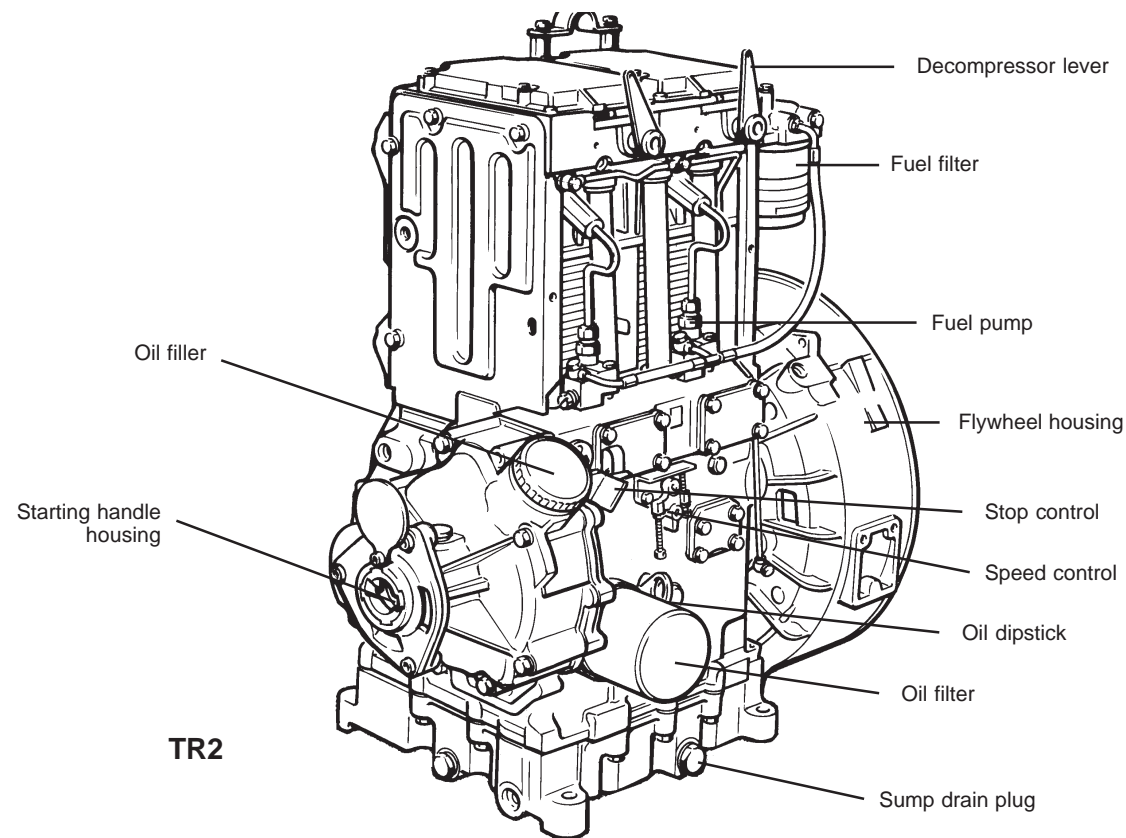


Approximate Weight and Dimensions

		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

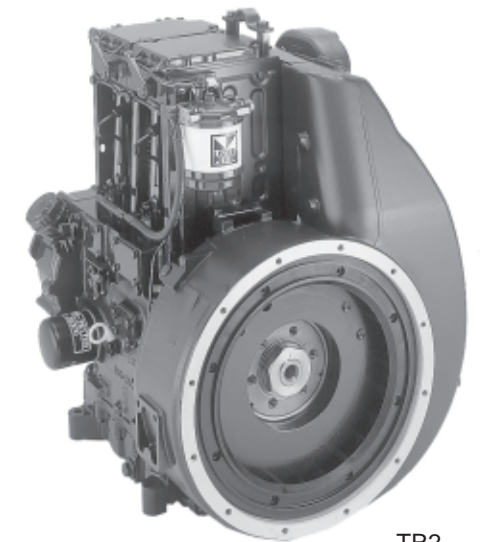
- Individual injection pumps.
- Self-vent system.

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.