

**LEADING CONSTRUCTION  
& INTEGRATED MAINTENANCE  
SOLUTION PROVIDER  
IN ASIA & USA**



**SERVING YOUR INDUSTRIAL NEEDS**



## ABOUT US

Mun Siong Group of Companies provides integrated Turnkey Mechanical services, Plant Maintenance and highly efficient specialised in-house services, experienced in combining multi-layer technical competencies with an unyielding dedication to safety, efficiency, quality, and environment responsibility.

We are one of the leading construction and integrated maintenance solutions provider in Asia and USA, first established in Singapore in 1969. Our company offers an extensive range of mechanical and electrical & instrumentation services for oil & gas, petrochemical, energy, chemicals, and power generation industries. We provide a one-stop solution for all our clients with regards to engineering, procurement, fabrication, construction and maintenance services for process plants, as well as niche specialised products and solutions.

## LEAPING TOWARDS A SUSTAINABLE FUTURE WITH RESILIENCE



### VISION

We will become the preferred and most trusted turnkey solution provider to customers, colleagues, investors, business partners, and the communities where we work and live.

### OUR MISSION

We dedicate ourselves to be the preferred service provider that thrives on cutting edge Technology, Safety, Quality and Competitive Solutions to achieve customer satisfaction.

### CORE VALUES

- SAFETY • QUALITY
- CUSTOMER FOCUS
- LEADERSHIP
- TEAMWORK

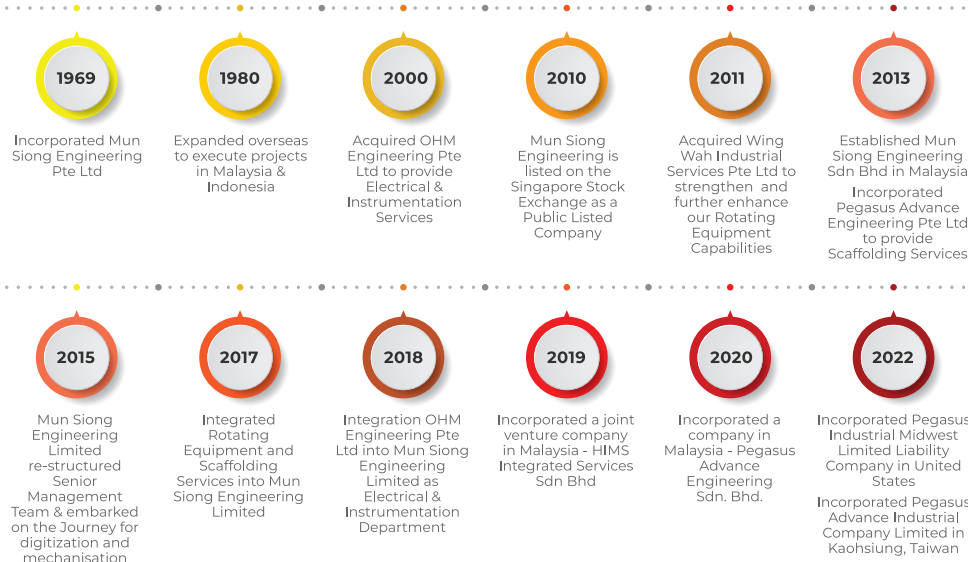


MUN SIONG GROUP OF COMPANIES  
EST. 1969

Headquarters,  
**Mun Siong Engineering Limited (Singapore)**

Group Companies  
**Pegasus Industrial Midwest LLC**  
**Pegasus Advance Engineering Sdn. Bhd.**  
**Pegasus Advance Industrial Co., Ltd**

## MILESTONES



Mun Siong Group of Companies, a Construction and Integrated Maintenance service provider, utilises cutting edge technology such as Ultrasonic Cleaning and specialized Coatings to improve your heat exchanger reliability.

We are at the forefront when it comes to maintenance works and turnkey projects. We have successfully completed numerous greenfield and brownfield projects as well as Turnaround and Shutdown projects.

Our skilled team boasts an impressive safety record and a wealth of experience, with numerous years of combined expertise.

