

GENERAL CONSTRUCTIONS • IFAISTUS
OMIROS TSAKIROGLOU & CO.



ΗΦΑΙΣΤΟΣ

BALLAST WATER TREATMENT SYSTEM

| Pre-Fabrication Procedure
& Installation Process |



GENERAL CONSTRUCTIONS • IFAISTUS
OMIROS TSAKIROGLOU & CO.

• IFAISTUS COMPANY GROUP •

GEORGIA GEORGIADOU & CO.



PROJECT DESCRIPTION

IMO Ballast Water Management Convention requires the installation of a Ballast Water Treatment System onboard all existing vessels.

The **prefabrication – installation** procedure, of the chosen BWTS system, is the final and the most demanding task, taking into consideration the following:

- Quality of the products (pipes, flanges, valves, etc) with all relevant certificates
- Quality of the welding procedure (WPQR – WPS – Welder's Certificates).
- Timesaving during prefabrication – installation.
- Testing of new installed spools, before operating the system.

SERVICES

Our company can offer high quality services when it comes to the installation of your system. Beginning with the, in depth, **analysis** of the provided drawings, summarizing all the requested **materials** (pipes, flanges, valves, sockets etc.) with all the relevant **certificates**, by our qualified Engineers – Staff.

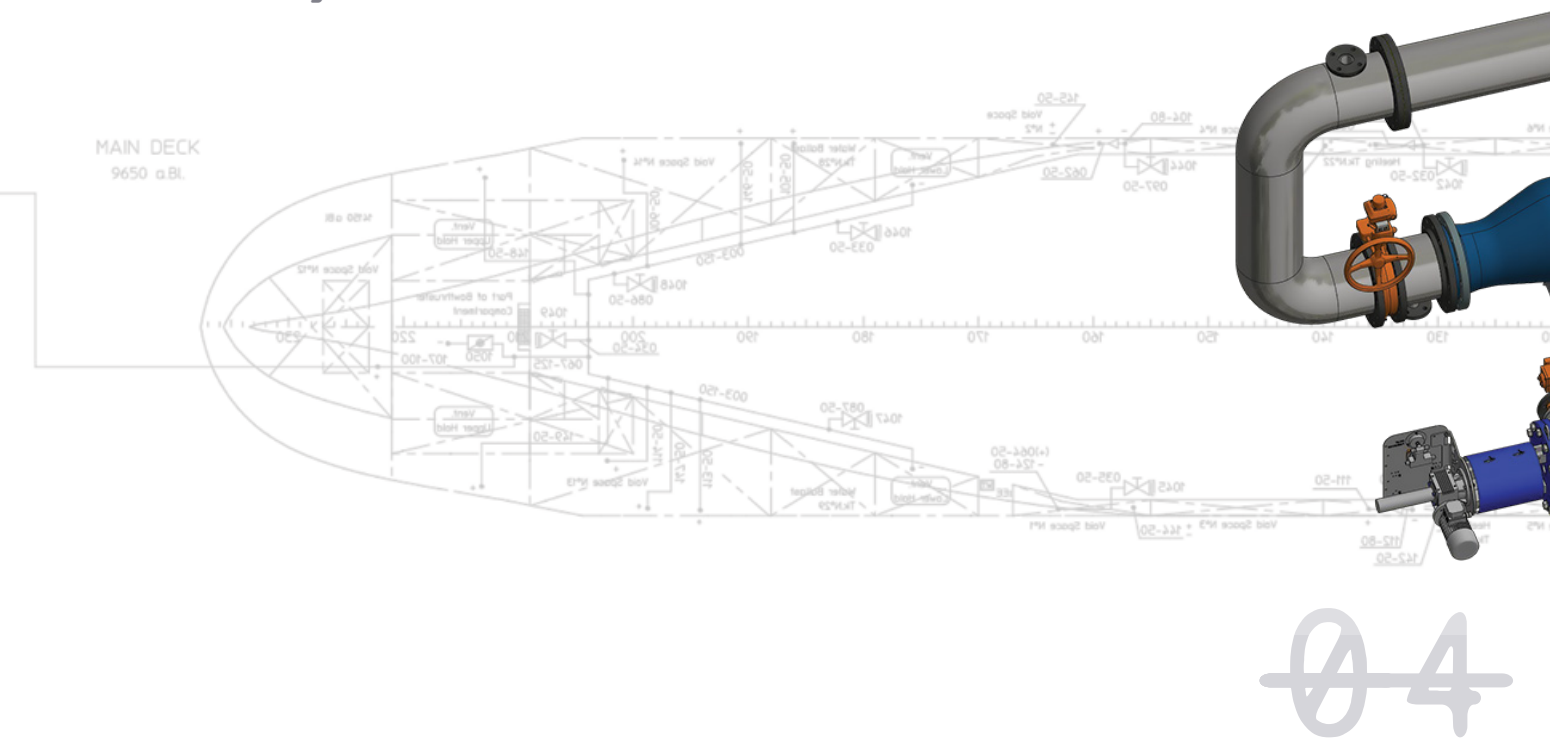
Prefabrication of the spools is taking place in our facilities in Athens, by our certified expert team, and is based on certified procedures WPQR–WPS.

Quality control of ready spools is taking place, before departure.

Packing & Handling – Transportation is based on Vessel's orders.

