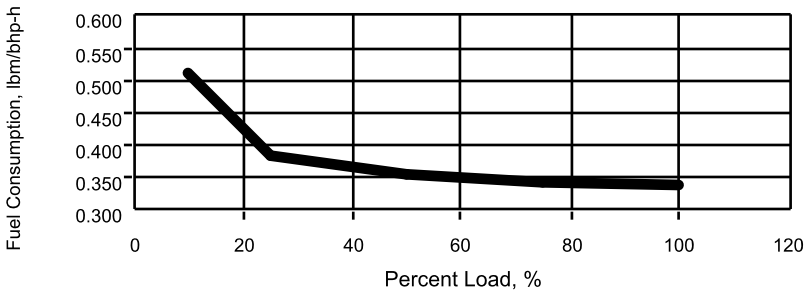
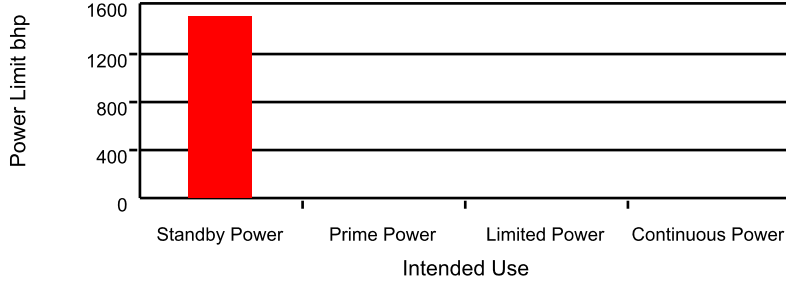
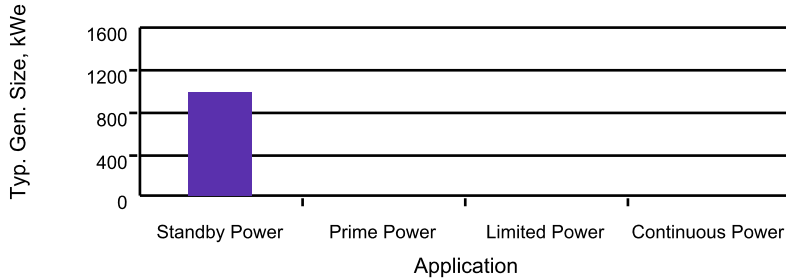




# Gen Set 16V2000 - R1637M36

Performance Data  
06N04M1599

1495 bhp @ 1800 r/min



Standby Power 60 Hz - 1000 kW <sub>e</sub>		
Percent Load, %	Power, bhp	Fuel Consumption, lb <sub>m</sub> /bhp-h
10	150	0.511
25	374	0.386
50	748	0.354
75	1121	0.345
100	1495	0.339

Prime Power 60 Hz - 0		
Percent Load, %	Power, bhp	Fuel Consumption, lb <sub>m</sub> /bhp-h
10	-	-
25	-	-
50	-	-
75	-	-
100	-	-

Limited Power 60 Hz - 0		
Percent Load, %	Power, bhp	Fuel Consumption, lb <sub>m</sub> /bhp-h
10	-	-
25	-	-
50	-	-
75	-	-
100	-	-

Continuous Power 60 Hz - 0		
Percent Load, %	Power, bhp	Fuel Consumption, lb <sub>m</sub> /bhp-h
10	-	-
25	-	-
50	-	-
75	-	-
100	-	-

Tolerance for power values shown is +5/-0% at the conditions listed.  
Tolerance for fuel values shown has not been specified.

Condition	ISO 3046
Air Inlet Temp.	77 °F
CAC Inlet Temp.	131 °F
Relative Humidity	30 %
Total Baro. Pressure	30 in. Hg
Fuel Inlet Temp.	77 °F
Spec. Fuel Gravity [ref. temp.]	0.8472
Air Inlet Restriction	77 °F
Exhaust Back Pressure	6 in. H <sub>2</sub> O
Raw Water Temp.	12 in. H <sub>2</sub> O
Min. Fuel Heat Content [ref. test spec]	- °F
Altitude, above sea level	20,500 Btu/lb <sub>m</sub>
Air Density	-
Fuel Density	328 ft
Oil Density	0.1 lb/ft <sup>3</sup>

Available power is shown. Data does not include parasitic losses from fans, accessories, etc. Parasitic losses will vary depending on the final product configuration and reduce the available power accordingly.



