

400 Series 404F-E22T/TA Industrial

EU Stage IIIB / EPA Tier 4 Final / MLIT Step 4
25-50 kW / 33.5-67 hp

The Perkins 404F-E22T/TA engine is the newest member of the highly successful Perkins 400 Series range and has been designed to meet the latest set of emissions in North America and Japan.

This compact, 4 Cylinder engine offers our customers the ability to meet the latest emissions legislation with a compact package. Benefiting from a fully electronic fuel system, the engine further improves on the 400 Series reputation of excellent transient performance and low fuel consumption.

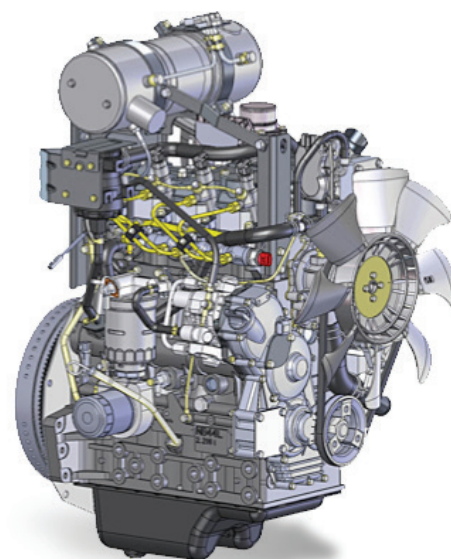
The 404F-E22 is a 4 cylinder, 2.2 litre engine available in a turbocharged or turbocharged after cooled configuration.

This compact package is capable of producing 50kW (67hp) and delivers excellent torque at low speeds, reduced owner and operating costs and extremely 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 our customers.

An extensive range of options is offered that make the 400 Series the complete solution for compact power needs.

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



Emissions

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

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

- A simple, cost effective solution to meet highest regulated emissions
- 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 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.
- With highly trained Perkins distributors in thousands of communities in over 180 countries, 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

Engine data

Number of cylinders	4 vertical in-line
Bore and stroke84 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 one-year warranties for constant speed engines and 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
- Adapter plate
- Glow plug starting aid
- Cast iron exhaust manifold options
- Induction manifold options
- Engine mounting
- Block heater provision

Fuel system

- Electronic 2000 bar common rail fuel system
- Spin on fuel filter
- Simple pintle nozzle injectors

Electrics

- Starter motor 12 volts
- Alternator 12 volts, 85 amp
- Off engine mounted ECU

Air system

- Turbocharged and turbocharged aftercooled configurations
- Standard air cleaner

Cooling system

- Belt driven coolant pump
- Cooling fan options
- Fan drive options
- Coolant temperature switch

