LISTER PETTER
POWER SYSTEMS

T SERIES

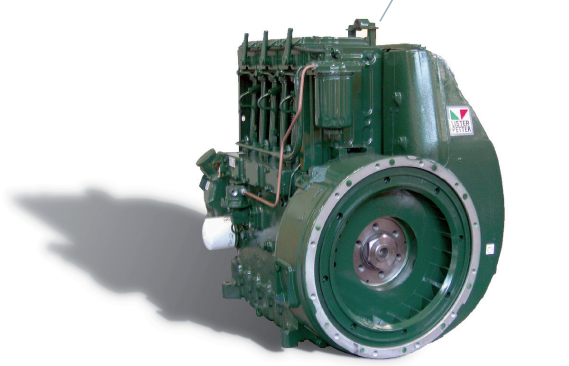
TR G Build Engines

TR1 | TR2 | TR3

fixed speeds
1500 | 1800 r/min

5.5 - 22.2 kW | 7.4 -29.8 bhp

TR3 Engine



OVERVIEW

The G Build engine is specifically designed as a Power generating engine suitable for use in unregulated emissions territories. It is durable, reliable and easy to maintain with oil and filter changes up to 250 hours, dependant on operational conditions.
It is designed for operation in ambient temperatures up to 40°C (104°F).

BASIC ENGINE CHARACTERISTICS

- diesel fuelled and approved for operation on biodiesel, that conform with ASTM D6751 and EN14214, concentrations of up to 20%
- direct injection
- 1, 2 or 3 cylinders
- air cooled
- naturally aspirated
- electric start (hand start optional)

Note:
These engines do not comply with Harmonised International Regulated Emissions Limits.

DESIGN FEATURES AND EQUIPMENT

- medium duty air cleaner *
- oil cooling by means of air flow over a deep crankcase finning
- inlet and exhaust manifolds
- fuel injection pump and self-vent fuel system
- fuel filter
- fuel lift pump *
- self-regulating plunger type lubricating oil pump
- spin-on lubricating oil filter
- decompressor lever
- flywheel with cooling fan **
- SAE 4 flywheel housing **
- mechanical governing
- 12V starter motor *
- safety switches *
- fuel control solenoid (energised to run) *
- standard skid base packing
- 250 hour service intervals
- operators' handbook

OPTIONAL ITEMS

- 12V battery charge windings
- SAE4:5 ventilated adaptor
- SAE4:4 ventilated adaptor
- 6.5" or 7.5" drive member
- heavy duty air cleaner

See also items with asterisk under Design Features and Equipment.
A range of options allows you to select a specification that matches your requirements, please consult your Lister Petter distributor.

Note:
T range genset engines are configured to accept dedicated single bearing alternators manufactured specifi cally to suit the TR bare flywheel arrangement. For alternators other than these it will be necessary to add to the specifications a ventilated adaptor (SAE4 or SAE5) and a drive member (6.5" or 7.5").

* Optional items standard on most builds
** Options available
*** Please refer to Applications Department for cyclic irregularity implications

POWER OUTPUTS

Speed, r/min	Power	Engine Power							
		TR1				TR2			
		Gross		Net		Gross		Net	
		kWm	bhp	kWm	bhp	kWm	bhp	kWm	bhp
1500	Continuous	5.5	7.4	5.5	7.4	11.0	14.8	11.0	14.8
	Fuel stop	6.1	8.2	6.1	8.2	12.1	16.2	12.1	16.2
1800	Continuous	6.7	9.0	6.7	9.0	13.1	17.6	13.1	17.6
	Fuel stop	7.4	9.9	7.4	9.9	14.4	19.3	14.4	19.3

Speed, r/min	Power	TR3			
		Gross		Net	
		kWm	bhp	kWm	bhp
1500	Continuous	16.8	22.5	16.8	22.5
	Fuel stop	18.5	24.8	18.5	24.8
1800	Continuous	20.2	27.1	20.2	27.1
	Fuel stop	22.2	29.8	22.2	29.8

TECHNICAL DATA

		TR1	TR2	TR3
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
Crankshaft end thrust (maximum continuous)	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) with the oil at 110°C (230°F)	bar	2.0	2.0	2.0
	lbf/in^2	29	29	29

RATING DEFINITIONS TO ISO 3046

ISO Standard Conditions

Barometric pressure 100 kPa
Relative humidity 30%
Ambient air temperature at the inlet manifold 25°C

Fixed Speed: Continuous Power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO 3046 standard conditions, measured at the flywheel without powerabsorbing accessories, 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 Power Systems Limited are used.

Fixed Speed (Fuel Stop): 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 of continuous running, immediately after working at the continuous power, under ISO 3046 standard conditions and with the provisions specified for continuous power in item (1) above, but with the fuel limited so that the fuel stop power cannot be exceeded.

Derating

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

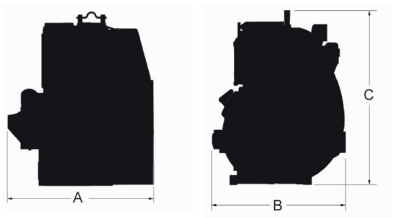
Notes:

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

APPROXIMATE FUEL CONSUMPTION

Speed, r/min	Load, %	TR1		TR2		TR3	
		g/kWh	l/h	g/kWh	l/h	g/kWh	l/h
1500	100	229	1.5	237	3.1	230	4.6
	75	244	1.2	244	2.4	240	3.6
1800	100	238	1.9	237	3.7	229	5.5
	75	251	1.5	248	2.9	238	4.3

APPROXIMATE DIMENSIONS AND WEIGHT



		TR1	TR2	TR3
Dry weight	kg	153	185	230
	lb	337	408	507
Length (A) without fuel tank	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

Note:
These weights are for a fully dressed G build configured engine.

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MADE IN BRITAIN