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**FIRST GROUP**   
ENGINEERING SERVICES

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# 1. INTRODUCTION

## 1.1 About FGE

First Group is a dynamic company that is considered one of the experienced companies that specializes in Engineering Service, Mechanical, Electrical, Instruments and Consumables/Raw Material Supplies.

The company's principal areas of business interests include Technical Support, General Maintenance, and Facilities Management.

We also provide specialized and skilled engineers, supervisors and technicians in several fields.

### OUR VISION

To be one of the leading companies for Engineering Services in Egypt and the Middle East.

### OUR PHILOSOPHY

To Always get the Task done, safely, properly, within time-frame and with best affordable price.

### OUR MISSION

Multi-tasking company able to implement the installation, preservation, commissioning, start up and maintenance, also providing highly equipped, experienced and motivated engineers and technicians.

## COMPANY VALUES

At FGE-Service, we have two core values that guide our performance.

Our **TEAM** Thrive on the challenge to excel in any environment their detection to safety and customer service worldwide is our greatest strength.

Our commitment to Regularity, Quality, Health, Safety and Environment is the basis of our competitive advantage.

# 1.2 Company's Certifications

FGE put a great effort into conducting its services with very high quality, safety and environmental standards

Accordingly, FGE is officially certified from :





Quality Management



Environmental Management



Health & Safety Management



NEBOSH Certified



ASME Certified



API Certified



Vibration Analysis Certified



## 1.3 QHSE Management

First Group is proud of its commitment to integrity, quality and safety in all its business processes



FGE QHSE Management Systems Supports our High performance, high-value strategy and integrated into our core values, principles, beliefs and our social responsibilities.

FGE acknowledges that Health, Safety and Environment (HSE) Regulations are an integral part of our organization and their implementation at any given work, is the key of unparalleled performance and fulfilling any client objective.

FGE is committed to implement and fulfill any regulations or requirements needed at any work site, supported by internal and external audits and continuously developing our integrated management system (IMS) to create a work culture fulfilling and continuously improving QHSE regulations.

FGE history of work is the best implementation and commitment of QHSE regulations and we are more than keen to make the future of our business even better.



## 2.COMPANY'S SERVICES

First Group Engineering Service is not just a name, we always aim to satisfy our clients by serving their vision properly in order to meet their expectations through providing our services



- Construction Services
- Preservation Services
- Static Equipment. Commissioning
- Rotating Equipment. Commissioning
- Condition Monitoring
- Maintenance Services
- Balancing Services
- Machining & Fabrication
- Abrasive Blasting & Painting Services
- Procurement & Supply Services
- Manpower Supply

## 2.1 Construction Services

FGE one of the leading engineering service company with a great history of achievements in many sectors. We have the core capability to provide mechanical and electrical EPC services for a various types of projects with high quality and safety standards implementation.



### SCOPE OF SERVICE

- Project management services.
- Storage tanks fabrication, installation & repair.
- piping & flow lines projects.
- Electrical power networks.
- Oil & Gas process & treatment facilities.
- Telecommunications & networking system.
- integration, modification & rehabilitation project.
- Control & automation system.

### SUPPORTING SERVICES

Engineering services through integration agreement with specialized engineering companies:

- Provide comprehensive consulting & engineering services for oil & gas, petrochemical, power & industrial sector.
- Services include: design, survey services, specialist engineering consultancy, detailed engineering.

## 2.2 Preservation Services

The Oil & Gas Industry has presented difficult challenges to researchers in fighting the effects of corrosion in economic loss and environmental safety. The total annual cost of corrosion in the oil and gas production industry is estimated to be \$1.372 billion.

FGE ideology for preservation services is that it's one of the most important services that we offer, as we believe in its vital role in the asset integrity of any industry or project.

FGE specializes in executing time frame based preservation plans, offering a variety of flexible programs based on conditions and requirements.



Preservation is a very important process for all kinds of equipment (rotating, static and so on), it works on protecting equipment from corrosion resulting from surrounding conditions such as: humidity, dust, heat and many other factors that could damage the equipment in any way.

Importance of preservation can be summarized in its definition as it is the protection and preventive maintenance carried out on equipment and systems before it goes into service.