## MAIN BUSINESS

- **ULTRASONIC CLEANING SERVICES**
- **HEAT EXCHANGER SERVICES**
- **REPAIR & FABRICATION SERVICES**
- **FURNACE DECOKING SERVICES**
- **ENGINEERING DESIGN SERVICES**
- **ROTATING EQUIPMENT SERVICES**
- **ELECTRICAL & INSTRUMENTATION SERVICES**
- **MAINTENANCE, TURNAROUND & CONSTRUCTION SERVICES**



# HEAT EXCHANGER SERVICES

**“ YOUR HEAT EXCHANGER REPAIR, CLEANING, COATING AND INSPECTION SPECIALIST! ”**

Since 1969, we have been a one-stop shop for all of your fabrication and maintenance needs. We manufacture, install, and service with the highest international quality, safety, and supply-chain reliability standards, regardless of your maintenance or application.

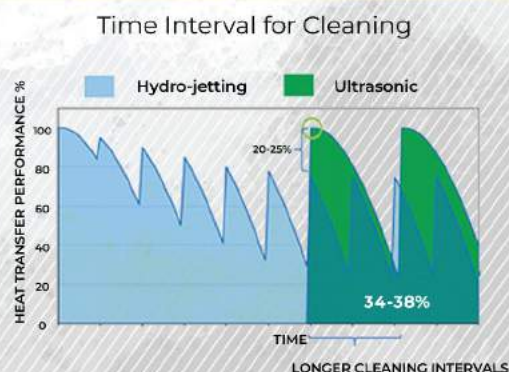
## ULTRASONIC CLEANING



## EVERYTHING YOU NEED TO KNOW

- 30% improved heat coefficient recovery vs. field
- 15% improved heat recovery vs. shop Hydro-Jetting
- Large tanks designed to accommodate most medium to large size exchangers
- Advanced cleaning of viscous bundles via ultrasonic waves through a combination of water, chemicals, heat, & agitation
- Proven technology to return like-new heat recovery coefficients

	Hydro-jetting	Ultrasonic Cleaning
OD Cleaning	75-85%	95-100%
ID Cleaning	75-85%	95-100%
Difference	25-30% cleaning efficiency	







After Ultrasonic Cleaning

## TRADITIONAL METHODS VS ULTRASONIC CLEANING

Up to 40,000 PSI operating water pressure

Longer duration

Cleaning efficiency limitations

High water volume usage

Additional safety protection equipment required

• No high water pressure

• Shorter duration

• Perform 95-100% effective cleaning

• Lower water volume usage

• No additional safety protection equipment required

## HIGH PRESSURE WATER JETTING

- We can clean and descale foreign deposits with high-pressure water up to 40,000 PSI (2,760 bar).
- To handle a range of scenarios and problems, we own a wide selection of Hydro Jetting equipment of different pressure ratings and customised nozzles to achieve optimal results.
- We also offer fully automated solutions like the Shell Side Bundle Blaster and Semi-Automated Cleaning Machine.



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# REPAIR & FABRICATION SERVICES

Since 1969, Mun Siong Group has worked with clients on various fabrication projects. We offer our services as a one-stop solution provider, fulfilling all your fabrication needs from our locations in Malaysia, Singapore, Taiwan and the United States to provide you access to multiple supply chains across the globe.

## FABRICATION CAPABILITIES

- Pressure Vessels
- Heat Exchangers
- Steel Structures
- Pre-assembled Modules (PAM) & Skids
- Tankage Fabrication
- Piping Works
- Blasting & Protective Coatings



### PRESSURE VESSELS

We fabricate custom pressure vessels as per client specifications while meeting all ASME code requirements. We guarantee quality work with utmost safety, valuing our client's time and delivering the best solutions.

### HEAT EXCHANGERS

Our team specialise in shell and tube heat exchanger fabrication. We offer custom solutions while adhering to quality requirements, leading to reliable and economical solutions.



### PIPING WORKS

We fabricate steel pipes with careful attention to detail to ensure efficient and reliable operation. Our team works closely with clients to determine which materials and fittings are best suited to the application.

