

# MILLER HEAVY EQUIPMENT

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## FOR SALE

**TWO USED GAS TURBO-GENERATOR 1000KW  
PACKAGED BY MTT (Year 2013)  
( Marine Turbine Technologic)**

**For Price contact Jorge Blanco at MHE**



Both packages have been serviced and the lube oil system flushed. The gas fuel control system has had maintained and fully tested.

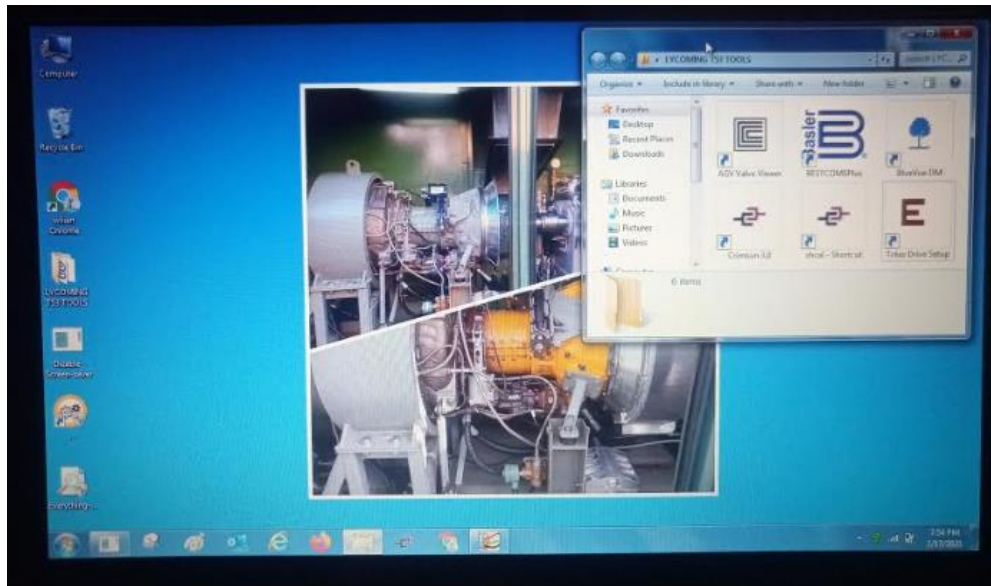
The metering control valve was serviced and calibrated by the manufacturer in San Diego California (Continental Corp).

The package operationally is very versatile; it can be put in service in less than 5 minutes without any external power supply. It counts with its own auxiliary system to startup from 0 to 100% speed meeting the blackout's control feature.

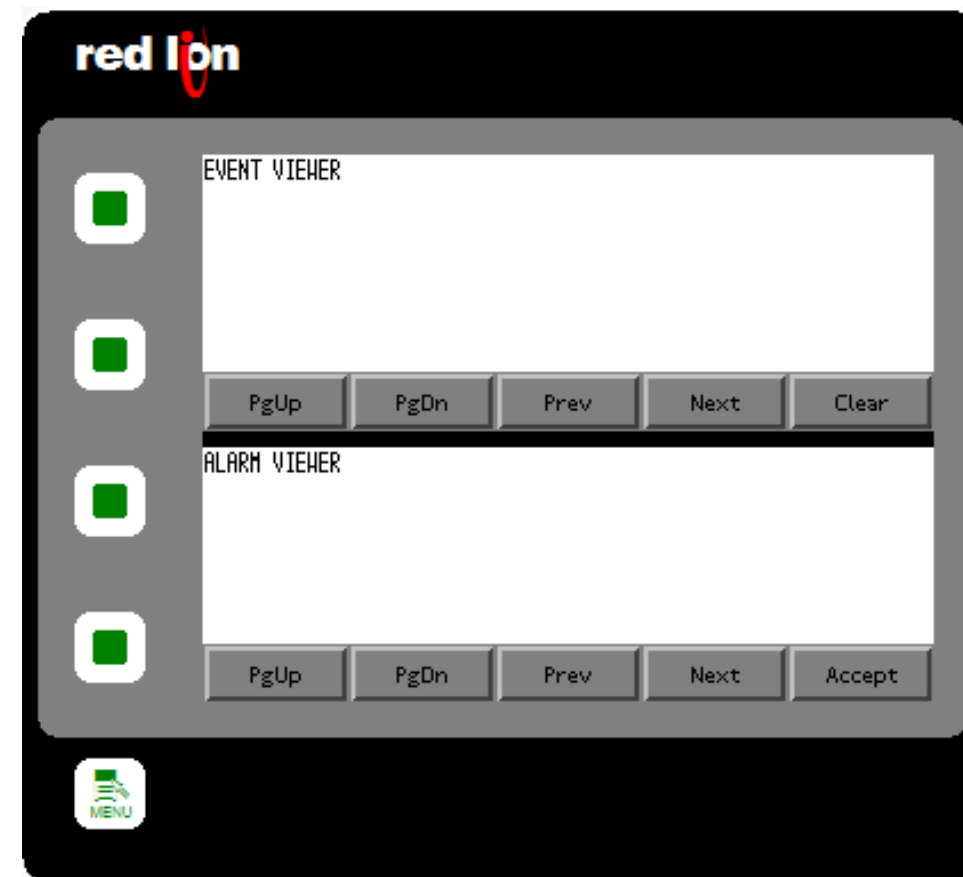
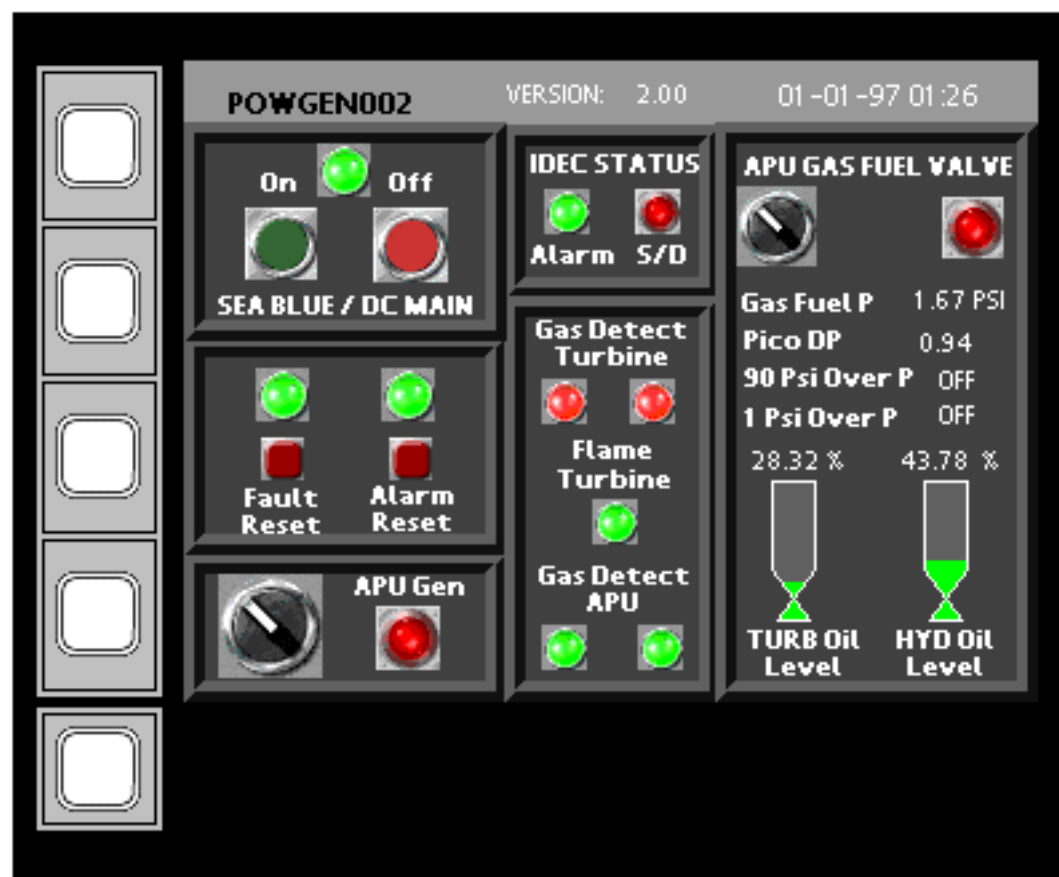
To put in service is fast and easy, it just needed to hook up a 2" hose to supply the natural gas.

