



# VOLVO PENTA



| 3 PHASE OUTPUTS     |          |      |     |      |    |
|---------------------|----------|------|-----|------|----|
| GENERATOR SET MODEL | RATING   | 50HZ |     | 60HZ |    |
|                     |          | KVA  | KW  | KVA  | KW |
| <b>WPSV-220</b>     | STAND-BY | 220  | 176 | NA   | NA |
|                     | PRIME    | 200  | 160 | NA   | NA |

Ratings at 0.8 pf - Generator designed to operate in ambient temperatures up to 50 °C

Standard Voltages 380 – 415 Volts 3 Phase 50HZ

RATING DEFINITIONS:

### PRIME POWER

These ratings are applicable for supplying continuous power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and this model can supply 10% overload power for 1 hour in 12 hours.

### STANDBY POWER

These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these rating. When used at standby Rating the alternator will be peak continuous rated (according to ISO3046)

### TECHNICAL DATA (50HZ)

|                      |                           |   |                              |
|----------------------|---------------------------|---|------------------------------|
| Engine model:        | TAD733GE                  | Cooling system:                           | liquid                       |
| Engine manufacturer: | Volvo Penta               | Total coolant capacity:                   | (liters) 21 liters           |
| Emissions statement  | Stage II                  | Total lubrication system capacity:        | (liters) 16.5 liters         |
| Number of cylinders: | 6                         | Engine rotation (viewed facing flywheel): | Anti-clockwise               |
| Cylinder arrangement | Vertical in-line          | Engine speed:                             | RPM 1500                     |
| Aspiration:          | Turbocharged, aftercooled | Output rated(prime) power:                | KW 180                       |
| Combustion system    | direct injection          | Fuel consumption at: 50% load             | L/h 23.1                     |
| Compression ratio    | 16:1                      | 75% load:                                 | L/h 34.7                     |
| Bore/stroke:         | mm. 105x135               | 100% load:                                | L/h 45.8                     |
| Displacement:        | (liters) 7.01             | Specific lube oil consumption:            | Max 0.8% of fuel Consumption |

## STANDARD SPECIFICATION WPSV-220

### 1. ENGINE

Volvo Penta heavy duty diesel engine.

#### 1.1 Governor

Mechanical, compliance with ISO8528, Class G2.

### 2. COOLING RADIATOR

Radiator and cooling fan complete with protection guards, designed to cool the engine in ambient temperatures up to 50° C.



The radiator is mounted on the base frame to avoid vibrations coming from the engine.

### 3. FILTRATION SYSTEM

Cartridge type air filter with security element. Cartridge fuel filter and full lube oil filter. All filters have replaceable elements.

### 4. EXHAUST SYSTEM

Heavy-duty industrial silencer.

### 5. ELECTRICAL SYSTEM

12 Volt DC system with battery charging alternator, Starter motor, High capacity maintenance free lead acid battery, battery rack mounted on the generating set base frame, and heavy duty interconnecting cables with terminations.



**6. ALTERNATOR** Screen protected and drip-proof, self-exciting, self-regulating brush-less alternator. Four poles, STAR winding connection, suitable for tropical, humid and saline climates. H class insulation IP23.

### 7. AUTOMATIC VOLTAGE REGULATOR

Static electronic design voltage regulator. Steady voltage precision within + 1 % from no load to full load including cold and hot variations, at any Power factor between 0.8 and unity.

### 8. MOTOR STARTING

An overload capacity equivalent to between 160% to 300% of full load impedance at zero power factor can be sustained for 10 seconds.

### 9. MOUNTING ARRANGEMENT

#### 9.1 Base Frame

The complete generating set is mounted on heavy duty steel fabricated base frame Which is anti rust coated.

#### 9.2 Coupling

Engine and alternator are directly coupled by means of SAE flange so there is no possibility of misalignment after prolong use. The engine fly wheel is flexibly coupled to the alternator rotor.

#### 9.3 Anti Vibration Mounting Pads

Anti vibration pads are fitted between engine-alternator base frame ensuring complete vibration isolation of rotating assemblies.

### 10. FUEL SYSTEM

Metal fuel tank with a total capacity of 365 liters is provided on the base frame. The Fuel tank is easy to clean and is equipped with visual fuel level indicator.

### 11. DIMENSIONS

#### Open Type

|        |      |    |
|--------|------|----|
| Length | 2850 | mm |
| Width  | 990  | mm |
| Height | 1750 | mm |
| Weight | 2100 | Kg |

#### Silent Type

|        |      |    |
|--------|------|----|
| Length | 3600 | mm |
| Width  | 1130 |    |
| Height | 2105 |    |
| Weight | 2450 |    |

### 12. CONTROL PANEL

The manual starting control panel (DSE) has been designed and built to combine all the instruments control and the warning lights for engine and alternator. The sheet steel made panel is carefully painted for tropical climates and is designed for a dusty environment. Includes following equipment Ammeter with selector switch – water temperature meter – oil pressure meter- moulded case three pole circuit breaker with thermal and magnetic release - automatic shut down in case of HWT, LOP and over speed - starting key and stop push button - acoustical signal - warning light for high cooling water temperature, low oil pressure, battery charging - hours meter



Automatic starting control board versions are available as option.

### 13. DOCUMENTATION

A full set of operation and maintenance manual are provided.

### 14. FACTORY TESTS

Generating set is subject to a strict load test before delivery. A test certificate can be provided as optional.

### 15. QUALITY STANDARDS

Generating set meets the following standards ISO 8528, IEC 34.1, CEI 2.3, VDE 0530, BS 4999-5000, NF51-100. Volvo Penta is fully accredited ISO 9001 company.

### 16. WARRANTY

Generating set is guaranteed for a period of 12 months from date of commissioning or 18 months from date of shipment which ever occurs earlier.

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