# Gen Set 16V2000 - R1637M36

## Technical Data 06N04M1599

### 1495 bhp @ 1800 r/min

	Standby Power 60 Hz - 1000 kW <sub>e</sub>	Prime Power 60 Hz - 0	Limited Power 60 Hz - 0	Continuous Power 60 Hz - 0	
<b>Calibration Details</b>					
Control System	MDEC Electronics	-	-	-	-
Maximum Power	1495	-	-	-	bhp
Maximum Power Speed	1800	-	-	-	r/min
Rated Power Limit	1495	-	-	-	bhp
Rated Power Limit Speed	1800	-	-	-	r/min
Typical Low Idle Speed	600	-	-	-	r/min
Typical High Idle Speed	1890	-	-	-	r/min
Intended Use	Standby Power applications	-	-	-	-
<b>Cooling System</b>					
Coolant Capacity in Engine Circuit	137	-	-	-	qt (US)
Coolant Capacity in Charge Air Circuit	21	-	-	-	qt (US)
Total Coolant Capacity	159	-	-	-	qt (US)
Coolant Flow Rate in Engine Circuit	255	-	-	-	gal/min (US)
Coolant Flow Rate in Charge Air Circuit	75	-	-	-	gal/min (US)
Heat Rejection to Engine Coolant Circuit	27,300	-	-	-	Btu/min
Heat Rejection to Coolant in Charge Air Circuit	16,500	-	-	-	Btu/min
Radiated Heat Rejection	2550	-	-	-	Btu/min
<b>Exhaust System</b>					
Exhaust Flow Rate (volumetric)	8572	-	-	-	ft <sup>3</sup> /min
Exhaust Temperature	1085	-	-	-	°F
<b>Fuel System</b>					
Injector Device	-	-	-	-	-
Injection System	EUP	-	-	-	-
Fuel Flow Rate (mass)	840.6	-	-	-	lb <sub>m</sub> /h
Fuel Flow Rate (volumetric)	118.9	-	-	-	gal/h (US)
Fuel Spill Rate (mass)	334.1	-	-	-	lb <sub>m</sub> /h
Fuel Spill Rate (volumetric)	47.3	-	-	-	gal/h (US)
Fuel Consumption (mass)	506.5	-	-	-	lb <sub>m</sub> /h
Fuel Consumption (volumetric)	71.6	-	-	-	gal/h (US)
Heat Rejection to Fuel	-	-	-	-	Btu/min
<b>Intake System</b>					
Engine Air Flow Rate (volumetric)	2966	-	-	-	ft <sup>3</sup> /min
Intake Manifold Pressure	74	-	-	-	in. Hg
Turbocharger Compressor Outlet Temp.	-	-	-	-	°F

Available power is shown. Data does not include parasitic losses from fans, accessories, etc. Parasitic losses will vary depending on the final product configuration and reduce the available power accordingly.



**Gen Set**  
**16V2000 - R1637M36**

**Technical Data**  
**06N04M1599**

**1495 bhp @ 1800 r/min**

	Standby Power 60 Hz - 1000 kW <sub>e</sub>	Prime Power 60 Hz - 0	Limited Power 60 Hz - 0	Continuous Power 60 Hz - 0	
<b>Lubrication System</b>					
Oil Flow Rate	-	-	-	-	gal/min (US)
Oil Pressure	87	-	-	-	lbf/in. <sup>2</sup>
Oil Consumption (mass)	2.53	-	-	-	lb <sub>m</sub> /h
Oil Consumption (volumetric)	1.35	-	-	-	qt/h (US)
<b>Additional Information</b>					
Altitude Capability	-	-	-	-	ft
Brake Mean Effective Pressure (BMEP)	338	-	-	-	lbf/in. <sup>2</sup>
Compression Ratio	14.0	-	-	-	: 1
Friction Horsepower	-	-	-	-	fhp
Mean Piston Speed	1772	-	-	-	ft/min
Turbocharger	Twin K37-4665	-	-	-	-

Available power is shown. Data does not include parasitic losses from fans, accessories, etc. Parasitic losses will vary depending on the final product configuration and reduce the available power accordingly.



