HF-20GFD6 | 20 kW

INDUSTRIAL DIESEL GENERATOR SET

Emergency Standby Diesel — 60 Hz

Standby Power Rating
20[1] kW, 25[1] kVA, 60 Hz

Application
Emergency standby only

Standby ratings shown. Final configuration and engine documentation are confirmed with the quotation.



Image used for illustration purposes only

CODES AND STANDARDS

Not all codes and standards apply to all configurations. Contact factory for project-specific certification and evaluation options. References below are not claims of existing whole-set certification.

- ANSI/CAN/UL/ULC 2200 — whole-set certification option; separate assessment and quotation
- CSA C22.2 No. 100 — generator component standard; Canadian scope to confirm
- ISO 8528 / ISO 3046 — rating and test references
- IEC 60034 / NEMA MG 1 — alternator references
- NFPA 37, NFPA 70 (NEC), NFPA 110 — installation and system requirements
- CSA C282 — Canadian emergency power systems, where specified
- Field evaluation / CSA SPE-1000 special inspection — scope and authority acceptance required
- UL-rated components per quotation; not equivalent to whole-set UL 2200 listing
- Seismic / wind requirements — engineered assessment and testing by project

HAIFENG POWER CONFIGURATION

Haifeng Power HF-20GFD6: 20 kW emergency standby configuration with Perkins 404D-22G engine and Stamford alternator.

480Y/277 V, three-phase, 60 Hz. Silent/weatherproof enclosure. Stamford alternator; final model, winding and coupling selected for the ordered configuration.

OEM engine data supports equipment selection. Product photograph illustrates enclosure style. Confirm dimensions, weight, noise and site conditions with the quotation.

SPEC SHEET

CONFIGURABLE FEATURES — FINAL SCOPE PER QUOTATION

ENGINE SYSTEM
- Oil Drain Extension
- Heavy Duty Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer

FUEL SYSTEM
- Engine fuel shutoff per selected build
- Primary Fuel Filter

COOLING SYSTEM
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze
- Coolant heater voltage per project supply

ELECTRICAL SYSTEM
- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM
- Alternator Protection System
- Lead arrangement per selected winding
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Excitation system per alternator selection
- Sealed Bearings
- Automated Manufacturing (Winding, Insertion, Lacing, Varnishing)
- Rotor Dynamically Spin Balanced
- Amortisseur Winding
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- Warranty terms per written quotation
- Duty restrictions per engine certification

ENCLOSURE (IF SELECTED)
- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuation Enclosures)
- Gasketed Doors
- Discharge arrangement per enclosure design
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- Textured Polyester Powder Coat Paint

FUEL TANK
- Tank capacity and runtime per quotation
- Single/double-wall tank per specification
- Vents
- Tank inspection/test per approved design
- Rupture Basin Alarm
- Fuel Level
- Check Valve In Supply and Return Lines
- Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM
Deep Sea — functions per selected controller

PROGRAM FUNCTIONS
- Programmable Crank Limiter
- Exercise schedule if controller supports it
- Project control logic by agreement
- Communications per selected controller
- AVR sensing per alternator configuration
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Governor interface per engine/controller
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- Project alarm schedule and acceptance tests
- Modbus® Protocol
- Maintenance reminders where supported
- Single Point Ground

FULL SYSTEM STATUS DISPLAY
- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

ALARMS AND WARNINGS
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Overspeed
- Battery Voltage
- Time and Date Stamped
- Event records where supported
- Alarm text/codes per controller and engine

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CONFIGURABLE OPTIONS

ENGINE SYSTEM
- Request: Block Heater
- Request: Oil Make-Up System
- Request: Oil Heater
- Request: Industrial Exhaust Silencer (Open Set Only)

FUEL SYSTEM
- Request: Flexible Fuel Lines
- Request: Primary Fuel Filter

ELECTRICAL SYSTEM
- Charger rating/certification per quotation
- Request: Battery Warmer

ALTERNATOR SYSTEM
- Request: Alternator Upsizing
- Request: Anti-Condensation Heater
- Request: Tropical Coating

CIRCUIT BREAKER OPTIONS
- Request: Main Line Circuit Breaker
- Request: 2nd Main Line Circuit Breaker
- Request: Shunt Trip and Auxiliary Contact
- Request: Electronic Trip Breakers

GENERATOR SET
- Request: Extended Factory Testing
- Project-specific seismic assessment
- Request: 8 Position Load Center

ENCLOSURE
- Request: Weather Protected Enclosure
- Request: Level 1 Sound Attenuated
- Request: Level 2 Sound Attenuated
- Request: Steel Enclosure
- Request: Aluminum Enclosure
- Site-specific wind-load assessment
- Request: AC/DC Enclosure Lighting Kit
- Request: Spring or Pad Vibration Isolators