**Notes:**

1. The package comes equipped with an operational laptop including all the tools needed to monitoring the system parameters and operate the equipment (start/stop/load).
2. Package 1: 2750 fired Hrs / Package 2: 1784 fired Hrs
3. Package can be tested and loaded with a previous deposit and an appointment; some conditions are applicable.
4. Ex-works Florida

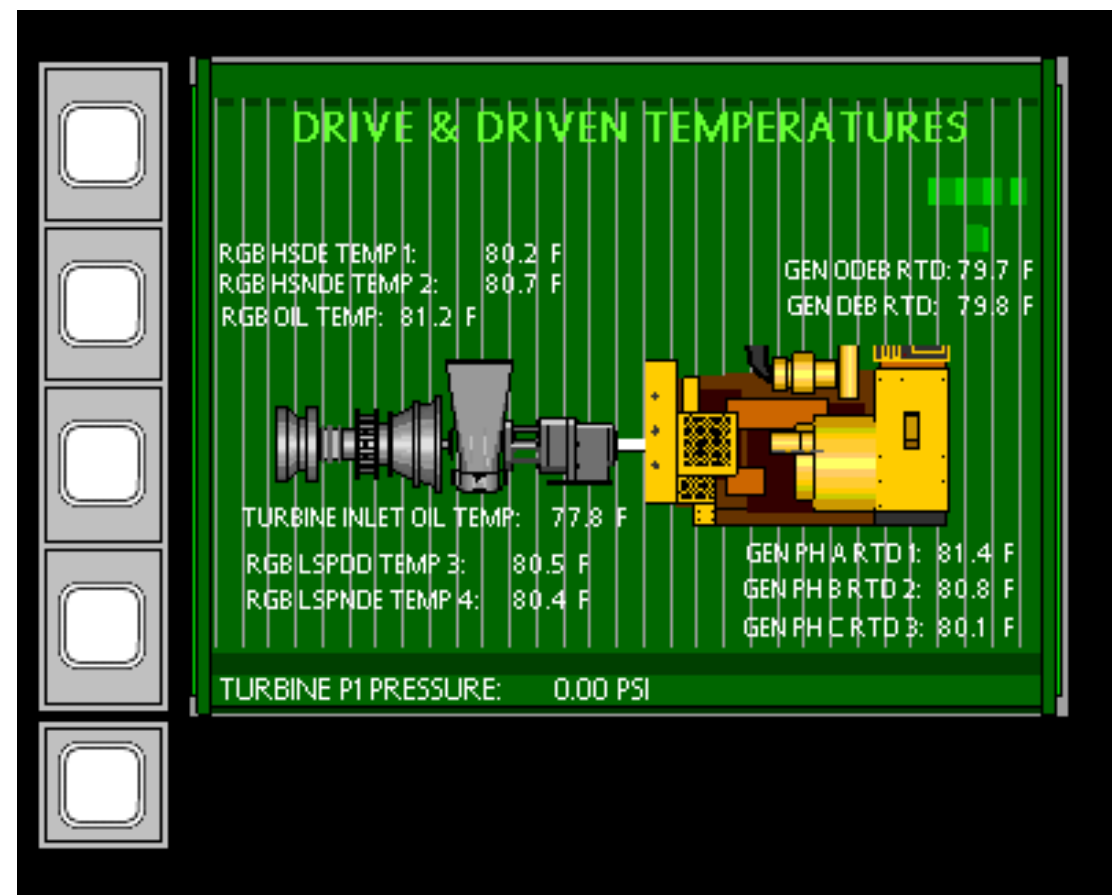
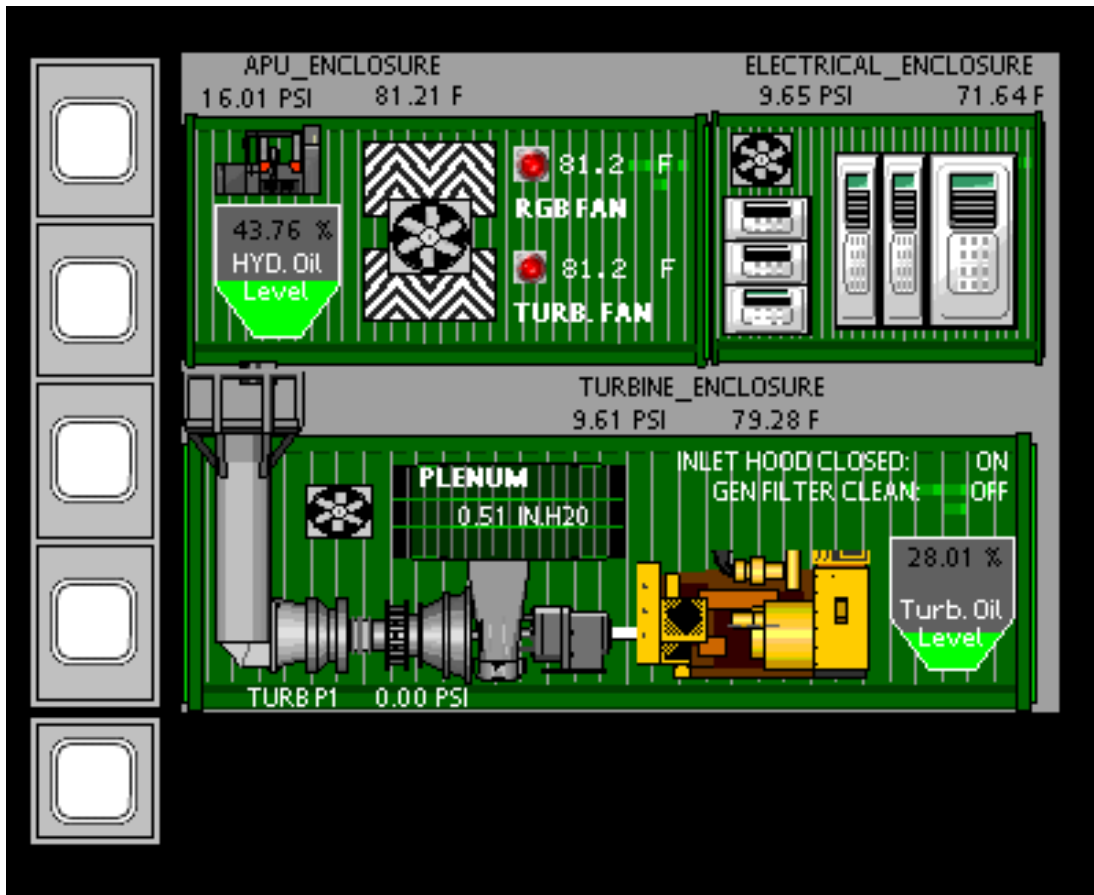