# Gen Set 16V2000

# Installation Data R1637M36

## 1495 bhp @ 1800 r/min

### Cooling System

Min. Coolant Flow Rate in CAC Circuit	67.4 gal/min (US)
Min. Coolant Flow Rate in Engine Circuit	229.8 gal/min (US)
Max. Coolant Out Temp. in Engine Circuit	203 °F
Max. CAC Water Pump Discharge Pressure (Exclusive of Pressure Cap)	- lbf/in. <sup>2</sup>
Max. Engine Water Pump Discharge Pressure (Exclusive of Pressure Cap)	- lbf/in. <sup>2</sup>
Min. Water Pump Inlet Pressure (Rapid Warm-up Rad.)	- lbf/in. <sup>2</sup>
Min. Water Pump Inlet Pressure (Conventional Rad.)	5.8 lbf/in. <sup>2</sup>
Max. Water Pump Static Pressure Head	22.0 lbf/in. <sup>2</sup>
Max. External Restriction in CAC Circuit	10.2 lbf/in. <sup>2</sup>
Max. External Restriction in Engine Circuit	10.2 lbf/in. <sup>2</sup>
Max. Intercooler Coolant Outlet Temp.	158 °F
Max. Ambient-to-Intercooler Coolant Outlet Temp. Rise	- °F
Min. Engine Coolant Fill Rate	- gal/min (US)
Min. Drawdown	10 %
Max. Dearthation Time	30 min
Min. Pressure Cap	- lbf/in. <sup>2</sup>
Max. System Pressure (Exclusive of Pressure Cap)	31.9 lbf/in. <sup>2</sup>
Min. Top Tank Coolant Temp.	- °F

### Crankshaft System

Max. Radial Load- Crankshaft	- lbf
Max. Continuous Load- Thrust Bearing	- lbf
Max. Intermittent Load- Thrust Bearing	- lbf
Max. Shock Load- Thrust Bearing	- lbf
Max. Vertical Load at Rear Face of Flywheel (†)	- lbf
Max. Static Bending Moment at Rear Face of Block	- ft-lbf

(†) The weight of the flywheel must be included with the OEM components.

### Electrical System

Max. Resistance of Starting Circuit - 24 V System	- Ω
Rec. Battery Capacity - 24 V System	- CCA

### Exhaust System

Max. Exhaust System Back Pressure	3.0 in. Hg
Rec. Dry Exhaust Pipe Dia. - Single	9.0 in.
Rec. Dry Exhaust Pipe Dia. - Dual	6.0 in.

### Fuel System

Max. Fuel Inlet Temp.	131 °F
Max. Fuel Pump Suction for Clean System	8.9 in. Hg
Max. Fuel Pump Suction for Dirty System	- in. Hg
Max. Fuel Return Pressure	7.3 lbf/in. <sup>2</sup>
Rec. Primary Fuel Filter Size	- micron
Max. Secondary Fuel Filter Size	5 micron

### Intake System

Max. Ambient to Intake Manifold Temp. Differential	- °F
Max. Ambient to Turbo Compressor Inlet Temp. Rise	31 °F
Max. Crankcase Pressure	- in. H <sub>2</sub> O
Max. Intake Manifold Pressure	- in. Hg
Max. Intake Manifold Temp.	- °F
Max. Intake Restriction for a Clean Air Cleaner	12 in. H <sub>2</sub> O
Max. Intake Restriction for a Dirty Air Cleaner	20 in. H <sub>2</sub> O
Rec. Intake Pipe Dia. - Single	8.0 in.
Rec. Intake Pipe Dia. - Dual	- in.

### Lubrication System

Max. Change in Oil Pressure from Engine Out to Oil Cooler Inlet for Remote-mounted Filters	- in. H <sub>2</sub> O
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**Gen Set**  
**16V2000 - R1637M36**

**1495 bhp @ 1800 r/min**

**Emission Data**  
**06N04M1599**

**Certification Summary**

Certification Code (CWC)	5292
US Nonroad (Tier 1)	Certified.
US Nonroad (Tier 2)	Not certified.
US Nonroad (Tier 3)	Not certified.
US Nonroad (Tier 4)	Not certified.
EURO Nonroad (Stage I)	Not certified.
EURO Nonroad (Stage II)	Not certified.
EURO Nonroad (Stage III)	Not certified.
EURO Nonroad (Stage IV)	Not certified.
South Coast Air Quality Management District (SCAQMD)	Certified.

