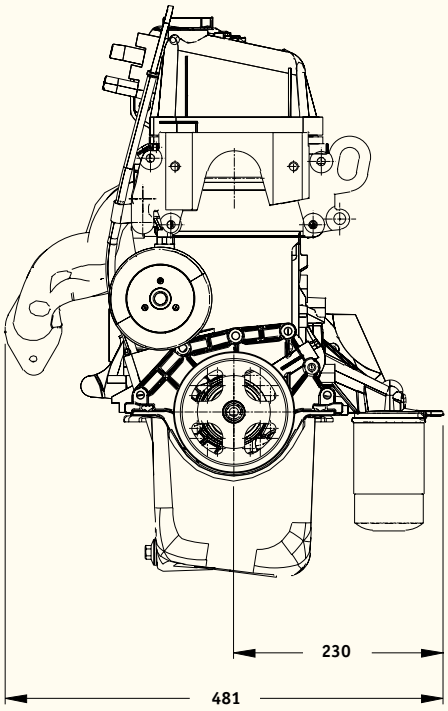
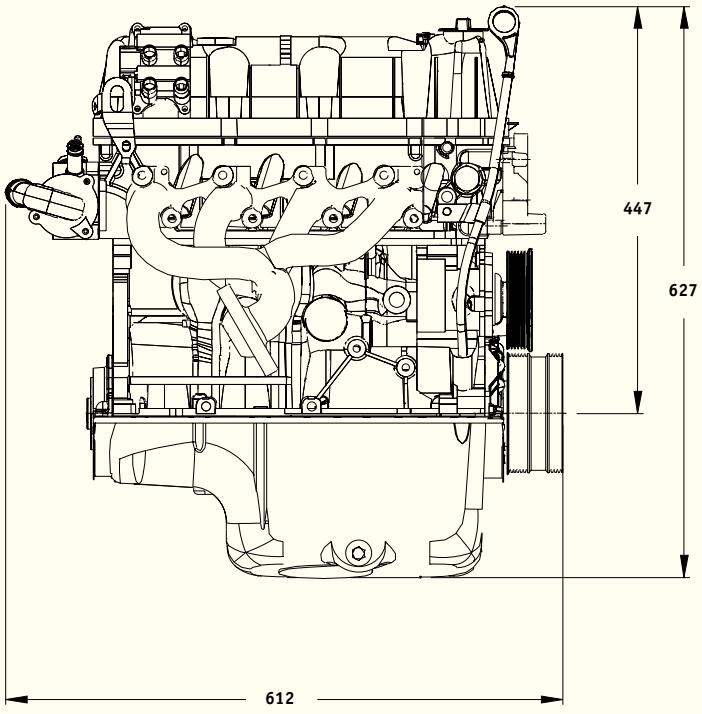
Installation Drawings

Front End View



Right Side View



Measurements	mm

Ford Power Products
15700 Lundy Parkway Drive
Suite 200
Dearborn, Michigan 48126
Phone: 1-800-833-4773
Fax: 1-313-619-2600

Ford Power Products
Stolberger Str. 313
D-50933 Köln, Germany
Phone: 49-221-94700 552
Fax: 49-221-94700 560

Ford Power Products
20/586 Arisdale Avenue
South Ockendon
Essex, RM 15 5TJ England
Phone: 44-1708-672 677
Fax: 44-1708-672 349

Contact Ford Power Products or your local FPP distributor for additional information.

Corporate Web Site: www.fordpowerproducts.com

TSG-416

Base Industrial Engine EFI

1.6-Litre 4-Cylinder

Powerful Performance from one source.

Ford Power Products

TSG-416
Base Industrial Engine EFI
1.6-Litre 4-Cylinder

Options

Flywheel Housing
- SAE #5M with feet and side pads

Flywheels
- Flat face
- SAE 7.5" O/C

Aluminum Intake Manifold
Engine-Mounted Cooling Fans
- 14.9" (380 mm) diameter suction
- 14.9" (380 mm) diameter pusher

Front Engine Supports (without Radiator)
- Single Foot
- Dual Foot

90 Amp Generator
LH and RH Mounted Starters
- Parts conform to SAE J1171 (marine) specifications

Electronic Control Modules (refer to FPP-192-583)
- Ignition Control Module (ICM)
- Engine Performance Module (EPM)

Wiring Harnesses
- ICM application
- EPM application

Electronic Throttle Control
Discrete Speed Switch
Variable Speed Foot Pedal
Variable Speed Hand Control
Gaseous (LPG, NG, LPG/NG) Fuel Delivery System
Gasoline Fuel Injection (EFI/Sequential Port) System
Exhaust Pipe with Rain Cap
Three-Way Catalyst (available 2003)

