



## TECHNICAL SPECIFICATION 12-LITRE ENGINE DC12 401 - 459 KVA

The DC12 is a turbo charged 4-stroke diesel engine equipped with Engine Management System (EMS) and Electronically controlled unit injectors (EUI).

|                            |             |
|----------------------------|-------------|
| No. of cylinders           | 6 in line   |
| Displacement               | 11.7 litres |
| Bore                       | 127 mm      |
| Stroke                     | 154 mm      |
| Weight excl. oil and water | 980 kg      |

### Standard equipment

Unit injectors and Scania EMS electronic control unit (Engine Management System). Side mounted turbo charger with high position, centrifugal lube oil cleaner, oil filter, oil cooler, fuel pre-filter with water separator, fuel filter, alternator 1-pole 65A 28V, starting motor 1-pole 6.7 kW 24V, flywheel SAE 14", flywheel housing SAE1 of silumin, front mounted engine brackets, Operator's manual.

### Optional equipment

Optional (low type) oil sump, optional oil filling, electrical system 2-pole 24V, alternator 2-pole 65A or 1-pole 100A.

### Extra equipment

Pre-assembled radiator 1.0, 1.2 or 1.3 m<sup>2</sup> with charge-air cooler, fan cover, fan ring, expansion tank and protection covers, suction and pressure fans Ø787 and Ø912 mm, soft or fixed engine suspension. Hydraulic pump, air compressor, ac comperssor. Side mounted power take-off with a maximum continuous torque of 400 Nm (41 kpm). Crankshaft belt pulley with two extra grooves, various exhaust connections, silencer and air cleaner, engine heater, hand pump for oil draining, closed crankcase ventilation. Torsional vibration calculations for industrial applications.

### Engine description

**Cylinder block** Made of alloy cast iron. **Cylinder heads** Six individual cylinder heads. Unit injector technology with engine mounted electronic control unit. **Valves** Four valves per cylinder head. **Camshaft** Mounted in high position and of alloy steel. **Pistons and cylinder liners** Composite pistons with aluminium bodies and steel crowns. Cylinder liners of exchangeable wet type. **Connection rods** I-section pressforgings of alloy steel. **Crankshaft** Made of alloy steel with hardened and polished bearing surfaces. **Oil sump** Made of steel. **Flywheel** Made of cast iron. Direction of rotation seen from flywheel end – counter clockwise. **Electrical system** 1-pole 24V.

| Engine type                        | DC12 60A (401 - 459 kVA)              |             |                |             |                |
|------------------------------------|---------------------------------------|-------------|----------------|-------------|----------------|
|                                    | 50 Hz                                 |             | 60 Hz          |             |                |
|                                    |                                       | Prime Power | Stand-by Power | Prime Power | Stand-by Power |
| Engine output, gross               | kW                                    | 356         | 399            | 384         | 406            |
| Fan losses*                        | kW                                    | 11          | 11             | 11          | 11             |
| kVA band**                         | KVA                                   | 401         | 451            | 434         | 459            |
| Governor, type                     | Scania Engine Management System (EMS) |             |                |             |                |
| <b>Spec. fuel consumption:</b>     |                                       |             |                |             |                |
| 1/1 load                           | g/kWh                                 | 192         | 194            | 193         | 194            |
| 3/4 load                           | g/kWh                                 | 190         | 190            | 192         | 191            |
| 1/2 load                           | g/kWh                                 | 195         | 193            | 197         | 196            |
| <b>Spec. lube oil consumption:</b> |                                       |             |                |             |                |
|                                    | g/kWh                                 | < 0.3       |                | < 0.3       |                |
| Compression ratio                  |                                       | 16:1        |                |             |                |
| <b>Heat rejection</b>              |                                       |             |                |             |                |
| to cooling water                   | kW                                    | 136         | 154            | 147         | 156            |
| to exhaust gas                     | kW                                    | 232         | 263            | 245         | 261            |
| to charge air                      | kW                                    | 59          | 73             | 72          | 78             |
| to surrounding air                 | kW                                    | 31          | 35             | 32          | 34             |
| Air consumption                    | kg/min                                | 27          | 30             | 32          | 33             |
| Exhaust flow                       | kg/min                                | 28          | 31             | 33          | 34             |
| Exhaust temperature                | °C                                    | 524         | 543            | 489         | 502            |

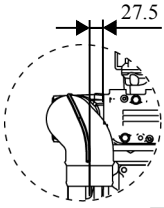
\*Fan losses: With recommended fan for +35 °C air-on temperature to cooling system.  
 \*\*Range, kVA: As per above note \*fan losses and with generator efficiency common on the market.  
 Speed variations according to ISO 3046/IV, Class A1, and ISO 8528-1, Class G2.  
 Output values: 0 to +3%. Fuel values: +/-3%.

| Prime power  | Stand-by Power  |
|--|---|
| <b>Prime power, ISO 8528:</b> For continues operation and unlimited yearly operation time at varying load and with a max. mean load factor of 70% of rated power, 10% overload capacity 1h/12h.<br><b>Rated codes:</b> ISO 3046, ISO 8528. | <b>Maximum Stand-by Power:</b> For operation under normal varying load during a power outage. Not overloadable. Not for applications intended for more than 500 h/year service time. <b>Rating codes:</b> ISO 3046. |

