



deteGAsa[®]

GRUPO  ARGOS



detegasa[®]
GRUPO ARGOS

REFUELING SYSTEMS

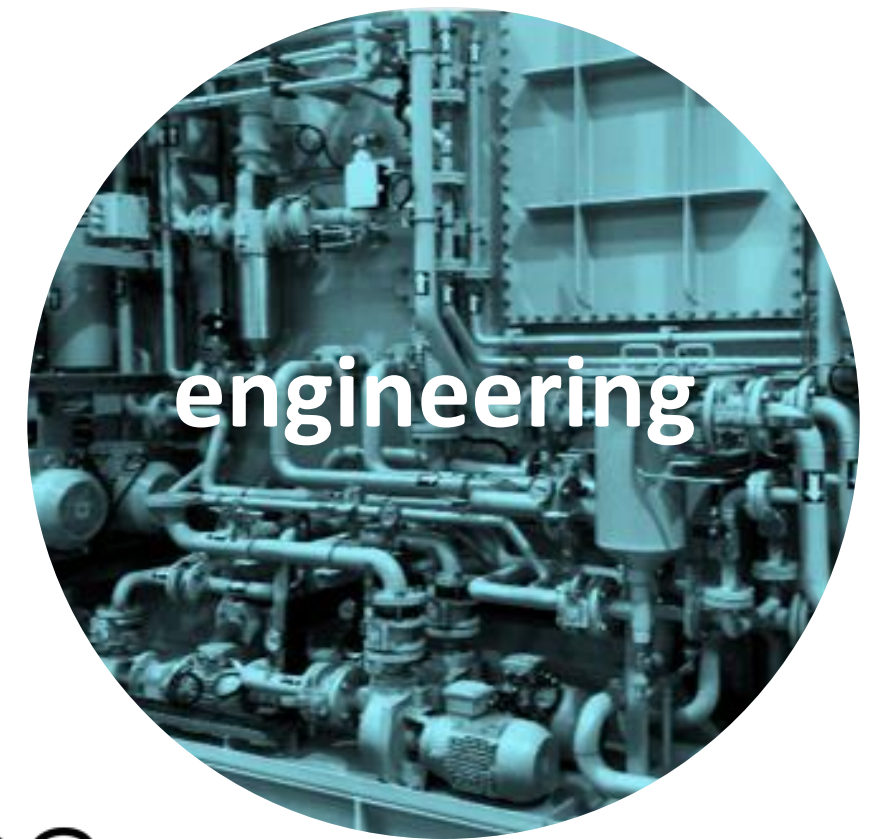
WASTE TREATMENT

FRESH WATER TREATMENT

GALLEY AND LAUNDRY EQUIPMENT

CUSTOM MADE SOLUTIONS

About Us

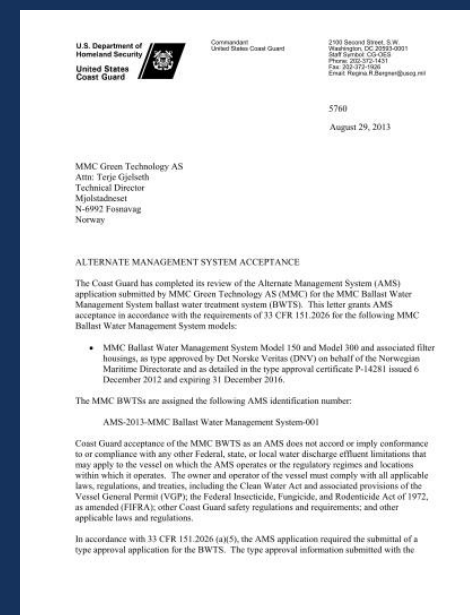
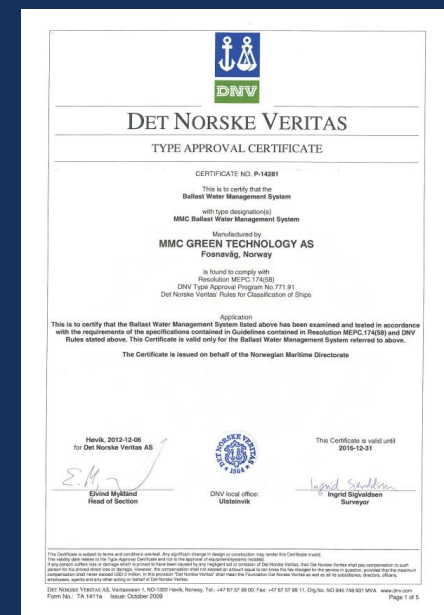


Company

We have the experience and the qualification to develop projects to meet every customer's needs.

Type Approval BY DNV.

Special projects programs with : LR, BV, RINA, RMRS



AQAP 2110
(NATO requirement for quality assurance in design, development and production)



ISO 9001 (1995)



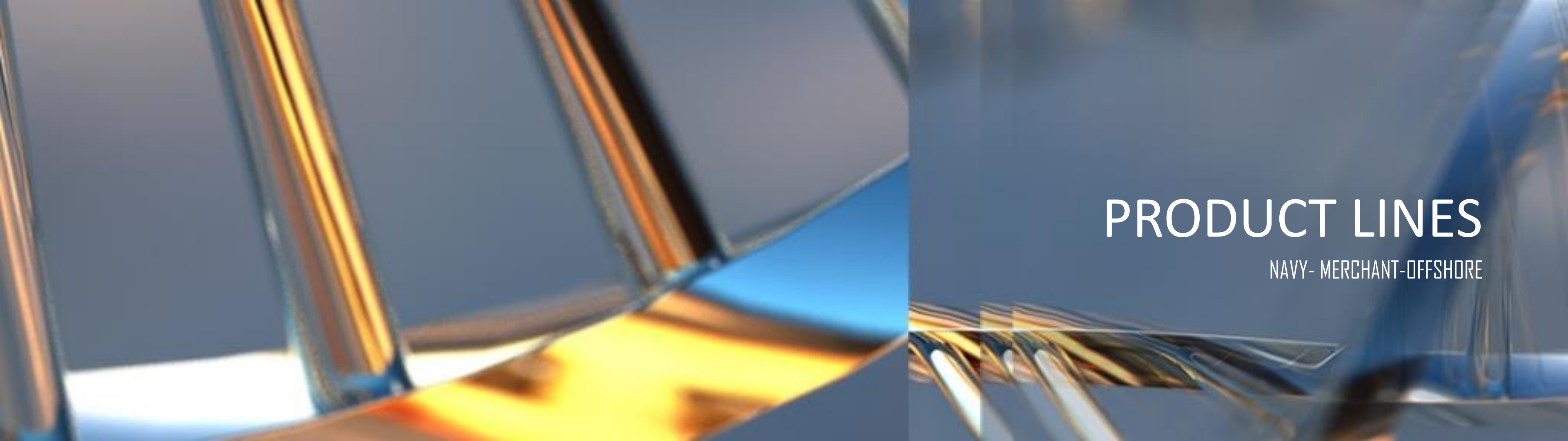
ISO 14001 (2010)