LAPTOP AND APPLICATIONS TOOLS



SCREEN AVAILABLES THROUGH WEB PAGE






SCREEN AVAILABLES THROUGH WEB PAGE

PowGen002

1 Megawatt T53

Wed Feb 17 2021 08:17:16



Value	Description	Value	Description
0.00	Gen Hz	0.00	Grid Hz
0.00	N1 RPM	-0.0	KWatts
-1.1	Ng PSI	88.1	EGT DegF
87.9	T1 DegF	83.1	OilT DegF

Main

iDEC

Basler

Red Lion

Turbine Fault List

0x650 Operator has requested an extended start.

Load Setpoint:  
200 KWatts

Up

Down

FaultReset

Purge

Start

Stop

Run Island

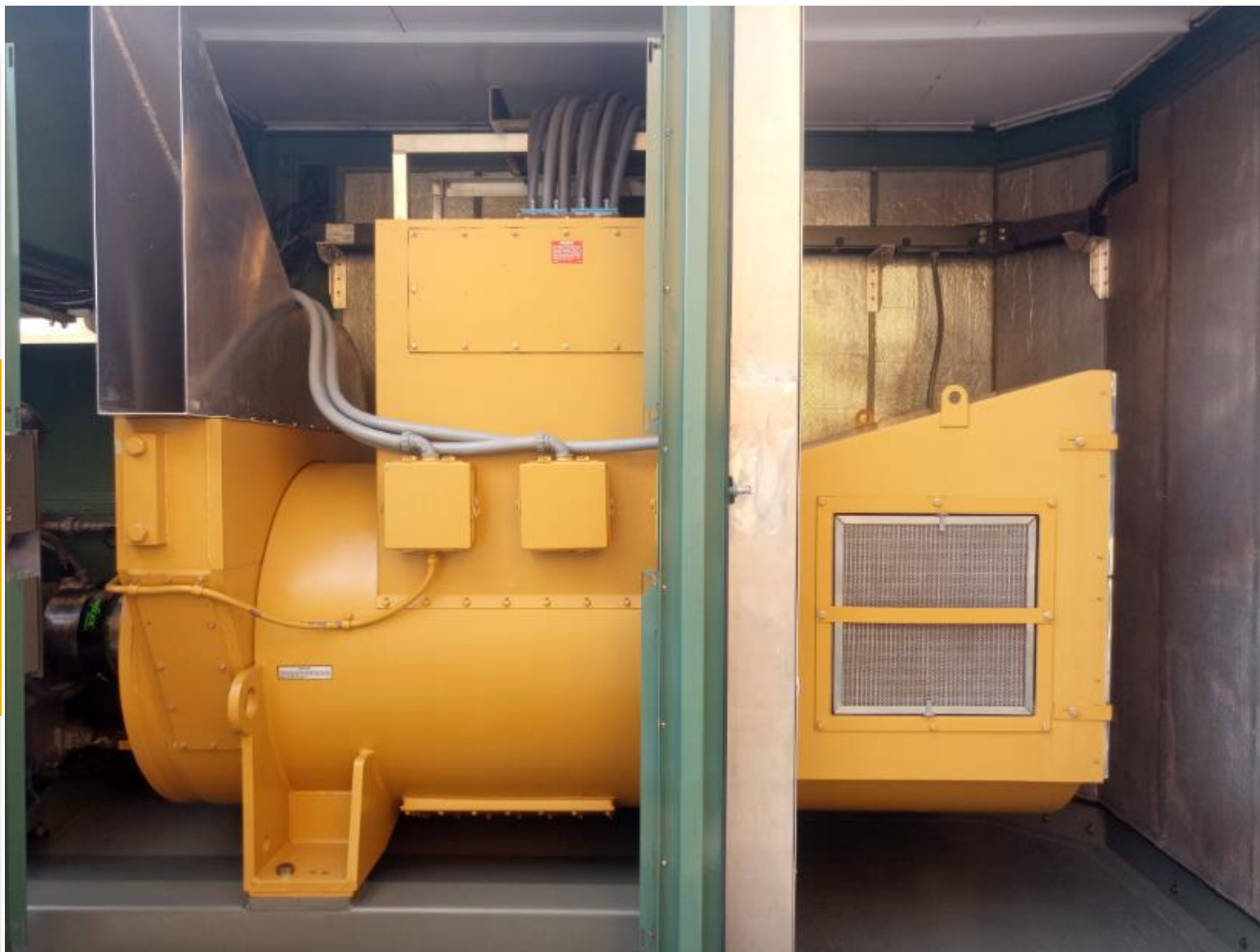
