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### **About GOGS**

## **Company History**



GOGS was born in Geoje island, Republic of Korea in 1994 as Engineering solution provider, where two major Shipyards, SHI and DSME are located, which has grown to operate overseas offices for 24 years.

We carry out the consultation not only Engineering Management (Commercial ship, Offshore, Onshore, Wind Power) but also other sectors including Project Management, Construction Management (Trouble Shooting, Mechanical Completion, Commissioning, etc.), Contract Management (Risk Assessment), Procurement (Equipment and Material Management, etc.) and Trading business.

We develop customer-oriented solutions, provide more competitive, select and concentrate on services laying a foundation for becoming a leading solution provider.

Whatever how large or small the projects are our role is on the project and target is to exceed our Clients' expectations in everyway possible and helping to complete the project on-time, within budget and with the highest quality possible.

Construction is always complicated and sometime beyond out expectation, but our goal is pretty clear: with out professionals, unders tand our Clients' **NEEDS** and **OBJECTIVES**, and make a full commitment to every project in which we are involved.

Our future is defined by the success of Clients' Project. Vision & Strategy 1994 Start-up the Commercial Ship Engineering business as Subcontractor of SHI

2005 Start-up of Offshore Engineering & Ship Construction Consulting

2006 Opened China Branch Office & Subsidiary Company (Yantai)

2012 Start-up of Offshore Punch & Modification, Procurement.
Acquired ISO 9001, ISO 14001, OHSAS 18001 Certification (ABS)

2014 Launched R&D Center

2016 Opened Japan Branch Office (Nagasaki) Start-up of Commissioning

2017 Start-up of Sox Scrubber, Retrofit & Ship Repair

2018 M&A Daesung Trading Company and Opened China Branch Office (Dalian) SOx Scrubber Retrofit Engineering (30 Vessels)



Utilize new areas to create new growth drivers



## **QHES Philosophy**

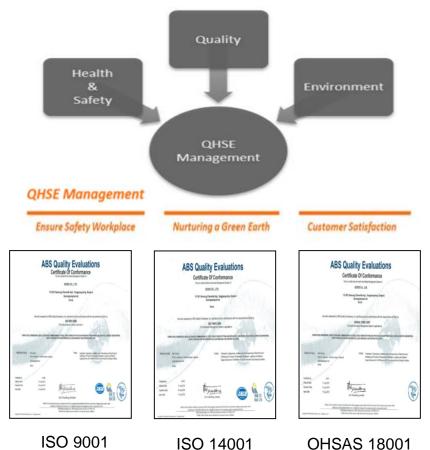


We recognizes Health, Safety and Environment management for all of its employees as being one of the most important facets of the Clients' overall management and implement HSE Management System according to the requirements of related regulations ISO 14001 and OHSAS 18001 with strong commitment to take the social role and responsibility in order to make Incident, illness free and eco-friendly working environment.

Seeking to provide the services that customers demand in a preemptive and proactive manner through systematic and innovative quality management, we established quality management activities to set and implement quality targets and action plans for each project which related regulations, ISO 9001.

#### **QHSE Policies:**

- •Identify customer's requirements and deliver to the agreed standards.
- Provide a safe working environment and ensure that the appropriate resources are assigned to all working areas.
- Protect the environment we work in.
- Quality system is maintained and reviewed on regular basis.
- Achieve a 'Zero Incident target.
- Set maintain high standards of Health and Safety at every working area.
- Monitor environmental performance to ensure compliance with this policy and with legal requirements.
- Comply with applicable local laws, legislations, codes of practice and international HSE standards.





## **GOGS Business Scope**



#### **Engineering**

- New & Repair Ship Design
- Plant Detail Design
- Plant Production Design
- Off Shore Modification Design
- Sox Scrubber & BWTS Design
- Module & Package Design

#### **Construction Service**

- Sox Scrubber & BWTS Retrofit
- Ship Repair Work
- New Ship building
- Punch & Modification Work
- MC processing & Commissioning
- Package/Skid Modular
- Engine Repair Service
- Fabrication & installation

#### **Trading Service**

- Ballast Water Treatment
- Emergency Generator
- Provision & E/R Crane
- Cargo Oil Pump
- F.O & L.O filter
- Fresh Water Generator
- Propeller
- Anchor & Anchor chain
- Mooring Rope

