 23554 mm Tank no. 2 C Tag no.: 663-PUCE-5220 Tank no. 3 C Tag no.: 663-PUCE-5320 Tank no. 4 C Tag no.: 663-PUCE-5420 Tank no. 5 C Tag no.: 663-PUCE-5520	0365-2317-4 001.39713.000006-AC069	
172D	(1)		Pipe stack split (4 splits) Orientation of hydr. con.: 0° L = 33483 mm, A1= 6810 mm, A2= 15179,5 mm, A3= 23547,5 mm Tank no. 6 PS Tag no.: 663-PUCE-5630	0365-2318-4 001.39713.000006-AC069	
174	1	A105832	Crude cargo pump SD350 Pipe stack split (5 splits) Orientation of hydr. con.: 0° L = 33554 mm, A1= 6810 mm, A2= 15184,5 mm, A3= 23554 mm Tank no. 7 C Tag no.: 663-PUCE-5720	0365-2314-3 001.39713.000006-AC068 0365-2320-4 001.39713.000006-AC069	
173	1	A105831	Produced water pump SD350 Pipe stack split Orientation of hydr. con.: 0° L = 33453 mm, A1= 6810 mm, A2= 15179,5 mm, A3= 23547,5 mm Tank no. Produced water tank Tag no. 124-PUCE-5000	0365-2314-3 001.39713.000006-AC070 0365-2319-4 001.39713.000006-AC071	
175	19	A99434	Split list for SD350 (for item 172, 174)	0365-1834-4 A99434 001.39713.000006-AD051	
176	1	A99435	Split list for SD350 (for item 173)	0365-2209-4 A99435 001.39713.000006-AD049	

FRAMO SPECIFICATION

O. NO. 618662/1

No. **0240-1843-4**
Date/sign.: 17JAN20/GMO
Page: 10
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
177	19	A99479	Cargo flange SD350 (for item 172,174) B=330,2 mm, C=355,6 mm Material: AISI 316L	0365-2206-4 001.39713.000006-AD035	
180	1	A106151	Cargo flange SD350 (for item 173) B=336,5 mm, C=355,6 mm Material: 254SMO	0365-2206-4 001.39713.000006-AD035	
179	20	A47374	Deck trunk, SD350, H=500 mm thickness=25mm, Material: NV E 36	0365-1240-4 001.39713.000006-AD036	
<u>Submerged ballast pump SB400</u>					
190	2	A25720	Set of bolts and gasket, SB400	0380-0340-4 A25720 001.39713.000006-AD037	
191	6	A5626	Support ring, SB400 Material: AISI316L	0367-0161-2 001.39713.000006-AD038	
192	2	A107423	Ballast pump SB400 Pipe stack split, SB400 Evacuation system Orientation of hydraulic conn.: 0° L = 31473 mm, A1 = 5137 mm A2 = 13505 mm, A3 = 21873 mm Tank no. WBT SB Tag no. 112-PUCE-1010 Tank no. WBT PS Tag no. 112-PUCE-1020	0376-0788-3 001.39713.000006-AC082 0376-0789-4 001.39713.000006-AC079 0102-0555-4 001.39713.000006-AF001	
193	2	A100347	Split list for SB400	0376-0734-4 A100347 001.39713.000006-AD039	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 11
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
194	2	A107424	SB400 Pump casing/ air separator Flange standard: ANSI	0376-0788-3 001.39713.000006-AC082	
	(1)		Orientation of suction flange: 90° Port ballast pump 112-PUCE-1020		
	(1)		Orientation of suction flange: 270° STB ballast pump 112-PUCE-1010		
195	1	A87641	Pilot valves for evacuating system	0102-0758-4 001.39713.000006-AD040	
196	2	A33620	Deck trunk, SB400 H = 500 mm, thickness = 25mm Material: NV-E 36	0367-0589-4 001.39713.000006-AD041	
<u>Valves</u>					
260	1	A89632	Heating and venting valve	0125-1465-4 001.39713.000006-AD043	
262	5	A101025	Ball valve DN25	0179-0848-3 001.39713.000006-AD044	
263	3	A101026	Ball valve DN32	0179-0849-3 001.39713.000006-AD044	
264	3	A101027	Ball valve DN38	0179-0850-3 001.39713.000006-AD044	
265	1	A101028	Ball valve DN45	0179-0851-3 001.39713.000006-AD044	
266	20	A101029	Ball valve DN50	0179-0852-3 001.39713.000006-AD044	
269	1	A101030	Non return valve DN30	0179-0841-4 001.39713.000006-AD045	
270	3	A101040	Non return valve DN40	0179-0842-4 001.39713.000006-AD045	
271	3	A101050	Non return valve DN50	0179-0843-4 001.39713.000006-AD045	
272	1	A101065	Non return valve DN65	0179-0844-4 001.39713.000006-AD045	
273	20	A101080	Non return valve DN80	0179-0845-4 001.39713.000006-AD045	
274	2	A82004	Continuous Air Venting Valve	0179-0725-4	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 12
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Tools, spare parts, test equipment</u>					
310	1	A99703	Set of tools Standard tools	0032-0671-4 001.39713.000006-FE001	
			Tools SD100	0032-0674-4 001.39713.000006-FE002	
			Tools SD200	0032-0679-4 001.39713.000006-FE003	
			Tools SD250	0032-0684-4 001.39713.000006-FE004	
			Tools SD350	0032-0717-4 001.39713.000006-FE005	
			Tools SB400	0032-0699-4 001.39713.000006-FE006	
			Tools for oil cooler	0032-0432-4 001.39713.000006-FE007	
311	1	A57200	Test kit	0247-0970-3 A57200 001.39713.000006-FE008	
312	1	A99704	Parts for commissioning	A99704 001.39713.000006-FF001	
313	1	A90215	Set of blind flanges for cargo pumps	A90215 001.39713.000006-FE010	
<u>Dummy w/equipment</u>					
330	3	A52731	Laser	0208-0733-4 001.39713.000006-FE009	
331	1	A99705	Dummy for SD100	0208-0836-3 A99705 001.39713.000006-AD047	
332	1	A99706	Dummy for SD200	0208-0854-3 A99706 001.39713.000006-AD047	
333	1	A99707	Dummy for SD250	0208-0853-3 A99707 001.39713.000006-AD047	
334	1	A99708	Dummy for SD350	0208-0842-3 A99708 001.39713.000006-AD047	
335	1	A99709	Dummy for SB400	0208-0701-4 A99709 001.39713.000006-AD047	



