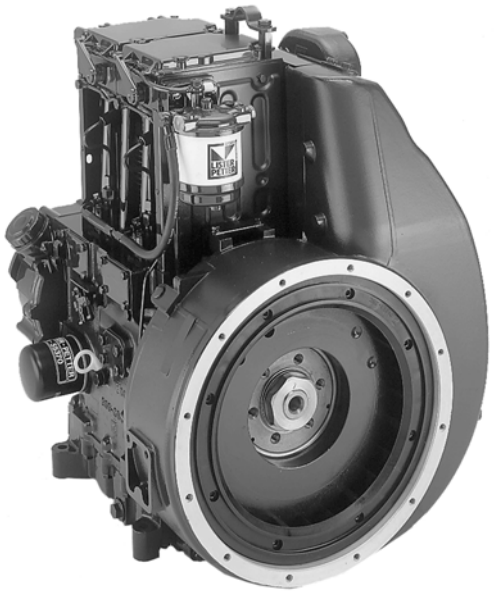
TR1, 2 and 3 Series

Power Ranges: 5.5 – 28.5 kW; 7.4 – 38 bhp
Full Load Speed Range: 1500 – 2500r/min

Engine Characteristics:

- One, two and cylinders.
- Direct injection.
- Naturally aspirated.
- Air cooled.
- Diesel fuelled.
- Anti-clockwise rotation, looking on the flywheel end.
- Fuel filter.
- Air cleaner.
- Hand or 12 volt electric starting.

Typical Engine Features



Design Features:

- Designed for continuous operation in ambients up to 52°C (122°F)
- Oil cooling by means of air flow over deep crankcase finning.
- Self regulating plunger type lubricating oil pump.
- 250 hour service intervals.
- Self-vent fuel system with individual fuel injection pumps.
- Mechanical governing:
  Variable speed – 900-2500r/min
  Fixed speed – 1500 and 1800r/min.

Warranty:

- Standard – two years from manufacture.
- Optional – five years from the date of sale (conditions apply).

Standard Equipment:

- Flywheel.
- Flywheel housing with SAE4 flange.
- Inlet and exhaust manifolds.
- Spin-on lubricating oil filter.
- Fuel filter.
- Decompressor levers.
- Operators Handbook.

Optional Items:

- A comprehensive range of options allows the customer to select a specification which matches their requirement.
- Five year warranty from the date of sale (conditions apply).

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

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

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

		r/min	1500	1800	2000	2500
TR1	Intermittent Power	Nm	38.8	39.2	38.2	36.3
		lbf ft	28.6	28.9	28.2	26.8
TR2		Nm	77.0	76.4	76.4	72.6
		lbf ft	56.8	56.3	56.3	53.5
TR3		Nm	117.8	117.8	116.5	108.9
		lbf ft	86.9	86.9	85.9	80.3

Fixed Speed Power

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.

Technical Data

		TR1	TR2	TRT3
Type of fuel injection		Direct	Direct	Direct
Number of cylinders		1	2	3
Aspiration		Natural	Natural	Natural
Direction of rotation – looking on flywheel end		Anti-clockwise	Anti-clockwise	Anti-clockwise
Nominal cylinder 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
Total 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
Minimum idling speed	r/min	850	850	850
Number of flywheel ring gear teeth		110	110	110
Maximum continuous crankshaft end thrust	kgf	132	132	132
	lbf	290	290	290
Crankcase vacuum – minimum	mbar	2.0	2.5	3.0
	in H_2O	0.8	1.0	1.2
Crankcase vacuum – average	mbar	3.5	4.6	7.5
	in H_2O	1.4	1.8	2.9
Lubricating oil pressure – mean and with the oil at 110°C (230°F)	bar	2.0	2.0	2.0
	lbf ft^2	29	29	29
Lubricating oil pressure at idle	bar	1.0	1.0	1.0
	lbf ft^2	14.5	14.5	14.5

Fuel Consumption

100% Load – continuous power

	r/min	1500	1800	2000	2500
TR1	litre/hr	1.5	1.9	2.1	2.5
	US gal/	0.4	0.49	0.55	0.67
TR2	litre/hr	3.1	3.7	4.1	4.9
	US gal/	0.81	0.97	1.07	1.3
TR3	litre/hr	4.6	5.5	6.1	7.3
	US gal/	1.21	1.46	1.60	1.91

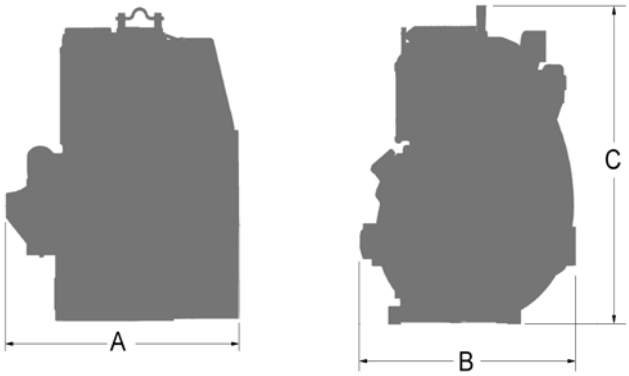
75% Load – continuous power

1500	1800	2000	2500
1.2	1.5	1.6	2.0
0.31	0.39	0.43	0.53
2.4	2.9	3.2	3.8
0.64	0.76	0.85	1.03
3.6	4.3	4.7	5.7
0.96	1.15	1.26	1.51

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

Approximate Dimensions and Weight

		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



Rating Definitions (ISO 3046)

1. Fixed Speed Power - continuous speed (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under conditions of 100 kPa barometric pressure, 30% relative humidity and 25°C air inlet temperature, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Limited, are used.

2. Fixed Speed Powers - overload power (ICXN)

The maximum power in kW which 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 conditions specified in (1) above.

3. Variable Speed - fuel stop power, continuous power (IFN)

The maximum power in kW which an engine is capable of delivering continuously at stated crankshaft speed, under the conditions as specified in item 1, with the fuel limited so that the fuel stop power cannot be exceeded.

4. Variable Speed - fuel stop power, intermittent (IOFN)

The maximum power in kW which an engine is capable of delivering intermittently at the stated crankshaft speed, for a period not exceeding 1 hour in any period of 12 hours continuous running immediately after running at the Continuous Fuel Stop Power rating.

5. De-rating

For non-standard site conditions, reference should be made to relevant BS, ISO and DIN standards.

Notes:

1. *The overload capability applies to a fully run-in engine. This is normally attained after a running period of about 50 hours .*
2. *Power ratings measured at the flywheel and fuel consumptions, apply to a fully run-in, non derated engine without a radiator and fan fitted, and without power absorbing accessories or transmission equipment.*

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