Our **technicians** are send **onboard**, in order to receive the ready spools and begin the installation, always based on provided drawings.

Final step is the **onboard test** of the new installed spools, new line delivered tested and ready to use.



SCOPE OF WORK

Phase A:

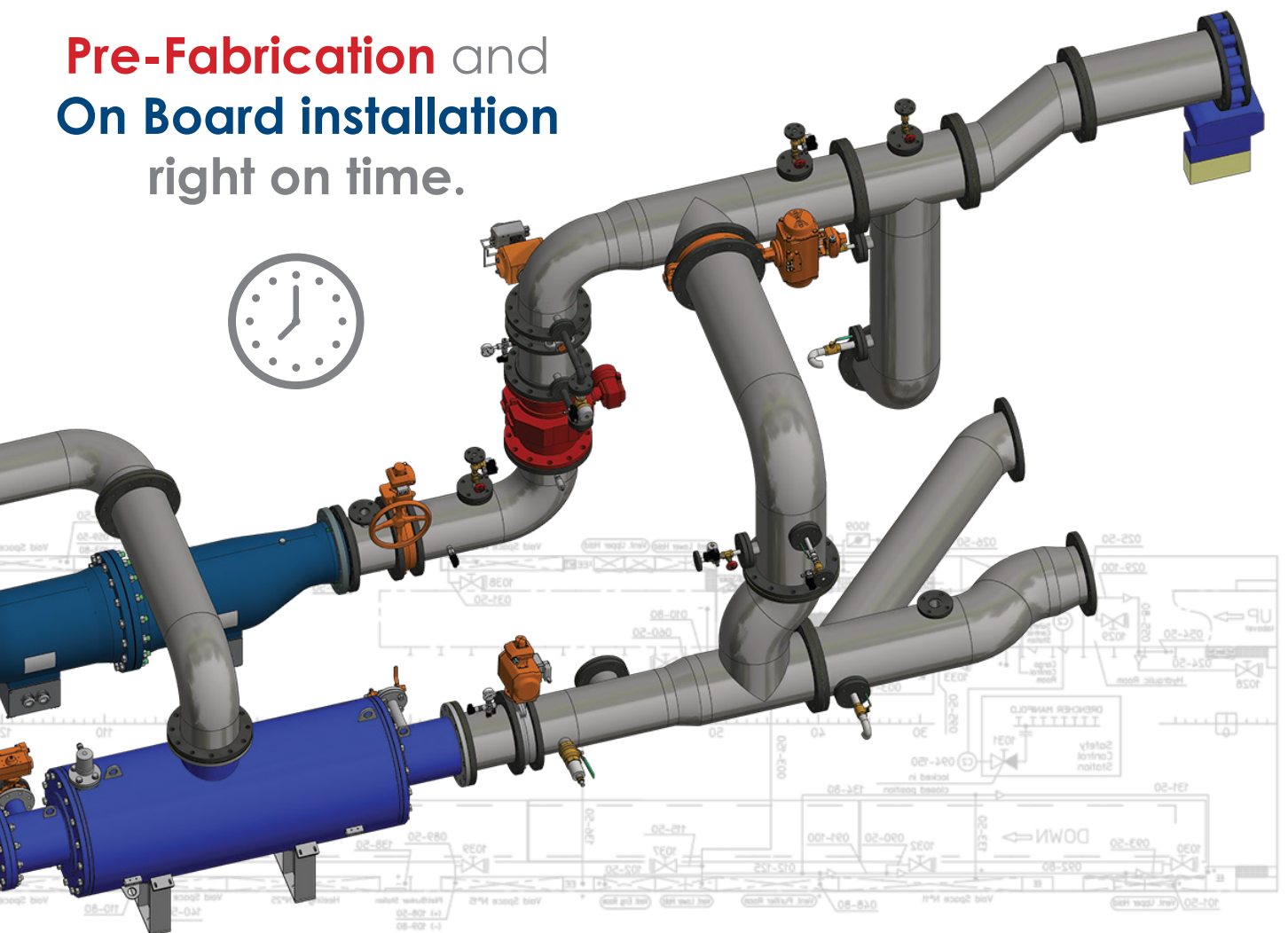
Pre-fabrication of all pipe spools in our facilities (Ex Piraeus / Ex Athens) by approved technicians / pipe spool workers specialists, in accordance with the technical specification.

Phase B:

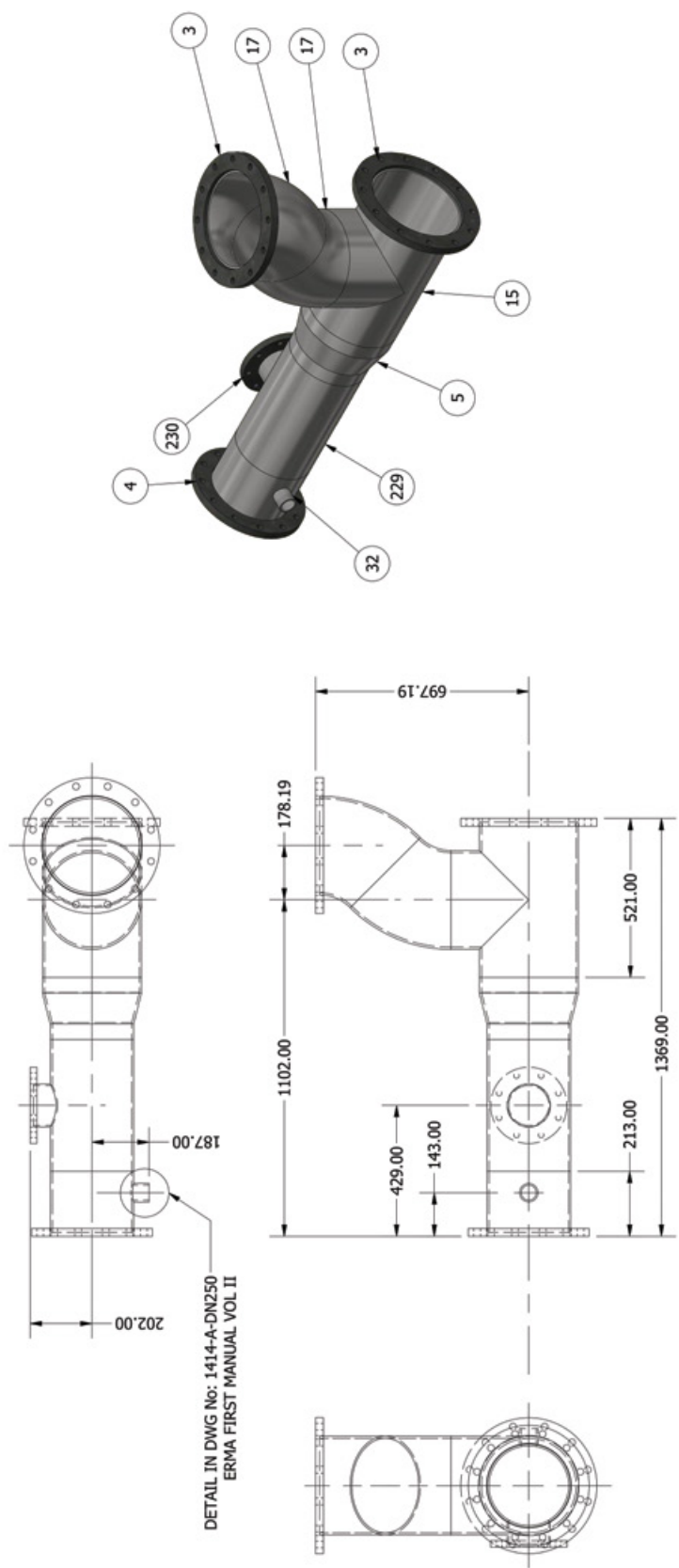
Installation process onboard during sailing and / or berthing, if necessary, in accordance with the technical specification. A team of, at least, six (6) technicians attending onboard, as follows:

- Five (5) pipe specialists / experienced technicians
- One (1) electrical technician.

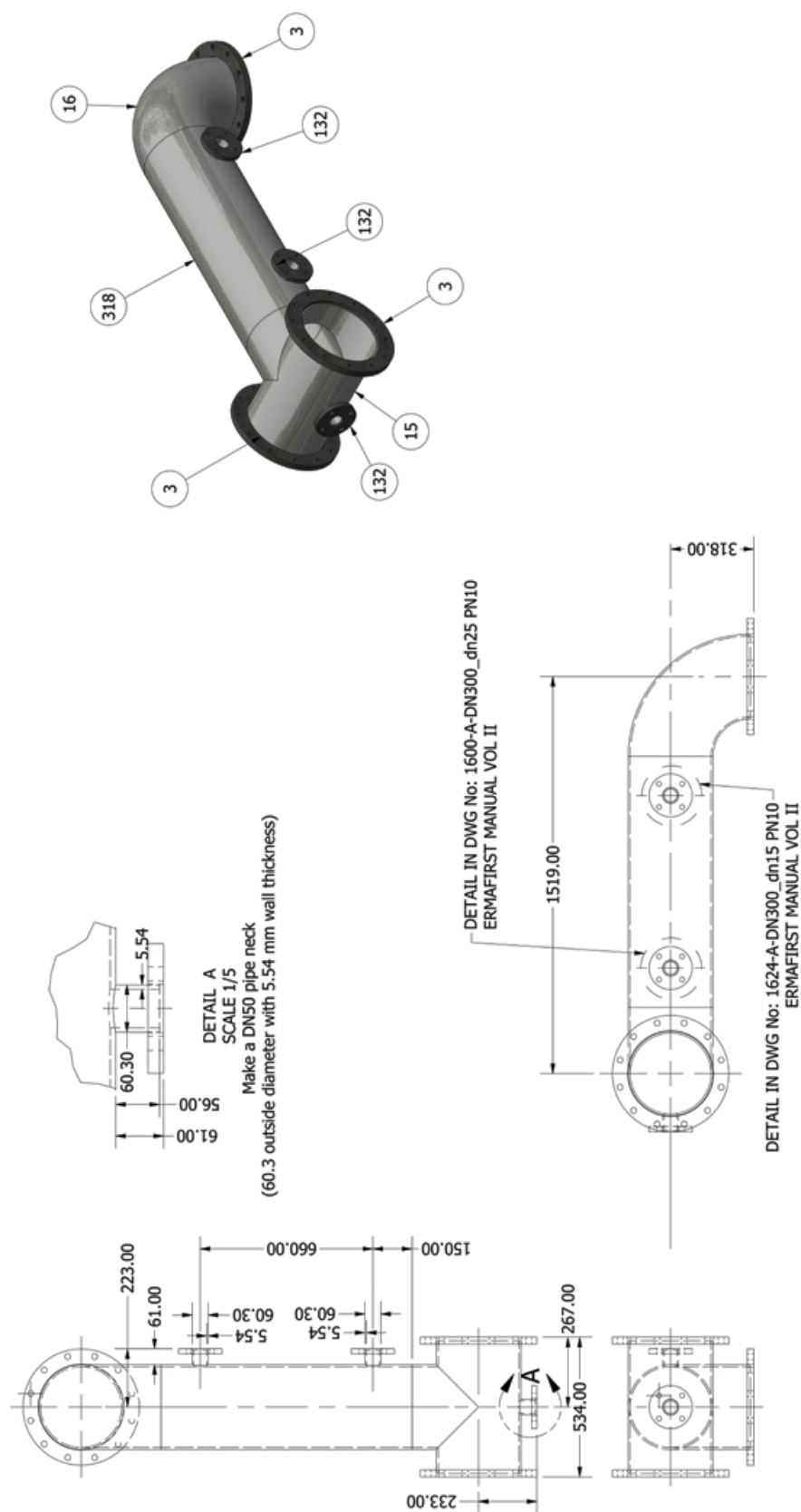
Pre-Fabrication and
On Board installation
right on time.