Without equipment preservation the corrosion resulting from the surrounding conditions will definitely damage the equipment by time causing it to stop functioning as desired especially in the case of long time storage.



Before Preservation



After Preservation

## Targeted equipment

FGE offers preservation services for most types of equipment;

### Rotating Equipment

FGE is specialized in the preservation of all types of rotating equipment such as;

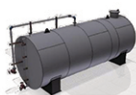
- Centrifugal pumps and compressors
- Reciprocating pumps and compressors
- Screw pumps and compressors
- Rotary pumps and compressors
- Blowers



### Static Equipment

FGE is specialized in the preservation of most types of static equipment such as;

- Vessels
- Filters
- Heat exchangers
- Boilers
- Columns and towers



### Preservation Tools

In FGE we believe that in order to perform the right job you must have the right tools.  
We always put a great concern in updating our tools and get the right tools for all our activities according to our clients' demands.

- Hand pumps
- Sand papers
- Greasers
- Blowers
- Grinder accessories



### Preservation Materials

In order to overcome corrosion effects, FGE uses planned programs which include the usage of many different materials.

In FGE we always care that the materials we use are environmentally safe and non-polluting. Here are some of the material we use in most of our preservation activities;

- VCI (Vapor Corrosion Inhibitor)
- VPCI (Vapor Phase Corrosion Inhibitor)
- Plastic Covers
- Grease
- Special ropes



### Achievements at Zohr gas field

FGE was responsible for the preservation of all rotating equipment at Zohr gas field.

FGE successfully preserved over 1000 rotating equipment which played a very vital role in the asset integrity of these equipment



## 2.3 Static Equipment Pre-Commissioning

FGE is capable of performing all pre-commissioning and commissioning activities for all types of static equipment such as:

1. Pressure vessels
2. Towers
3. Storage tanks
4. Heat exchanger
5. Heaters
6. Boilers
7. Reactors
8. Filters



### HYDROSTATIC TESTING

We provide specialized Hydro-testing, pneumatic leak testing as a part of wide range pre-commissioning services.

Our team of engineers and technicians are well experienced at carrying out hydrostatic activities on a variety of projects wither new constructed or rehabilitated ones.



### CHEMICAL CLEANING

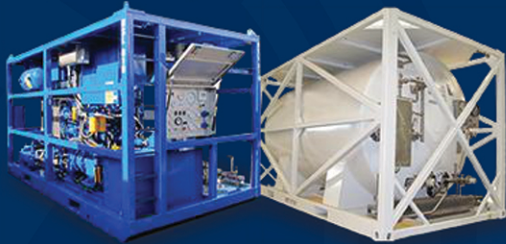
For most process plants the presence of any contamination, oil, or grease is prohibited, and so FGE is well prepared to provide full chemical cleaning services for a variety of process plants in different industries.



## Nitrogen Services

FGE is one of the leading companies for the provision of nitrogen helium testing. Our fleet includes nitrogen convertors, single skids, split skids, pumps, tanks, testing equipment, vaporizers and other ancillary equipment, Which is one of the newest and largest in the industry.

Our Nitrogen Services includes Nitrogen Purging, Nitrogen pressure test and Commissioning Leak Test and also we provide multi-disciplined personnel to offer a complete Integrated Services offering and a Leak Free Guarantee



## Tanks and pressure vessels boxing-up

The final step for the static equipment is the final boxing, FGE has all the equipment and materials needed to box-up all types of static equipment





## Catalyst Handling Services

FGE is a leading company at catalyst handling and specialized industrial cleaning all in compliance with safe work procedures and efficiency. Supported by an experienced management team, world class equipment and cooperation with high qualified partners at catalyst handling. All to ensure the success of your next catalyst turn-around



Catalyst Handling Vacuum Unit



Inert Entry Life Support Unit



Catalyst Handling Screening, Separation and Bagging



Mercury Chemical Cleaning and Decontamination



## 2.4 Rotating Equipment Commissioning

FGE is well experienced and qualified to Excel at providing commissioning services for Rotating equipment.

ZOHR Gas Field and FGE achievements

ZOHR field is an offshore natural gas field located at the Egyptian sector of the Mediterranean Sea and it is the largest reserve of Natural gas to be found at the Mediterranean Sea. ZOHR Field greatly increased the Egyptian Reserve of natural gas.

