DIESELGENERATORS.CO.UK

# Model: V700C2
# Engine: VOLVO, TWD1643GE
# Alternator: LEROY SOMER, LSA491S4

## Specifications

- Compliant with stage 2 of the European pollutant emissions directive
- Electronic governor
- Mechanically welded chassis with anti-vibration suspension
- Power circuit breaker
- Radiator for wiring T°of 50°C [122°F] max with mechanical fan
- Protective grille for fan and rotating parts
- 9dB(A) silencer supplied separately
- Charged DC starting battery with electrolyte
- 24 V charging alternator and starter
- Supplied with oil and coolant -30°C
- User manual and commissioning guide

## Generator Ratings

| Voltage | Power ESP kW/kVA | Power RRP kW/kVA | Standby Amps | Dimensions | Weight |
|---|---|---|---|---|---|
| 415/240 | 560 / 700 | 509 / 636 | 974 | Length: 3470<br>Width: 1630<br>Height: 2080 | 3890kg Net<br>4560kg Gross |
| 400/230 | 560 / 700 | 509 / 636 | 1010 | | |
| 380/220 | 553 / 691 | 503 / 628 | 1050 | | |
| 240/120 | 558 / 697 | 507 / 634 | 1677 | | |
| 230/115 | 535 / 669 | 487 / 608 | 1679 | | |
| 220/110 | 511 / 639 | 465 / 581 | 1677 | | |

**RRP:** Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1. A 10% overload capability is available for a period of 1 hour within 12hour period of operation, in accordance with ISO 3046-1.

**ESP:** The standby power rating is applicable for supplying emergency power in variable load applications i accordance with ISO 8528-1. Overload is not allowed.

**Terms of Use:** Standard reference conditions 25˚C Air Inlet Temp, 100m A.S.L 60% relative humidity. All engine performance data based on the above mentioned continuous ratings.

## Canopy Version

| Type | dB(A)@7m | Dimensions | Weight | Tank |
|---|---|---|---|---|
| M230 | 75.2 | Length: 5031<br>Width: 1690<br>Height: 2662 | 5410kg Net<br>6090kg Gross | 610 L |
| M230-DW | 75.2 | Length: 5083<br>Width: 1690<br>Height: 2922 | 6140kg Net<br>7980kg Gross | 1950 L |

All units supplied with canopy as standard except when requested.

## Engine Data

| | |
|---|---|
| Manufacturer/Model | VOLVO TWD1643GE, 4-strokes, Turbo |
| Cylinder arrangement | 6 x L |
| Displacement | 16.12L [983.7C.I.] |
| Bore and stroke | 144mm [5.7in.] X 165mm [6.5in.] |
| Compression ratio | 16.5 : 1 |
| Rated RPM | 1500 Rpm |
| Piston speed | 8.25m/s [27.1ft./s] |
| Max. standby power at rated RPM | 596kW [799BHP] |
| Frequency regulation, steady state | +/- 0.5% |
| BMEP | 27.4bar [397psi] |
| Governor: type | ELEC |

## Exhaust System

| | |
|---|---|
| Exhaust temperature | 450°C [842°F] |
| Exhaust gas flow | 1693L/s [3588cfm] |
| Max back pressure | 1000mm CE [39in. WG] |

## Fuel System

| | |
|---|---|
| 110% (Stand by power) | 142.6L/h [37.7gal/hr] |
| 100% (of the Prime Power) | 128L/h [33.8gal/hr] |
| 75% (of the Prime Power) | 94.5L/h [25.0gal/hr] |
| 50% (of the Prime Power) | 63L/h [16.6gal/hr] |
| Total fuel flow | 190L/h [50.2gal/hr] |

## Oil System

| | |
|---|---|
| Total oil capacity w/filters | 48L [12.7gal] |
| Oil Pressure low idle | 0.7bar [10.1psi] |
| Oil Pressure rated RPM | 6.5bar [94.2psi] |
| Oil consumption 100% load | 0.1L/h [0.026gal/hr] |
| Oil capacity carter | 42L [11.1gal] |

## Thermal balance 100% load

| | |
|---|---|
| Heat rejection to exhaust | 463kW [26326Btu/mn] |
| Radiated heat to ambiant | 20kW [1137Btu/mn] |
| Heat rejection to coolant | 218kW [12395Btu/mn] |