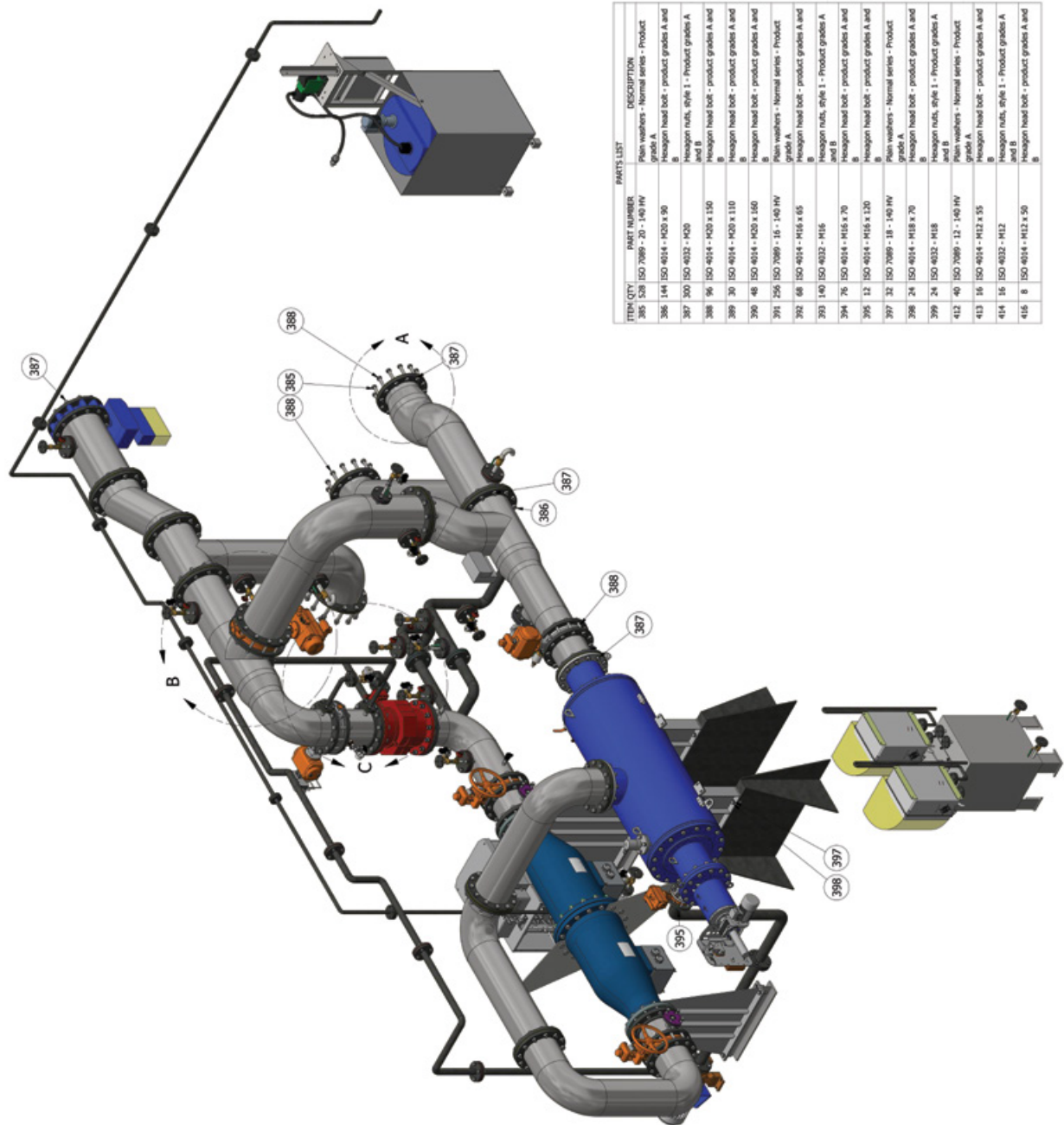
ENGINEERING STUDY / DRAWINGS



ENGINEERING STUDY / DRAWINGS



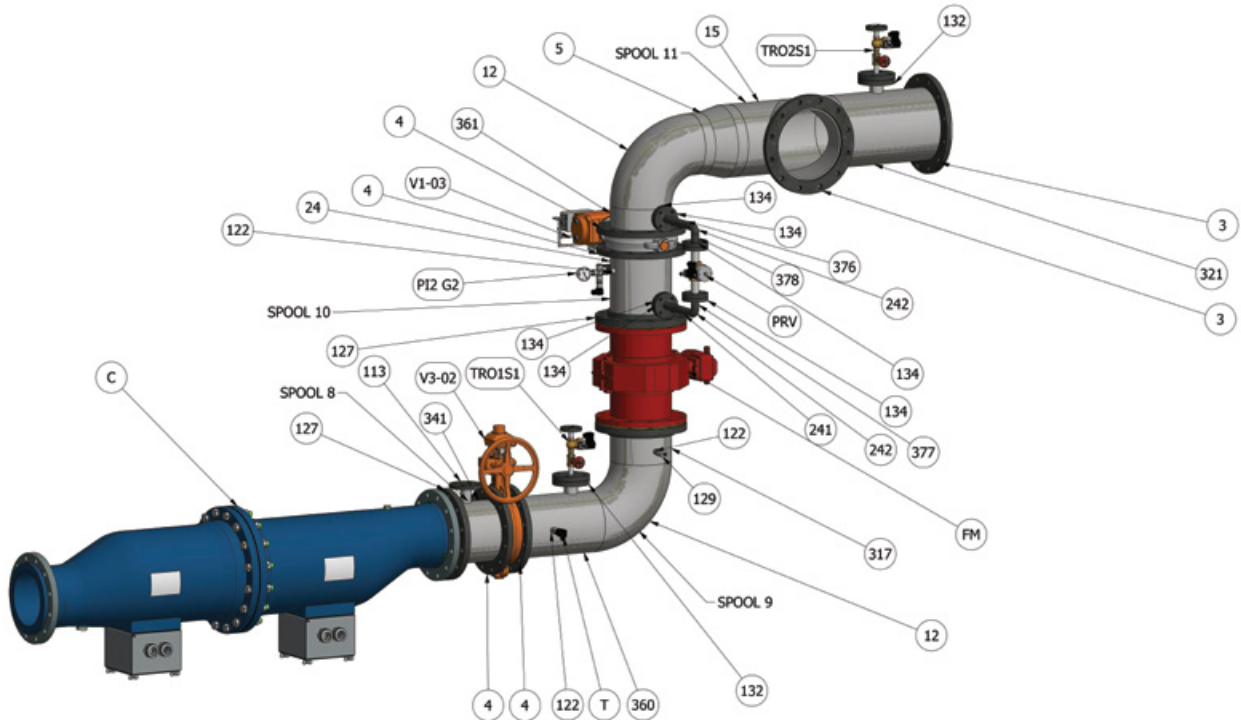
GENERAL VIEW – MATERIAL SUPPLY



PARTS LIST		
ITEM	QTY	PART NUMBER
385	20	ISO 7089 - 20 - 140 HV
386	144	ISO 4014 - H20 x 90
387	300	ISO 4014 - H20 x 90
388	16	ISO 4014 - H20 x 110
389	30	ISO 4014 - H20 x 110
390	48	ISO 4014 - H20 x 160
391	256	ISO 7089 - 16 - 140 HV
392	68	ISO 4014 - H16 x 65
393	140	ISO 4014 - H16 x 70
394	76	ISO 4014 - H16 x 120
395	12	ISO 4014 - H16 x 120
396	32	ISO 7089 - 18 - 140 HV
397	24	ISO 4014 - H18 x 70
398	24	ISO 4014 - H18 x 70
399	24	ISO 4014 - H18 x 70
400	24	ISO 4014 - H18 x 70
401	24	ISO 4014 - H18 x 70
402	24	ISO 4014 - H18 x 70
403	24	ISO 4014 - H18 x 70
404	24	ISO 4014 - H18 x 70
405	24	ISO 4014 - H18 x 70
406	24	ISO 4014 - H18 x 70
407	24	ISO 4014 - H18 x 70
408	24	ISO 4014 - H18 x 70
409	24	ISO 4014 - H18 x 70
410	24	ISO 4014 - H18 x 70
411	24	ISO 4014 - H18 x 70
412	24	ISO 4014 - H18 x 70
413	24	ISO 4014 - H18 x 70
414	24	ISO 4014 - H18 x 70
415	24	ISO 4014 - H18 x 70