Run Grid

Log Out

☐ Fast Update

Connections:  
None

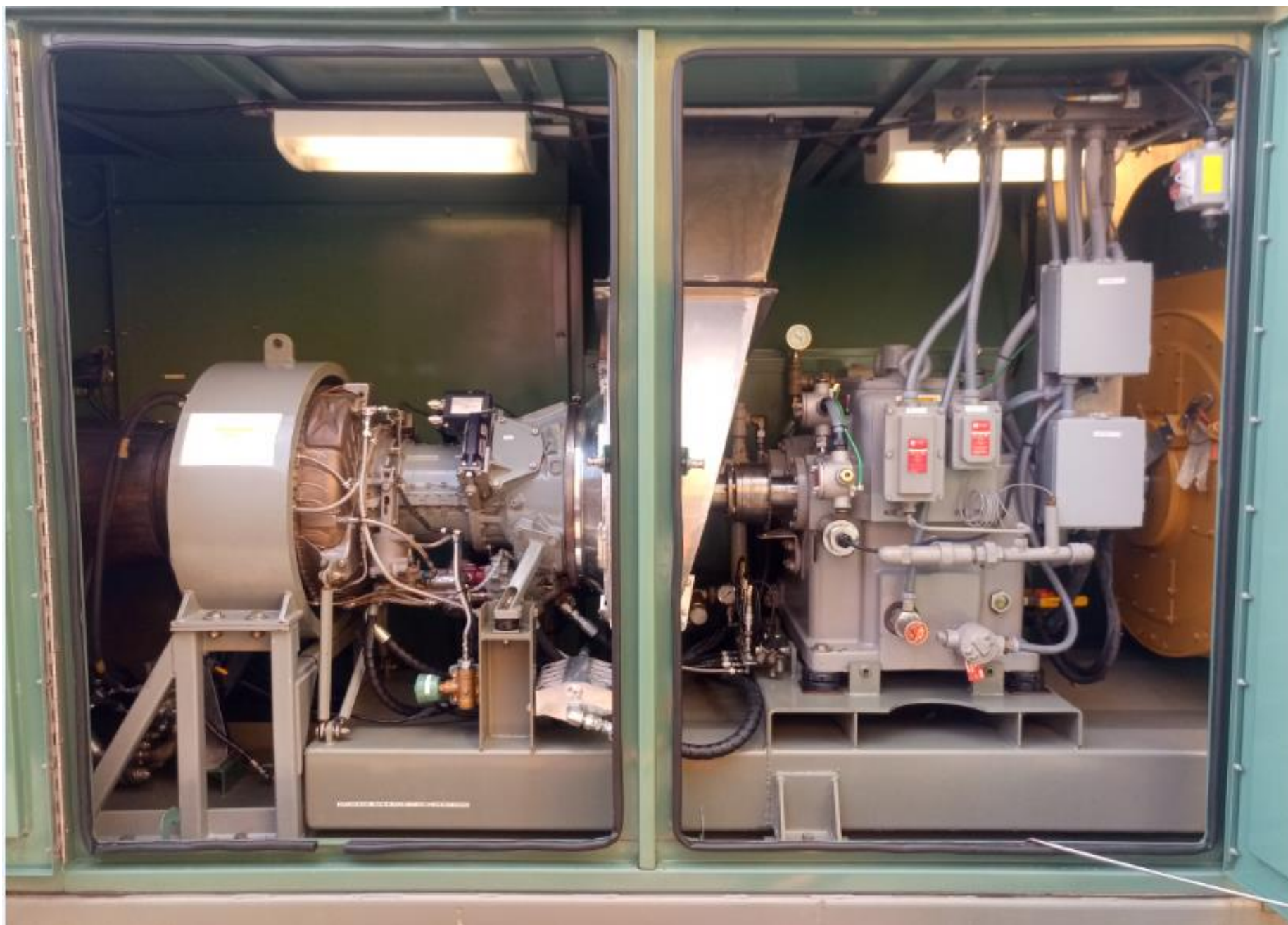
SCREEN AVAILABLES THROUGH WEB PAGE TO STARTUP



MAIN GENERATOR

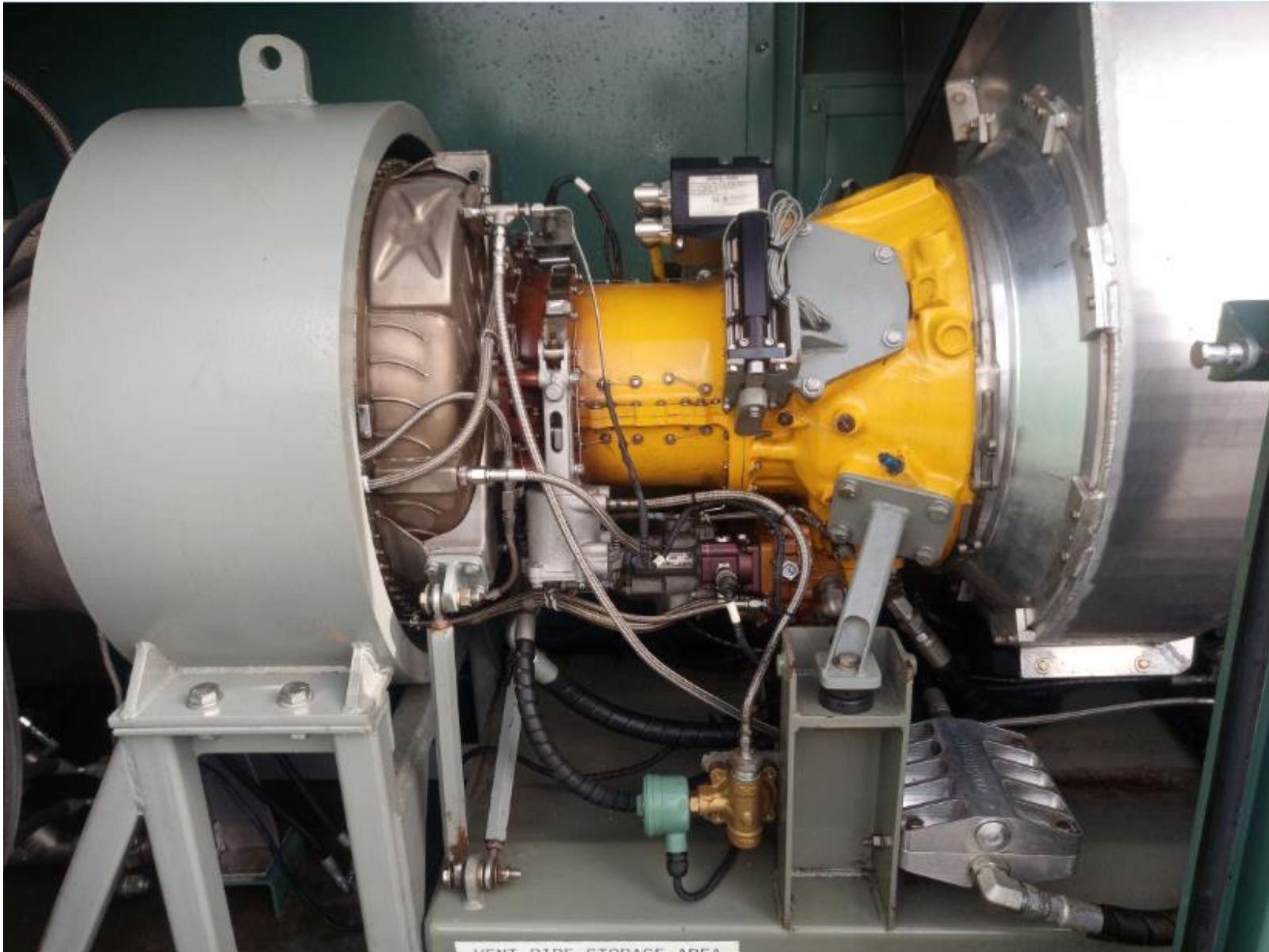




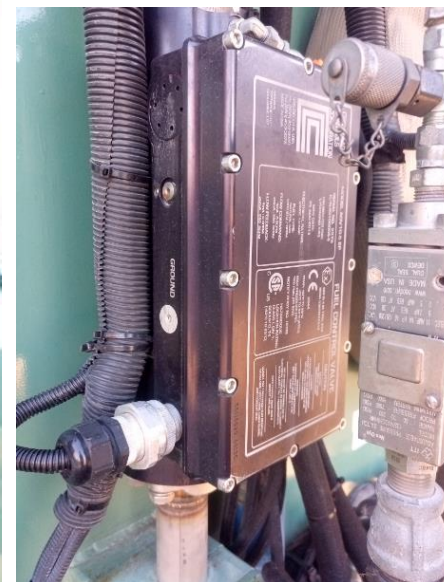


ENGINE TPT 8053



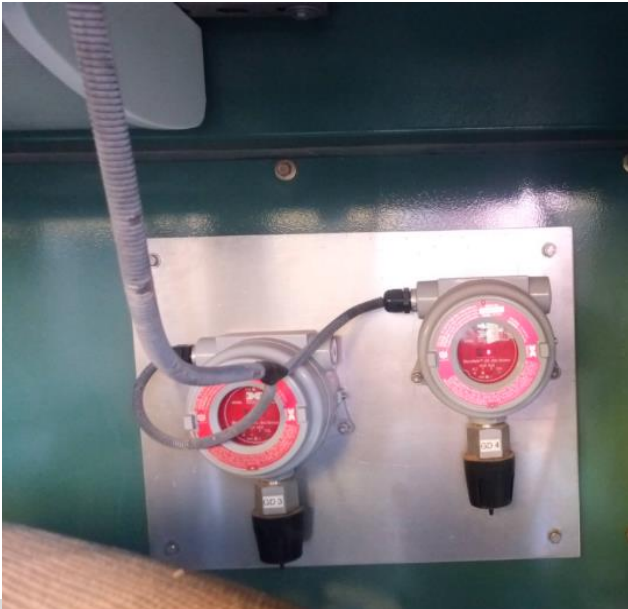


ENGINE TPT 8051



GAS FUEL SYSTEM





FIRE AND GAS SYSTEM

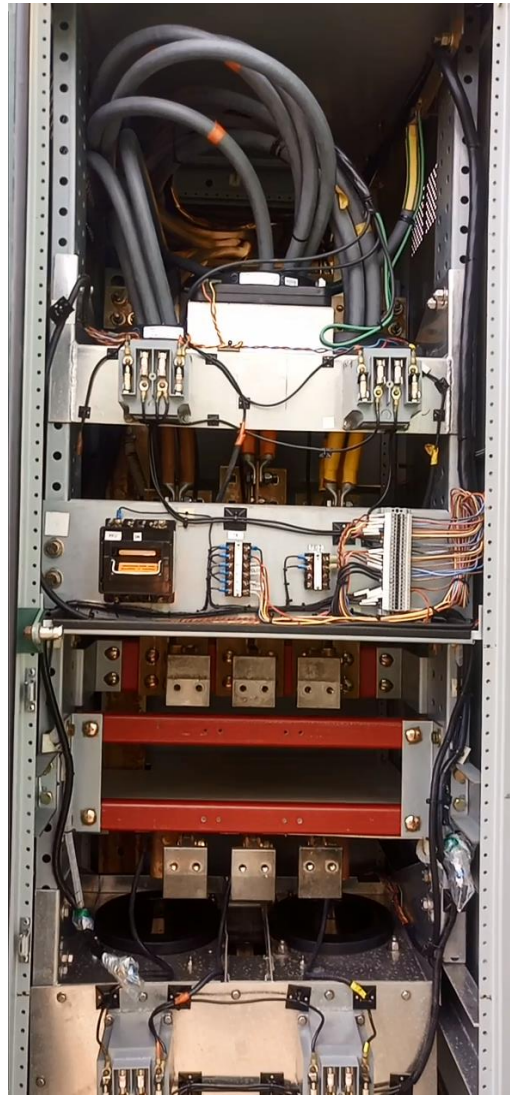




MCC 240&480 VAC / 24VDC BAY



BASLER  
GENERATOR CONTROL



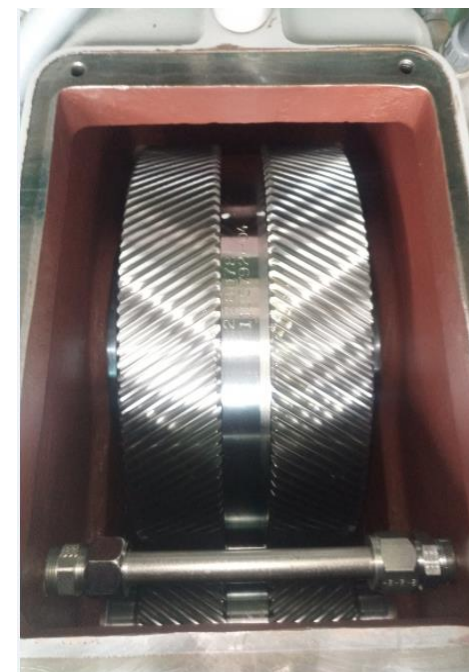
SWITCHGEAR / MAIN C.B







LUFKIN GEARS			
MODEL NO.	N1000C	RATIO	3.220:1
SERIAL NO.	11210551-03	INPUT RPM	5795
ORDER NO.	11210551	CATALOG RATING	2305 HP
SERVICE RATING	1600 HP	SERVICE FACTOR	1.44
YEAR	2013		
AGMA LUBRICANT NUMBER			
RECOMMENDED LUBRICATION OIL VISCOSITY GRADE REQUIREMENT AT VARIOUS OPERATING SUMP TEMPERATURES			
FOR 100-120°F (40-49°C)		AGMA # 2	
FOR 120-135°F (49-57°C)		AGMA # 2	
FOR 135-150°F (57-65°C)		AGMA # 2	
LUFKIN			



GEARBOX





On-Board Auxiliary Power Unit

## MILLER HEAVY EQUIPMENT

Both units  
are identical.

