Compagnia Tecnica Motori S.p.A. was founded in 1958 and since establishing itself has developed its activities into the design, assembly, trading, installation and servicing of generating sets, cogeneration systems and fire fighting systems. The professional and dynamic management team lead the company with the same principles of the company’s founders, whilst expanding the company’s goals to face the future challenges.

Driven to meet its client’s needs, CTM has developed policies that meet its client’s requirements. As such, CTM has established itself as an eminent manufacturer in Europe in this field.

Factory Acceptance Test Capability and Facilities
- Performance test (kWe, kVA, kWkA, V, Hz) at power factor 0.8 – 1 logging up to 8 MVA through load banks and using all contractual supplied equipment for a string test
- Transient test with Generator Set response with Voltage / Frequency variations a recovery time, against a load step application sequence
- Vibration test according to ISO 8528 International standard
- Noise test
- Specific Fuel Consumption test with weighting system
- Emissions verification
- Verification of set point of protection switches / transmitters
- Generator Protection Relay set point test through current injection on secondary circuits
- High Voltage, Insulation Resistance Dielectric test on electrical equipments
- Paint thickness and adhesion test
- Container pressurization test

The above test can be carried out both in the indoor test bay (600 sqm extension) or in the Outdoor test bay area (1200 sqm extension).

All the test bay instrumentation is certified according to ISO 9001.

All equipment manufactured to an agreed SDR, ITP and HSQ to provide a full documentation pack to suite major oil and gas packages and zone rated equipment.

Zone 2 compliant package solutions for Oil & Gas application

Typical Construction features
- Fire and Gas detection system with 2 out 3 logic including:
  - 3 UWR flame detectors
  - 3 rate compensated heat detectors
  - 3 flammable gas detectors
  - F&G panel
- Prime mover (diesel or gas RIC engine) converted with protection kit including:
  - Spark arrestor on exhaust gas system
  - Flame arrestor on combustion air intake system and oil breather
  - Air intake shut off valve
  - Gas detector on engine combustion air intake system
  - Watercooled turbocharger and exhaust gas heat exchanger for T3 compliance
  - Engine protection switches
  - Engine harneses
  - Marine radiator, double section for jacket water and exhaust gas cooling
  - Explosion Relief Valve on engine crankcase
  - Ex d alternator
  - Ex d electric starter motor
- Synchronous alternator LV, MV, HV
  - IP 55
  - Ex e/n“A” protection
- Auxiliary distribution panel with:
  - Ex d junction boxes IP66, marine grade aluminium, SS316L or Cast Iron
  - Double seal, IP66, SS316L, Ex d cable glands
  - Armoured interconnecting cables
- Electric Starting System with:
  - Lead acid or Ni-CD VRLA batteries, housed in Ex e ventilated box and relevant circuit breaker housed in Ex e Junction box.
  - Hydraulic or compressed air starting system can be installed as alternative or back up.
- Electrical starting system with:
  - Armoured interconnecting cables
  - Double seal, IP66, SS316L, Ex d cable glands
  - Ex e junction box
- F&G panel
- 3 flammable gas detectors
- 3 rate compensated heat detectors
- 3 UV/IR flame detectors
- 3 CO2, C0.5 or Inergen extinguisher accumulators fully connected with manual or automatic change over
- Spray heads
- Manual call point
- Lock Off Unit
- Siren, flashing lamps green, amber and red for normal operation, gas / fire detected, gas / fire confirmed
- Equipment for Harsh ambient conditions from -50°C to +55°C

Applicable Standards and Code
- ISO 8528: Reciprocating Internal Combustion Engine Driven Alternating Current Generating Sets
- ISO 3046: Reciprocating Internal Combustion Engines
- IEC 60034: Rotating Electrical Machinery
- API 650: Welded Tanks for Oil Storage
- UL 142: Aboveground Flammable Liquid Tanks
- ASME VIII div.1: Boiler Pressure Vessel and qualifications
- ASME IX: Welding Brazing and Fusing
- BS 165: Flange Dimensions
- API 671: Special Purposes Couplings for Petroleum, Chemical and Gas Industry Services
- NFPA 12: Standard on Carbon Dioxide Extinguishing Systems
- NFPA 20: Standard for the Installation of Stationary Pumps for Fire Protection
- NFPA 37: Standard on Installation and Use of Stationary Combustion Engines
- NFPA 110: Standard for Emergency and Stand By Power Systems
- NFPA 750: Standard on Water Mist Fire Protection Systems
- EU 94/9/EC (ATEX): Equipment and Protective systems intended for use in potentially Explosive atmospheres
- DNV 2.7-1 / 2 / 3: Off-shore containers
- BS EN 12079: Offshore containers and associated lifting sets
- SOLAS: International Convention for the Safety of Life at Sea
MAIN DIESEL GENERATOR SETS

2 x 319 kVA - 440 V - 50 Hz
Zone 2 – IIB – T3 certified.