BILL OF MATERIALS



PARTS LIST				PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION	ITEM	QTY	PART NUMBER	DESCRIPTION
3	2	DIN 2576 Slip-On Flange for Welding Series 1 (ISO) - PN 10 300 x 323.9	Flange	241	250,000 mm	DIN 2458 Pipe 33.7 x 4	Pipe
4	4	DIN 2576 Slip-On Flange for Welding Series 1 (ISO) - PN 10 250 x 273	Flange	242	2	DIN 2605 90 Deg Elbow Type 2 33.7 - 45	Elbow
5	1	DIN 2616 Concentric Reducer (K) 323.9 x 7.1 - 273 x 6.3 S	Reducer	317	156,000 mm	DIN 2458 Pipe 273 x 6.3	Pipe
12	2	DIN 2605 90 Deg Elbow Type 2 273 - 6.3S	Elbow	321	477,000 mm	DIN 2458 Pipe 323.9 x 7.1	Pipe
15	1	DIN 2615-1 Tee 323.9 x 7.1 S	Tee	341	220,000 mm	DIN 2458 Pipe 273 x 6.3	Pipe
24	306,000 mm	DIN 2458 Pipe 273 x 6.3	Pipe	360	417,000 mm	DIN 2458 Pipe 273 x 6.3	Pipe
113	1	DIN 2576 Slip-On Flange for Welding Series 1 (ISO) - PN 10 40 x 48.3	Flange	361	107,000 mm	DIN 2458 Pipe 273 x 6.3	Pipe
122	3	ISO 4144 Half socket S1 1/2	Pipework-stainless steel fittings threaded in accordance with ISO 7-1 - Half socket S1	376	250,000 mm	DIN 2458 Pipe 33.7 x 4	Pipe
127	3	ASME B16.5 Flange Slip-On Welding - Class 150 10	Pipe Flanges - Flange Slip - On Welding - Class 150.Inch	377	46,000 mm	DIN 2458 Pipe 33.7 x 4	Pipe
132	2	ISO 7005-1 Plate Flange for Welding Type 01 Flat Face - ISO PN 10 DN50	Metallic flanges-part 1: steel flanges - Plate Flange For Welding Type 01 Flat Face - ISO PN 10	378	46,000 mm	DIN 2458 Pipe 33.7 x 4	Pipe
134	6	ISO 7005-1 Plate Flange for Welding Type 01 Flat Face - ISO PN 10 DN25	Metallic flanges-part 1: steel flanges - Plate Flange For Welding Type 01 Flat Face - ISO PN 10				

PRE – FABRICATION PROCEDURE

Phase A:

Pre-fabrication of all pipe spools in our facilities (Ex Piraeus / Ex Athens) by approved technicians / pipe spool workers specialists, in accordance with the technical specification.



PRE – FABRICATION PROCEDURE



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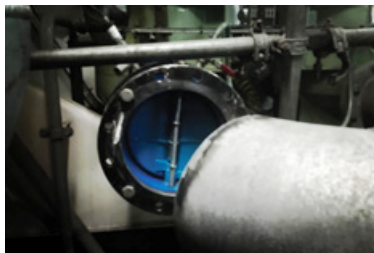


INSTALLATION PROCESS

Phase B:

Installation process onboard during sailing and / or berthing, if necessary, in accordance with the technical specification. A team of, at least, six (6) technicians attending onboard, as follows:

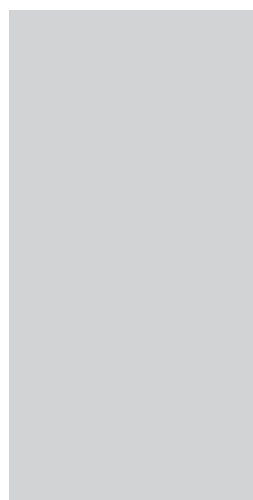
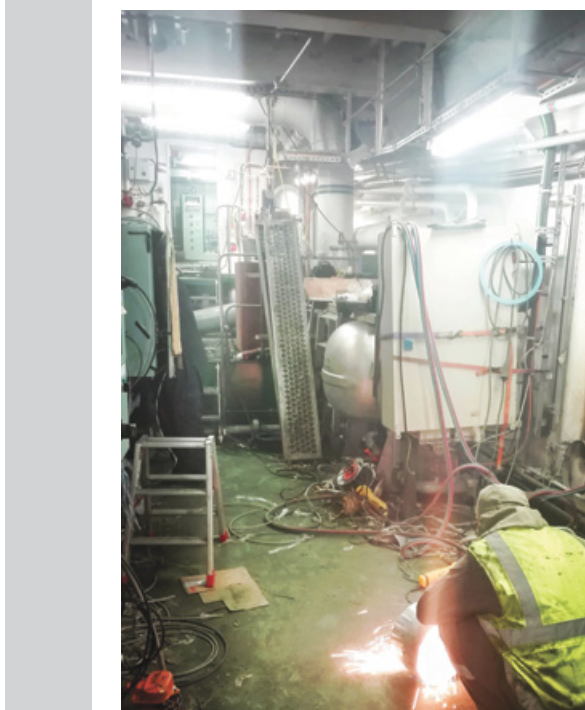
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- One (1) electrical technician.



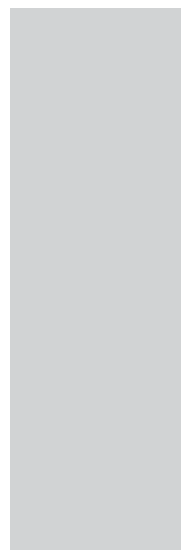
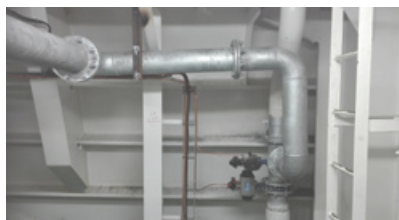
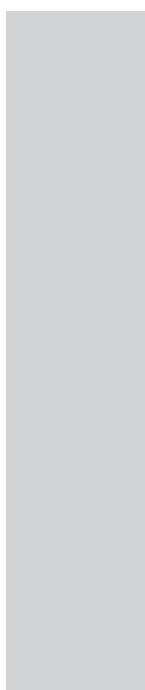
INSTALLATION PROCESS