## PROJECTS



**PAM & SKIDS**



**TANKAGE FABRICATION**



## REPAIR CAPABILITIES

We are able to handle various pressure vessel and heat exchanger repairs as we are certified by ASME and NBBI. Our blasting and coating services provide you with a cost-saving solution to increase the equipment's lifespan whilst minimizing routine cleaning intervals.

### RETUBING

Our retubing services include on-site tube cutting, tube removal, tube installation and hydrotesting.



### BLASTING & PROTECTIVE COATING SOLUTIONS

We provide a comprehensive solution for Grit Blasting and Protective Coating. Grit Blasting prepares the surface with the required profile and surface cleanliness.

Our Specialised Coatings minimize cleaning downtime and improve the flow rate of static, rotating, and fixed equipment.



### HEAVY MACHINERY

Our facilities are fully equipped with in-house machinery and equipment to meet all your fabrication needs. Skilled workers coupled with latest machinery assure precision in fabrication in a timely manner while meeting safety and quality requirements. Our services extend to steel preparation, welding, blasting, painting, and heavy lifting.



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# MAINTENANCE, TURNAROUND & CONSTRUCTION SERVICES

Our services and solutions are all-encompassing. With our capabilities in covering both plant maintenance works and related services as an on-site single-source maintenance service provider, we offer a fully integrated suite of multidisciplinary support services for all stages of asset lifecycles, including initial designing, fabrication, construction, ongoing maintenance, turnarounds, and shutdowns.



## CAPABILITIES

- Routine Plant Maintenance
- New or Existing Pipeline Work (Includes Tie-Ins)
- Structural Modifications & New Erection
- Rotating Equipment Maintenance
- Static Equipment Maintenance
- Furnace Maintenance Works (Includes Re-Coil)
- Electrical & Instrumentation Maintenance
- Total Valve Management, Valves Change-Out Servicing & Certification
- Divestment of Plant Equipment
- Condition Monitoring
- Isolation & Replacement of Parts & Equipment Maintenance
- Storage Tank Maintenance & Rehabilitation
- Plant Turnaround
- De-Bottlenecking & Upgrading



# CONSTRUCTION PROJECTS

- Design, Fabrication, and Erection of Steel Structures & Fixed Equipment
- Design, Prefabrication & Installation of Piping Works
- Installation of Static & Rotating Equipment
- Design, Prefabrication of Pre-Assembled Modules (PAM) & Skids
- Tank Construction
- Design, Site Installation of Electrical & Instrumentation Works
- Construction Management of Plants and Refineries

## PROJECT HIGHLIGHTS

Decades of proven track records in executing large-scale projects with project values ranging from SGD 20M to more than SGD 60M, and at the same time managing headcounts of more than 600 skilled workers on a single project. Our experienced projects department is skilled in various field executions and can undertake projects encompassing multiple disciplines.



## SHUTDOWN & TURNAROUNDS

MS Group has a proven track record of planning and executing shutdowns and turnarounds in multiple countries.



## SCAFFOLDING WORK



We are an approved Scaffold Contractor certified by the Ministry of Manpower. Our company provides scaffolding erection services and rental materials along with our skilled and certified scaffold supervisors and erectors. We possess both tubular scaffold and system scaffold for high-reach access needs in plant construction, modular fabrication projects, and any maintenance services.



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# FURNACE DECOKING SERVICES

## WHY MECHANICAL DECOKING?



TO REMOVE FOULING AND  
COKE DEPOSITS IN THE  
FURNACE OR BOILER TUBES



IMPROVE  
FURNACE  
PERFORMANCE



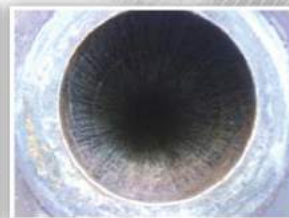
INCREASED  
SAVINGS



MINIMAL  
DOWNTIME



BEFORE



AFTER

## OUR DECOKING MACHINE

- Capable of mechanical and intelligent pigging
- Intelligent pig option with detailed reports of tube integrity
- Self-contained in a 40ft shipping container
- Contains double pumper units
- Contains a graphic recorder for pig tracking
- Clean water and effluent tank
- Closed loop system
- Control room





