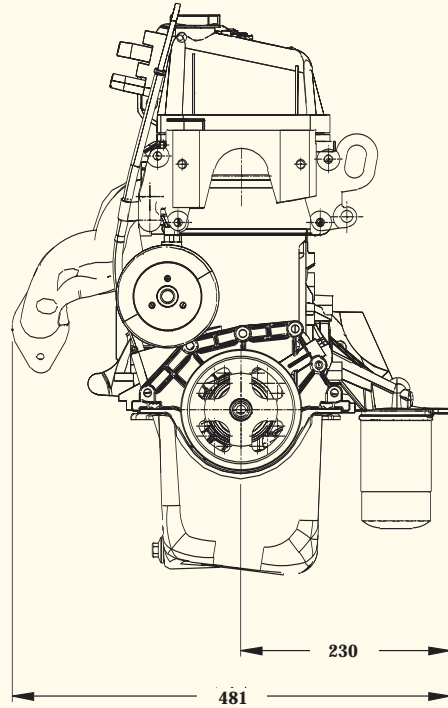
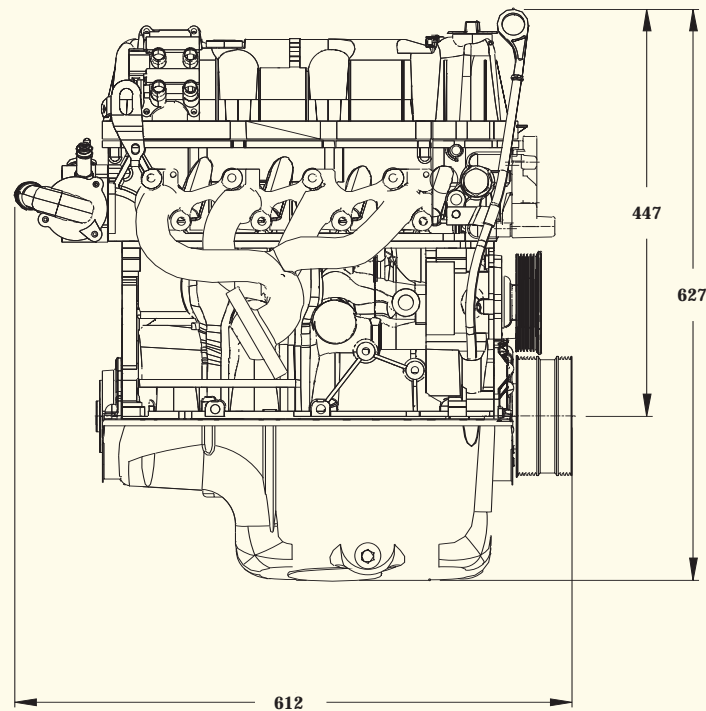


Front End View



Right Side View



Measurements    mm

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



Powerful  
Performance  
from one  
source.



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

Corporate Web Site: [www.fordpowerproducts.com](http://www.fordpowerproducts.com)

**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**  
Trafford House, Station Way  
Basildon, Essex, SS16 5XX, England  
Phone: 44 (0)1268 704181  
Fax: 44 (0)1268 702121



# 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

EPA and ARB emission-certified packages available. Contact FPP or local distributor for specific details.

#### Warranty

Contact FPP or local distributor for warranty terms.