Lubrication system

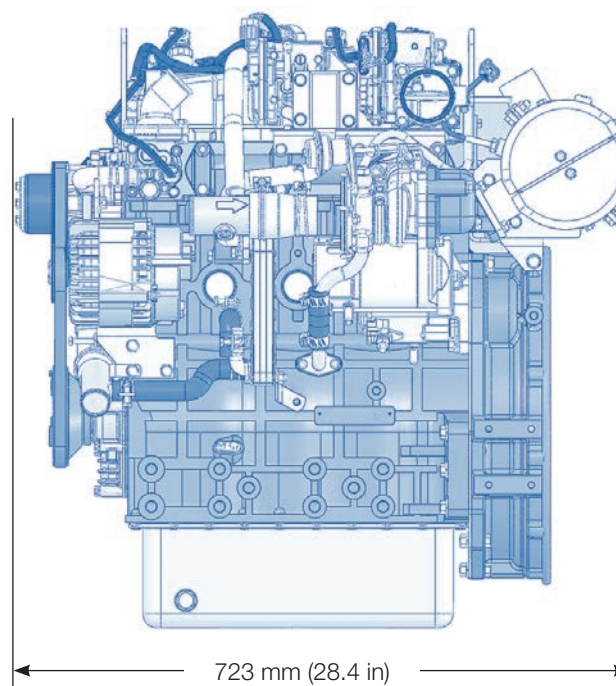
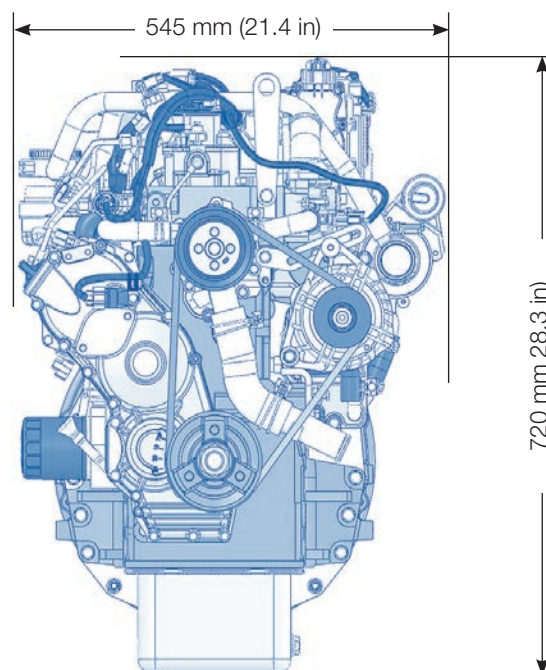
- Oil sump options for various applications
- Spin on oil filter options
- Oil pressure switch

Control system

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

Emissions control system

- Compact DOC only aftertreatment system



Final dimensions will depend on completed specification

Options group

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

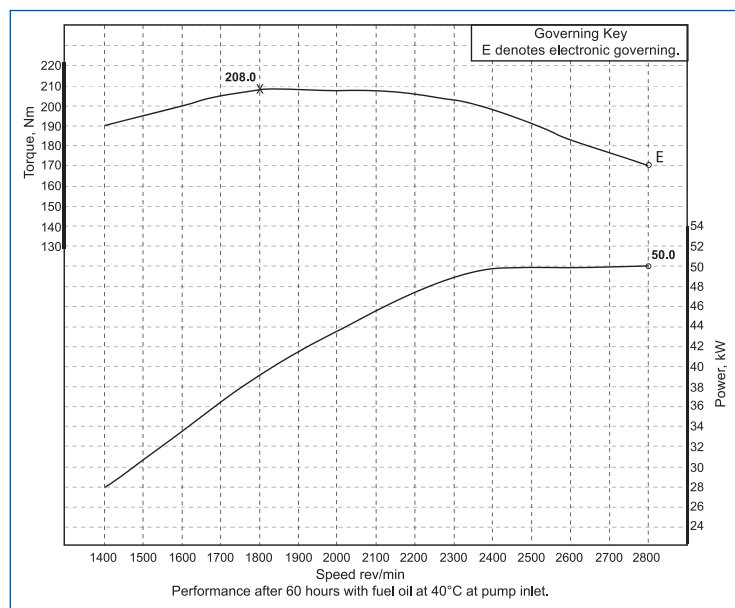
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Performance data



Planned ratings

	'C' Rating		Speed (rpm)	Torque	
	kW	hp		Nm	lbf-ft
T	33.0	44.2	2200	160	118.0
T	36.0	48.2	2400	160	118.0
T	36.4	48.8	2600	165	121.7
TA	39.0	52.3	2200	197	145.3
TA	43.0	57.6	2400	197	145.3
TA	41.0	55.0	2600	183	135.0
TA	44.7	59.9	2600	197	145.3
TA	48.5	65.0	2600	208	153.4
TA	46.0	61.7	2600	208	153.4
TA	44.7	59.9	2800	183	135.0
TA	48.5	65.0	2800	208	153.4
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%).

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).