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FOR FURTHER DETAILS ATTACHED IS THE  
PACKAGE BROCHURE

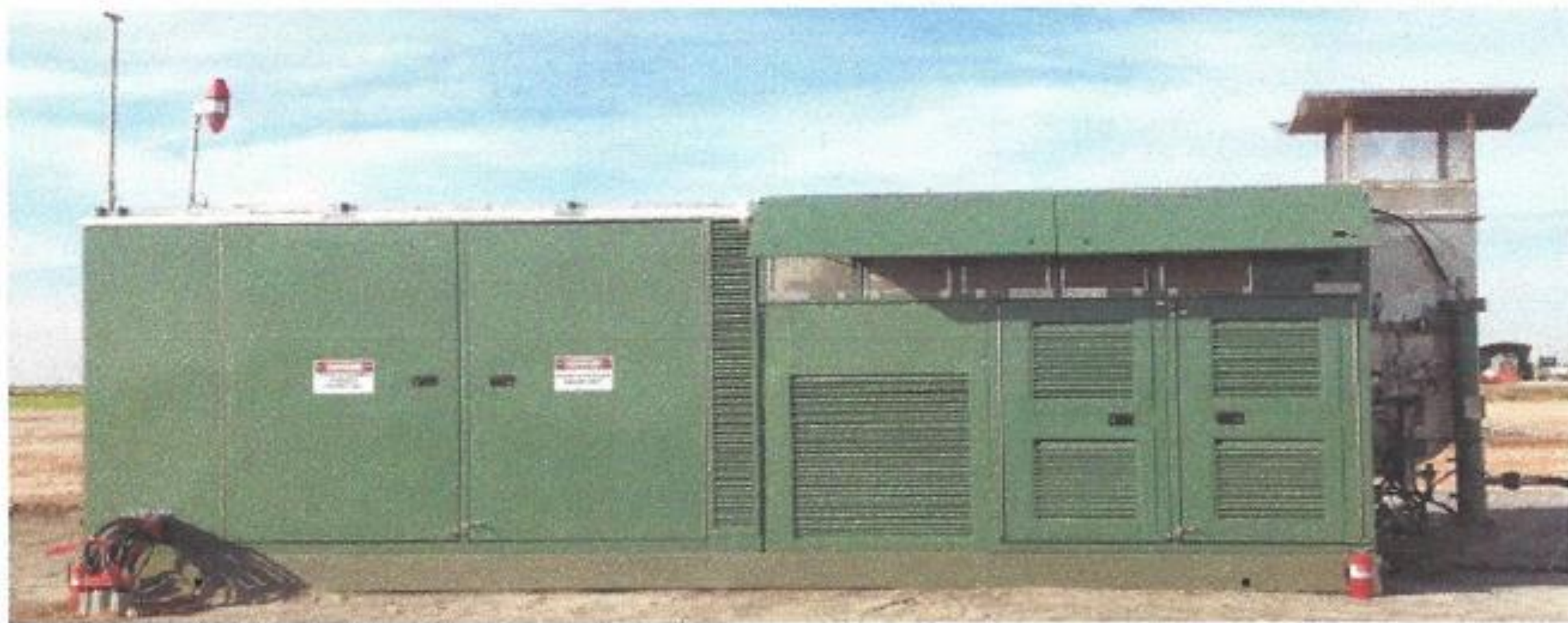




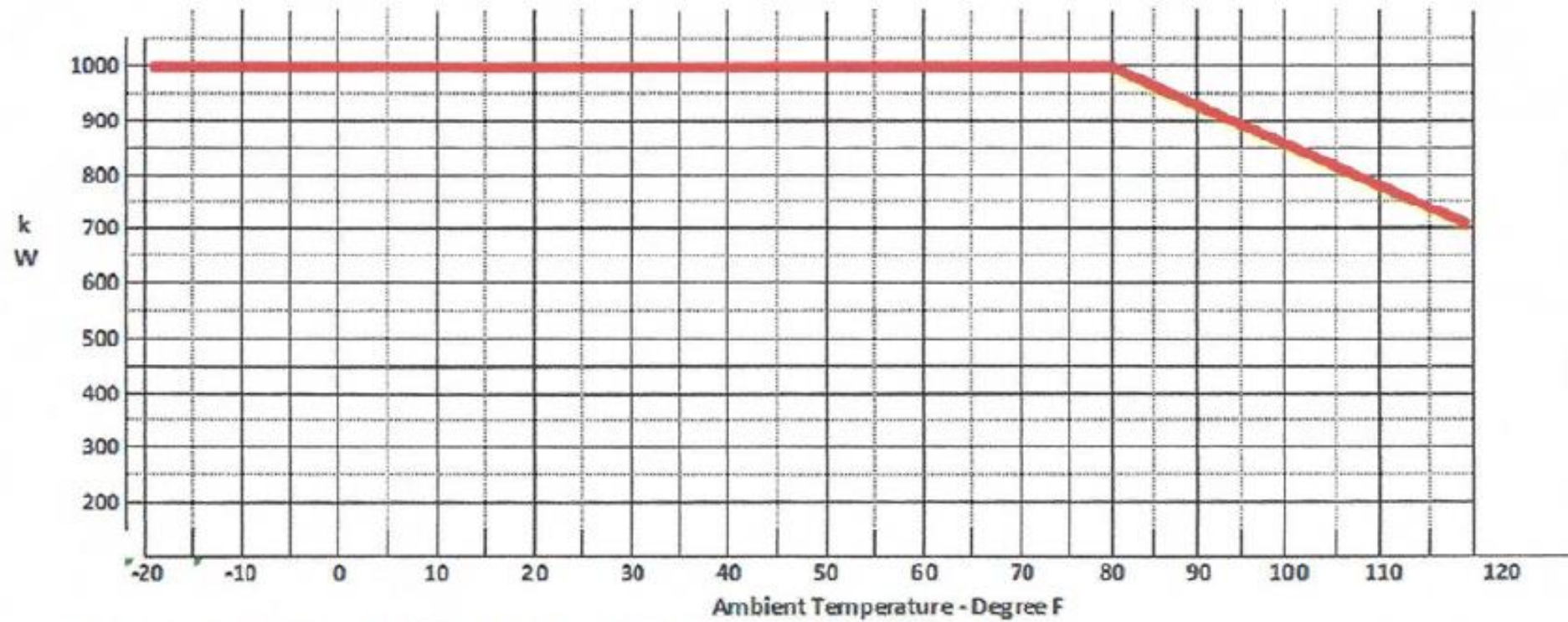
## 1 MW - Power Generation Unit

### Performance

- Output Power 1,000 kW – 480V
- Heat Rate 13,200 BTU/kWe-hr
- Exhaust Flow 11.7 lb/sec
- Exhaust Temperature 1,100 Degrees F
- Nominal Rating – per ISO at 59 Degrees F, Sea Level
  - No Inlet/Exhaust/Accessory Losses
  - Relative Humidity 60%
  - Natural Gas Fuel with LHV = ~1000 BTU/scf



- 1 MW Power Generation Unit - 1,100 Deg F Operating Exhaust Gas Temperature (EGT)\*



\* Projected performance based on 59 DegF amb. Temp. 60% RH, sea level, no inlet/exhaust losses

	Heat Rate
1000 kW	13.2 mBtu/hp-hr Heat Rate
750 kW	14.2mBtu/hp-hr Heat Rate
500 kW	17.4 mBtu/hp-hr Heat Rate

ELEVATION (ft)	
1000	0.964
2000	0.930
3000	0.896
4000	0.864
5000	0.832
6000	0.801

Degree F @ Standard Day



## General Specifications

- **Engine**

- Split Shaft Gas Turbine
- Five Stage Axial – Single Stage Centrifugal Compressor
- Compressor
  - Variable inlet guide vanes
