

850 Series 854F-E34T Industrial Engine

EU Stage IIIB, EPA Tier 4 Final and MLIT Step 4
45-55.4 kW / 60-74 hp

The new, innovative Perkins® 850 Series engines are designed to meet EU Stage IIIB, EPA Tier 4 and Japanese MLIT Step 4 emissions legislation. These engines have been designed to give exceptional power density and low cost of ownership. Their robust technology allows our OEMs the ability to integrate these engines into their equipment with the minimum of re-engineering.

The 854F-E34T is the smaller engine of the 850 Series. Turbocharged, 3.4 litre, 4 cylinder unit capable of producing 55.4 kW (74 hp), its high power density, combined with excellent torque, enables the machine manufacturers to select this engine where previously they may have used an engine of higher cubic capacity. This downsizing represents a cost saving and creates more space to package the new aftertreatment unit.

The Perkins 850 Series engines have the innovative design to meet the latest, stringent emissions legislation and the flexibility to integrate into hundreds of different types of equipment.

Perkins have developed a reputation for designing and building reliable and durable engines suitable for the most demanding applications.



Emissions

Designed to meet 2013 EU Stage IIIB (Europe), EPA Tier 4 Final (US) and MLIT Step 4 (Japan) emission requirements.

Specification		
Number of cylinders	4 vertical in-line	
Bore and stroke	99 x 110 mm	3.9 x 4.3 in
Displacement	3.4 litres	207.5 in ³
Aspiration	Turbocharged	
Cycle	4 stroke	
Combustion system	Direct injection	
Compression ratio	17:1	
Rotation	Anti-clockwise, viewed on flywheel	
Cooling system	Liquid	
Total coolant capacity	6 litres	1.58 US gal

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Final weight and dimensions will depend on completed specification.

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Features and benefits

Reliable, quiet, and durable power

- World-class manufacturing capability and processes coupled with proven core engine designs assure reliability, quiet operation, and many hours of productive life

Innovative design

- Leading-edge technology of the 850 Series provides significant improvements in power, torque, fuel consumption and response
- Turbocharging – single smart wastegated turbo systems
- Durable high pressure common rail technology
- Centrifugal (no filter) closed circuit breathing system

Fuel economy

- Fuel consumption optimized to match operating cycles of a wide range of equipment and applications. No additional fluids or additives are required which lowers operating costs

Low cost of ownership

- Excellent fuel consumption
- Hydraulic tappets allow service-free top end
- Multi-vee belts for longer service intervals
- 500 hour oil change intervals
- Option of service-free Diesel Particulate Filter
- Extended Service Contracts:
 - No surprises – Total protection from unexpected repair costs (parts, labour and travel)
 - Enjoy longer lasting product support from Perkins global network
 - Genuine Perkins parts ensure continued engine performance
 - Highly trained technicians carry out all repairs
 - Transferable coverage should you sell your machine

Discover more: www.perkins.com/esc

Product support excellence

- Perkins recognise that the customer relationship is important to machine manufacturers and we can offer a range of flexible solutions to help provide appropriate support, either to the OEM's network or directly to the machine customer
- Perkins information systems enable our distributors to quickly diagnose engine faults and identify the right parts. The Perkins logistics operation is able to dispatch more than 45,000 different parts from stock, reaching the customer within 24 hours
- To find your local distributor: www.perkins.com/distributor

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Technical information

- Multiple engine ratings
- SAE A PTO drive
- Timing case gear driven auxiliaries
- Flywheel housings
- Flywheel and starter rings
- Fuel filter positions
- Adapter plates
- Starter motors
- Fan drives and locations
- Lubricating oil filters
- Front end drives
- Alternators
- Belt driven auxiliaries
- Induction manifolds
- Exhaust manifolds
- Cold start aids
- Engine mountings
- Cooling packs
- Electronic Control Module
- Common rail fuel pump and injectors
- Wiring harness
- Sensors for:
 - Engine speed
 - Oil pressure
 - Coolant temperature