Emissions Information

California Air Resources Board (CARB) emissions certified packages available. (Gasoline only, LPG only, NG only, LPG/NG dry fuel, Gasoline/LPG bi-fuel, and Gasoline/NG bi-fuel)

Warranty

EFI Engine: 3 years/2,000 hours, whichever occurs first, on complete package (base engine and ancillary parts)
Gen-Set: 5 years/3,000 hours, whichever occurs first, on base engine and 2 years, regardless of hours, on ancillary parts
Electronic Controls: 5 years/3,500 hours, whichever occurs first, on EPM, actuator and main engine harness; 2 years/2,000 hours, whichever occurs first, on ICM

Ford Power Products

Specifications

Engine Type	2V, SOHC, I-4
Bore and Stroke	3.23 in x 2.97 in (82.1 mm x 75.5 mm)
Displacement	1.6 Litre (97.4 CID)
Compression Ratio	9.5:1
Oil Capacity	4.4 Qts (4.2 litres)
Net Weight	200 Lbs (90.7 Kgs)
Dimensions	L 24.1" x W 18.9" x H 24.7" (612 mm x 481 mm x 627 mm)

Gasoline (corrected per SAE J1995)

Fuel Specification	87 A.K.I.
Rated Power @ 3600 RPM	Intermittent: 63 HP (47 kW) Continuous: 53 HP (40 kW)
Peak Torque @ 3200 RPM	Intermittent: 93 Ft. Lbs. (126 Nm) Continuous: 79 Ft. Lbs. (107 Nm)
Power @ 1800 RPM	Intermittent: 29 HP (22 kW) Continuous: 24 HP (18 kW)

Natural Gas (corrected per SAE J1995)

Fuel Specification	1050 BTU/FT3
Rated Power @ 3600 RPM	Intermittent: 52 HP (39 kW) Continuous: 44 HP (33 kW)
Peak Torque @ 3200 RPM	Intermittent: 78 Ft. Lbs. (106 Nm) Continuous: 66 Ft. Lbs. (89 Nm)
Power @ 1800 RPM	Intermittent: 26 HP (19 kW) Continuous: 22 HP (16 kW)

Liquefied Petroleum Gas (corrected per SAE J1995)

Fuel Specification	ASI Grade HD-5
Rated Power @ 3600 RPM	Intermittent: 57 HP (43 kW) Continuous: 48 HP (36 kW)
Peak Torque @ 2800 RPM	Intermittent: 86 Ft. Lbs. (117 Nm) Continuous: 73 Ft. Lbs. (99 Nm)
Power @ 1800 RPM	Intermittent: 26 HP (20 kW) Continuous: 22 HP (17 kW)

Standard Features/Benefits

Single Overhead Camshaft (SOHC) Featuring Single, Sleeve Type, Chain Driven Camshaft with Hydraulic Tensioning System for reduced engine noise and friction, increased performance, durability and service free chain tensioning

Low Friction Roller Finger Follower Valve Train for minimal friction, improved reliability and increased torque

Low Pressure Die Cast Aluminum Cylinder Head for improved durability and decreased weight

Alternate-Fuel-Ready Valve Train Components for alternate fuel operation

Cast Iron High Compression Swirl (HCS) Cylinder Block for reduced emissions and improved combustion efficiency

Piston Cooling Jets for increased performance and durability

Integrated Knock Sensor for improved engine protection and increased engine durability

Nodular, Graphite Cast Iron Crankshaft with Five Main Bearings for increased strength and durability

Cast Iron Exhaust Manifolds for Off-Highway Market for increased engine performance and durability

Polyamid Plastic Camshaft Cover for corrosion resistance and reduced noise

Coil Assembly Electronic Ignition System with Cam and Crank Shaft Position Sensors for reliable and effective spark delivery

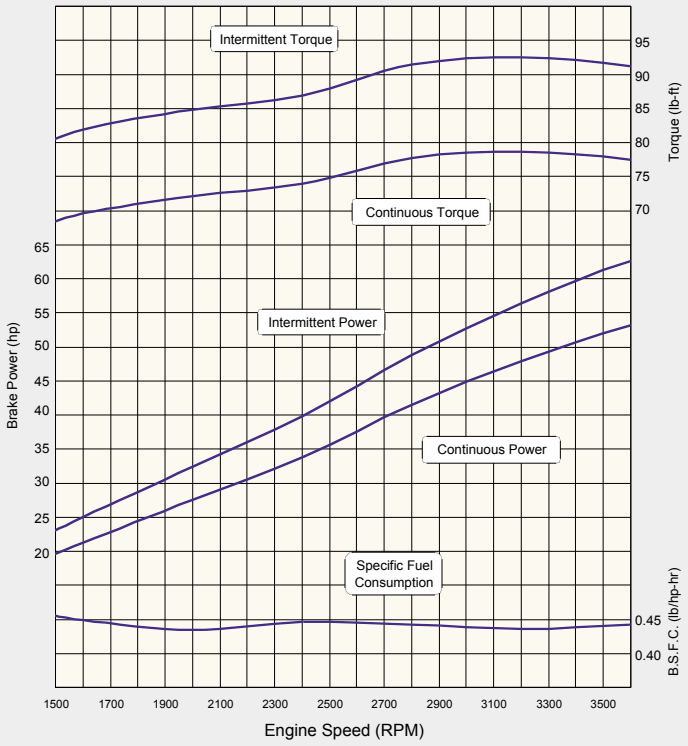
Gasoline Sequential Port Fuel Injection ensures controlled fuel delivery throughout the various engine speeds, providing increased performance and reducing emissions