FRAMO SPECIFICATION

O. NO. 618662/1

No. **0240-1843-4**
Date/sign.: 17JAN20/GMO
Page: 13
Rev. A: 24APR20/GMO

<u>Item</u>	<u>Qty.</u>	<u>ID no.</u>	<u>Description/Title</u>	<u>Drawing no.</u>	<u>Last rev.</u>
<u>Other equipment</u>					
340	1	A87880	Hydraulic pipes and fittings		
345	1	A98153	Lifting equipment for complete HPU	0363-3924-3	
				001.39713.000006-EC003	
360	2	A89689	Damping orifice DN50, SB400 For Ballast pumps	0125-1028-4	
				001.39713.000006-AD042	
361	2	A54192	Damping orifice DN30, SD100 For Slop skimming pumps	0125-1028-4	
				001.39713.000006-AD042	
362	1	A54196	Damping orifice DN30, SD100 For MGO pump	0125-1028-4	
				001.39713.000006-AD042	

Chapter 2 TECHNICAL DATA

<u>DESCRIPTION/TITLE</u>	<u>DRAWING NO.</u>	<u>REV.</u>
Technical system data	0076-1751-4	
Data sheet, 1000 kW HV motor	001.39713.000006-BK001	
	0294-2889-4	
Data sheet, 500 kW HV motor	001.39713.000006-BL001	
	0294-2890-4	
Data sheet, 30 kW LV motor	001.39713.000006-BL002	
	0294-2891-4	
Data sheet, 1,5 kW LV motor	001.39713.000006-BL003	
	0294-2892-4	
	001.39713.000006-BL004	
Crude Cargo Pumps SD350:		
Pump specification	0115-2062-401	
	001.39713.000006-AK009	
Performance diagram	0169-4912-4	
	001.39713.000006-AT001	
Pump data sheet	0905-0462-4	
	001.39713.000006-AK001	
Produced water Pump SD350:		
Pump specification	0115-2062-402	
	001.39713.000006-AK010	
Performance diagram	0169-4541-4	
	001.39713.000006-AT001	
Pump data sheet	0905-0463-4	
	001.39713.000006-AK002	
Slop Pump SD250:		
Pump specification	0115-2062-403	
	001.39713.000006-AK011	
Performance diagram	0169-4542-4	
	001.39713.000006-AT003	
Pump data sheet	0905-0456-4	
	001.39713.000006-AK003	
Slop Pumps SD200:		
Pump specification	0115-2062-404	
	001.39713.000006-AK012	
Performance diagram	0169-4543-4	
	001.39713.000006-AT004	
Pump data sheet	0905-0457-4	
	001.39713.000006-AK004	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 15
Rev. A: 24APR20/GMO