ELECTRICAL / ELECTRONIC INSTALLATION & WIRING

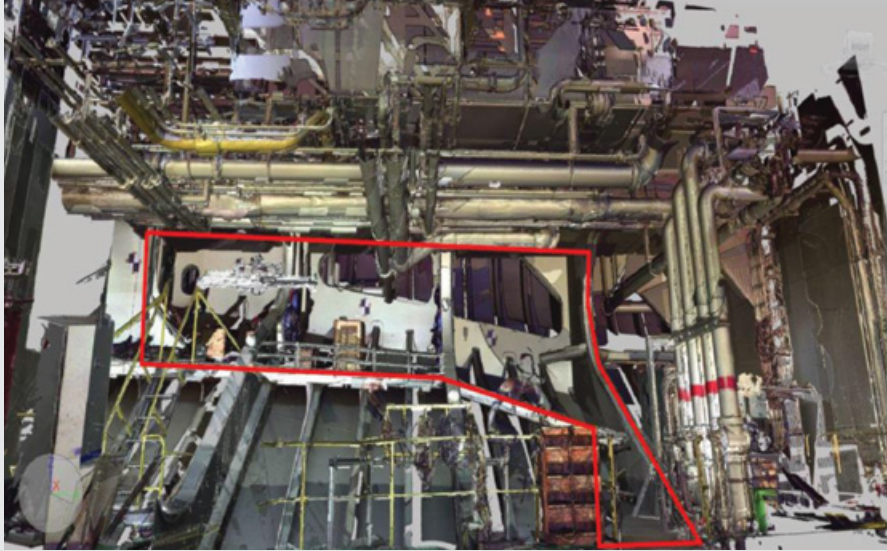


INSTALLATION PROCESS – FINAL STAGE

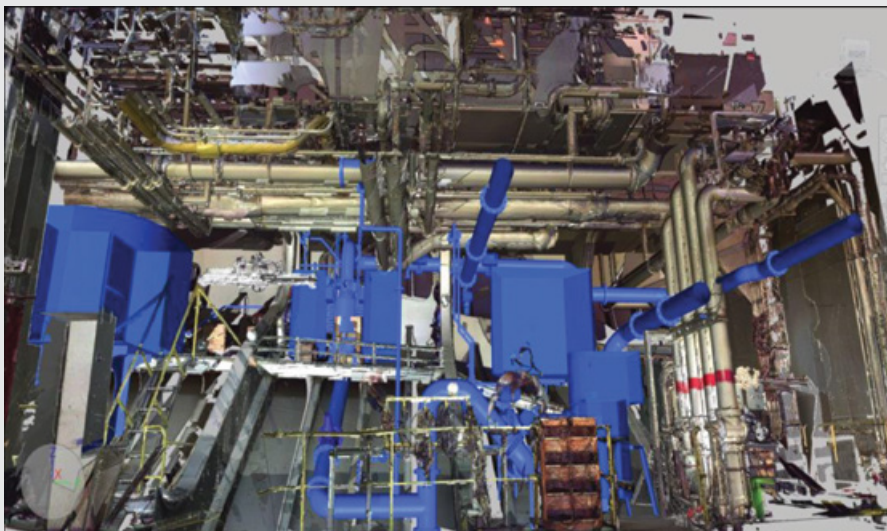


3D LASER SCANNING

- Overview of the selected installation area.



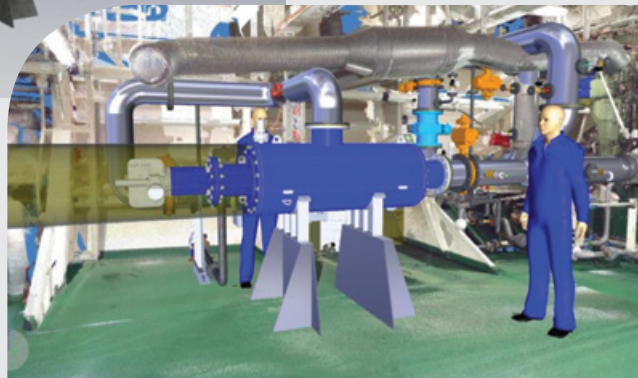
- Complete system installed in the selected area.



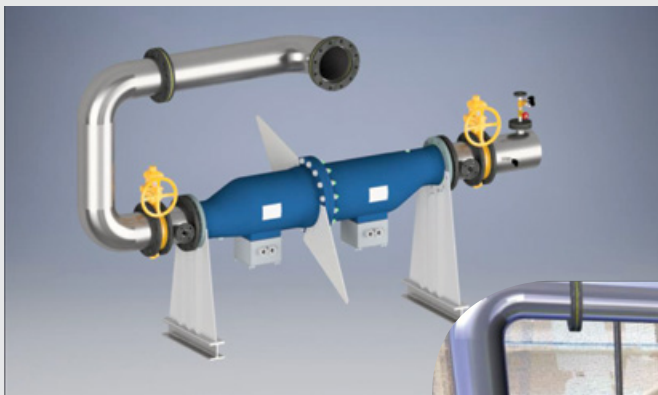
FEASIBILITY STUDY



3-D Filter Model.