**Compliance Summary**

Japanese Nonroad	No.
TA-Luft Power Plant	No.
<b>SCAQMD Permit Information</b>	
- Application Number	428837
- Status	Certified.
- Issue Date	17 MAY 2004
- Expiration Date	17 MAY 2006

Available power is shown. Data does not include parasitic losses from fans, accessories, etc. Parasitic losses will vary depending on the final product configuration and reduce the available power accordingly.

**Emission Data**

<b>Steady-state Emission Summary</b>						
NO <sub>x</sub>						9700 g/h
CO						1045 g/h
HC						167 g/h
SO <sub>2</sub> - with .5% sulfur content fuel						1150 g/h
SO <sub>2</sub> - with .05% sulfur content fuel						115 g/h
Particulates						65.8 g/h
<b>C1 Cycle Emission Summary</b>						
NO <sub>x</sub>						- g/bhp·h
CO						- g/bhp·h
HC						- g/bhp·h
Particulates						- g/bhp·h
<b>D2 - Cycle Emissions</b>						
Engine Load	10%	25%	50%	75%	100%	Cycle Value
						g/h
CO	1770	641	510	729	1045	1.07
HC	335	162	178	221	167	0.28
SO <sub>2</sub> - with 0.5% sulfur content fuel	173	327	599	878	1150	-
SO <sub>2</sub> - with 0.05% sulfur content fuel	17.3	32.7	59.9	87.8	115	-
Particulates	57.8	25.1	63.0	63.6	65.8	0.07
NO <sub>x</sub>	1610	2680	3665	5990	9700	5.73
<b>Opacity Mode</b>						
Acceleration						-
Lug						-
Peak						-
<b>Smoke</b>						
Bosch No.						-

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found at 40 CFR Part 89 (Control of Emissions From New and In-Use Nonroad Compression-Ignition Engines). The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.



Gen Set  
16V2000 - R1637M36

Noise Summary  
06N04M1599

1495 bhp @ 1800 r/min

Frequency, Hz	Surface, dB(A)	Exhaust, dB(A)	Structureborne Longitudinal, dB(A)	Structureborne Transverse, dB(A)	Structureborne Vertical, dB(A)
25	21.8	48.9	-	-	41.3
32	29.9	68.5	-	-	59.1
40	28.7	63.0	-	-	57.4
50	34.9	72.8	-	-	64.8
63	40.6	81.9	-	-	63.8
80	50.8	78.2	-	-	75.0
100	60.9	90.0	-	-	80.9
125	74.3	99.0	-	-	80.9
160	69.3	100.0	-	-	81.6
200	72.5	105.2	-	-	76.6
250	77.6	104.3	-	-	82.9
315	78.4	102.8	-	-	84.4
400	82.8	104.8	-	-	93.7
500	83.8	107.8	-	-	99.3
630	85.0	105.2	-	-	93.6
800	86.8	104.4	-	-	90.2
1000	87.0	106.8	-	-	103.5
1250	88.8	105.8	-	-	97.1
1600	90.8	102.8	-	-	93.5
2000	92.6	101.8	-	-	92.7
2500	92.2	99.2	-	-	90.3
3150	91.5	98.0	-	-	91.7
4000	90.9	97.4	-	-	87.0
5000	86.9	89.3	-	-	80.5
6300	92.6	80.4	-	-	68.4
8000	86.4	71.5	-	-	68.9
10,000	98.8	55.9	-	-	63.5
12,500	84.6	-	-	-	-
16,000	-	-	-	-	-
20,000	-	-	-	-	-
Total	103.2	115.9	-	-	110.0

**Conditions and Tolerances**

Data Tolerance	Tolerance for values shown is +2/-0 dB(A) at the conditions listed.	Tolerance for values shown is +3/-0 dB(A) at the conditions listed.	Tolerance for values shown has not been specified.	Tolerance for values shown has not been specified.	Tolerance for values shown has not been specified.
Test Standard	ISO 6798	ISO 6798	not specified	not specified	not specified
Comments	Data includes intake and air filter noise contributions.	2 x 90° and 2 x 45° (mitred)	not specified	not specified	not specified