<u>DESCRIPTION/TITLE</u>	<u>DRAWING NO.</u>	<u>REV.</u>
Slop skimming Pumps SD100: Pump specification	0115-2062-405 001.39713.000006-AK013	
Performance diagram	0169-4544-4 001.39713.000006-AT005	
Pump data sheet	0905-0458-4 001.39713.000006-AK005	
MGO Pump SD100: Pump specification	0115-2062-406 001.39713.000006-AK014	
Performance diagram	0169-4545-4 001.39713.000006-AT005	
Pump data sheet	0905-0459-4 001.39713.000006-AK006	
Ballast Pumps SB400: Pump specification	0115-2062-407 001.39713.000006-AK015	
Performance diagram	0169-4546-4 001.39713.000006-AT007	
Pump data sheet	0905-0460-4 001.39713.000006-AK007	
Portable Pump TK150: Pump specification	0115-2062-408 001.39713.000006-AK016	
Performance diagram	0169-4547-4 001.39713.000006-AT008	
Pump data sheet	0905-0461-4 001.39713.000006-AK008	
Operating range for SD100 pump	0169-3509-4 001.39713.000006-AT005	
Operating range for SD200 pump	0169-3510-4 001.39713.000006-AT004	
Operating range for SD250 pump	0169-3783-4 001.39713.000006-AT003	
Operating range for SD350 pump	0169-4256-4 001.39713.000006-AT001	

Chapter 3 SYSTEM DRAWINGS

<u>DESCRIPTION/TITLE</u>	<u>DRAWING NO.</u>	<u>REV.</u>
Legend for hydraulic diagram	0216-0985-3 001.39713.000006-AE001	
Hydraulic diagram, power pack room	0216-2770-101 001.39713.000006-AE002	
Hydraulic diagram, deck section	0216-2770-102 001.39713.000006-AE003	
Hydraulic diagram, HPU A	0216-2594-1 001.39713.000006-AE004	
Hydraulic diagram, HPU B	0216-2595-1 001.39713.000006-AE005	
Hydraulic diagram, auxiliary hydraulic unit	0216-2596-2 001.39713.000006-AE006	
Instrument and Equipment list	0216-2767-3 001.39713.000006-AJ001	
Instrument data sheet	0143-1079-4 001.39713.000006-AJ002	
Single line / Block diagram	0223-0744-2 001.39713.000006-BA001	
Legend and codes for el. diagram	0143-0240-3 001.39713.000006-BG001	
Interconnection diagram	0223-0745-3 001.39713.000006-BG002	
Modbus mapping list	0143-1080-4 001.39713.000006-BA002	
Cause & Effect diagram	0143-1081-3 001.39713.000006-AL001	

EX. CERTIFICATES

EX Equipment register sheet	0143-1082-3 001.39713.000006-BN001
IECEX cert. for Emergency stop buttons on deck & engine room	0294-2595-4 001.39713.000006-BM001
IECEX cert. for Header tank pressure transmitter	0294-2594-4 001.39713.000006-BM002
ATEX cert. for Ex. amplifier for ballast level switch	0294-2505-4 001.39713.000006-BM003
Declaration of Conformity for ballast level switch	0294-2647-4 001.39713.000006-BM004