## MS SOFT PIGS

- Fully compressible through 90° and 180° bends
- Intelligent pig option
- Durable whilst breakable under pressure
- Soft pigs designed to protect heater tubes
- Curved-tipped carbide studs
- Controlled pig design and production



BEFORE



AFTER



Broken appendages

## WHY US?

- Extensive track records with Key Oil Majors since 1998
- Detailed reports of tube integrity with intelligent pigging
- Prolongs equipment lifespan
- Successful track record with horseshoe headers
- Minimises damage on tube internal wall
- 360° tube cleaning
- Environmentally friendly
- International coverage

**CHEMICAL FREE**



No Damage



Damaged Tube

## OUR COMMITMENT

- **SAFETY**
- **TIMELY**
- **QUALITY**



**Trusted Partner**



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# ROTATING EQUIPMENT SERVICES

**“ We Improve  
Performance &  
Reduce Downtime  
of your Rotating  
Equipment ”**

**MS** Group have 20 years of experience as a rotating equipment full-service provider in delivering comprehensive solutions to ensure continuous operations and process security. Our expertise includes overhauling, repairing, retrofitting, inspections, maintenance. We are committed in helping clients in improving the reliability and performance of rotating equipment.



**PREVENTIVE  
MAINTENANCE**



**IMPROVE SITE  
EFFICIENCY**



**BETTER  
ROI**



**MAXIMIZE  
RELIABILITY**



## WORKSHOP SERVICES

- Overhauling of Rotating Equipment
- Retrofitting Works
- Dynamic Balancing  $\leq G 1.0$
- Equipment Upgrading & Modification
- Induced Draft Fan & Forced Draft Fan Maintenance
- Mechanical Seal Flush Plan Modification
- Single to Double Seal Upgrade
- Fabrication of Pump Skid
- Failure Analysis with Detailed Inspection, Measurement & Test Reports





## Before & After Overhaul



## Before & After Cleaning and Coating

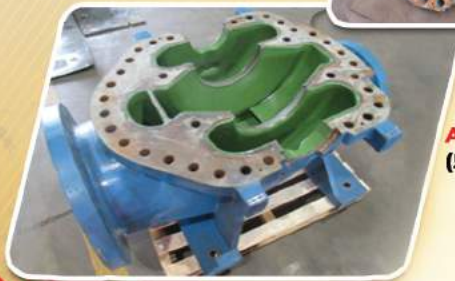


**Before** Cleaning  
- calcium deposits

Hydro-jetting and Grit  
Blasting used to clean  
surfaces of pump



**After** Coating Completed  
(50 microns thick layer)



## Low-Surface-Energy Coatings for impellers and pump casings

- Reduces Fouling, and is resistant to thermal cycling
- Increases flow rate
- Reduce routine equipment maintenance due to anti-corrosion properties
- Extends the useful life of rotating equipment inclusive of grit blasting services

## FIELD SERVICES

- Machinery Removal, Installation & Alignment
- Bearing Replacement
- Mechanical Seal Replacement
- Fin Fan Overhauling
- Condition Monitoring
- Equipment Maintenance
- Agitator Overhaul
- New Rotating Equipment Installation (Pumps, Fin Fans, Blowers, FDF, IDF, etc.)

## PREVENTIVE MAINTENANCE

We provide early defect prediction to optimize outage processes, minimize downtime and reduce unplanned maintenance costs

## MANPOWER SUPPLY

Should our clients require competent personnel, we are able to provide manpower of various skill levels to satisfy their requirements.

## 24-HOUR EMERGENCY

We provide round-the-clock support and emergency repair services for any of your pumps, blowers, gearboxes, and air compressors needs.



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# ENGINEERING DESIGN SERVICES

**MS** Group maintains a strong multidisciplinary in-house engineering team in Asia and the United States capable of providing comprehensive range of services.