OHSAS 18001 (2010)

LEAN MANUFACTURE





PRODUCT LINES

NAVY- MERCHANT-OFFSHORE



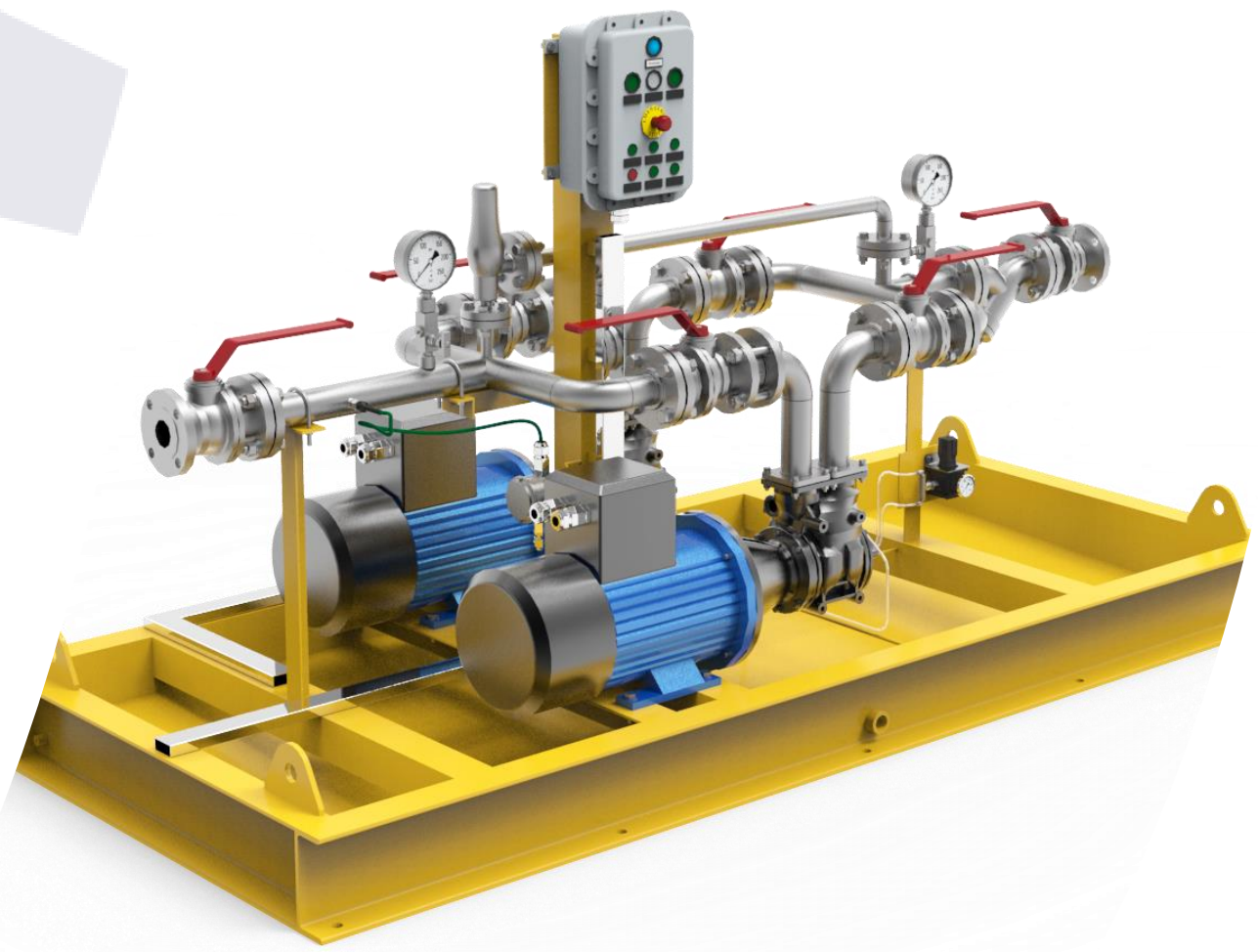
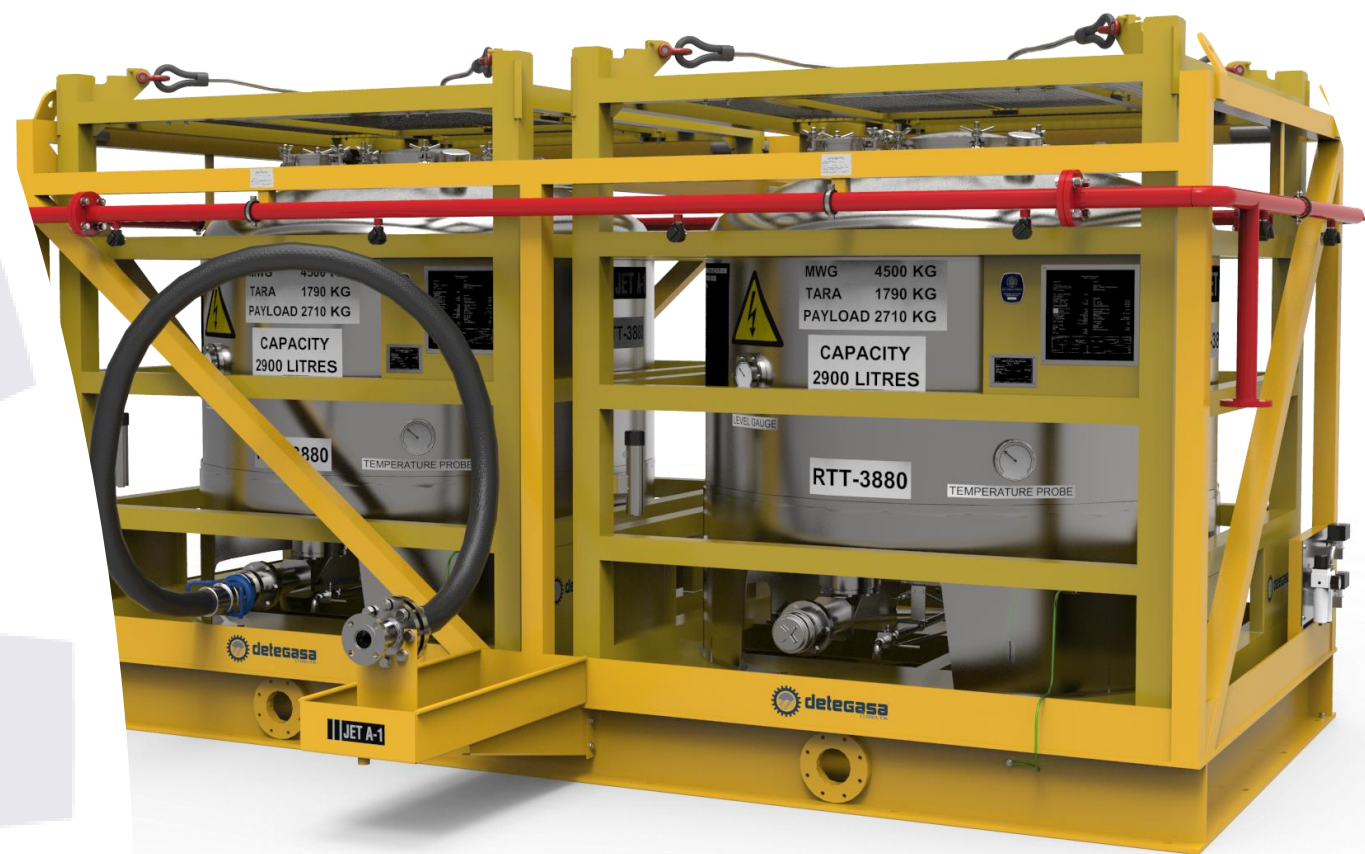
PRODUCT LINES