At FGE we consider working at ZOHR field our crown jewel and our biggest achievement, as we tested and commissioned:

- 554 Pump
- 162 Fan
- 24 blower

For this achievement, FGE was awarded more than one recommendation letter from the commissioning managers of ENI.



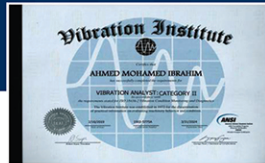
## 2.5 Condition Monitoring

At FGE we believe in the reliability and its vital role in the integrity of rotating equipment maintenance, that's why we are prepared with professional, trained, and well equipped condition monitoring team. All to achieve our client's satisfaction through predictive and proactive maintenance programs, including:

- Vibration Analysis, fault detection and diagnosis of rotating equipment.
- Commissioning of newly installed or recently maintained equipment.
- Vibration based overhauling.
- Balancing onsite for rotating equipment.
- Alignment of all types of rotating equipment.
- Lubrication using ultrasound techniques.
- Run up & Cost down tests.
- Oil Analysis.
- Thermography services.

**FGE condition monitoring professional team are:**

- Internationally certified from the American Vibration institute as CAT 2 vibration analysis.
- Well trained on all types of laser alignment.
- Well trained on ultra sound lubrication techniques.



FGE always put a great concern to deliver its services efficiently, so we always care to have the most recent and updated technologies and devices for each service we offer.

OneProd Vibration Analyzer Falcon APT 2039

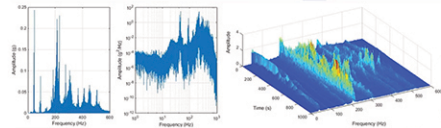
- Complete set of vibration analysis system
- Data collector
- Three axis wireless Sensors
- Balancing Module
- Multiply channels
- Built in stroboscope, pyrometer, camera and audio comment recorder



This device along with all its features and modules enables us to conduct many services to our clients such as:

1. Vibration analysis.
2. On-site Balancing

Vibration analysis is considered the corner stone of successful reliability centered maintenance program, also vibration has been used to save industry millions of dollars in machine downtime as it has traditionally been associated with trouble in machines-wear, malfunction, noise, and structural damage. So, FGE is offering routine based vibration analysis to be able to identify any fault and enable you to plan to take maintenance action before a failure occurs.



## ON-SITE BALANCING

Balancing of rotating machinery becomes an essential and vital demand in order to ensure reliable operation of newly designed rotating machinery. So FGE put a great concern in the balancing services regarding the industries and market demands

Our company efficiently performs different types of balancing on site for most types of equipment if applicable:

- Air cooler fans
- Centrifugal fans and blowers
- Centrifugal pumps



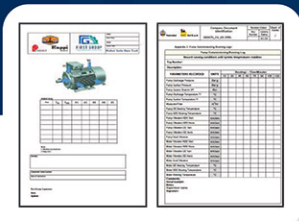
## VIBRATION TESTS AND MONITORING

During our achievement in all the commissioning activities we performed, the final judgment on the equipment status was to monitor the vibration and temperature on the equipment bearings.

FGE Tested more than 2000 rotating equipment, recording vibration and temperature values in professional forms to be used as the official form for the equipment release and to be documented by clients.

BVT 30 Vibrometer

- Overall vibration Collector
- Temperature Gun



## LASER ALIGNMENT

Recent statistics have proved that almost 50% of reported cases of failure in different components of machinery trains are originally caused by misalignment. FGE engineers and technicians are very precise in all types of laser alignment.

We have great experience in laser alignment as we faced almost all alignment and soft foot problems.

During the commissioning phases in ZOHR field, FGE successfully aligned more than 1300 rotating equipment such as; pumps, compressors, fans, blowers and turbines.

### Easy Laser XT 440

- Complete set of laser alignment system
- Horizontal shaft alignment
- Vertical shaft alignment
- Machine train alignment
- Soft foot
- Pulleys alignment
- Cold/Hot alignment



## ULTRASOUND LUBRICATION

Poor lubrication practices are a leading cause of bearing failure. LUBE Checker is an ultrasound solution focused on optimizing grease replenishment. It is the perfect companion for performing lubrication on condition based intervals.