## CAPABILITIES

- PROCESS ENGINEERING
- MECHANICAL ENGINEERING
- ELECTRICAL ENGINEERING
- INSTRUMENTATION ENGINEERING
- PIPING ENGINEERING AND STORAGE TANKS
- CIVIL ENGINEERING
- STRUCTURAL ENGINEERING
- HEAT EXCHANGER AND PRESSURE VESSEL
- INTEGRATED ENGINEERING SUPPORT



## NON-DESTRUCTIVE TESTING SERVICES

- Phase Array Ultrasonic Testing (PAUT)
- Ultrasonic Testing (UT)
- Post Weld Heat Treatment - ceramic heater (PWHT)
- Positive Material Identification (PMI)
- Ferrite Testing (FT)
- Hardness Testing (HT)
- Magnetic Particle Testing (MPT)
- Dye Penetrant Testing (DPT)



HT



PMI

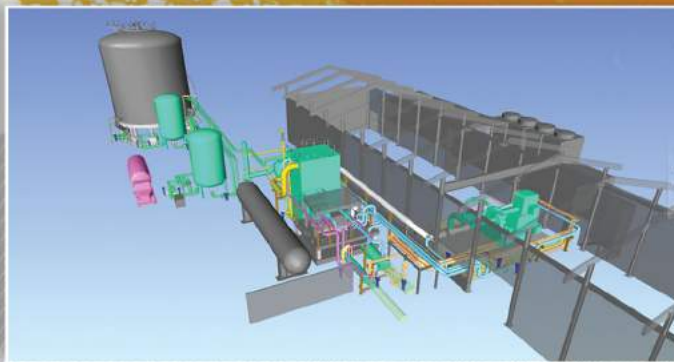
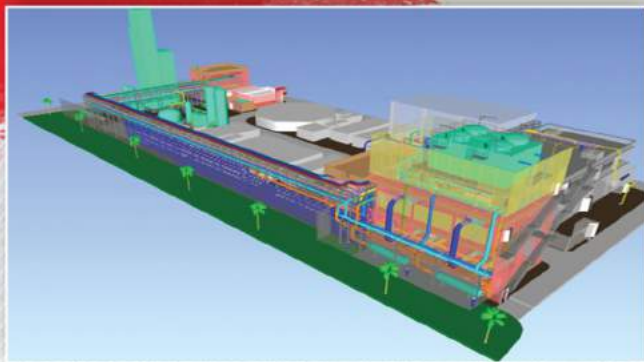
## QUALITY ASSURANCE

- Accredited by American Society of Mechanical Engineering (ASME) in Singapore, Malaysia, Taiwan and United States
- Holding U, U2, and R stamp certifications enabling repairs, alterations and fabrication of heat exchangers and pressure vessels
- In-house API certified inspectors to provide quality assurance in Asia and United States

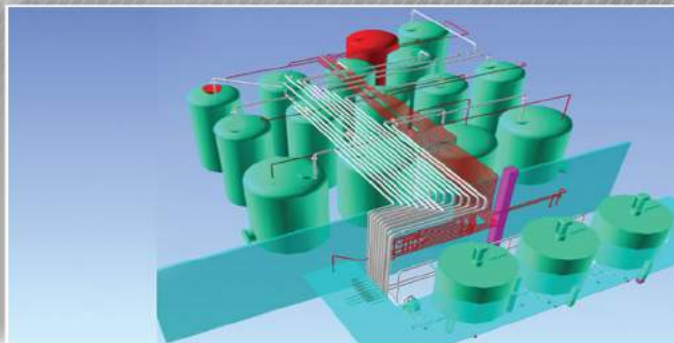
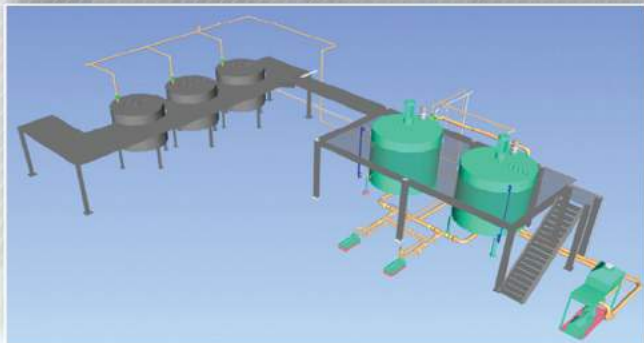