Design on request to cover specific customer demands

<p>REFUELING SYSTEMS</p>	 <p>Helicopters/Life boats/ Vehicles/ Zodiaks</p>						
<p>WASTE TREATMENT</p>	 <p>Incinerators</p>	 <p>STP</p>	 <p>OWS</p>	 <p>Shredder / Compactor</p>	 <p>Pulper</p>	 <p>BWMS</p>	
<p>WATER SANITATION AND FIRE-FIGHTING</p>	 <p>Hidrophore groups</p>	 <p>Water Calorifiers</p>	 <p>Modular Solutions</p>	 <p>AFFF Stations</p>	 <p>AFFF hose-reels</p>	 <p>Heat Exchangers</p>	
<p>GALLEY AND LAUNDRY EQUIPMENT</p>	 <p>Galley</p>	 <p>Refrigerator</p>	 <p>Counters</p>	 <p>Laundry</p>			
<p>OTHER EQUIPMENT</p>	 <p>Shore connection reels</p>	 <p>HP/LP Flasks</p>	 <p>Fuel Heaters</p>	 <p>RCS canyon protection</p>	 <p>Helideck safety nets</p>	 <p>Explosion Venting Devices</p>	 <p>Cooling modules</p>

REFUELING SYSTEMS

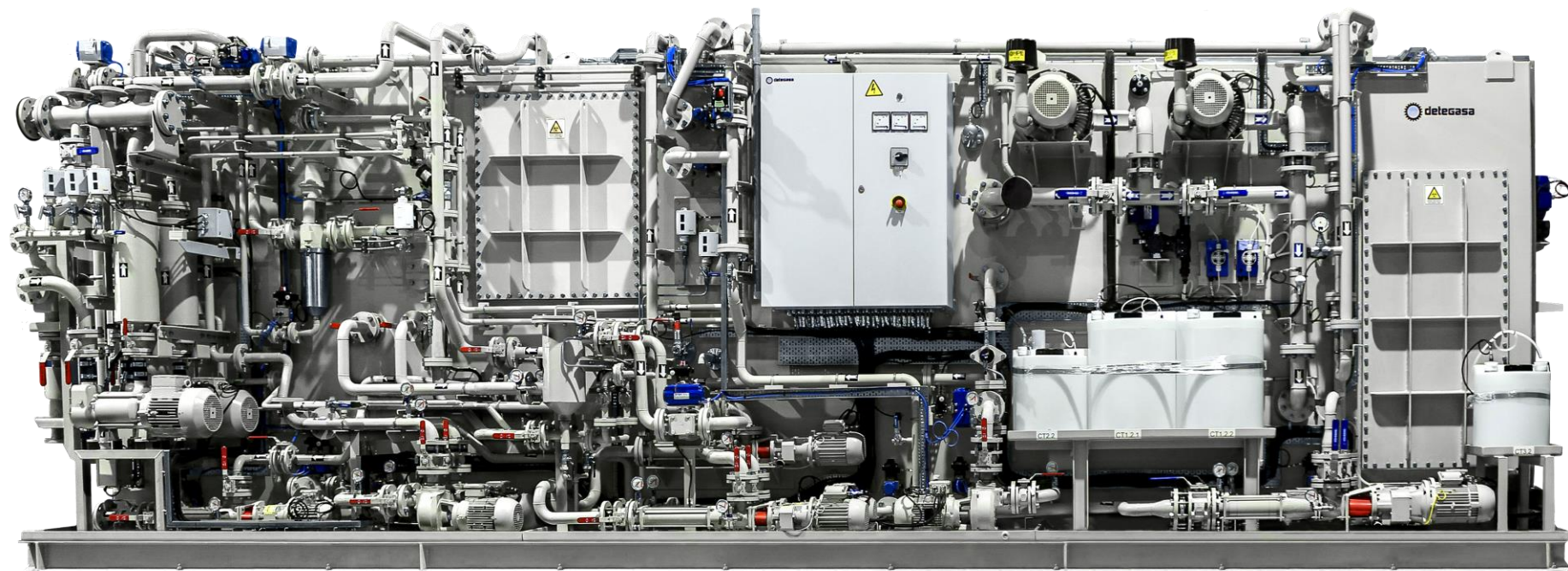
- ✓ DISPENSING UNITS
- ✓ PUMPS MODULES
- ✓ TRANSPORTABLE TANKS