#### 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

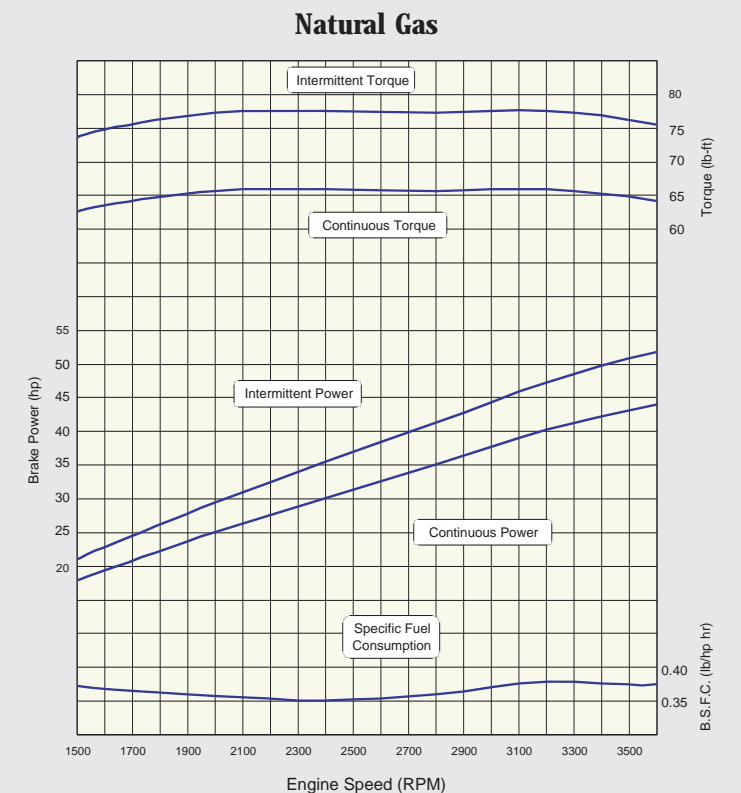
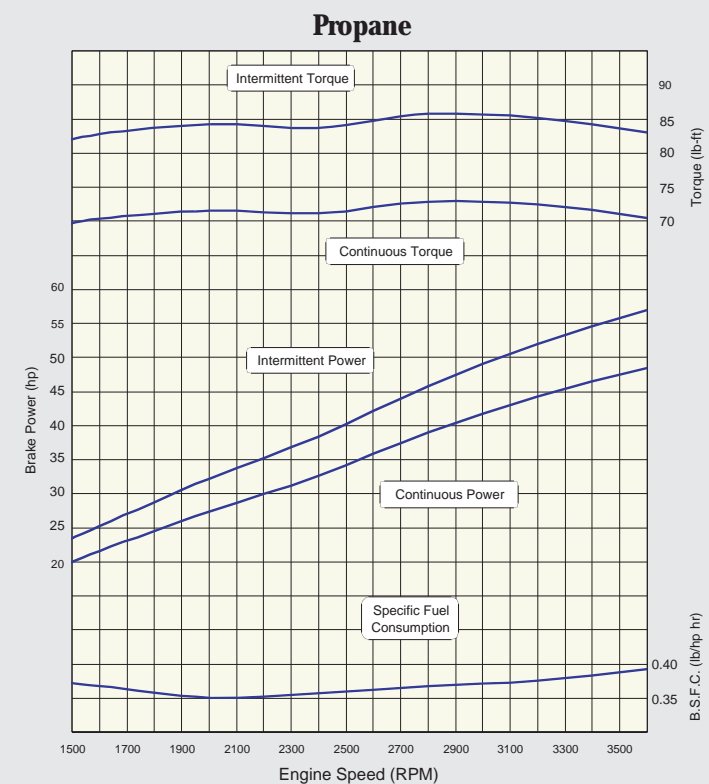
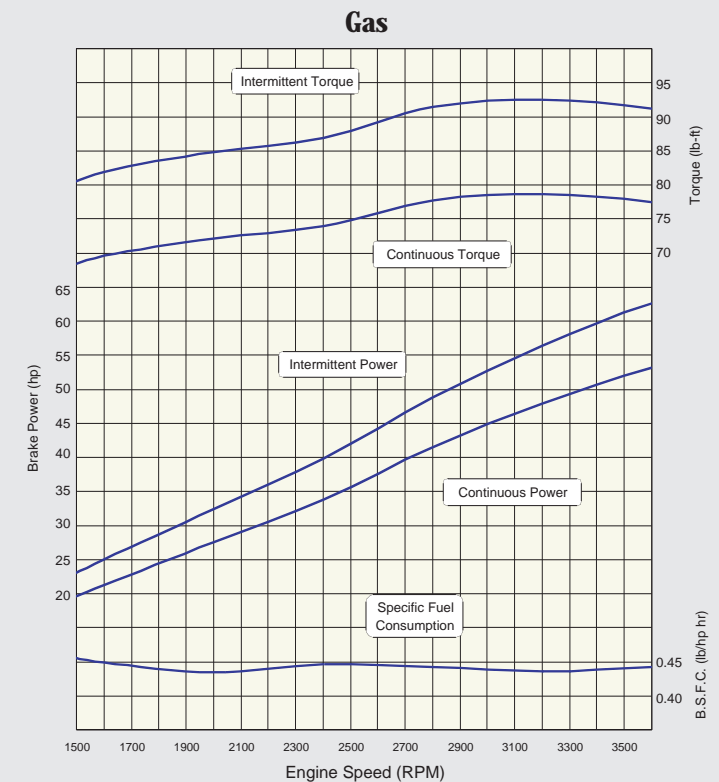
**Coil Assembly Electronic Ignition System with Cam and Crank Shaft Position Sensors** for reliable and effective spark delivery

**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)



Specifications are subject to change without notice.

Above power curves utilized the Ford Power Products EPM and emissions certified package.

