**AP170-6**

**POWERED by PERKINS**

**DIESEL GENERATING SET** 480/277 V , 440/254V, 380/220V, 220/127- 60 Hz

<table>
<thead>
<tr>
<th>MODEL</th>
<th>Power Pf. 0.8</th>
<th>AP170-6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby</td>
<td>kVA</td>
<td>170</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>136.0</td>
</tr>
<tr>
<td>Prime</td>
<td>kVA</td>
<td>154</td>
</tr>
<tr>
<td></td>
<td>kW</td>
<td>123.2</td>
</tr>
</tbody>
</table>

Standby: Continuous running at variable load for duration of an emergency. No overload is permitted on these ratings. In accordance with ISO 3046.

Prime: Continuous running at variable load for unlimited periods with 10% overload available for 1 hour in any 12 hour period. In accordance with ISO 8528, ISO 3046.

- High quality, reliable and complete power unit
- Compact design
- Easy start and maintenance possibility
- Every generating set is subject to a comprehensive test program which includes full load testing, checking and provision of all control and safety shut down functions testing
- Fully engineered with a wide range of options and accessories: Canopy, sound proof canopy and on-road trailer

Manufacturer reserves the right to make changes in model, technical specifications, color, equipment and accessories without prior notice.
# ENGINE

<table>
<thead>
<tr>
<th>PERKINS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model</strong></td>
<td>1106A-70TG1</td>
</tr>
<tr>
<td><strong>Engine Power Output</strong></td>
<td></td>
</tr>
<tr>
<td>at rated rpm</td>
<td>kWm     155.4</td>
</tr>
<tr>
<td></td>
<td>HP       208</td>
</tr>
<tr>
<td><strong>Aspiration and Cooling</strong></td>
<td></td>
</tr>
<tr>
<td>Total Displacement</td>
<td>Litre 7.01</td>
</tr>
<tr>
<td>No. of Cylinders and Build</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6: in-line</td>
</tr>
<tr>
<td><strong>Engine Speed</strong></td>
<td>rpm 1800</td>
</tr>
<tr>
<td><strong>Bore and Stroke</strong></td>
<td>mm 105 x 135</td>
</tr>
<tr>
<td><strong>Compression Ratio</strong></td>
<td>18.2:1</td>
</tr>
<tr>
<td><strong>Governor</strong></td>
<td>Mechanical</td>
</tr>
<tr>
<td><strong>Fuel Consumption at full load</strong></td>
<td>L/hr 35.2</td>
</tr>
<tr>
<td><strong>Fuel Tank Capacity</strong></td>
<td>Litre 340</td>
</tr>
<tr>
<td><strong>Oil Capacity</strong></td>
<td>Litre 16.5</td>
</tr>
<tr>
<td><strong>Coolant Capacity</strong></td>
<td>Litre 21</td>
</tr>
<tr>
<td><strong>Radiator Cooling Air</strong></td>
<td>m³/min 252</td>
</tr>
<tr>
<td><strong>Air Intake – Engine</strong></td>
<td>m³/min 11.48</td>
</tr>
<tr>
<td><strong>Exhaust Gas Flow</strong></td>
<td>m³/min 29.05</td>
</tr>
</tbody>
</table>

- Heavy duty Perkins diesel engine
- Four stroke, water cooled, turbocharged
- Direct injection fuel system
- Mechanical Governor system
- 12/24 V D.C. starter and charge alternator
- Replaceable fuel filter, oil filter and dry element air filter
- Cooling radiator and fan
- Starter battery (with lead acid) including Rack and Cables
- Flexible fuel connection hoses and manual oil sump drain valve
- Industrial capacity exhaust silencer and steel bellows
- Jacket water heater (at automatic models)
- Operation manuals and circuit diagram documents

# ALTERNATOR

<table>
<thead>
<tr>
<th>Design</th>
<th>Brushless single bearing, revolving field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stator</td>
<td>Single bearing, flexible disc</td>
</tr>
<tr>
<td>Rotor</td>
<td>Class H</td>
</tr>
<tr>
<td>Insulation System</td>
<td>25 - 163°C Continuous</td>
</tr>
<tr>
<td>Standard Temperature Rise</td>
<td>Self Excited</td>
</tr>
<tr>
<td>Exciter Type</td>
<td>A (U), B (V), C (W)</td>
</tr>
<tr>
<td>Phase Rotation</td>
<td>Direct drive centrifugal blower fan</td>
</tr>
<tr>
<td>Alternator Cooling</td>
<td>No load &lt; 1.5%. Non distorting balanced linear load &lt; 5%</td>
</tr>
<tr>
<td>AC Waveform Total Harmonic Distortion</td>
<td>&lt;50 per NEMA MG1-22.43</td>
</tr>
<tr>
<td>Telephone Influence Factor (TIF)</td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Telephone Harmonic Factor (THF)</td>
<td></td>
</tr>
</tbody>
</table>