WASTE TREATMENT



INCINERATORS- SEWAGE TREATMENT PLANTS- BILGE WATER SEPARATORS



GALLEY

- COOKING
- OVENS
- DISHWASHING
- REFRIGERATORS
- AUXILIARY EQUIPMENT
- FURNITURE





GALLEY PRODUCTS

- OVENS AND CHILLERS
- DISHWASHER
- REFRIGERATORS





ELECTRONIC CONTROLS

*Optional



USER FRIENDLY DOOR OPENING



*Optional





LAUNDRY

HIGH SPIN



FAST SPIN



LOW SPIN



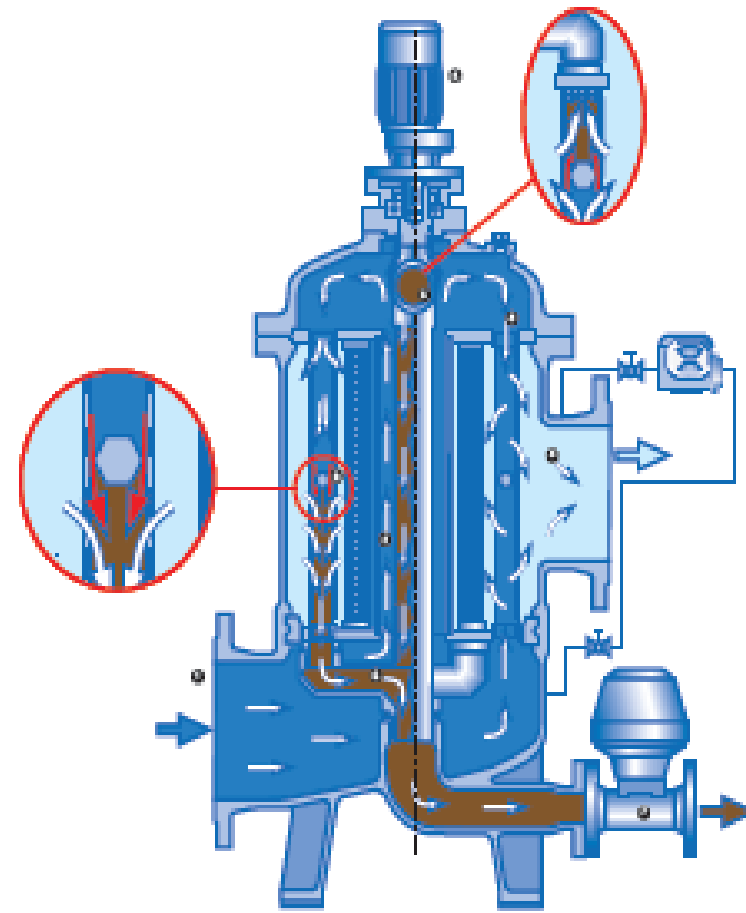
All models with Touch Plus TP2 programmer.
The ranges, versions and sizes remain the same.
CONFIGURABLE OPTIONS



BALLAST WATER MANAGEMENT SYSTEMS

- ✓ Small footprint
- ✓ Simple installation
- ✓ User-friendly
- ✓ Maintenance friendly
- ✓ Low power consumption, approx. 15 kW at maximum power
- ✓ Low operating cost
- ✓ DNV Type Approved
- ✓ USCG AMS

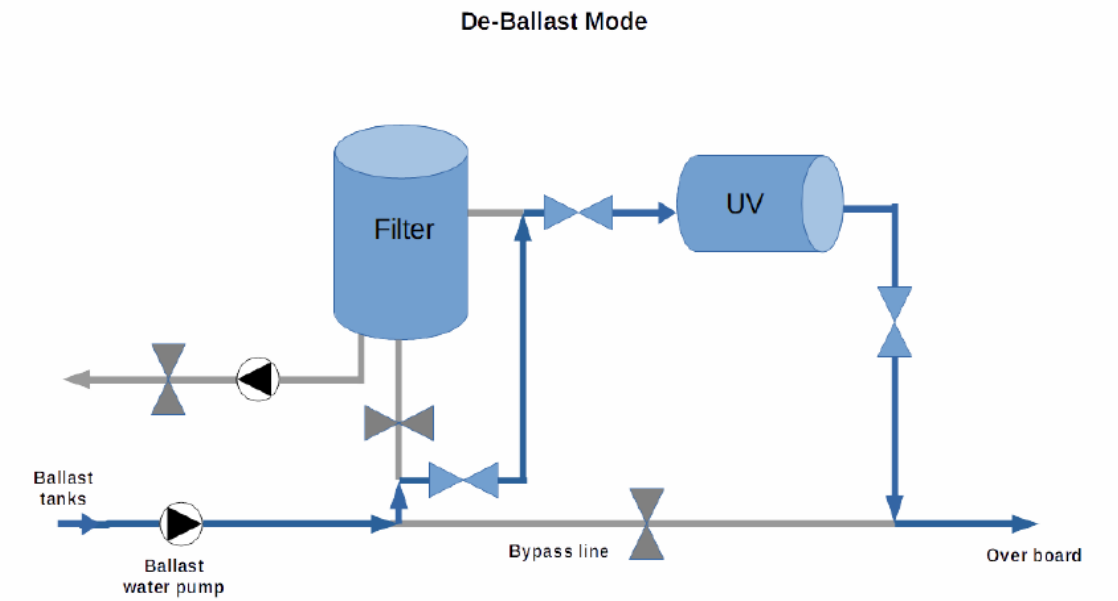
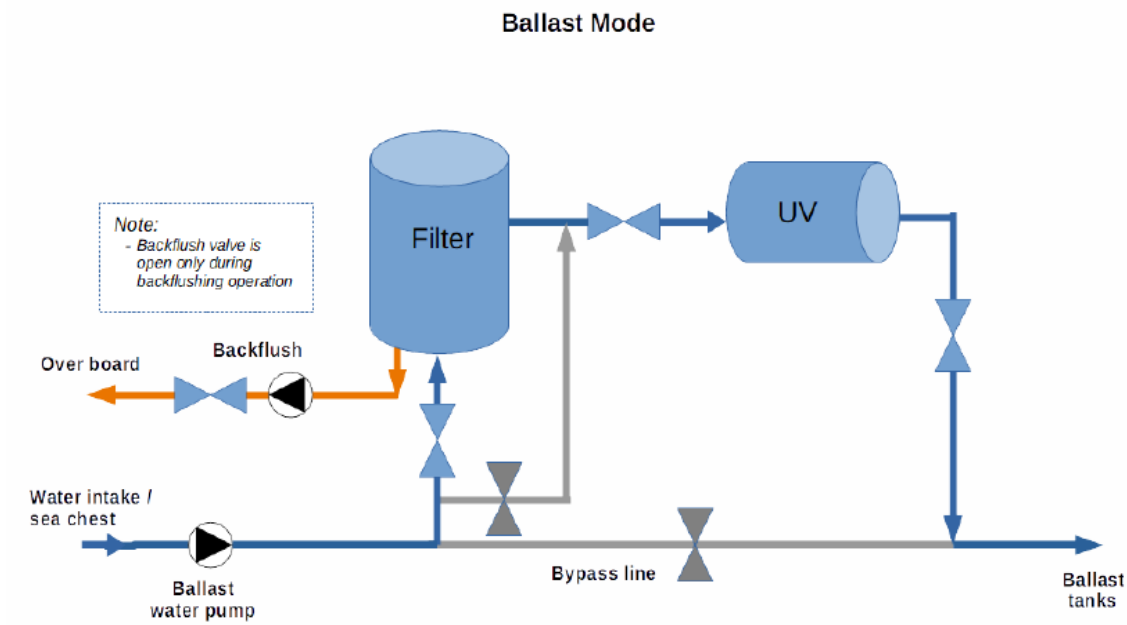
BALLAST WATER MANAGEMENT SYSTEMS



