

400 Series 404F-E22T/TA

Industrial EU Stage IIIB / U.S. EPA Tier 4 Final / Japan 2014 (Tier 4 Final) 36.4 kW (49 bhp); 50 kW (67 bhp)

The Perkins 404F-E22T/TA engine is the newest member of the highly successful Perkins 400 Series range and has been designed to help our customers meet current emissions standards in Europe, North America and Japan.

The 404F-E22 is a 4-cylinder, 2.2 litre engine that offers supreme reliability, flexibility and an easy integration process. The engine is available in a turbocharged or turbocharged aftercooled configuration.

Benefiting from a fully electronic fuel system, the engine further improves on the 400 Series reputation of excellent transient performance and low fuel consumption.

The 404F-E22 is capable of producing 50 kW (67 hp) and delivers excellent torque at low speeds, reduced owner and operating costs and low noise and harshness.

Commonality with other engines in the 400 Series has been built into this new engine, allowing for minimum machine change and reduced development costs for Perkins customers.

We have developed a reputation for designing and building reliable and durable engines suitable for the most demanding off-highway applications. An extensive range of options is on offer, making the 400 Series the complete solution for compact power needs.



Emissions

Designed to meet the 2013 EU Stage IIIB, U.S. EPA Tier 4 Final and Japan 2014 (Tier 4 Final) emissions standards.

Reliable, Quiet, and Durable Power

You are provided reliability, quiet operation, and many hours of productive life thanks to Perkins world-class manufacturing capability and processes, coupled with our proven core engine designs.

Innovative Design

- A simple, cost effective solution to meet current emissions standards
- Improved performance and reduced fuel consumption levels
- Flexibility in aftertreatment mounting
- Regeneration-free aftertreatment robust in all conditions
- Turbocharged and turbocharged aftercooled versions

Low Cost of Ownership

- Reduced oil consumption
- Easy maintenance and serviceability
- Improved fuel consumption
- Service-free aftertreatment system
- Regeneration-free aftertreatment system eliminates downtime
- 500-hour service intervals and two-year warranty as standard

Local support, global coverage

Perkins recognises that the customer relationship is important to machine manufacturers. 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.

You are never far away from expert product knowledge, genuine parts and a range of advanced diagnostic technology for keeping your engine in peak condition, with highly trained Perkins distributors in thousands of communities in 180 countries.

Engine data

Number of cylinders	4 vertical in-line
Bore and stroke	84 mm x 100 mm (3.3 in x 3.9 in)
Displacement	2.2 litres (135 cubic in)
Aspiration	Turbocharged
Aspiration	Turbocharged aftercooled
Cycle	4 stroke
Combustion system	Direct injection
Compression ratio	18:1
Rotation	Anti-clockwise, viewed on flywheel
Cooling system	Liquid
Total lub system capacity (engine only)	10.6 litres (2.8 US gal)
Total coolant capacity (engine only)	4.2 litres (1.1 US gal)

Dimensions - based on rear mount

Length including fan	723 mm (28.4 in)
Width	545 mm (21.4 in)
Height	720 mm (28.3 in)
Dry weight	230 kg (507 lbs)

Final weight and dimensions will depend on completed specification

Warranties and Service Contracts

We provide two-year warranties for variable speed models, as standard.

These are supported by multilevel Extended Service Contracts that can be bought additionally.

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Engine specification

Core engine

- Multiple engine rating options
- Cast iron engine block
- SAE A PTO drive
- Flywheel and flywheel housing options
- Glow plug starting aid
- Engine mounting
- Block heater provision

Fuel system

- Electronic 2000 bar common rail fuel system
- Spin on fuel filter with water detector