Filter Model
installed inside
the aggregate room.

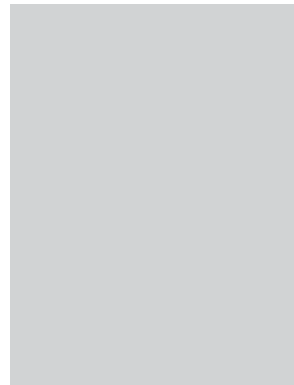
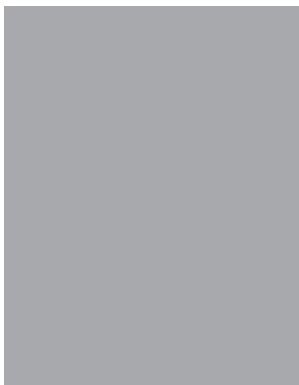
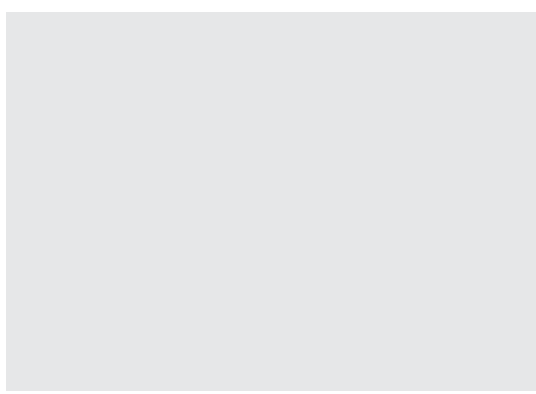
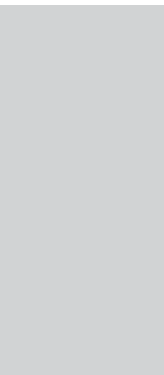
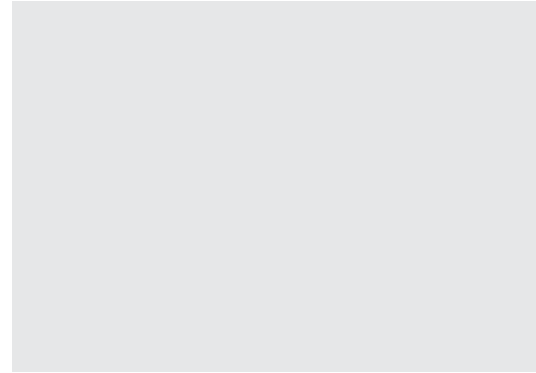
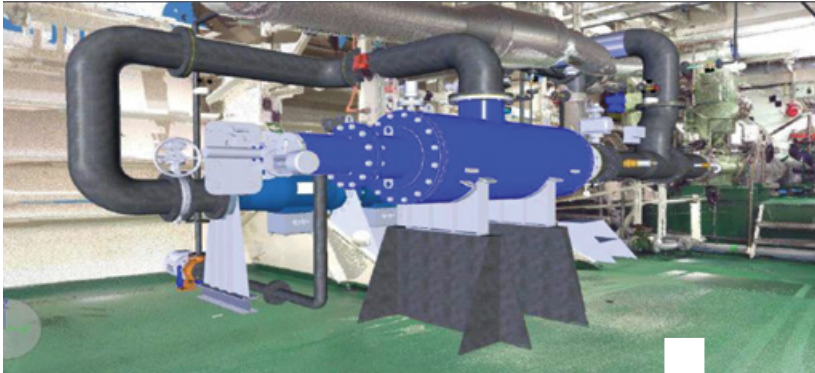


El. Cell model

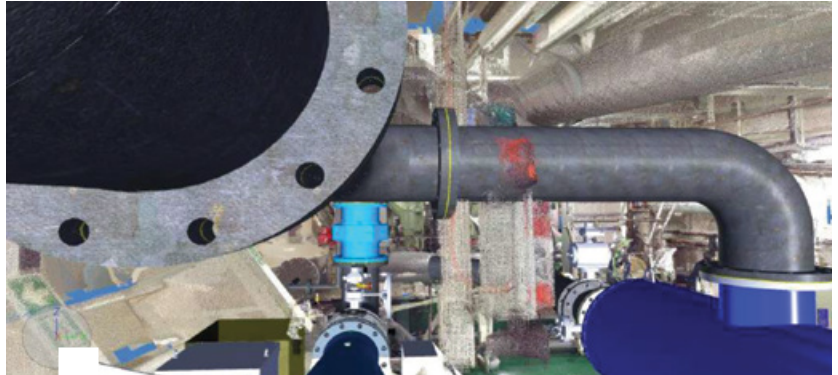


El. Cell model
installed inside
the aggregate room.

3D MODEL VS INSTALLATION



3D MODEL VS INSTALLATION



NOTES

Around the world, but close to you.



45, Methonis str., 18545
Piraeus, Greece

Tel: +30 210 46 15 699,
+30 210 46 28 964

Fax: +30 210 46 14 078

Email: info@ifaistus.gr
sales@ifaistus.gr

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- INOX FLEXIBLE HOSES
- H.P. METALLIC TUBES
- FLEXIBLE CABLES
- MARINE SPARE PARTS
- SPECIAL CONSTRUCTIONS UPON ORDER