- Capacities from TRC 60m³/h- 1274m³/h
- Lamp life 1000 hours, i.e. 5 year
- Can be integrated in ships existing automation system (IAS).
- Automatic flushing with fresh water after operation
- No chemicals, no drain water to bilge sumps
- Can be integrated in ships existing automation system (IAS).
- PC based control system, possibility for remote Access



BALLAST WATER MANAGEMENT SYSTEMS



VIDEO

BALLAST WATER MANAGEMENT SYSTEMS



- Epoxy coating as standard
- Excellent corrosion resistance
- 20micron filter basket
- Can withstand abrasive particles
- Short lead time

- Very robust inner parts
- Easy to assemble
- No electric or pneumatic devices in contact with seawater

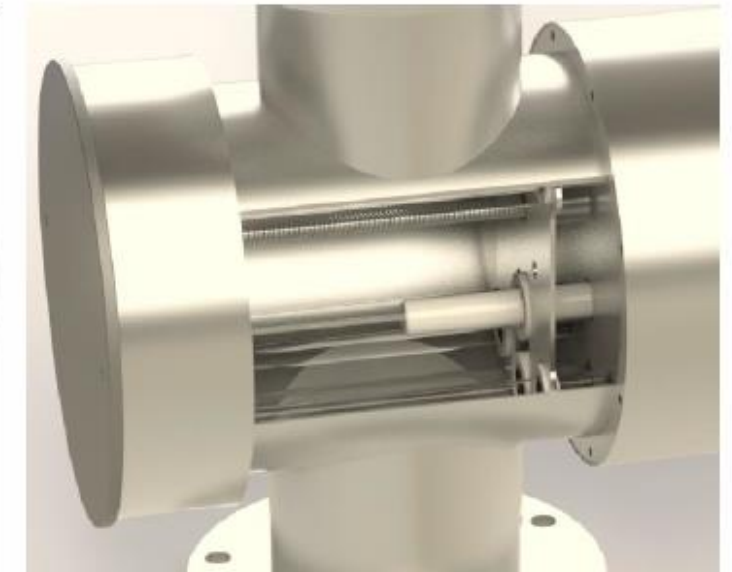
- Backflush pump as standard

- Sacrificial anode as standard
- Shelf design
- Widely available as spares
- Easy maintenance
= Lower cost

BALLAST WATER MANAGEMENT SYSTEMS

Accurate UV-I readings > Optimized power consumption

- Fouling is an important issue for UV-systems. Increased fouling = more power
- NGT are using a unique wiper system from first signal of low transmission, automatic or manual
- This will clean all quartz sleeves, including quartz sleeve for UV-sensor
- Exclude requirement to dismount sensor to clean, often resulting in requirements to recalibrate sensor



BALLAST WATER MANAGEMENT SYSTEMS



Modular design – can be delivered as Skid or separate components (simplifies retrofit)