- 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).
- Constant Speed Engines for use in Industrial, IOPU and ElectropaK applications: Certified against the requirements of EU Stage IIIA (Directives 97/68/EC, as last amended for mobile applications); and US EPA Tier 4 Final (40 CFR Part 60 for stationary applications and 40 CFR Part 1039 for mobile applications).

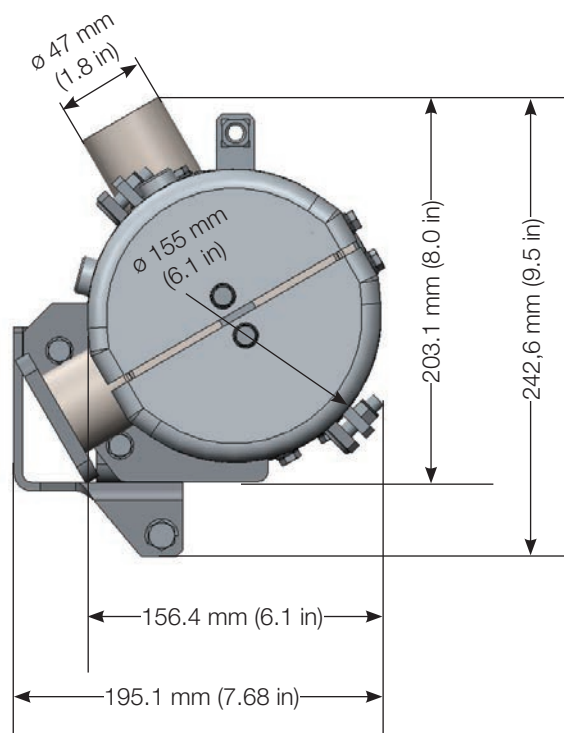
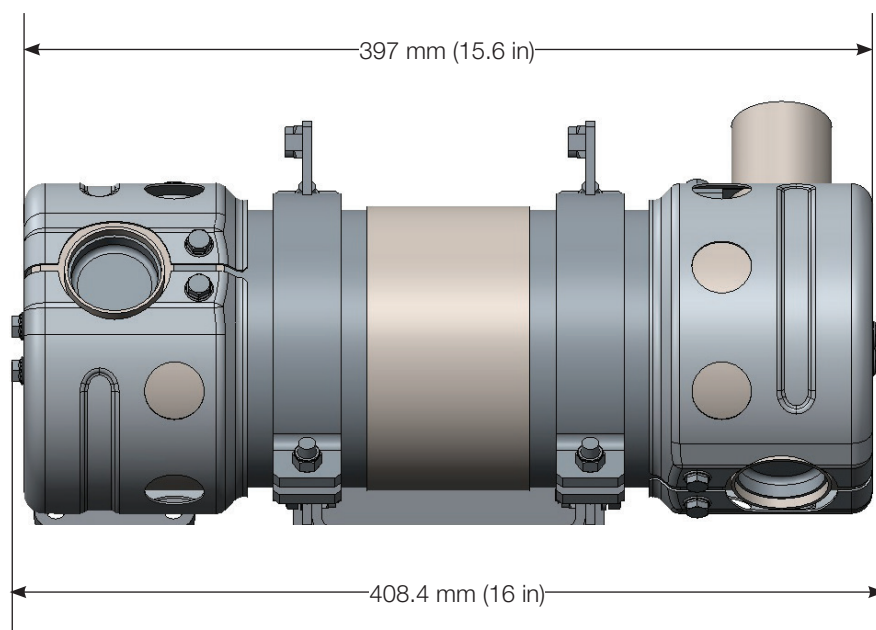
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Aftertreatment configuration



Aftertreatment

DOC – Diesel Oxidation Catalyst.

Technology

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

Power

Using our advanced research and development techniques, we have perfectly matched the aftertreatment system to the engine. Without the requirement for regeneration, the aftertreatment system eliminates any risk of downtime for maximum productivity.

Mounting

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

Service

Service-free operation.

Final weight and dimensions will depend on completed specification

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