#### **General Service**

- Technical Consulting Service
- Manpower Supply
- packing & Logistics
- Shipping Agent
- Rental Service
- Raw Materials
- Procurement
- Material & Equipment
- Fabrication Item
- Spare Part







## **Engineering Business**



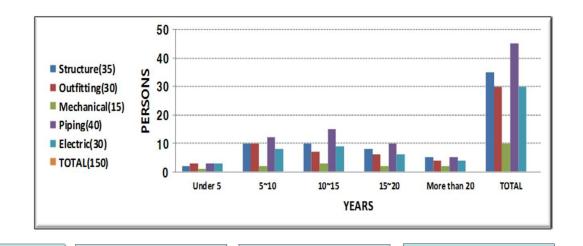
Our formula is: to provide one stop engineering service to our Clients including all disciplines of Structure, Piping, Outfitting, Electrical and Instrumentation, Nautical, Accommodation, Piping Diagram and Electrical principle Diagram and 3-D Modeling of all disciplines.

Commercial Vessel Basic, Detail, Production Engineering

Crude Oil / Bulk / Chemical / Tankers / LNG / PCTC / Supply Vessel / AHTS / Tug Boat / Car ferry / Passenger Vessel

- Offshore Products Detail, Production Engineering
   TLP / Jack-up / Semi-Submersible Rigs / Platform / Drillship / FPSO / FLNG
- Sox Scrubber & BWTS Retrofit Engineering
- Ship Repair Engineering
- Modification & Upgrade Engineering
- Commissioning procedure
- Onshore Plant Detail, Production Engineering Power / Chemical / Oil & Gas Plant)
- Technical Consulting & Supervision
- Software & Tools

2D/3D Program: Autocad, Tribon, PDMS, SP3D, AM, TEKLA Analysis Program: SACS for stress analysis Nastrom FX for FEM analysis, Inventor for 3D design



# Structure . Structural Analysis . Basic & Detail . Shop Drawing . 3D Modeling

Piping
P & ID
Arrangement
Installation
Fabrication
<b>3D Modeling</b>

Vent Diagram
<b>Machinery Room</b>
Mooring
Anchoring
Life Saving
Arrangement
Installation

Outfit. / Mech

Elec. Diagram EL. Load Analysis
Arrangement
Installation
Fabrication

**E&I** 

# Architecture HVAC & Architecture Diagram Arrangement Installation Fabrication

Production
Block Division
<b>Production Method</b>
Lifting Method
Scaffolding
Lord Out
Consulting etc.



## Retrofit Business – BWTS, SOx Scrubber system



In accordance with the mandatory revision of the International Maritime Law, we have concluded agreements with companies supplying BWTS / SOx & NOx scrubber system equipment that require new installations.

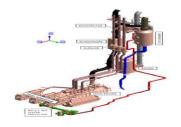
We already have direct contract with Global Container Company 8,000 teu container for SOx scrubber system basic, production engineering and construction supervising, also contract with SHI for Global Container Company 8,000 teu container for production engineering.

Equipment engineering for BWTS & SOx scrubber system on new 6.6K Chemical Tanker of Sam-Kang Shipyard.

GOGS aims to provide ship owners with retrofit BWTS / Scrubber system expertise during the retrofit process.

#### **GOGS Retrofit Process**

- Vessel specification check & drawing review
- Survey & pre engineering
- Engineering (basic & production)
- Procurement & pre fabrication
- > Retrofit (Installation) owner option
  - 1. Retrofit on GOGS consortium shipyard (Korea & China)
  - 2. Retrofit on Owner consortium shipyard
- Start up & Commissioning











Examination the drawing & document



Engineering (3D Modeling)



Fabrication



Installation



Commissioning



# **Package / Skid Modulization Business**



Fabrication and assembly of Package Module at a domestic site in Korea very close to SHI and DSME shipyard by a skilled people, cost effective materials supply chain.

Provided production shop with excellent facilities and execute fabrication, assembly, mechanical completion, commissioning and delivery together with GOGS and Customer.

Transportation for delivery is dramatically short.

Easy availability of production materials like steel and pipe spools, electrical, painting and related materials and skilled workers.