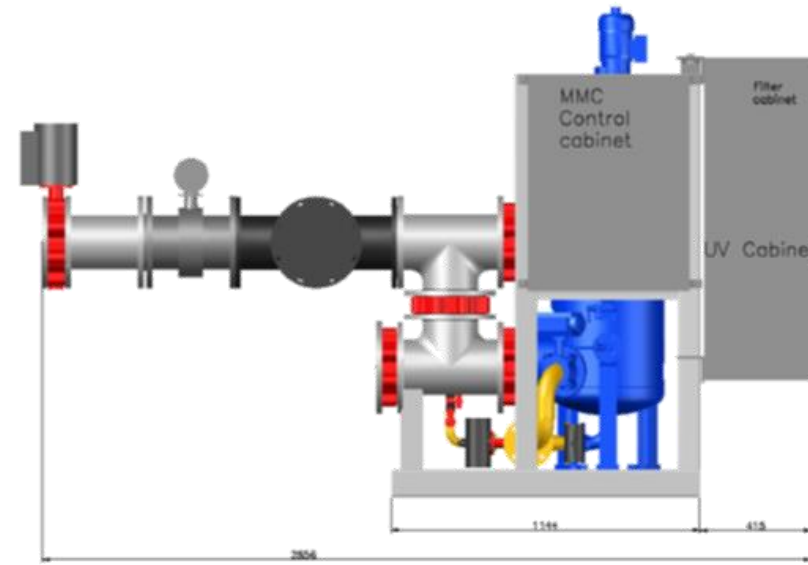
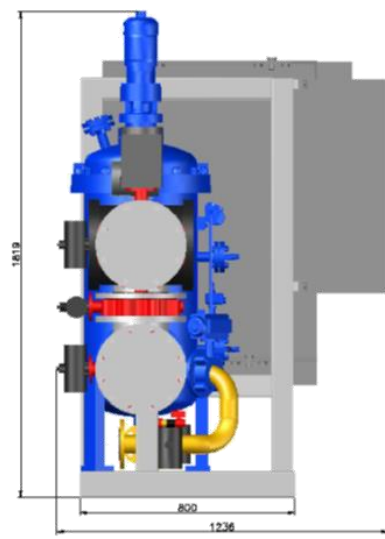
BALLAST WATER MANAGEMENT SYSTEMS

What to consider when installing your BWMS

- Available space and acceptable power consumption?
- Is increased ballast time accepted if compensated with smaller size and lower cost?

We see more and more shipowners that install systems smaller than their onboard ballast pump capacity, due to operations are not always ballast dependent. (This require some form of counter measure to ensure reduction of flow onboard to be according to BWMS treatment rate capacity)



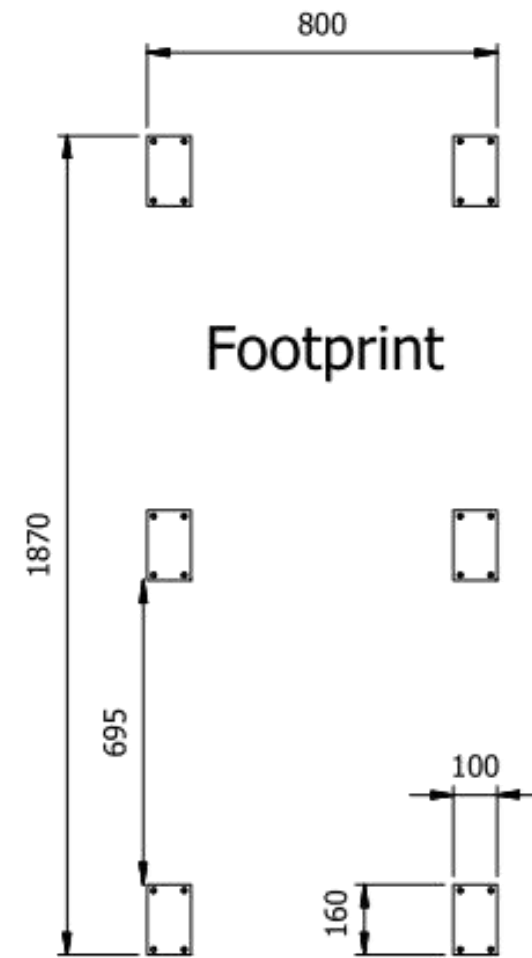
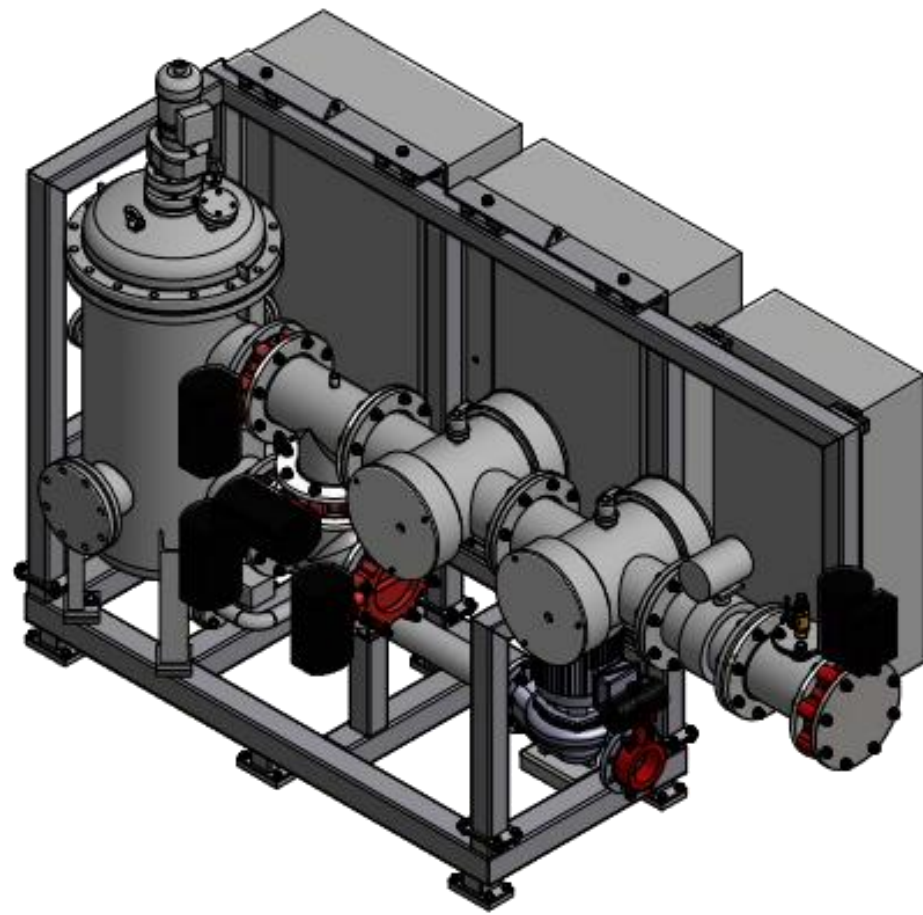


Preliminary Dimensional Sketch 150m³/h System

Capacity (m ³ /h)	Length	Width	Height	Foot Print (m ²)	Weight (Kg)	Power consumption UV max/min (kW)
150	2838	1241	1819	3,5	1183	14/8