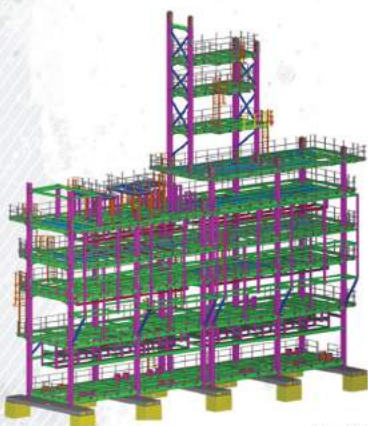
# PROJECT HIGHLIGHTS



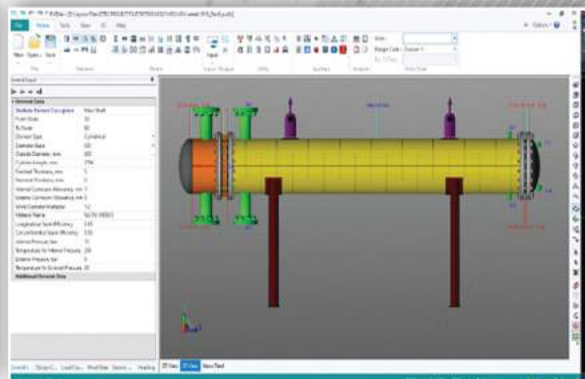
**AIR LIQUIDE SINGAPORE** - Piping, Valve, Pressure Vessels



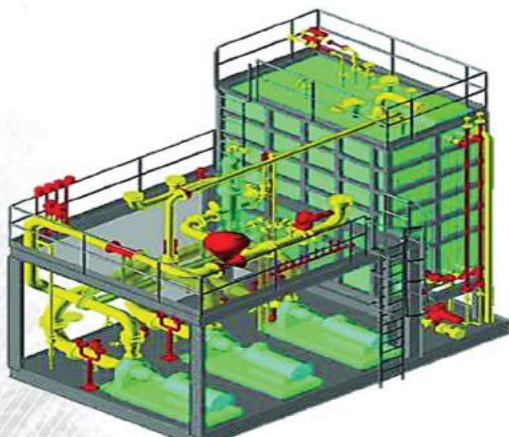
**BASF SINGAPORE TANK FARM** - Tanks, Piping, Structures



**TEKLA DESIGN**  
Modeling & Structural Design



**SEVERAL HEAT EXCHANGER DESIGNS**  
for Various Clients



**KAOMBO SEAWATER TREATMENT PLANT FOR ANGOLA AFRICA**  
Process Design, Piping, Valve, Instrumentation



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# ELECTRICAL & INSTRUMENTATION SERVICES

**MS** Group turnkey Electrical and Instrumentation (E&I) offerings cover the entire lifecycle of a system, from design and construction to commissioning, service, and maintenance. We have undertaken major forms of electrical and instrumentation projects ranging from greenfield and brownfield construction projects, routine maintenance, shutdown works and turnarounds.



**Trench Cable Laying**



**Transformer Installation**



**Cable Laying Works**

## CAPABILITIES

Our commitment is to provide top quality products and services. It is an integral factor in our ability to carry out long-term contracts for oil majors and other industry partners.

- **Installation of Cable Trays, Conduits & Cable Ladders**
- **Installation of Transformers, Switchgears & Lighting**
- **Trench Excavation, Cable Laying & Termination**
- **Grounding System & Lightning Protection System**
- **Analyzer Houses System Integration**
- **Production Skid Electrical & Instrument Works**
- **PLC System Solutions**
- **Electrical, Instrument & Control Circuit Design**
- **Calibration, Loop Check, Testing & Pre-Commissioning**
- **Installation of DCS & Auxiliary Panels**
- **Field Instrument & Impulse Line Installation**
- **Manpower Supply**



## YOUR VISION. OUR EXPERTISE.

With our dedicated team of experienced and trained personnel, clients can have the assurance that projects will be completed in a timely and safe manner.

Low Voltage Cable Glanding



Panel Installation



Lighting Fixture Installation



Underground Conduit Installation



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