ZADCO – SATAH FULL FIELD DEVELOPMENT PROJECT – U.A.E.

1. SS316L spark arrestor and exhaust silencer
2. Container redundant pressurization system with operation Ex d axial fans and stand-by Ex d centrifugal fans
3. Diesel generator with Zone 2-3G converted engine, Ex na IP55 synchronous alternator, cooling radiator and common baseplate
4. High efficiency, oil resistant, antivibration mounts
5. Certified lifting lugs
6. Engine intake air system with flame arrestor, shut-off valve, gas detector
7. Exhaust gas cooler to reduce gas temperature within T3 limit (200°C)
8. SS316L Fire dampers, A60 rated, on air inlet and air outlet passages
9. Engine Ex e harnesses
10. Fire & Gas system blinking lamps with siren
11. Fire & Gas detection system with Gas detectors, UV/IR flame detectors, heat detectors, F&G panel
12. Ex dauxiliaries distribution panel
13. Ex dexternal panel including pressurization gauge, emergency push button, manual call point, lock-off unit and instrumental connection junction box.
14. Double mass cooling radiator, skid mounted or remote mounted for JW and exhaust gas cooling, with antistatic fan belts and Ex d instrumentation
15. - 16 - 17
Redundant high performance starting system with lead acid or NiCd batteries, housed in Ex n box with Ex d breaker and Ex d starting motors
Design, manufacturing, testing, supply and commissioning (on-shore and off-shore) of:

- 3 x 276 kW gas gen-set base production – Gas engine GE Waukesha H24GSID Generator Leroy Somer LSA 47.2S4
- 1 x 207 kW diesel gen-set emergency production – Diesel engine Volvo TAD754 Generator Leroy Somer LSA 46.2 VL12
- H80 fire rated container for all gen-set
- HFE227 clean agent fire fighting system.
MAIN DIESEL GENERATOR SET
1 x 3000 kVA – 11.000 V – 50 Hz

EMERGENCY DIESEL GENERATOR SET
1 x 800 kVA – 400 V – 50 Hz

Zone 2 – IIB – T3 certified
QATAR PETROLEUM – EPIC FOR FORWARD MOUNTED BASE (FMB) PLATFORM – QATAR

Design, manufacturing, supply and commissioning of one 3 MWe.
- A60 Fire rated sound proofed container
- Novec 1230 clean agent fire fighting system
- Hydraulic starting system with ASME VIII div.1 – “U” stamped accumulators 207 bar
- Fully redundant hot-std by bumpless, microprocessor based control system
- Remote radiator Zone 2 – IIB – T3

EMERGENCY DIESEL GENERATOR SETS
1 x 2250 kVA – 690 V – 50 Hz
1 x 1600 kVA – 690 V – 50 Hz
1 x 1250 kVA – 690 V – 50 Hz

for safe area
TOTAL – TEMPA ROSSA – ITALY

Design, manufacturing, supply and commissioning of one 2250 kVA, one 1600 kVA and one 1250 kVA Gensets powered by MTU diesel engine and LEROY SOMER alternator – IP55.
- 45’ sound proof container for a sound level of 80 dB(A)@1 mt., SOLAS A0 fire rating, pressurized suitable for Zone II
- Hydraulic and pneumatic starting system PED certified
- Fire fighting system water mist, according to NFPA rules
PUMPSET ENGINEERED PACKAGES AND AUXILIARIES

1. NFPA20 Fire Water Pump Package, with Caterpillar C18 diesel engine and Flowserve Centrifugal split case pump. ARAMCO - Yanbu Project - Saudi Arabia
2. NFPA20 Fire Water Pump Package, with Caterpillar 3508 diesel engine, Flowserve centrifugal pump, main electric starting system, back-up hydraulic starting system, F53 superduplex stainless steel cooling water system. EXXON - Sakhalin Island - Russia
3. SS 316L soundproof canopy with CO2 fire fighting system - Offshore applications
4. Medium Duty Flush Pump, Zone 2 IIB T3 compliant for hazardous area installation, with Volvo TAD1242 diesel engine. Flowserve centrifugal pump, pressurized auto start control panel. SATORP - Jubail Project - ARAMCO - Saudi Arabia
5. NFPA20 Fire Water Pump Package, with Caterpillar C18 diesel engine and Flowserve vertical pump. ARAMCO - Yanbu Project – Saudi Arabia
7. 30 mc capacity SS 316L fuel tank with sun-shade
8. 3 mc capacity fuel tank, painted SS316L complete with side level gauge, DP cell level transmitter, floating overfilling valve, vent with flame arrester
9. Redundant duplex fuel coalescer pre-filters with change over valve
10. Duplex lube oil and fuel oil filters with change over valve and differential pressure indicator
11. 2 x 100% fully connected water mist fire extinguishing system. Housed SS316L cabinet
12. Fire & Gas control panel
13. Microprocessor based control and synchronising panel with Multilin SR489 generator protection relay – SSFD Project ZADCO