Preliminary Dimensional Sketch 300m³/h System

BALLAST WATER MANAGEMENT SYSTEM



Preliminary Dimensional Sketch

300m³/h System

Capacity (m ³ /h)	Length	Width	Height	Foot Print (m ²)	Weight (Kg)	Power consumption UV max/min (kW)
300	3534	1342	2138	4,8	1566	28/16

BALLAST WATER MANAGEMENT SYSTEM

OUR TAGET MARKET

Bulk carriers



Dry cargo-passanger



Fishing



Offshore



Miscellaneous

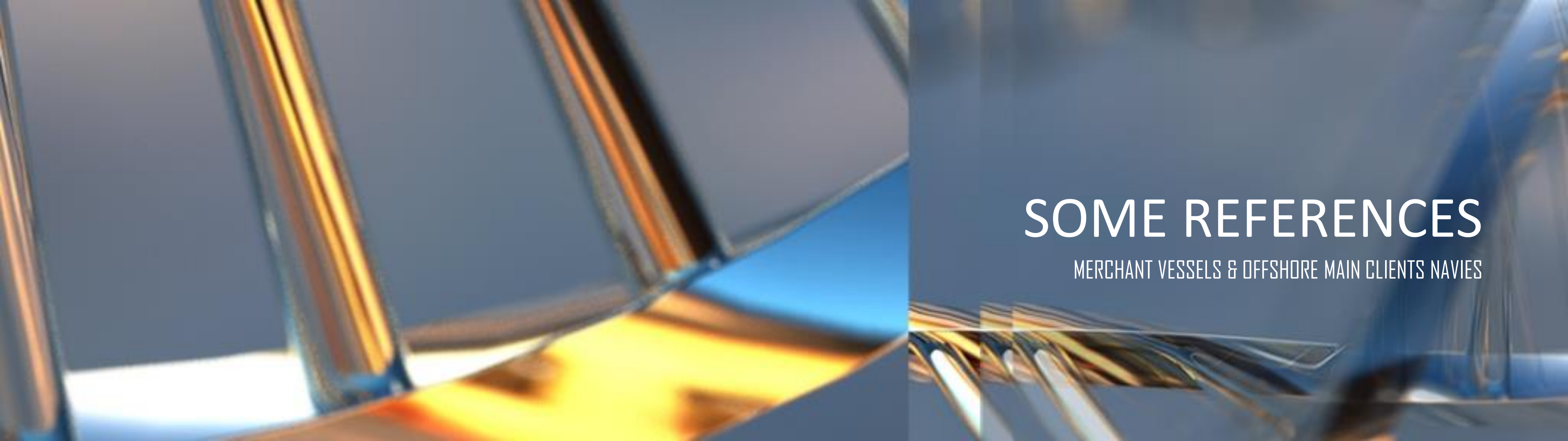


Main differentiators

- Size
- No active substances (environmentally friendly)
- Easy to operate & maintain
- Price, spare part price & operation costs
- Reliable and dedicated service (talk to the expert)
- Built of reliable and well proven components

BALLAST WATER MANAGEMENT SYSTEM





SOME REFERENCES

MERCHANT VESSELS & OFFSHORE MAIN CLIENTS NAVIES





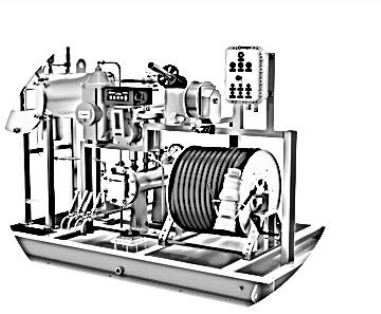
Detegasa Worldwide Presence

MCDERMOT INC - STX EUROPE - DAMEN - FSG GERMANY - CSBC - JAN DE NUL - CHINA MERCHANTS - STOLT NIELSEN - LLOYD WERFT -
FINCANTIERI - SOVCOMFLOT - MAERSK - CARNIVAL CRUISES - NAVANTIA - BERG & LARSEN - HUDONG SHIPYARD - DETROIT BRASIL -
KLEVEN WERFT - MEYER WERFT - DEME GROUP - JO TANKERS

BWMS REFERENCES



Some references from Helicopter Refueling Systems



Drillship Tiger I (Helicopter refuelling system) "Shanghai Shipyard"



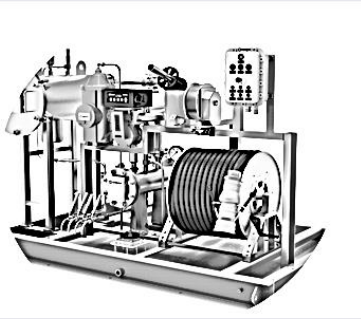
Joides resolution ocean drilling research vessel (Helicopter refuelling system) "Overseas Drilling"



Jack-Up Krathong (Helicopter refuelling system) "Lamprell Energy"

COUNTRIES	TYPE OF VESSEL
UNITED ARAB EMIRATES (UAE)	JACK-UP Chaopharaya
	JACK-UP Krathong
SINGAPORE	DRILLING TIGER I
	DRILLING TIGER II
	DRILLING TIGER III
	DRILLING TIGER IV
NETHERLANDS	JR OCEAN DRILLING RESEARCH VESSEL
PERU	RAP CARRASCO OCEANOGRAPHIC RESEARCH VESSEL
RUSSIA	NUCLEAR ICEBREAKER SYBERIA
	NUCLEAR ICEBREAKER MURMANSK
	NUCLEAR ICEBREAKER
MEXICO	FLOTING HOTEL
PORTUGAL	EXPEDITION PASSENGER VESSEL

Some references from Helicopter Refueling Systems



Bap Carrasco oceanographic research vessel (HRS) "Freire Shipyard"



Icebreaker Syberia (HRS) "Baltic SY"



Floting hotel Pemex (HRS) "Mexico"

COUNTRIES	TYPE OF VESSEL
UNITED ARAB EMIRATES (UAE)	JACK-UP Chaopharaya
	JACK-UP Krathong
SINGAPORE	DRILLING TIGER I
	DRILLING TIGER II
	DRILLING TIGER III
	DRILLING TIGER IV
NETHERLANDS	JR OCEAN DRILLING RESEARCH VESSEL
PERU	RAP CARRASCO OCEANOGRAPHIC RESEARCH VESSEL
RUSSIA	NUCLEAR ICEBREAKER SYBERIA
	NUCLEAR ICEBREAKER MURMANSK
	NUCLEAR ICEBREAKER
MEXICO	FLOTING HOTEL
PORTUGAL	EXPEDITION PASSENGER VESSEL