FUEL TANK
- Request: Overfill Protection Valve
- Request: Fuel Fill Drop Tube
- Request: 5 Gal Spill Return Hose
- Request: Tank Risers
- Request: Vent Extensions
- Request: Fire Rated Fuel Hose
- Request: Fill Extensions

CONTROL SYSTEM
- Remote annunciator to project specification
- Request: Remote Relay Assembly (8 or 16)
- Request: Remote E-Stop (Break Glass-Type, Surface Mount)
- Request: Remote E-Stop (Mushroom-Type, Surface Mount)
- Request: Remote E-Stop (Mushroom-Type, Flush Mount)
- Request: 10A Engine Run Relay
- Request: Ground Fault Annunciator

WARRANTY
- Warranty scope and duration by agreement
- Extended coverage subject to availability

ENGINEERED OPTIONS

ENGINE SYSTEM
- Request: Coolant Heater Ball Valves
- Request: Fluid Containment Pan

CONTROL SYSTEM
- Request: Spare Inputs (x4) / Outputs (x4)
- Request: Battery Disconnect Switch

ALTERNATOR SYSTEM
- Request: 3rd Breaker System

GENERATOR SET
- Request: Special Testing
- Request: Motorized Dampers
- Request: Door Open Alarm Horn

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HAIFENG POWER

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General	
Make	**Perkins 404D-22G**
EPA Emissions Compliance	**EPA certified - Haifeng confirmed**
Cylinder #	**4**
Type	**Inline 4, 4-stroke**
Displacement - in³ (L)	**135.2 (2.216)**
Bore - in (mm)	**3.31 (84)**
Stroke - in (mm)	**3.94 (100)**
Compression Ratio	**23.3:1**
Intake Air Method	**Naturally aspirated**
Engine Governing	
Governor	**Mechanical**
Lubrication System	
Oil Filter Type	**Spin-on full-flow**
Crankcase Oil Capacity - qt (L)	**11.2 (10.6 OEM ref.)**

Cooling System	
Cooling System Type	**Liquid-cooled**
Water Pump Type	**Belt-driven**
Fan Type	**Puller (TPD2076E2 build)**
Fan Speed - RPM	**2,394 calculated OEM ratio**
Fan Diameter - in (mm)	**12.60 (320 OEM)**
Fuel System	
Fuel Type	**Diesel**
Fuel Specifications	**ULSD; see OEM OMM**
Fuel Inject Pump Make	**Cassette type**
Injector Type	**Pintle nozzle**
Engine Type	**Indirect injection**
Engine Electrical System	
System Voltage	**12 VDC**
Battery Charger Alternator	**12 V / 65 A**
Battery Size	**740 CCA SAE J537 at -15°C**
Battery Voltage	**12 V system**

ALTERNATOR SELECTION REFERENCE

Standard Model	**Stamford - selected per order**
Poles	**4**
Field Type	**Revolving, brushless**
Insulation Class - Rotor	**H**
Insulation Class - Stator	**H**
Standard Excitation	**Self-excited; options available**
Bearings	**Single; optional arrangements**
Coupling	**Selected with final alternator/build**
Voltage Regulator Type	**AS540 (range reference)**
Number of Sensed Phases	**2**

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OPERATING DATA

POWER RATINGS - DIESEL (STANDBY)

Connection	Power	Current
480Y/277 V, 3-phase, PF 0.8[1]	20[1] kW	30[1] A

MOTOR STARTING: SIZED TO THE PROJECT LOAD AND ALLOWABLE VOLTAGE DIP.

Fuel system - standby	
Fuel Pump Lift - ft (m)	**2.62 (0.8)**
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)	**16.6 (63)**
OEM Cooling Reference	
Coolant Flow - gpm (Lpm)	**15.5 (58.7)**
Coolant System Capacity - gal (L)	**1.8 (7) OEM ElectropaK**
Heat Rejection to Coolant - BTU/hr (kW)	**75,749.6 (22.2)**
Combustion Air Requirements (Standby)	
Flow at Rated Power - cfm (m³/min)	**61.4 (1.74)**
Engine (Standby)	
Rated Engine Speed - RPM	**1800**
OEM engine power reference (not genset output)	**24.3 gross / 23.9 net kWm**
Piston Speed - ft/min (m/min)	**1,181.1 (360) calculated**
BMEP - psi (kPa)	**106.0 (731)**
Exhaust (Standby)	
Exhaust Flow (Rated Output) - cfm (m³/min)	**168.1 (4.76)**
Exhaust Temperature (Rated Output) - °F (°C)	**950 (510)**

[1] Standby selection data at 480 V, 60 Hz and 0.8 power factor. Current and kVA are calculated. Engine operating figures are OEM references, not complete-set test results. EPA status confirmed by Haifeng for the supplied engine configuration. Engine family/build documents retained with the order. Engine source: 20-404D-22G.pdf. OEM full-standby fuel reference: 6.9 L/h at 1,800 rpm; not a measured complete-set figure.

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