<b>Camshaft</b>	
UPC Group Number	06X01B1297
Type	Gear-driven
Location	In the cylinder block
Material	-
Surface Finish - Journal	-
Surface Finish - Lobe	-
<b>Camshaft Bearing</b>	
Type	-
Material	-
Mean Effective Length [MEL]	- in.
Mean Journal Diameter [MJD]	- in.
Projected Area [per bearing]	- in. <sup>2</sup>
<b>Connecting Rod</b>	
Type	-
Material	-
<b>Connecting Rod Cap</b>	
Type	-
Material	-
<b>Connecting Rod Crank Pin Bearing</b>	
Type	-
Quantity [per journal]	-
Material - Lower Bearing	-
Material - Upper Bearing	-
Mean Effective Length [MEL]	- in.
Mean Journal Diameter [MJD]	- in.
Projected Area [per bearing]	- in. <sup>2</sup>

<b>Crankshaft</b>	
Type	-
Material	-
Surface Finish - Journal	-
Type of Balance	-
<b>Crankshaft Main Bearing</b>	
Type	-
Quantity [per journal]	-
Material - Lower Bearing	-
Material - Upper Bearing	-
Mean Effective Length [MEL]	- in.
Mean Journal Diameter [MJD]	- in.
Projected Area [per bearing]	- in. <sup>2</sup>
<b>Crankshaft Thrust Bearing</b>	
Type	-
Quantity	-
Mean Effective Length [MEL]	- in.
Mean Journal Diameter [MJD]	- in.
Projected Area [per bearing]	- in. <sup>2</sup>
<b>Cylinder Block</b>	
UPC Group Number	06A01 1641
Type	90-degree vee cylinder block
Material	-
<b>Cylinder Head</b>	
UPC Group Number	06A02 0529
Type	-
Material	-
Air Management	-
<b>Cylinder Liner</b>	
UPC Group Number	06A02 0529
Type	-
Material	-



<b>Exhaust Valve</b>	
Type	Poppet valve
Material - Head	-
Material - Stem	-
Operating Mechanism	Push rod with rocker arm
Type of Lifter	-
Quantity [valves per cylinder]	2
Quantity [springs per valve]	-
<b>Exhaust Valve Insert</b>	
Type	-
Material	-
<b>Intake Valve</b>	
Type	Poppet valve
Material - Head	-
Material - Stem	-
Operating Mechanism	Push rod with rocker arm
Type of Lifter	-
Quantity [valves per cylinder]	-
Quantity [springs per valve]	-
<b>Intake Valve Insert</b>	
Type	-
Material	-

<b>Piston</b>	
Type	-
Material - Crown	-
Material - Skirt	-
Cooling	-
<b>Piston Pin</b>	
Type	-
Material	-
Wrist Pin Keepers	-
<b>Piston Pin Bearing</b>	
Type	-
Material	-
<b>Piston Ring, Compression</b>	
Top Ring	-
Second Ring	-
Quantity [per piston]	-
<b>Piston Ring, Oil</b>	
Type	Two-piece, spring-loaded
Quantity [per piston]	-
Location	Below compression ring





# Gen Set 16V2000 - R1637M36

# Engine Configuration Data Summary

Description	
Model Number	R1637M36
Number of Cylinders	16
Bore	5.12 in.
Stroke	5.91 in.
Displacement - per cylinder	121 in. <sup>3</sup>
Displacement - total	1944 in. <sup>3</sup>
Aftertreatment	No Aftertreatment Device
Aspiration	Turbocharged
Combustion System	Direct Injection
Charge Air Cooling System	Separate Circuit Charge Cooling (SCCC)
Electronic System	MDEC Electronics
Engine Type	90-degree Vee Engine
Ventilation	Open Engine Crankcase
Status	Available
Availability Date	03 NOV 2003
Discontinued Date	-

This model is approved for commercial gen set applications (60 Hz only).

Size	
Overall Length	85.83 in.
Overall Width	62.20 in.
Overall Height	61.81 in.

Weight	
Approximate Dry Weight	7011 lb <sub>m</sub>
Approximate Wet Weight	7518 lb <sub>m</sub>

Center of Gravity for a Dry Engine	
Distance from Rear Face of Block: x-axis	31.93 in.
Distance above Crankshaft: y-axis	6.69 in.
Distance to the Right of the Crankshaft: z-axis	0.91 in.