  - Pressure ratio - 7.2
- Combustion Chamber, Annular
  - 22 gas nozzles
  - High energy ignition
- Power Turbine
  - Two stage reactive
  - Power takeoff speed - 60-Hz 5800 rpm
- Vibration Transducer
  - Accelerometer inlet casing
  - Accelerometer rear turbine (available)

- **Reduction Gearbox**

- Single Reduction Parallel Shaft 1800 RPM
- Vibration (casing, radial and proximity probes)
- Temperature RTD at each Journal Bearing

38,000 LBS Package Weight

9.5' Tall

25' Long

8' Wide



## 1 MW - Power Generation Unit

- **Generator**
  - 4 Pole, 3 Phase, 60-Hz, 4 Wire WYE Connection
  - Synchronous w/Permanent Magnet Generator Exciter
  - 2 Regreasable Anti-Friction Bearings
  - Temperature Rise – 105 Deg C / 40 Deg C
  - NEMA Class F Insulation
  - Enclosure IP-23 Open Drip Proof w/Filter
- **Footprint**
  - Approximate Weight: 38,000 lbs.
  - Package Dimensions: 25' Long x 8' Wide x 9.5' Tall
- **Enclosure**
  - Complete Package
  - Fire and Gas Detection
  - Fire Suppression (available)
- **Starting System**
  - Hydraulic via Onboard HPU
  - Black Start Capable



