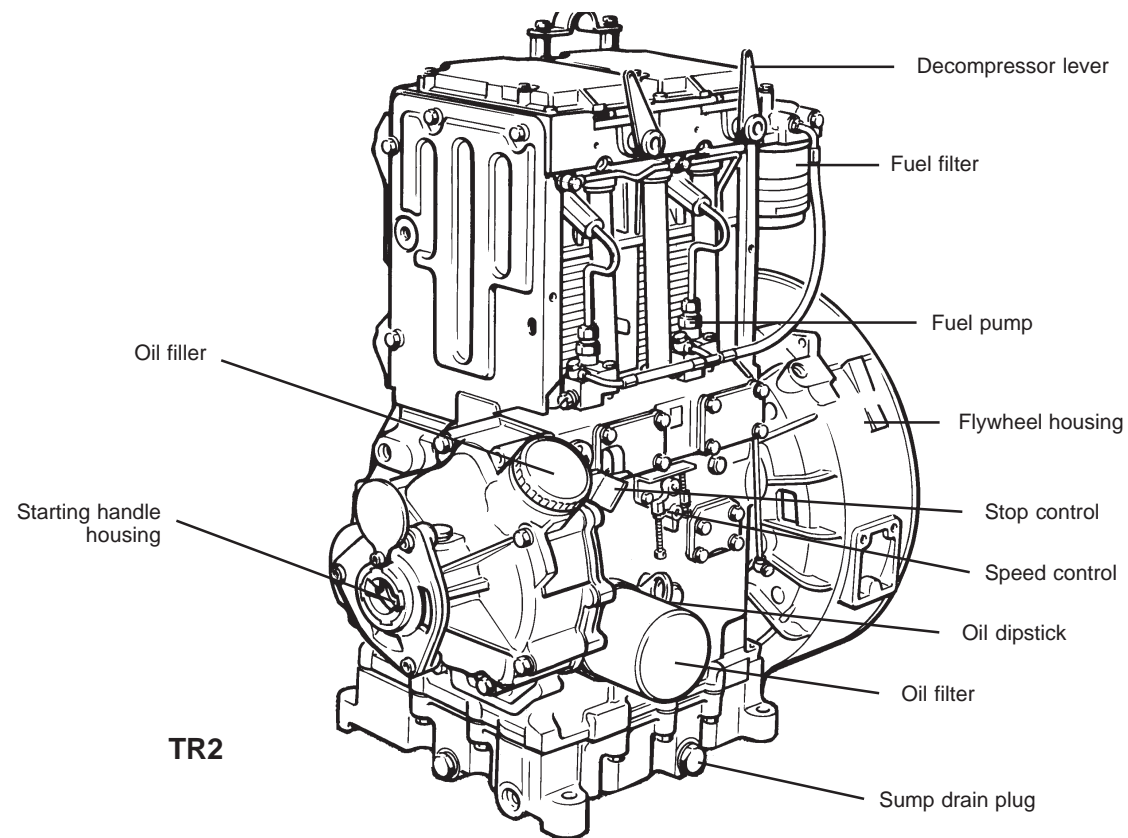


Approximate Weight and Dimensions

| | | TR1 | TR2 | TR3 |
|------------|----|------|------|------|
| Dry weight | kg | 153 | 185 | 230 |
| | lb | 337 | 408 | 507 |
| Length (A) | mm | 444 | 571 | 698 |
| | in | 17.5 | 22.5 | 27.5 |
| Width (B) | mm | 521 | 521 | 521 |
| | in | 20.5 | 20.5 | 20.5 |
| Height (C) | mm | 683 | 683 | 683 |
| | in | 26.9 | 26.9 | 26.9 |



Typical Engine Features



TR2

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We have made efforts to ensure that the information is accurate, but reserve the right to amend specifications and information without notice and without obligation or liability.



TR1,2,3 Series

Power Range: 7.4 - 38 hp

5.5 - 28.5 kW

Full Load Speed Range: 1500-2500r/min

Industrial Engine Data Sheet

Characteristics

Nomenclature

- 1, 2 and 3 cylinder, air cooled, direct injection diesel engines.

Rotation

- Anti-clockwise, looking on the flywheel end.