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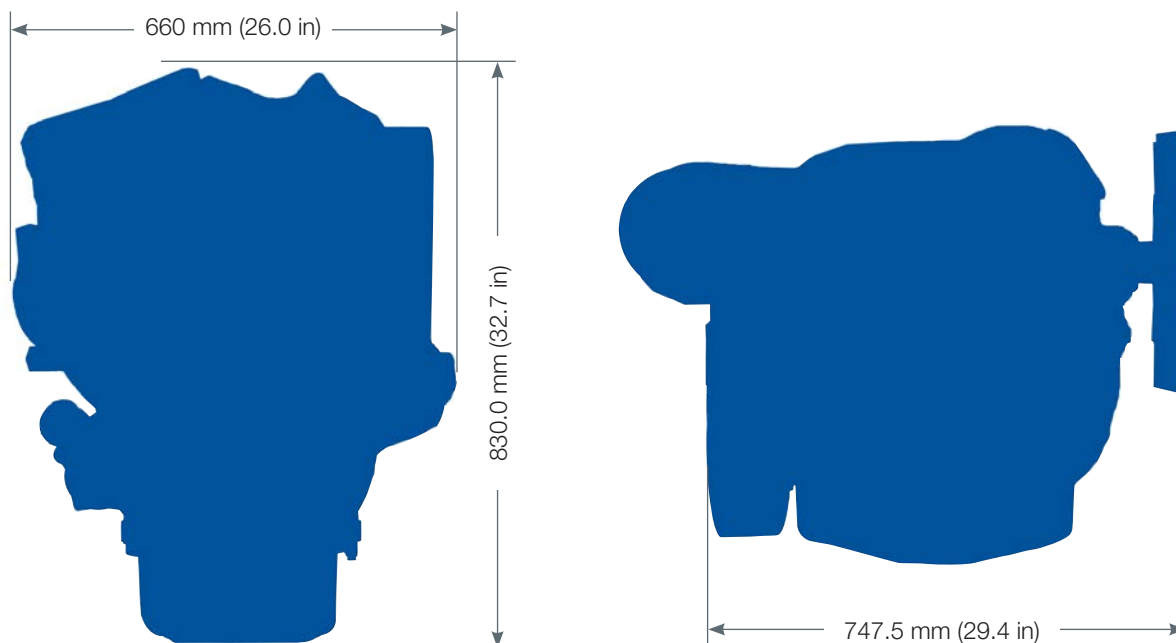
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Engine package weights and dimensions		
Side turbo – Length	747.5 mm	29.4 in
Width	662.0 mm	26.0 in
Height	822.0 mm	32.3 in
Top turbo – Length	747.5 mm	29.4 in
Width	660.0 mm	26.0 in
Height	830.0 mm	32.7 in
Weight (dry)	270 kg	595.2 lb