Electrics

- Starter motor 12 volts
- Alternator 12 volts, 85 amp

Air system

- Turbocharged and turbocharged aftercooled configurations

Cooling system

- Belt driven coolant pump
- Cooling fan options
- Fan drive options

Lubrication system

- Oil sump options for various applications
- Spin on oil filter

Control system

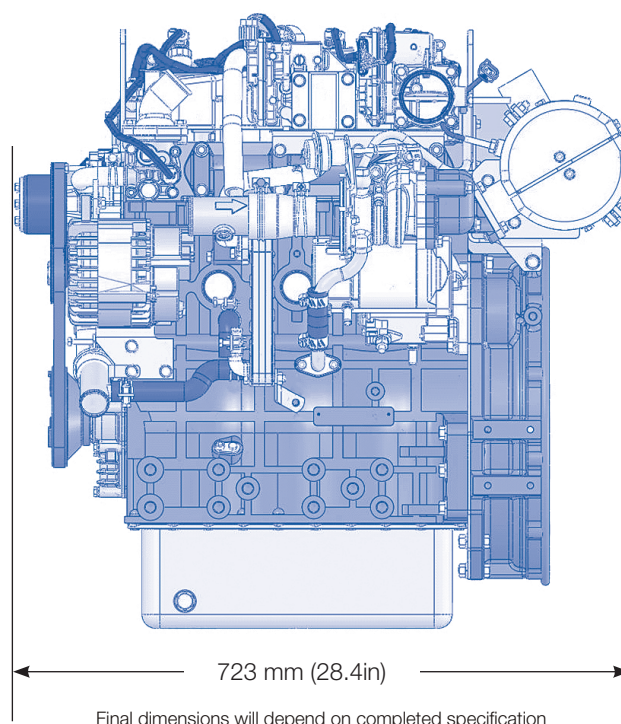
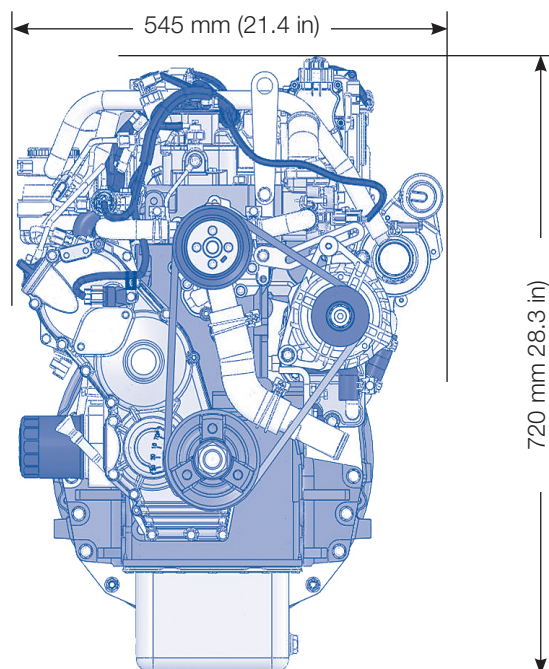
- Electronic control module – chassis mounted
- Flexible and configurable software features and well supported SAE J1939 CAN bus enables highly integrated machines
- The wiring harness connectors and sensors are waterproof and designed to withstand harsh off-highway environments

Emissions control system

- Compact Diesel Oxidation Catalyst only aftertreatment system

Options group

- An extensive range of options are available, enabling you to prepare a specification matched precisely to your needs



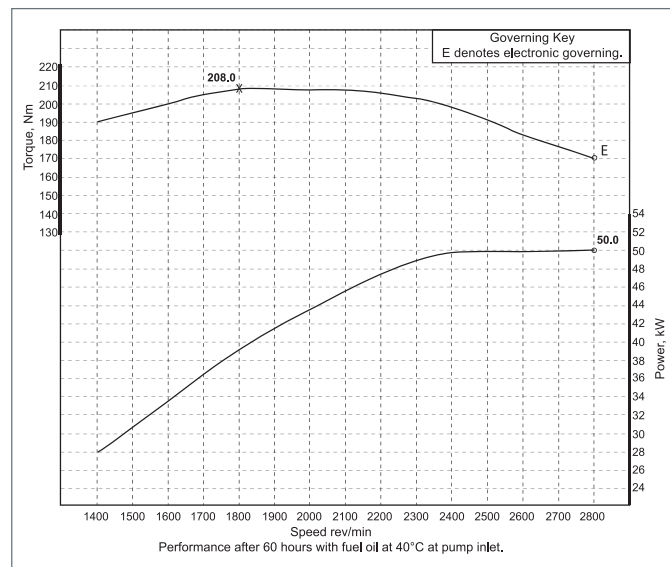
 **Perkins®**

THE HEART OF EVERY GREAT MACHINE

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Performance data



Parent ratings

	'C' Rating		Speed (rpm)	Torque	
	kW	bhp		Nm	lbf·ft
T	36.4	48.8	2800	165	121.7
TA	50.0	67.0	2800	208	153.4

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%).

We have a selection of ratings to match differing machine requirements and will work with you to find the best power solution.