**Containment Shield**

**1400 HP Turbine**

**Air Inlet Plenum**

**Lufkin Gearbox**

**Kato Generator**



**1 MW Power Generation Drive Train**

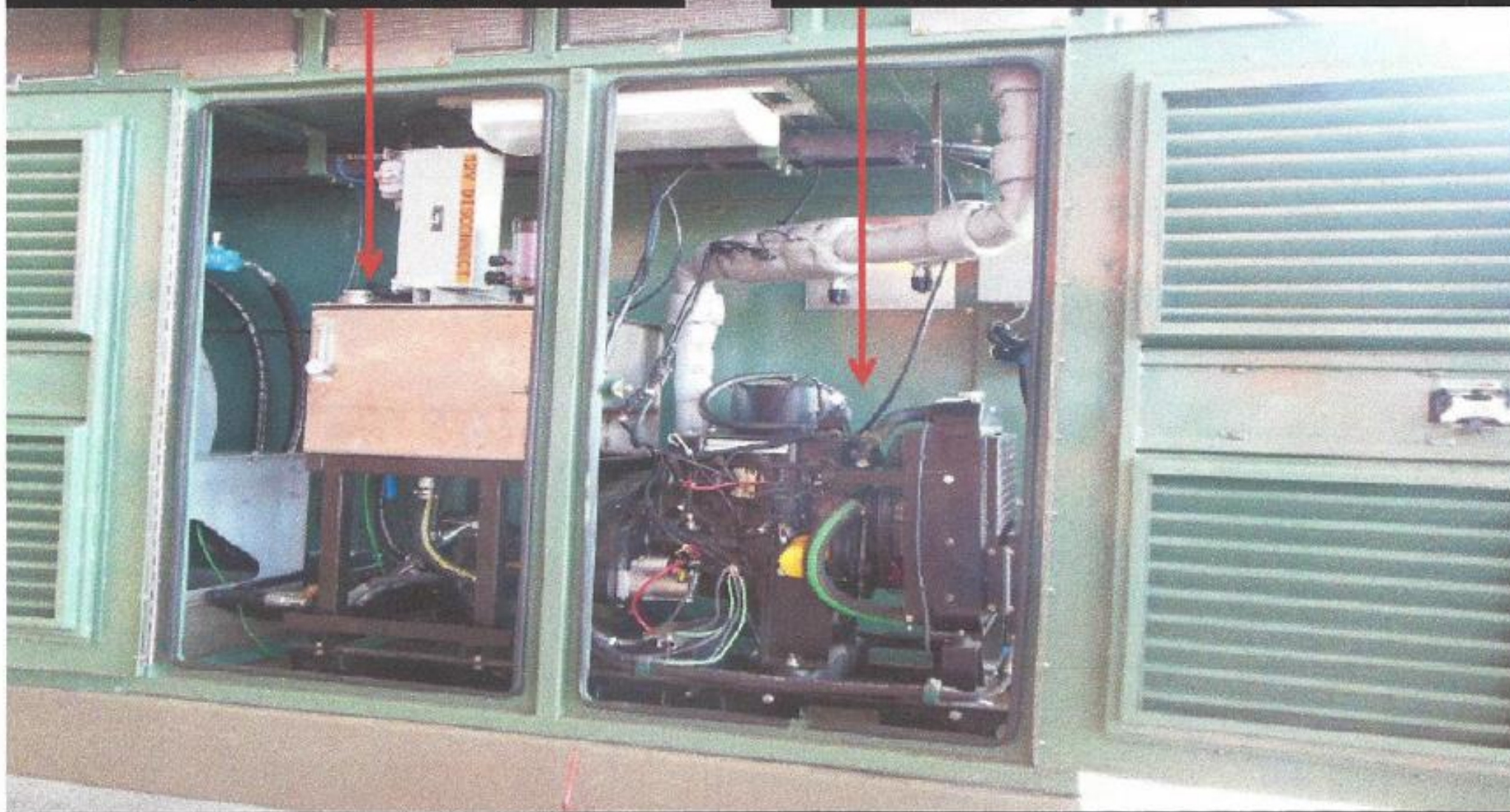
## **1 MW - Power Generation Unit**

- **Package Codes, Regulations and Standards**
  - NEC, NFPA, IEEE, NEMA, API, OSHA
- **Fuel System**
  - Natural Gas
  - Dual Fuel Available (Diesel and Natural Gas)
- **Lube Oil System**
  - Turbine Driven Lube Pump
  - Turbine Lube Oil Tank
  - Reduction Gearbox Driven Lube Pump
  - Reduction Gearbox Lube Oil Pre-Heater
  - Dual Core Air-Oil Heat Exchanger
- **Air Inlet and Exhaust**
  - Dedicated Filtered Gas Turbine Air Inlet Plenum
  - Attenuated Inlet
  - Attenuated Exhaust



**Hydraulic Start System**

**On-Board Auxiliary Power Unit**





## 1 MW -Power Generation Unit

- **Gas Turbine Cleaning System**
  - Pre-plumbed
  - Portable Cleaning Tank (available)
- **TPG Package Power**
  - 12V and 24V DC Battery / Charging Systems
  - Solar Panel
- **TPG Engine and Generator Control**
  - TES iDEC Gas Turbine and Generation System Control
  - Basler Generator Controls
  - Lynx CPU, Red Lion Ethernet Modbus Supervisory Interface
- **Field Maintenance**
  - 30,000 Hour Engine Life Before Overhaul
  - On Site Module and Engine Exchanges
  - Follows a Prescribed PM Schedule Based on the Application

iDEC Turbine Control

DC Battery Box

Basler Gen. Control

GE Main Breaker



**Emissions Data - November 2013**  
**- 004 - T53 on Compressed Natural Gas (CNG)**

<b>Engine Percent of Power</b>	<b>KW Load</b>	<b>CO PPM</b>	<b>NOX PPM @ 15%</b>	<b>SO2 PPM</b>	<b>NMHC PPM</b>
30%	300	173.10	31.73	0.11	1.71
50%	500	73.05	41.04	0.33	0.01
75%	750	34.47	50.73	0.69	0.00
100%	1000	8.66	68.00	0.79	0.00

**Emissions Data - November 2013**  
**- 004 - T53 on #2 Diesel Liquid Fuel**

<b>Engine Percent of Power</b>	<b>SHP at Dyno</b>	<b>CO PPM</b>	<b>NOX PPM @ 15%</b>	<b>SO2 PPM</b>	<b>NMHC PPM</b>
30%	400	355.35	37.33	3.38	33.93
50%	670	205.05	48.46	2.06	12.07
75%	1005	79.29	61.58	1.31	1.16
100%	1340	27.75	74.58	0.93	0.03



**480V & 240V Motor Control**

**DC Rack**

**Light Panel**

**Transformer**





## 1 MW Genset Commissioned and Operational

Motor Control Panels, DC  
Rack and Transformer

Inlet Air Filtration  
for Gas Turbine

Attenuated  
Exhaust