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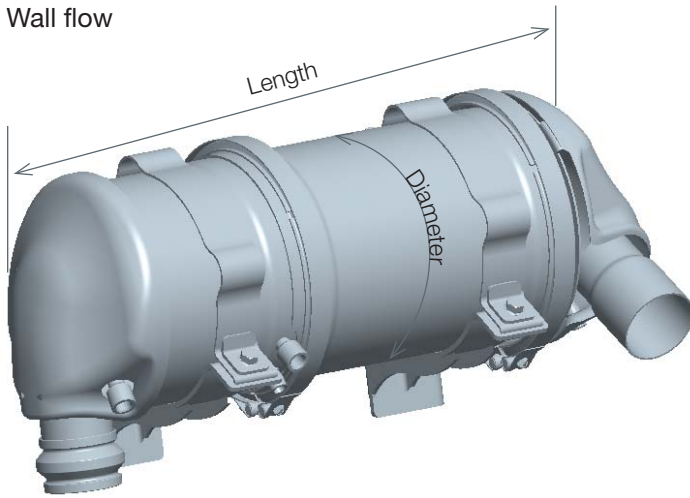
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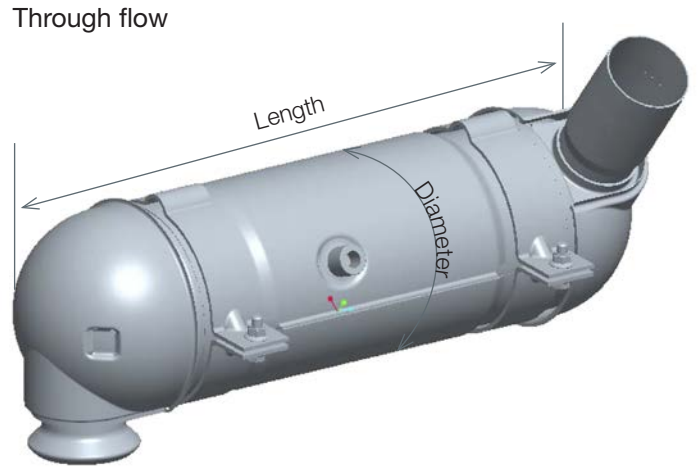
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Wall flow



Through flow



Aftertreatment weights and dimensions

	Wall flow		Through flow	
Length	541 mm	21.3 in	509 mm	20 in
Diameter of can	180 mm	7.1 in	149 mm	5.8 in
Weight	20 kg	44 lb	14 kg	30.8 lb

Aftertreatment

The diesel particulate filter on its own cannot remove all the legislated gases. Hydrocarbons, carbon monoxide and the 'soluble organic fraction' must also be managed. The Diesel Oxidation Catalyst (DOC) is a silicon carbide material but uses a through flow principle. The gases pass straight through the device rather than through the walls.

For particulate reduction Perkins is offering customer flexibility by having two options for our customers:

- A silicon carbide wall flow DPF. This porous ceramic material is highly efficient at removing particulate matter – 90% as a minimum – and often much higher
- We also have options for service-free, through flow diesel particulate filter (not suitable for Switzerland)
- Incorporating low temperature regeneration with oxy-exotherm back-up

Technology

The Diesel Particulate Filter (DPF) technology chosen performs through the whole work cycle of the engine thus allowing it to work efficiently.

Power

Using our advanced research and development techniques, we have perfectly matched the aftertreatment to the engine. The engine performance has then been optimised to give the maximum power and the emissions module is invisible to the operator in most duty cycles.

Mounting

Multiple off and on engine installation options provide OEM with simple and flexible solutions for many applications.

Service

Minimum 3,000 hour DPF ash service intervals for wall flow DPF and free service for through flow filter.