Chapter 4 SPECIAL INSTRUCTIONS

<u>Description/Title</u>	<u>Framo doc. no.</u>	<u>Rev.</u>
Operation manual for cargo pumps	1000-0294-401 001.39713.000006-FB001	
Operation manual for ballast pumps	1000-0274-401 001.39713.000006-FB002	
Functional description	0242-3371-401 001.39713.000006-FB003	
User guide for Visual Display Unit (VDU)	0143-0867-4 001.39713.000006-FB004	
Inspection and test plan (Pumping system)	0120-0112-4 001.39713.000006-QCP001	
Inspection and test plan (Piping system)	856-429-4 001.39713.000006-QCP002	
Quality plan	0053-0279-4 001.39713.000006-CC001	
Painting specification	0053-0278-4 001.39713.000006-DR001	
Test procedure (FAT), HPU	0074-0444-4 001.39713.000006-CS001	
Performance test procedure (FAT), Pumps	0074-0445-4 001.39713.000006-CS002	
Test procedure, UCP	1400-0778-4 001.39713.000006-CS003	
Noise data sheet for HPU	0038-0184-4 001.39713.000006-HB001	
Vibration data sheet for HPU	0038-0185-4 001.39713.000006-HD001	
Noise and Vibration test procedure	0074-0385-4 001.39713.000006-NT001	
Procedure for preservation, packing and marking	1400-0561-4 001.39713.000006-EA001	
Post commissioning procedure	1403-0051-4 001.39713.000006-EE001	
Procedure for re-preservation	1403-0032-4 001.39713.000006-EE002	
Table of corresponding material standards	0113-0024-4 001.39713.000006-MS001	
Framo Drawings piping system TDBW (separate volume)	618662-FDPI 001.39713.000006-AC104	
Framo Mounting Instructions (separate volume)	618662-FMI 001.39713.000006-EC001	
Framo Manufacturing Record Book pumping system (separate volume)	618662-FMRBPU 001.39713.000006-VDB005	
Framo Manufacturing Record Book piping system (separate volume)	618662-FMRBPI 001.39713.000006-VDB004	
Framo Service Manual pumping system (separate volume)	618662-FSMPU 001.39713.000006-FC002	
Framo Service Manual piping system (separate volume)	618662-FSMPI 001.39713.000006-FC001	

Chapter 5 APPENDICES (Framo internal use only)

Description/Title

Framo doc. no.

Rev.

Electrical drawings

Wiring diagram, System

0223-0746-3

001.39713.000006-BG003

SPECIFICATION / INFORMATION

<u>Type</u>	<u>Qty</u>	<u>Specification/Information</u>	<u>Last revision</u>
ELECTRIC MOTOR HV 1000kW (For item 1, 2)	6	0124-4923-4 FRAMO Art. no. A99000-BV	
ELECTRIC MOTOR HV 500kW (For item 1, 2)	2	0124-4927-4 FRAMO Art. no. A99001-BV	
ELECTRIC MOTOR LV (For item 4)	3	0124-4911-4 FRAMO Art. no. A98156	
ELECTRIC MOTOR LV (For item 10)	1	0124-4935-4 FRAMO Art. no. A95379	
HYDRAULIC PUMP (For item 1,2)	6	0124-4908-4 FRAMO Art. no.: A98141-BV	
HYDRAULIC PUMP (For item 1,2)	2	0124-4942-4 FRAMO Art. no.: A98157-BV	
OIL COOLER (For item 1, 2)	2	0124-4934-4 FRAMO Art. no.: A98158-BV	
HYDRAULIC OIL FEED PUMP (For item 4)	3	0124-3200-4 FRAMO Art. no.: A55081	



FRAMO SPECIFICATION

O. NO. 618662/1

No. 0240-1843-4
Date/sign.: 17JAN20/GMO
Page: 19
Rev. A: 24APR20/GMO

Type	Antall	Spesifikasjon/Informasjon	Rev.
------	--------	---------------------------	------

Rørsatsspesifikasjoner:

Cargo pump SD100, (For item 73)	0181-4736-4
Cargo pump SD100, (For item 77)	0181-4737-4
Cargo pump SD200, (For item 132)	0181-4730-4
Cargo pump SD250, (For item 152)	0181-4735-4
Cargo pump SD350, (For item 172, 173)	0181-4733-4
Cargo pump SD350, (For item 174)	0181-4734-4
Ballast pump SB400, (For item 192)	0181-4731-4

Annet: (levert kun til 618253 – H1468)

FLUSHING ORIFICE (For SD100)	3	0108-0715-3 FRAMO Art. no. A85105
FLUSHING ORIFICE (For SD200 and SB400)	3	0108-0715-3 FRAMO Art. no. A85106
FLUSHING ORIFICE (For SD250)	1	0108-0715-3 FRAMO Art. no. A85107
FLUSHING ORIFICE (For SD350)	20	0108-0715-3 FRAMO Art. no. A85108
FLUSHING EQUIPMENT (For pilot lines)	27	0125-1174-4, 0125-1077-4 FRAMO Art. no. A58204

Diverse:

Deviation list	xxxx-xxxx-x
Supplier Document Schedule	0241-1503-4