Cooling

- Air cooling by means of a flywheel mounted fan.
- Designed for continuous operation in ambients up to 52°C (125°F).
- Oil cooling by means of air flow over deep crankcase finning.

Lubrication

- Self regulating plunger type pump supplies oil under pressure to all important bearing surfaces.
- Full flow spin-on cartridge oil filter.
- 250 hour service intervals.

Fuel System

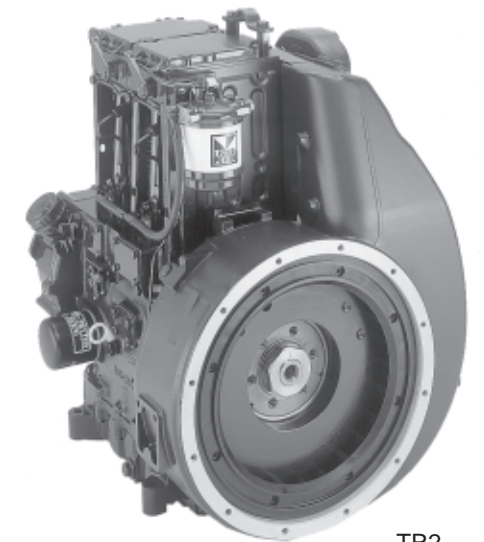
- Individual injection pumps.
- Self-vent system.

Starting

- Hand starting on the camshaft at the gear end.
- Starting handles are available in both limited or non limited kickback versions.
- Optional 12 volt electric starting.

Mechanical Governing

- Variable speed - 900-2500r/min.
- Fixed speed - 1500 and 1800r/min.



TR2

Standard Equipment and Options

Standard Equipment

- Flywheel
- Flywheel housing with SAE4 flange.
- Inlet and exhaust manifolds.
- Lubricating oil filter.
- Decompressor levers.
- Operators Handbook - various languages.

Options

- A comprehensive range of options allows the customer to select a specification which matches their requirement.

Technical Data

| | | TR1 | TR2 | TR3 | |
|---|---------------------|----------------|----------------|----------------|-----|
| Injection | | Direct | Direct | Direct | |
| Cooling | | Air | Air | Air | |
| Method of cooling | | Flywheel fan | Flywheel fan | Flywheel fan | |
| Rotation - looking on flywheel | | Anti-clockwise | Anti-clockwise | Anti-clockwise | |
| Nominal bore | mm | 98.42 | 98.42 | 98.42 | |
| | in | 3.875 | 3.875 | 3.875 | |
| Stroke | mm | 101.6 | 101.6 | 101.6 | |
| | in | 4.0 | 4.0 | 4.0 | |
| Number of cylinders | | 1 | 2 | 3 | |
| Cylinder capacity | litre | 0.773 | 1.55 | 2.32 | |
| | in ³ | 47.17 | 94.35 | 141.52 | |
| Compression ratio | | 15.5:1 | 15.5:1 | 15.5:1 | |
| Idling speed - minimum | r/min | 850 | 850 | 850 | |
| Sump capacity with the engine level | litre | 2.7 | 4.0 | 6.0 | |
| | pint | 4.7 | 7.0 | 10.5 | |
| | US quart | 2.8 | 4.2 | 6.3 | |
| Oil pressure - mean | bar | 2.0 | 2.0 | 2.0 | |
| | lbf/in ² | 29.0 | 29.0 | 29.0 | |
| Fuel tank capacity - engine mounted | litre | 13.5 | 13.5 | 13.5 | |
| | pint | 23.7 | 23.7 | 23.7 | |
| | US quart | 14.2 | 14.2 | 14.2 | |
| Maximum permissible crankshaft end thrust | kgf | 132 | 132 | 132 | |
| | lbf | 290 | 290 | 290 | |
| Crankcase vacuum: | mbar | 2.0 | 2.5 | 3.0 | |
| | - minimum | in WG | 0.8 | 1.0 | 1.2 |
| | - average | mbar | 3.5 | 4.6 | 7.5 |
| | | in WG | 1.4 | 1.8 | 2.9 |
| Number of flywheel gear ring teeth | | 110 | 110 | 110 | |