#### Simple scope of work

Customer Scope: 1. Supply core equipment / components and basic drawing to GOGS

2. Supervision and documentation

GOGS Scope : 1. Detail and customized engineering

2. Purchasing all related materials in a domestic market

3. Fabrication and Assembly

4. Inspection and Functional test

5. Delivery to shipyard



### **Simple Process**

Core components supplied by customer

Logistics & Transportation Local Purchasing
Piping / Fitting
Tubing / outfitting
Cable tray /
Steel plate & etc

Assembly
- GOGS Shop

Inspection MC Commissioning

Delivery to Shipyard

Carry out by GOGS in Local



## **Ship Repair Business**



GOGS is specialized in providing warranty repair business services for ship built such as Drillship / FPSO / LNG / Tanker / Container ship / Bulk carrier / Car carrier of DSME and SHI.

GOGS provides technical support and problem solving solutions through experienced ship engineer's visit services. There are various maintenance programs to meet customer's demand for damaged equipment as well as ships. By providing the necessary parts and services for maintenance, GOGS saves time and cost for clients.

Rapid technical service from specialized GOGS service engineer.

Total maintenance service : spare parts + maintenance + calibration.

All kinds of safety function and running condition after overhaul for safe operation.

In order to maintain the best condition and well-balanced performance, GOGS carries out periodic and scheduled maintenance on behalf of the client as per our regular maintenance plan.



- 1. Pipe system modification
- 2. Hull system modification
- 3. Engine room & Deck machinery system fabrication
- 4. Outfitting & Electrical system modification
- 5. Accommodation system modification
- 6. Control system commissioning
- 7. Engine repair service
- 8. Piping hydro & leak test, Machinery system flushing



- 1. Approved Quality
- 2. Just in Time Repair
- 3. Reasonable Cost
- 4. Speedy Response













## **New Ship Construction Business**

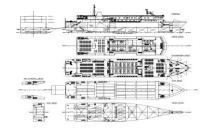


Based on the world's best engineers and project management technology, which has the world's strongest shipbuilding technology, we have built a consistent service system from shipyard construction to design, material procurement, procurement, installation and commissioning. From technical consulting service to order & shipbuilding, we provide the type of service which customer wants.

- Ship yard arrangement (Korea, owner company, etc.)
  - Case 1: After negotiating idle equipment at domestic and abroad and select ship yard

    Shipyard lease and use as a partner company, GOGS will control overall management for all stages
  - Case 2: Ship which wants to build in a country without shipyard

    GOGS can firstly provide shipyard architecture engineering service such as, lay out, capacity plan, equipment list
- Engineering (basic design, detail and production design)
   Optimized engineering with direct execution management by GOGS
- Procurement (equipment and material management)
   Development of optimum maker list
   Customized packing system
- Construction management (fabrication, installation, scaffolding, insulation, painting, commissioning)
   Customized production method to examine the working environment
   GOGS supervisor will dispatch for core part and monitoring service











#### **Punch & Modification Business**



'We are offering suitable assistance with technical support and mobilizing professional personnel at an appropriate time and place in order to complete projects successfully.

GOGS have a great deal of experience to carry out 'Punch Clearing & Modification Business' in various projects with our professional punch clear team organized with active and experienced members, and we make efforts to do our utmost for even better services at all times.

And, successful Construction Management demands a detail-diligent approach, proactively managed by professionals who have the experience, skills and technical support each project demands. Our professionals are not only credentialed; they have seasoned, hands-on experience in the construction industry.

This experience, gained in the trenches of construction projects across the globe, gives our project teams the practical knowledge they need to effectively manage virtually any type of capital project.

Our teams includes: Construction Managers, Construction Superintendents, Estimators, Schedulers, Inspectors, Contract Administrators and Trouble Spot Coordinators.

- Completion of Remaining Work according to system as per client's diagnose
- Punch Clearance Work for Offshore Package Unit
- Upgrade Equipment & System
- OFE installation including equipment
- Hot Oil/Chemical Flushing Service, Chemical Clearance, SUS Passivation
- Tiger Paint & Blasting & Painting
- Preservation & lay up
- Insulation







## **Commissioning Business**



Commissioning is not only a validation of equipment and systems operation, it is also a form of quality assurance.

Our experience is to approach to the development of a commissioning plan starts with a strong understanding of the Client's requirements, the project design intent, the systems installed and the desired outcome. We develops a plan that includes that understanding, as well as how commissioning communications will be processed, a complete outline of testing to be performed with the acceptance criteria, documentation required and a training outline.