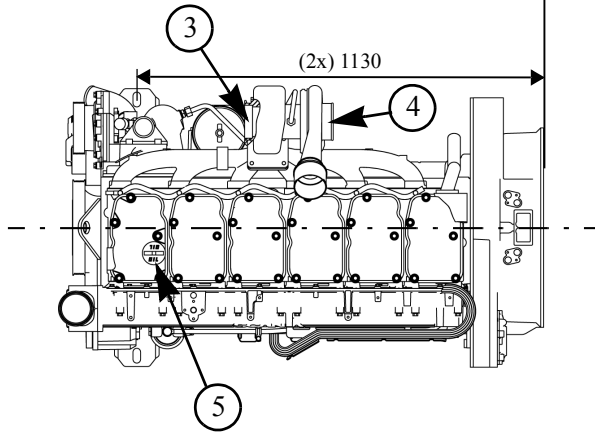
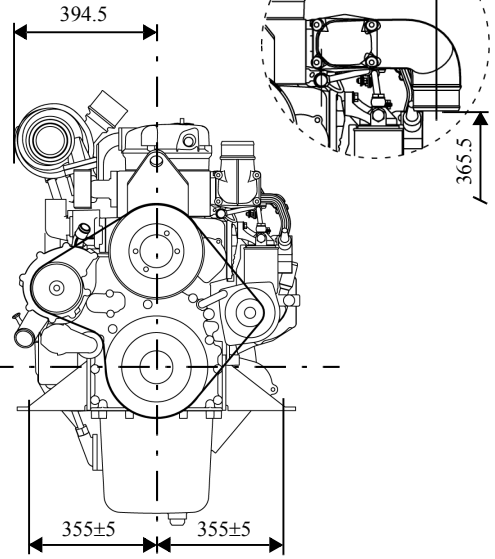
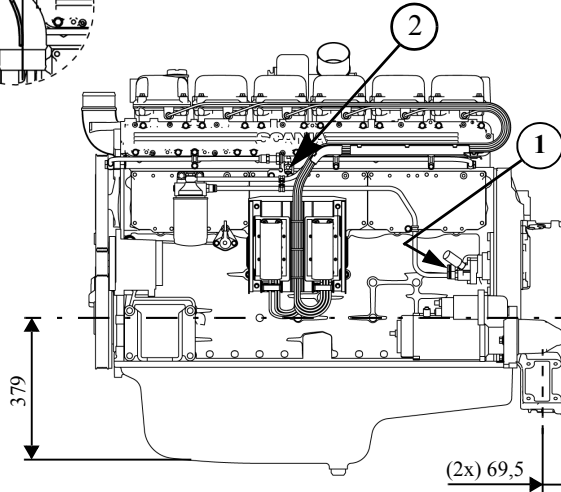
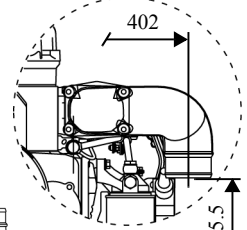
| Test conditions                             |
|---|
| Air temperature<br>+25°C                    |
| Barometric pressure<br>100 kPa (750 mmHg)   |
| Humidity<br>30%                             |
| Diesel fuel acc. to<br>ECE R 24 Annex 6     |
| Density of fuel<br>0.840 kg/dm <sup>3</sup> |
| Viscosity of fuel<br>3.0 cSt at 40°C        |
| Energy value<br>42700 kJ/kg                 |

# DC12 EMS

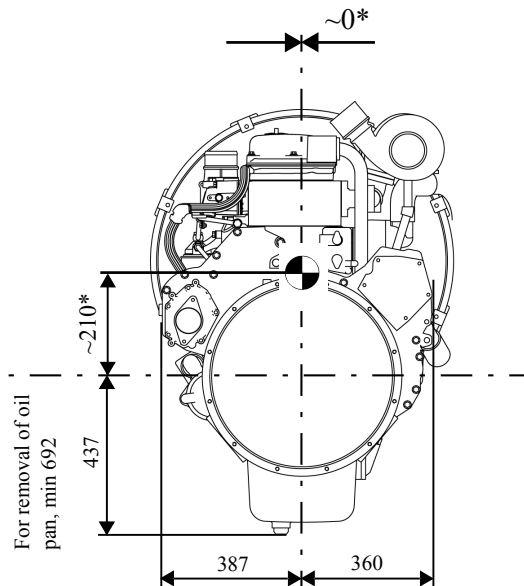
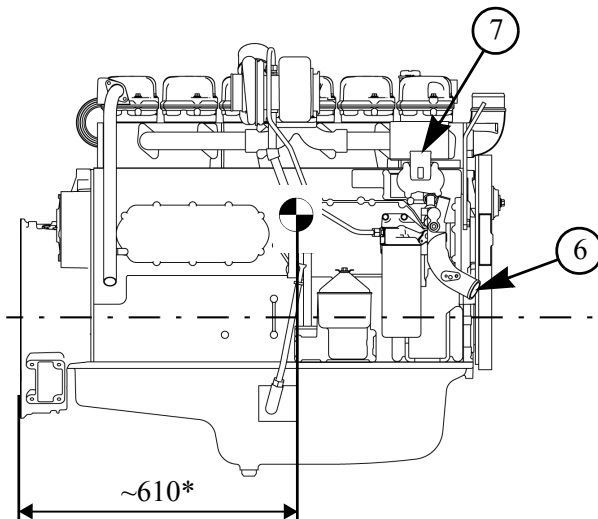
Optional design



Optional design



1. Fuel inlet
2. Fuel return
3. Air intake
4. Exhaust outlet
5. Oil filling
6. Water inlet
7. Water outlet



**SCANIA**

This specification may be revised without notice.