Oily water separator ATEX for TOTAL Offshore Egina FPSO "Samsung HI"

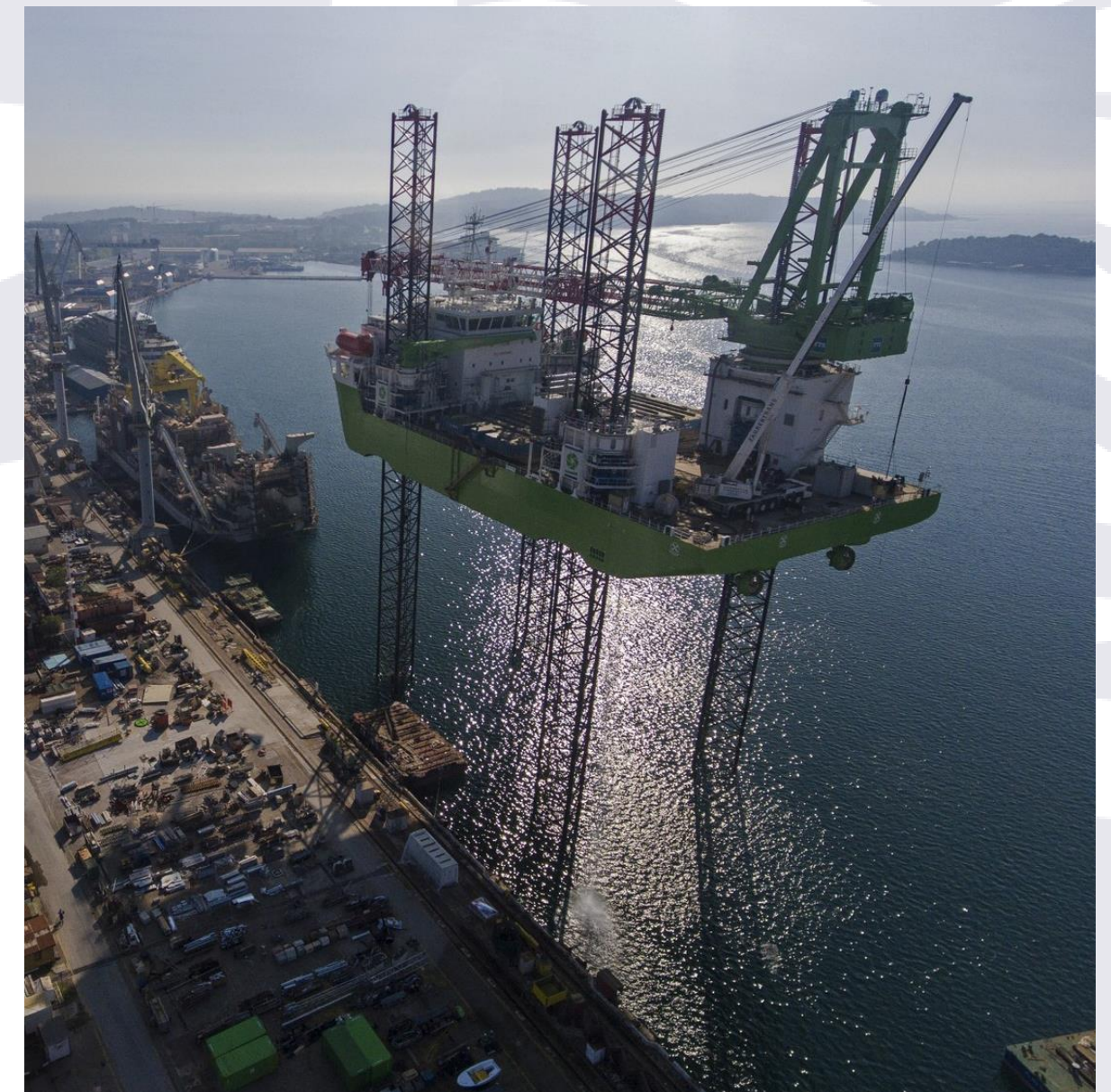


Oily water separator ATEX for FPSO "Shangai Waigaoqiao"



Oily water separator ATEX for TOTAL MOHO FPSO "Hyundai HI"

Some references from offshore projects



Sewage treatment plant for DEME Apolo jack-up platform "Croatia"



“F101 Alvaro de Bazán”



LPD Class “Galicia”



Logistic Replenishment Ship “Cantabria”



OPV “Meteor” Class



Other Spanish Navy Ships



Helicopter Landing Dock “Juan Carlos I”

Buques de la Armada Española

Ship	Units Delivered
Frigates F100 (5 ships)	264
LPD Clase “Galicia” (2 ships)	18
BAC “Cantabria”	10
OPV Class “Meteor”	258
LHD “Juan Carlos I”	69
Other Spanish navy ships	140
TOTAL	759

Detegasa has installed 759 equipment on board the Spanish Navy fleet.



LPD "Canberra"



Auxiliary Oiler Replenishment (AOR) Class



Air Warfare Destroyer (DDG)
Class "Hobart"

Board Royal Australian Navy (RAN)

Ship	Units Delivered
LHD Class "Canberra" (2 SHIPS)	188
DDG Class "Hobart" (3 SHIPS)	213
AOR Class "Supply" (2 SHIPS)	76
TOTAL	477

DETEGASA HAS 477 EQUIPMENT INSTALLED ON BOARD RAN



F310 "Fridtjof Nansen" FRIGATES

Royal Norwegian Navy



Ship	Units Delivered
Fragatas F310 (3 buques)	332
TOTAL	332

332 systems installed on board the frigates program



T-26 Frigates Program for the Royal British Navy

Royal British Navy



Equipment	Quantity	Total
SEWAGE TREATMENT PLANT	2	6
Oily Water Separator	1	3
TOTAL	3	9

BAE SYSTEMS



Thank you for your attention!

Any questions?

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