#### Mechanical/Hydraulic

System MC, pre-commissioning, commissioning, start up test
Rotating machinery installation, alignment, unit pre-start up test and operation
Marine utility system installation and test

#### Piping, Hydro test, Leak test

Piping/tubing fabricating & installation, high pressure hydro test. line flushing, hydro test, Sensitive leak test and function test, Field modification, repair and punch rectification

#### Electrical and I&C

Field instrument calibration, cable pulling & connection
Fiber optical cable connection & test
I/O validation check (Loop test, F&G, Cause & Effect test)
PLC & device-net programming and commissioning
Electrical testing (Sequence, no load test)

#### Installation / Hook-up

Mechanical and Piping Electrical and HVAC





## **Procurement Business – Equipment & Material**



GOGS maintains a collaborative relationship with Asian equipment companies and supply products to shipyards.

Supply of equipment to various kinds of vessels through relationship with Oil and Gas major's equipment Vendors. Also supplies consumable or required material after post-A/S and/or terminated service.

Through the agreement with the core equipment vendor, it locally produces rather than the material supply income when working in Korea.

Available supply equipment through local equipment network.

Export & Import / Custom order / Purchasing agent

#### **Service Products**

- Ship spare part
- Ship equipment & material
- Modification item
- PPE item
- Consumable item
- Customized item
- Operating equipment
- Frequently fabricated items before sailing away
- Oil & lubricant
- Ship loose material packing & sea fastening
- Smart CO2 Welding machine including Inverter type Manufacturing in our shop





# **Trading Business – Equipment & Raw Material**



Established a representative office in Dalian, China on June 20, 2002.

Main business: It is a trade to supply Korean ship equipment to a large shipyard in China.

#### Main customers:

- State-owned shipyards: Dalian Shipyard (DSIC), Bohai Shipyard, Qingdao Beihai Shipyard, Shanghai Shipyard, Tianjin Xingang Shipyard, Shanghai Hudong Shipyard, SWS Shipyard, Jiangnan Shipyard
- Private Shipyard: Shanghai Rongsheng Shipyard, Yangzijiang Shipyard, New Century Shipyard, Huanghai Shipyard, Kouan Shipyard.



Long established trust and plenty of records.

#### **Service Products**

- Ballast Water TreatmentEmergency Towing System
- Emergency Generator Anchor & Anchor chain
- Provision & E/R Crane● Mooring Rope
- Cargo Oil Pump● Lighting
- Fresh Water GeneratorDeck Machinary
- PropellerRaw Materials











# **General Business – Manpower, Rental, Administration**



#### Manpower Management

Not all of today's organizations have the internal resources to handle every type of construction assignment.

We can augment a Client's Construction Team with specific expertise based upon the unique needs of each individual assignment. We offer experienced professionals with flexible availability that ranges from days to years.

Our experienced Project Managers, Construction Managers, Engineers, Architects, Designers, Schedulers, Contract Administrators, Office Administrators and other professionals are available any type of project at any phase.

Our professionals take a results-driven, cooperative, approach to meeting our Clients' goals, and effectively complement existing permanent staff throughout the globe.

#### **Rental Services**

- Load Bank, Motor Generator, Boat, Barge
- Work Shop & Storage, Container
- Accommodation & Car

#### **Administration Service**

- Visa / Work permit / Driver license acquisition
- International school registration assistance