## Air intake

| | |
|---|---|
| Max. intake restriction | 150mm CE [6in. WG] |
| Engine air flow | 727L/s [1541cfm] |

## Coolant system

| | |
|---|---|
| Radiator & engine capacity | 95L [25.1gal] |
| Max water temperature | 103°C [217°F] |
| Outlet water temperature | 93°C [199°F] |
| Fan power | 17 kW |
| Fan air flow w/o restriction | 10m3/s [21191cfm] |
| Available restriction on air flow | 30mm CE [1.2in. WG] |
| Type of coolant | Glycol-Ethylene |
| Thermostat | 86-96 °C |

## Emissions

| | |
|---|---|
| PM | 0.083 g/KW.h |
| CO | 0.69 g/KW.h |
| Nox | 5.4 g/KW.h |
| HC | 0.08 g/KW.h |

## Alternator Specifications

| | |
|---|---|
| Manufacturer/Type | LEROY SOMER (LSA491S4) |
| NUMBER OF PHASE | 3 |
| POWER FACTOR (Cos Phi) | 0.8 |
| ALTITUDE | < 1000 m |
| OVERSPEED | 2250 rpm |
| POLE: NUMBER | 4 |
| EXCITER TYPE | AREP |
| INSULATION: CLASS, TEMPERATURE RISE | H/H |
| VOLTAGE REGULATOR | R448 LS/B |
| SUSTAINED SHORT CIRCUIT CURRENT | |
| TOTAL HARMONICS (TGH/THC) | < 4% |
| WAVE FROM : NEMA = TIF- TGH/THC | < 50 |
| WAVE FROM: CEI = FHT - TGH/THC | < 2% |
| BEARING: NUMBER | 1 |
| COUPLING | Direct |
| VOLTAGE REGULATION 0 TO 100% LOAD | +/- 1% |
| RECOVERY TIME (20% VOLT DIP) MS | 500 ms |
| SkVA WITH 90% OF NORMAL SUSTAINED VOLTAGE (AT 0.4PF) | [N/A] |

## Other Alternator Data

| | |
|---|---|
| CONTINUOUS NOMINAL RATING @ 40° C | 660 kVA |
| STANDBY RATING @ 27° C | 725 kVA |
| EFFICIENCIES @ 4/4 LOAD | 93.6 % |
| AIR FLOW | 1m3/s [2118.87cfm] |
| SHORT CIRCUIT RATIO: 50 (Kcc) | 0.38 |
| DIRECT AXIS SYNCHRO REACTANCE UNSATURATED (Xd) | 343 % |
| QUADRA AXIS SYNCHRO REACTANCE UNSATURATED (Xq) | 205 % |
| OPEN CIRCUIT TIME CONSTANT: 50 (T'do) | 1958 ms |
| DIRECT AXIS TRANSIENT REACTANCE SATURATED (X'd) | 17.5 % |
| SHORT CIRCUIT TRANSIENT TIME CONSTANT (T'd) | 100 ms |

## Other Alternator Data Continued

| | |
|---|---|
| DIRECT AXIS SUBTRANSIENT REACTANCE SATURATED (X'd) | 14 % |
| SUBTRANSIENT TIME CONSTANT (T'd) | 10 ms |
| QUADRA AXIS SUBTRANSIENT REACTANCE SATURATED (X'q) | 16.3 % |
| ZERO SEQUENCE REACTACE UNSATURATED (Xo) | 0.9 % |
| NEGATIVE SEQUENCE REACTANCE SATURATED (X2) | 15.2 % |
| ARMATURE TIME CONSTANT (Ta) | 15 ms |
| NO LOAD EXCITATION CURRENT (io) | 0.9 A |
| FULL LOAD EXCITATION CURRENT (ic) | 3.6 A |
| FULL LOAD EXCITATION VOLTAGE (uc) | 43 V |
| RECOVERY TIME (DELTA U = 20% TRANSITOIRE) | 500 ms |
| MOTOR START (DELTA = 20% PERM. OR 50% TRANS.) | 1578 kVA |
| TRANSIENT DIP (4/4 CHARGE) - PF : 1.8AR | 13.3 % |
| NO LOAD LOSSES | 8.1kW [8.10Kw] |
| HEAT REJECTION | 33.7 kW |