Fuel Consumption

In the following table the 100% load figures are subject to 5% tolerance but all other figures are approximate and not guaranteed.

| | | 1500 | 1800 | 2000 | 2500 |
|------------------|-----------|------|------|------|------|
| TR1 100% load | litre/hr | 1.5 | 1.9 | 2.1 | 2.5 |
| | US gal/hr | 0.4 | 0.49 | 0.55 | 0.67 |
| TR2 100% load | litre/hr | 3.1 | 3.7 | 4.1 | 4.9 |
| | US gal/hr | 0.81 | 0.97 | 1.07 | 1.3 |
| TR3 100% load | litre/hr | 4.6 | 5.5 | 6.1 | 7.3 |
| | US gal/hr | 1.21 | 1.46 | 1.60 | 1.91 |
| TR1 75% load | litre/hr | 1.2 | 1.5 | 1.6 | 2.0 |
| | US gal/hr | 0.31 | 0.39 | 0.43 | 0.53 |
| TR2 75% load | litre/hr | 2.4 | 2.9 | 3.2 | 3.8 |
| | US gal/hr | 0.64 | 0.76 | 0.85 | 1.03 |
| TR3 75% load | litre/hr | 3.6 | 4.3 | 4.7 | 5.7 |
| | US gal/hr | 0.96 | 1.15 | 1.26 | 1.51 |

Power and Torque Performance to ISO 3046

TR1

| Variable Speed | r/min | 1500 | 1800 | 2000 | 2500 |
|-----------------------------|--------|------|------|------|------|
| Continuous Power | kW | 5.5 | 6.7 | 7.3 | 8.6 |
| | bhp | 7.4 | 9.0 | 9.8 | 11.5 |
| Intermittent Power | kW | 6.1 | 7.4 | 8.0 | 9.5 |
| | bhp | 8.2 | 9.9 | 10.7 | 12.7 |
| Torque - Intermittent Power | Nm | 38.8 | 39.2 | 38.2 | 36.3 |
| | lbf ft | 28.6 | 28.9 | 28.2 | 26.8 |

TR2

| Variable Speed | r/min | 1500 | 1800 | 2000 | 2500 |
|-----------------------------|--------|------|------|------|------|
| Continuous Power | kW | 11.0 | 13.1 | 14.5 | 17.3 |
| | bhp | 14.8 | 17.6 | 19.4 | 23.2 |
| Intermittent Power | kW | 12.1 | 14.4 | 16.0 | 19.0 |
| | bhp | 16.2 | 19.3 | 21.5 | 25.5 |
| Torque - Intermittent Power | Nm | 77.0 | 76.4 | 76.4 | 72.6 |
| | lbf ft | 56.8 | 56.3 | 56.3 | 53.5 |

TR3

| Variable Speed | r/min | 1500 | 1800 | 2000 | 2500 |
|-----------------------------|--------|-------|-------|-------|-------|
| Continuous Power | kW | 16.8 | 20.2 | 22.2 | 25.9 |
| | bhp | 22.5 | 27.1 | 29.8 | 34.7 |
| Intermittent Power | kW | 18.5 | 22.2 | 24.4 | 28.5 |
| | bhp | 24.8 | 29.8 | 32.7 | 38.2 |
| Torque - Intermittent Power | Nm | 117.8 | 117.8 | 116.5 | 108.9 |
| | lbf ft | 86.9 | 86.9 | 85.9 | 80.3 |

Note:

Fixed speed outputs at 1500 and 1800r/min are identical to the variable speed powers as given in the above tables for 1500 and 1800r/min.

Engine Rating Definitions to ISO 3046

Standard ISO Conditions

Barometric pressure 100kPa
Relative humidity 30%
Air inlet temperature 25°C

Continuous Power:

The power in kW, that the engine is capable of delivering continuously at the stated crankshaft speed, under ISO standard conditions, measured at the flywheel without power absorbing accessories. Provided that the engine is correctly serviced and maintained in good operating condition and that fuel to BS 2869 Class A2 or BS EN 590 and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter, are used.

Intermittent Power:

The maximum power in kW that the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours continuous running, immediately after working at the Continuous Power, under the ISO standard conditions specified above.