### Ultrasound LUBE Checker

This intuitive device ensures bearings receive the right amount of grease at intervals dictated by condition, not run time. LUBE Checker uses the LUBE Sense, a robust, repeatable sensor built to withstand harsh conditions.



## 2.6 Maintenance Services

FGE has great ability and flexibility to apply most types of maintenance programs.

Here are the most common types of maintenance programs :

- Preventive maintenance
- Predictive maintenance
- Condition-based maintenance
- Scheduled maintenance
- Routine maintenance
- Emergency maintenance
- Corrective maintenance



### OUR SCOPE

Recently, our scope regarding the maintenance services has expanded widely to include :

1. Rotating equipment maintenance
2. Static equipment maintenance
3. Mechanical seals maintenance
4. Engineering Services
5. Machining & fabrication



Rotating equipment maintenance

FGE is specialized in the maintenance of all rotating equipment such as :

1. Pumps
2. Compressors
3. Air coolers
4. Blowers
5. Turbines

For these equipment, FGE is capable of performing all necessary maintenance activities in order to restore the equipment condition such as

- Change/ replace defected parts
- Check all clearances and adjust if necessary
- Condition monitoring and fault analysis
- On-Off site balancing
- Performing all necessary repairs for defected parts
- Trouble-shooting



## Tools & equipment

In order to maintain a world-class quality, we partnered with the leaders in technology, so we can provide cutting edge technologies and tools , We always put a great concern in updating our tools. Equipment and devices in order to fulfill our clients' demands and reach their satisfaction.



## Static equipment maintenance

FGE also offers maintenance, inspection, repair and alteration activities for several types for static equipment.



## • Inspection :

FGE offers non-metal lining inspection and also the five methods of NDE inspection; VT, PT, MT, UT and RT.

## • Maintenance and Repairs:

FGE offers minor repairs such as; grinding and welding and also we offer major repairs such as; removal of one or more major part of the equipment to be maintained and re- installed.

## • Alteration :

FGE is capable of performing activities necessary to change the operating condition of equipment



## Mechanical Seals Maintenance

FGE offers all necessary maintenance activities for different types of mechanical seals.

FGE has great experience in all types of mechanical seals also we're familiar with the most popular mechanical seal manufacturers in Egypt.

We've great experience in Mechanical seal plans and all its common problems and failures



## EagleBurgmann Authorized Service Centre in Egypt

Recently, FGE succeeded to conclude a deal with Eagleburgmann to be their authorized service representative in Egypt.



**EagleBurgmann.**  
Rely on excellence



## 2.7 Balancing services

### 1. Balancing Machine

Recently, FGE equipped their workshop with Balancing Machine that is capable of performing different balancing types for various rotor sizes.

Our balancing machine is SCHENCK m/c H40B with CAB803 and additional roller bearing inserts 120-240 mm.



## 2.8 Machining & Fabrication

FGE workshop is equipped with many machines and tools that enable it to deal with the largest companies in various sectors, also our work shop contributes in our maintenance activities.

The total area of the workshop is 1200 square meters.

Our workshop is equipped with a variety of machines for maintenance and fabrication as it contains the following.



FGE workshop is also equipped with CNC Milling Machine with the following specifications:

American CNC Milling Machine HAAS VF-4 3 Axis.

HAAS VF-4 HRT-210 4 Axis , HAAS VF-4 TR-210 5 Axis



## 2.9 Abrasive Blasting & Painting Services

Most Industries have presented difficult challenges to researchers in fighting the effects of corrosion, FGE offers blasting services and rust removal for different process industries, we understand that surface preparation is essential for satisfactory performance of any paint system.

As sandblasting has become more commonly used, it has also been significantly improved to address safety concerns. We make sure to follow all appropriate industry standards and government regulations. We use the best silicate materials, dust collectors, breathing protection and protective clothing to ensure a safe environment for all involved.



Our highly skilled blasters and painters are committed to provide the best solutions, best methods, best quality and best value in areas such as: Off shore and Onshore , Shipyards, LNG Plants, Fabrication Facilities, Pipelines and Storage Tanks, even the largest projects



First Group For Engineering Services

## 2.10 Procurement & Supply Services

FGE has a strong network of local and foreign suppliers and subcontractors and also FGE is local representative /distributor of Explosion-proof electrical equipment (RUSSIA) no. of worldwide manufacture.