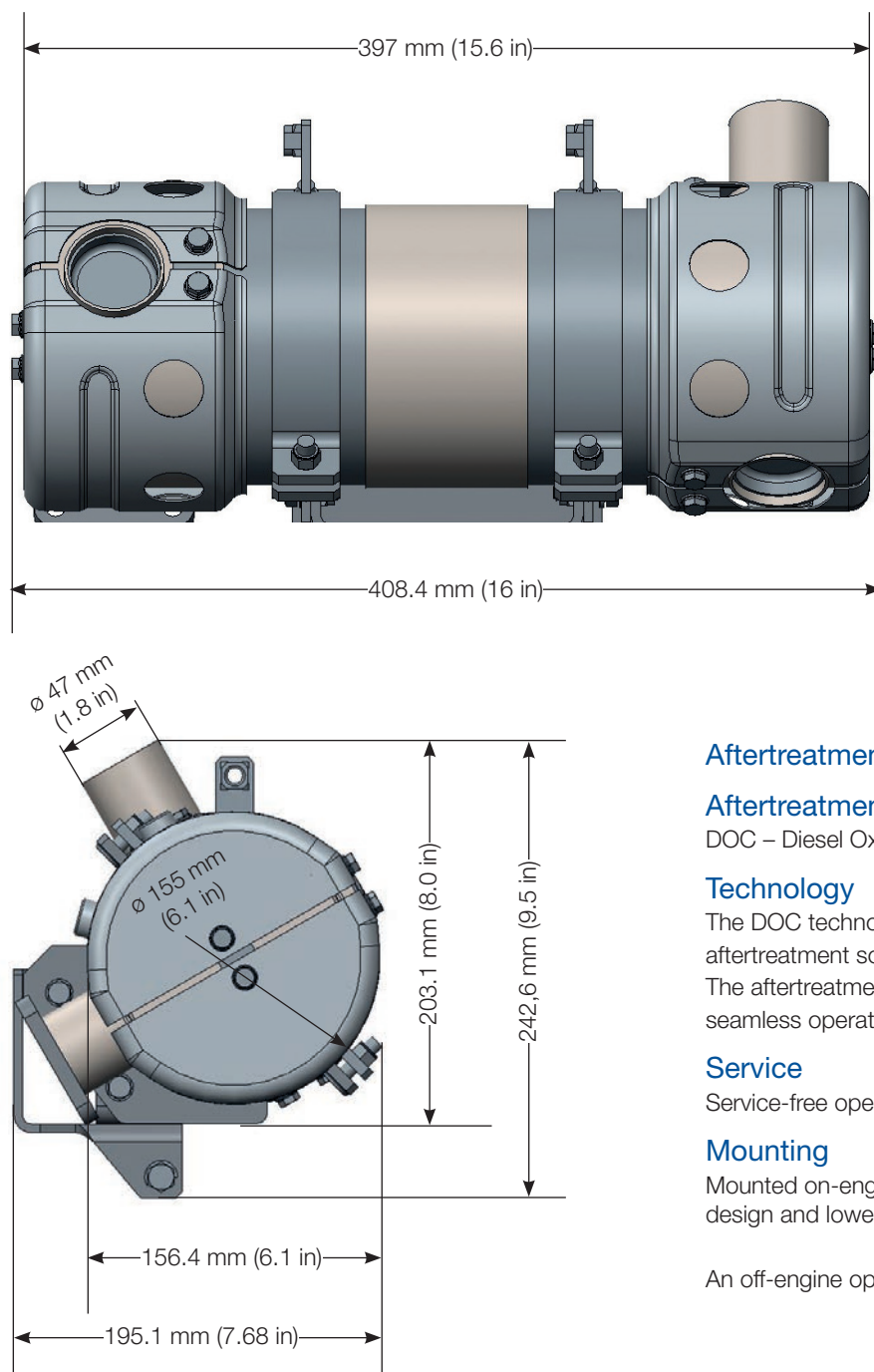
Rating Conditions for Diesel Engines - up to 7.1 litres are based on ISO/TR14396, inlet air standard conditions with a total barometric pressure of 100 kPa (29.5 in. Hg), with a vapour pressure of 1 kPa (0.295 in Hg) and 25°C (77°F). Performance is measured using fuel to specification EPA 2D 89.330-96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

- Variable Speed: Industrial and IOPU engines: Certified against the requirements of EU Stage IIIB (Directives 97/68/EC, as last amended, and 2004/26/EC, as last amended); and US EPA Tier 4 Final (40 CFR Part 1039).



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Aftertreatment configuration

Aftertreatment

DOC – Diesel Oxidation Catalyst

Technology

The DOC technology provides customers with an aftertreatment solution that is as compact as possible. The aftertreatment is regeneration free, providing a seamless operation throughout the work cycle.

Service

Service-free operation.

Mounting

Mounted on-engine as standard. This will provide the simplest design and lowest total cost for the machine manufacturer.

An off-engine option will be offered for some machines.