- Brushless, single bearing system, flexible disc, 4 poles
- Insulation class H
- Standard degree of protection IP21 (*IP22/IP23 is available.)*
- Self-exciting and self-regulating
- Impregnation with tropicalised epoxy varnish
- Solid state Automatic Voltage Regulator
- Stator winding with 2/3 pitch for improved harmonics
Control supervision and protection panel is mounted on the genset base frame. The control panel is equipped as follows:

1. Auto Mains Failure Control Panel
   Panel equipments:
   - Control with AMF module
   - Static battery charger
   - Emergency stop push button

   a) Generating set control module DSE 6020 features:
   - The module is used to monitor main supply and starts and stops of a standby generating set
   - Micro-processor based design
   - Automatic control of main and generator contactors
   - Monitors engine performance and AC power output LED alarm indication
   - Front panel configuration of timers and alarm trip points
   - CAN and magnetic pick-up versions (specify on ordering)
   - 4 digital inputs/3 analogue inputs
   - 6 outputs (4 configurable on Magnetic Pick-up, 6 configurable on CANbus version)
   - Easy push button control
   - STOP/RESET - MANUAL - AUTO - TEST – START

   b) Metering via LED display:
   - Generator Volts (L-L / L-N)  Generator kVA
   - Engine oil pressure (PSI-Bar)  Generator kW
   - Generator Ampere (L1,L2,L3)  Generator Cos (σ)
   - Engine temperature (°C & °F)
   - Generator Frequency (Hz)
   - Plant battery volts
   - Engine hours run
   - Mains Volts (Ph-Ph/Ph-N)

   c) Alarms:
   - Over and Under Speed
   - Low and High Battery Volt.
   - Start and Stop Failure
   - Charge fail
   - Over Current
   - Under / Over Generator Voltage
   - Low Oil Pressure
   - Emergency stop
   - High engine temperature

d) LED indications:
   - Mains available
   - Generator available
   - Mains on load
   - Generator on load

2. Power Outlet Terminal Board Mounted on the Gen-set Base Frame

Optional Equipments

- **Diesel Engine**
  - Oil heater

- **Alternator**
  - 3/4 Pole Output Circuit Breaker
  - Anti-condensation Heater

- **Panel**
  - Charge ammeter
  - Transfer Switch 3Pole
  - Transfer Switch 4 Pole
  - Earth Fault .single set

- **Accessories**
  - Bulk fuel tank
  - Automatic filling system
  - Fuel-water separator filter
  - Low fuel level alarm
  - Residential silencer
  - Enclosure or sound proof canopy
  - Trailer
  - Manual oil drain pump
  - Tool kit for maintenance
CHASSIS

The complete gen-set is mounted as whole on a heavy-duty fabricated, steel base frame
Anti-vibration pads are fixed between the engine/alternator feet and the base frame
Base frame design incorporates an integral fuel tank (Up to 750 kVA)
The generating set can be lifted or carefully pushed/pulled by the base frame
Dial type fuel gauge and drain plug on the fuel tank
Forklift pockets within base frame (up to 500kVA)

DIMENSIONS

<table>
<thead>
<tr>
<th>OPEN TYPE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS (LxWxH)</td>
<td>mm</td>
<td>2300<em>1150</em>1470</td>
</tr>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>1240</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SOUND ATTENUATED TYPE</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DIMENSIONS (LxWxH)</td>
<td>mm</td>
<td>3400<em>1220</em>1940</td>
</tr>
<tr>
<td>DRY WEIGHT</td>
<td>kg</td>
<td>1820</td>
</tr>
</tbody>
</table>

CANOPY

All canopy parts are designed with modular principles
Without welding assembly
Doors on each side
All metal canopy parts are painted by electrostatic polyester powder paint
Exhaust silencer is protected against environment influences
Thermally insulated engine exhaust system
Emergency stop push button is installed outside of the canopy
Easy lifting and moving
Easy maintenance and operation