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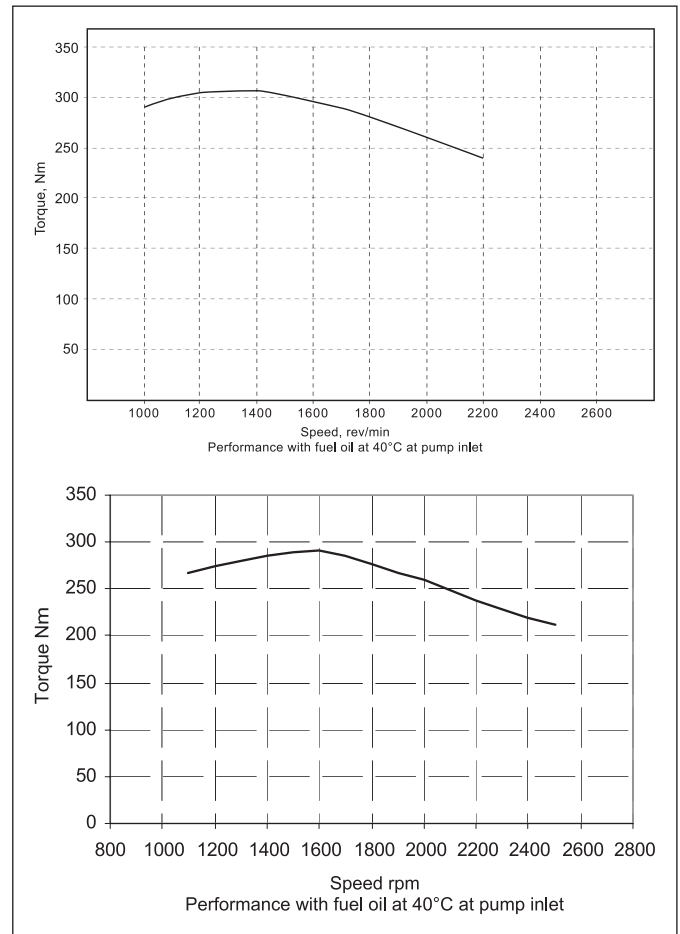
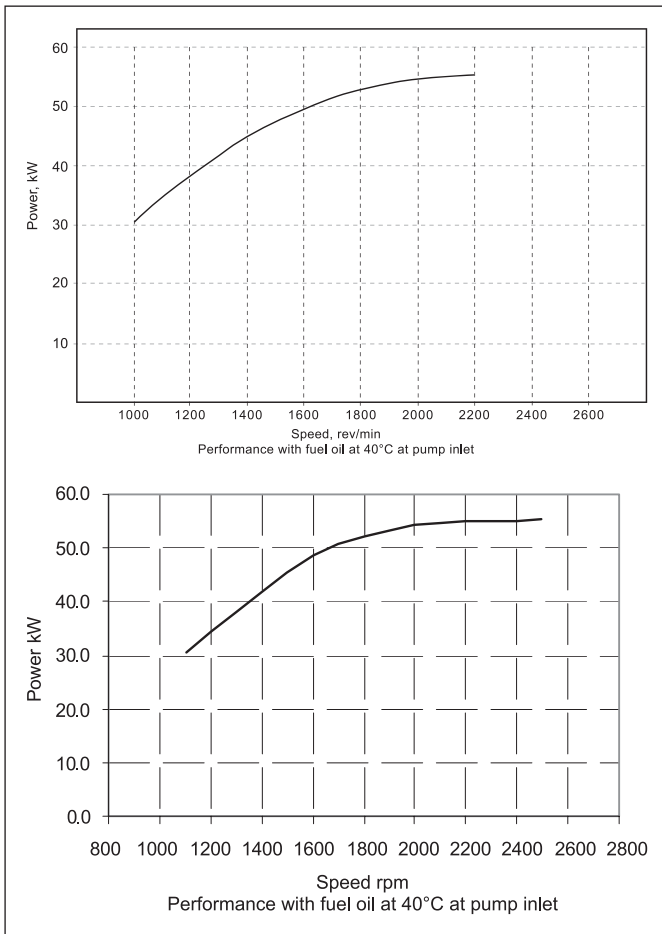
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Speed rpm	Power kW	Power hp	Speed rpm	Torque Nm	Torque lb-ft	Rating type
2200	55.4	74.3	1400	318	234.5	C
2500	55.4	74.3	1600	291	214.6	C

Rating Standard ISO 14396:2002

Unless otherwise specified, all stated data is for maximum rated speed and 100% load

Rating definitions and conditions

IND-C (Intermittent) is the horsepower and speed capability of the engine where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

Additional ratings are available for specific customer requirements. Consult your Perkins distributor.

Rating Conditions for Diesel Engines – up to 7.1 litres are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in. Hg), with a vapour pressure of 1 kPa (0.295 in Hg) and 25°C (77°F). Performance is measured using fuel to specification EPA 2D 89.330-96 with a density of 0.845-0.850 kg/L @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

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