Closed-Loop Fuel Control for improved emissions control

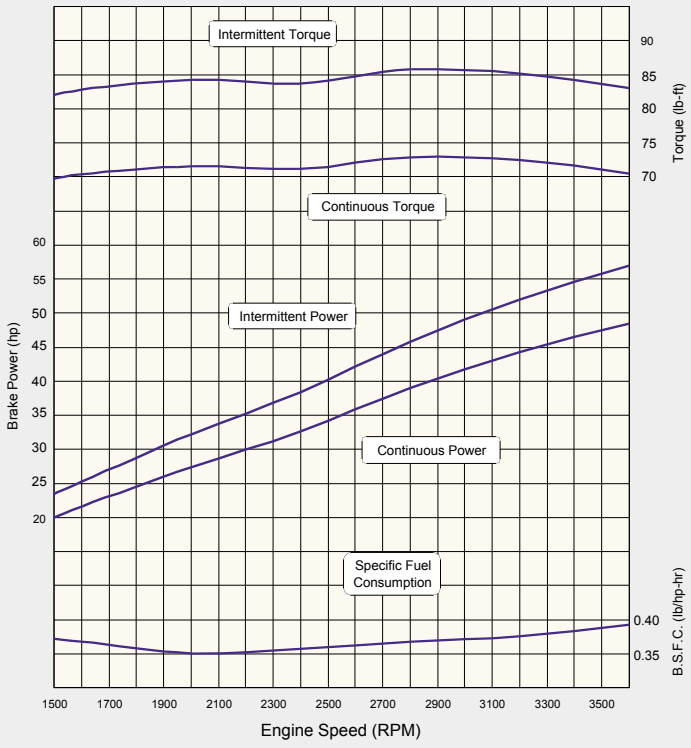
Next Generation Governing Using the Latest DC, Stepper-Motor Technology for accurate, dependable and reliable speed control

Power Curves (corrected per SAE J1995)

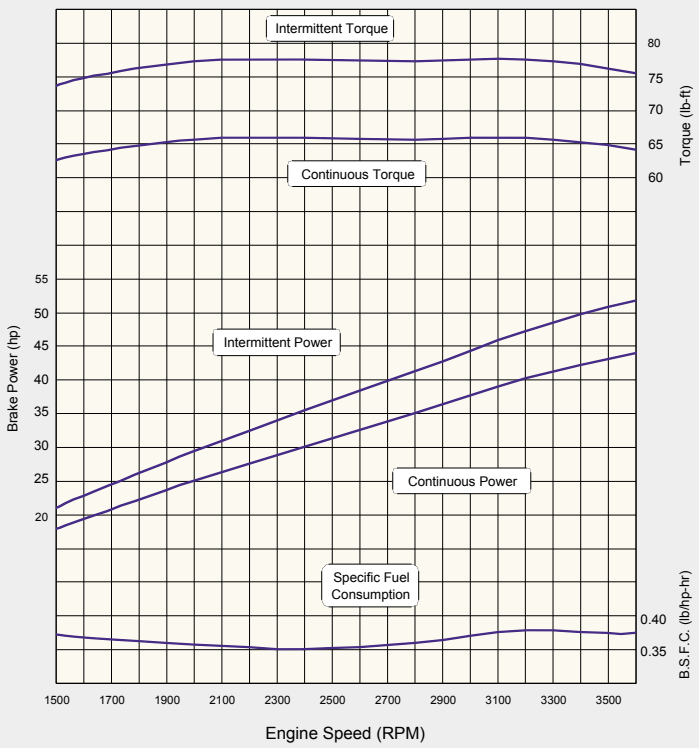
Gas



Propane



Natural Gas



Specifications are subject to change without notice.
Some Ford engines are produced for Ford by other companies.
Above power curves utilized the Ford Power Products EPM and emissions certified package.