First Group For Engineering Services



## FGE Main projects :

### MIDOR Shutdown project with EMC:

FGE is the first private sector company in Egypt to be awarded with a two-year contract (2021-2022) of " MIDOR refinery Project shut-down works " fully back to back from EMC.

### MIDOR Shutdown project with PETROMAINT:

FGE was awarded with a two-year contract (2021-2022) of "MIDOR refinery project shut-down works" from PETROMAINT.

### NCIC:

FGE was awarded with the supply and fabrication of the pipeline supports for PETROJET/NCIC.

FGE technical scope of work is Installation, pre-commissioning and Commissioning for all Turbo Machinery onsite.

FGE Detailed activities onsite:

- |                           |  |                                |
|---------------------------|--|--------------------------------|
| 1-Equipment Installation. | 2-Leveling.                            | 3-Soft foot and Pre-alignment. |
| 4-Flange parallelism.     | 5-Pipe strain.                         | 6-Final alignment.             |
| 7-Oil first fill.         | 8-Vibration monitoring.                |                                |
| 9-Solo run test.          | 10- Equipment preservation activities. |                                |

### EXXONMOBIL

FGE have ongoing agreement with EXXONMOBIL for Rotating Equipment maintenance at the Fuel Terminals in Egypt (Cairo, Alexandria, Port-Said and Suez), the agreement includes all fuel pumps, Additive pumps, Industrial Sewage and Firefighting pumps



### EPROM/APC:

FGE At the "U-3000 Project" at APC refinery, now operating at its optimal production rate of around 100,000 barrels per day (bbl. /d), saving \$85 million annually.

FGE activities onsite included:

- Pre-Commissioning / System Acceptance testing :
  - 1- 25 Pumps each one with different specifications and purpose.
  - 2- 17 Heat Exchanger and Coolers.
  - 3- 10 Towers and Vessels.
  - 4- Bringing the drainage system to service.
  - 5- Steam Blowing.
- Commissioning :
  - 1- Activating of all Utilities.
  - 2- Instrumentation for : ( 40 flow transmitter , 46 valves , 33 switches and many other instrumentations )
  - 3- Functional performance in all modes and system conditions.
  - 4- Functional testing of Rotating Equipment / Electric Motors.
  - 5- Flange Management.
  - 6- Gross leak Test & Commissioning leak test.
  - 7- Nitrogen Purging.

### EMC/SOPC

FGE was awarded with different scope of work at SOPC Revamping included:

- 1- Tanks maintenance.
- 2- Cold Cut for piping and hot cut for Tanks.
- 3- Sandblasting and coating.
- 4- Supply qualified technician.
- 5- Housekeeping manpower supply.
- 6- Fabrication of oil platform.
- 7- Heat exchanger maintenance.
- 8- Distillation Furnace maintenance.

## 2.11 Manpower Supply

FGE is Manpower Supply Company that is capable of providing quality personnel to all fields of expertise. We are licensed to provide manpower in our sponsorship to reduce the worries of our clients about compensation, insurance, labor law and accommodation of their employees.

FGE has the flexibility and the capabilities that enable us to provide;

- Complete recruitment solutions, sourcing and supplying quality staff.
- Highly qualified professionals and skilled engineers, supervisors, operators and technicians to support with the best top, middle and lower level workforce in a short, medium and long term basis.
- Exclusive and qualified workforce for all sectors like, Oil and Gas, Mechanical Construction, Civil Construction, Electrical Construction, Manufacturing, Power and Desalination plant, etc.



One of our most valuable strengths in FGE is that we care about the development and growth of our manpower skills, technicalities and experience through always asking ourselves one question regarding any technical issue "according to which standard?".

Accordingly our workforce are continuously being trained in order to improve their technicalities. a decent number of our manpower are internationally certified in several standards such as but not limited to ISO, ASME, NEBOSH and API.



Vibration  
Institute



WORLD STANDARD  
COMPRESSORS



ASME

## 3. Clients

Through years, FGE managed to provide services or supplies for these clients