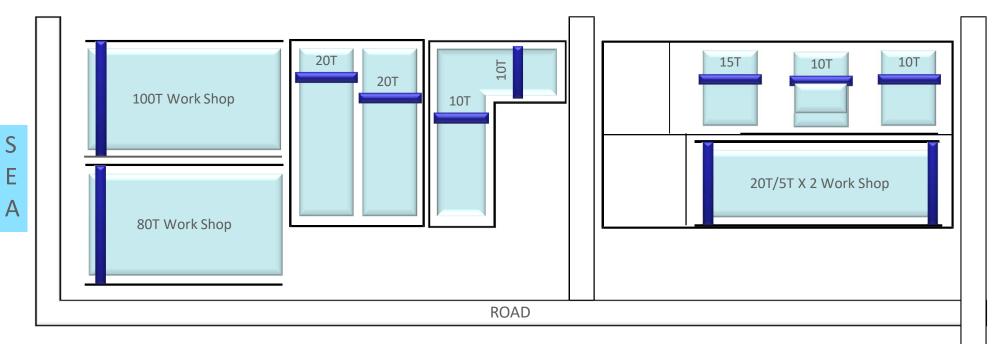




# **Capacity & Capability**



## Fabrication Yard (1)













# **Performance Records - Engineering**



Type of Vessel	Project Name	Ship Yard	Year
	Sakhalin	SHI	2004 ~ 2006
Fixed Platform	Benguela Belize	DSME	2004 ~ 2005
	Sanha	DSME	2002 ~ 2003
	Appomatox,	SHI	2015 ~ 2016
	Stampede, Stena	SHI	2014 ~ 2015
TLP & Semi -Rig	D-50	RAFFLES(China)	2007
	West E-Drill	SHI	2007
	Shenzi	SHI	2006 ~ 2007
FLNG	PETRONAS	SHI	2015 ~ 2016
FLING	Shell	SHI	2014 ~ 2017
	Maersk	SHI	2012 ~ 2013
	Pride	SHI	2010 ~ 2011
	Ocean Rig	SHI	2010 ~ 2011
Drill Ship	PDC	SHI	2009 ~ 2010
	Seadrill	SHI	2007 ~ 2008
	Stena	SHI	2006 ~ 2007
	Navis	SHI	1999 ~ 2000

Type of Vessel		Ship Yard	Year
Container	1600 TEU, 3200TEU, 4400TEU, 5500TEU 9200TEU,21200TEU	SHI	1999~2018
Bulk Carrier	35K,73K,135K,148K, 168K,185K,220K	SHI,SPP,S D,STX	1994~2015
LNG	87K ,125K,142K, VLEC Kogas 7.5K	SHI	2003~2018
Oil Tanker	6.6k,13k,35k,50k,73k,95k,11 5k,150k,VLCC	SHI,SPP,S D,STX, SK	1994~2018
Shuttle Tanker	73k,77k,95k,103k, 130k,199k	SHI	2005~2018
Passenger Boat	Minoan Lines Shipping S.A Maeask Dunkerque/ Norfolkline Shipping B.A	SHI	1999~2015
	Egina	SHI	2015~2016
FDCO	Teekay	SHI	2013
FPSO	BP Skarv	SHI	2009
	Nexus	SHI	2008



# **Performance records – Engineering Consultancy**



Project Name	Description	Year
OUHUA (China)	Ship Yard Capacity / Production System Review	2008
RAFFLES (China)	Semi Rig Detail & Production Drawing (Structure, Piping, E&I, Outfitting)	2006~2008
Sung Dong Shipyard (Korea)	Basic & Detail Design Review Vendor Control & MTO	2007
SPP Shipyard (Korea)	Yard Practice (Structure, Pipe, Outfitting) & Construction System	2006
Samho Shipyard (Korea)		2005



# **Performance records – Offshore Procurement**



Client	Description	Year
AKER MH, ABB, NOV, OCEAN SAVER	Spare parts & Supply pipe spools Unit structural & Steel outfitting fabrication	2012
SEIMENS	Spare parts & Supply pipe spools	2014
ATLAS COPCO	Painting work For PTFE pipe spool supports Cable Tray & Cover modification items	2015
BONO ARTES	Pipe spool painting work	2016
SCHLUMBERGER	Bulk items	2016
FRED OLSEN	Tool box & Traffolyte & Steel Tag	2016



# **Performance records – Manpower Supply**



Client	Description	Year
KONGSBERG	Technician (E&I / Mechanical / Punch work / Piping / Commissioning) Inspector( E&I / Piping / Painting / Mechanical / Structural / HVAC )  Ballast Treatment System Service Engineer	2012
TEEKAY, ODFJELL	Engineer & Designer ( E&I, Piping, Outfitting, Mechanical, Structure, PDMS ) Office	2013~2014
FRED OLSEN, ABB	Ballast Treatment System Service Engineer	2014
OCEAN SAVER, CATRINA	Engineer & Designer ( E&I, Piping, Outfitting, Mechanical, Structure, PDMS ) Office	2015
FLO	Ballast Treatment System Service Engineer	2015
SHELL, EXXON MOBIL	Technician (E&I / Mechanical / Punch work / Piping / Commissioning) Inspector( E&I /Piping /Painting / Mechanical / Structural / HVAC )	2015~2017
INPEX, DONG ENERGY	Technician (E&I / Mechanical / Punch work / Piping / Commissioning) Inspector( E&I /Piping /Painting / Mechanical / Structural / HVAC )	2016~2017
MHI (Mitsubishi Heavy Industries)	Ship Commissioning to Elect. / I&C / Mechanical / HVAC / Piping (PGS,LPGC etc.)	2016~



# **Performance records – Punch Clearance & Modification**



Project /Client	Description	Year
ABB	FG Cabinet Power Cable / ESD Cabinet Network Cabinet Patch Panel	2013
KONGSBERG (KMK Offshore Projects)	FAT Punch Items Power & Network Cable / Cabinets	2013
STENA Drill Max Ice Drillship	SCHLUMBERGER (Electrical Cable Repair)	2013
TEEKAY FPSO	Installation of Temporary Incinerator  Modification of Hatch Cover,  Centralizing Pipes Fabrication of Spools, Tool box  Tiger Painting(Living quarter, Heli-Deck)  LEWA /Chemical Injection Package, Incinerator package installation	2014
ALFALAVAL  1.PETRONS FLNG  2. OCEAN TIGER Drill ship  3. SHELL FLNG  4. STENA Semi Rig  5. CAT-J Semi Rig #1, #2  6. BW LNG FSRU,  7. MAERSK Jack-up Rig  8. SONANGOL Drill ship	Desalination Packages , Fresh Water Generator, Valve Re-orientation  Heat exchanger by-pass pipe installation, Purifier  Distillation insulation installation, Re-gas Glycol Water Heater  Lean solvent coolers etc.	2015~



# **Performance records – Punch Clearance & Modification**



Project	Client / Description	Year
SHELL FLNG (Technip FMC) SHELL CPI	Additional stairs on skid (20 points) Estimation (Scheduling), Engineering (Design & Modification), Fabrication, Installation, Quality Control (Inspection & Trouble Shoot) to Completion & Handover (Final Closing Report).  COES (Air Dryer Packages) KHI (Coiler packages) KHI (Coiler packages) ATLAS COPCO (Air Compressor Packages, Regeneration Compressor, Maintenance Compressor) EVOQUA (Chlorination Packages) BONO ARTES (Skid Mixed Beds Exchange Polisher Package) MHI (Mitsubishi Heavy Industries) (STG Package, NGB Compressor, OVHD Compressor, DEP Compressor) SIEMENS (Lube Oil console of End Flush Gas Compressor, Seal Gas Filter, Oil Vapor Extraction Fan Motors) FLOWSERVE (CCW2 Packages, Seal System Packages, Actuator, Valves) GE (MR/PMR Compressor) ALDERLY (Condensate Coriolis Metering skid, Butane Metering Skid, Propane etering Skid) AUTOCHIM (Deluge Skid) GBA (Air Cooler) MILTON ROY (Chemical Packages) PERONI (Subsea Injection Pumps Package) YOKOGAWA (Analyzer Package) EXO (MLA Crane, Overhead Crane) J.BARNSELY (OVHD Travelling Crane, Air Compressor barnsely OVHD Crane) AIR PRODUCTS (N2 Packages) FAVELLE FARCO CRANE (Pedestal Crane) EBARA (Debutanizer Reflux Pump) HEATRIC (Pressure Vessel) SULZER (Debutanizer Column) PECO-PACET (Chemical Spills Collection Filter, Pressure Vessel)	2015~2017



# **Performance records – MC & Commissioning**



Project Name	Description	Year
EGINA SHELL FLNG ICHTHYS CPF ODFJELL SEMI RIG	Commissioning assist to Elect / I&C. / Mechanical. / HVAC / Piping  Commissioning For L/Q  E & I loop test for Hull and Top-side Commissioning For Mud Sys & HVAC Sys  Flushing for ROV and Sub-sea control system Helium leak test & COW & Punch work  Commissioning for marine utility system Commissioning for production equipment  Commissioning for Safety & Drilling Sys etc.	2016~
Commercial Vessel (Japan/MHI)	Ship Commissioning to Elect. / I&C / Mechanical./ HVAC/Piping (PGS,LPGC etc.)	2016~



# **Performance records – Ship Repair Services**



Type of Vessel	Description	Year
Container Ship	HP, LP Drum Cupper Line Installation Inc. Washer Oil TK MDO Flushing and Leak Test / Pipe and Flange Renew Steam Tracing Installation and Insulation Support Installation for Vibration of Exhaust Gas Pipes Propeller Shaft Repair	2018
Tanker	Modification for Outlet of Emergency Generator Additionally Support Installation and Insulation Reefer Cooling Expansion Tank Modification G/E Air Cooler Drain Line Modification ( Reconnection and Welding )	2017



# **Company Location**





