

# BSD

## DIESEL ENGINES

3 cyl - 332 - 333 - 333H

4 cyl - 442 - 444 - 444 T



Power  
Products

# Introduction

Four basic engine options are available for the 2004 model year. The 2004 model year is designed to provide the high power and rugged characteristics expected in the work range of industrial applications.

Four basic engine options offer range performance requirements for the following model designations:

- 900-440 - 4-cylinder 900 cc displacement
- 900-540 - 4-cylinder 900 cc displacement
- 900-540 - 4-cylinder 900 cc displacement
- 900-540 - 4-cylinder 900 cc displacement

Four basic engine options are available for the 2005 model year. The 2005 model year is designed to provide the high power and rugged characteristics expected in the work range of industrial applications.

- 900-440 - 4-cylinder 900 cc displacement
- 900-540 - 4-cylinder 900 cc displacement
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- 900-540 - 4-cylinder 900 cc displacement

Durability and reliability are ensured by incorporating the following features in the engine design:

- Low torque-to-weight ratio for low inertia engine and low displacement-to-weight ratio for cylinder engine.
- All engines are fitted with noise and vibration control by the proper location of engine components and without belts.
- All engines have three crank pins with hardened flycrank pins and hardened main bearings to reduce vibration.
- Large diameter pistons.
- All pistons have an aluminum structure with forged forgings which enhance the advantages of the aluminum forging.
- The design of a cylinder engine makes complete combustion be achieved.
- The 4-cylinder engine with the internal lubrication timing bearings mounting.
- The design of the cylinder engine makes complete combustion be achieved.
- The 4-cylinder engine has the ability to accept constant speed (CC).
- The 4-cylinder engine has the ability to accept constant speed (CC).

# Engine Build & Options

## Engine Build

All engines will be equipped with the following items:

- Cast iron cylinder head with aluminum valve supports mounted on the cylinder head.
- Standard overhead ring gear.
- Single steel crankshaft with steel pin and crankshaft with steel pin and crankshaft.
- Flywheel with a propeller treatment for vibration reduction.
- Alternator and fan drive.
- Water pump.
- Standard cooling fan and fan drive.

## Options

All of engine optional gear availability are listed:

- Two gearsets (900 and 900) for constant.
- 10 gears - 10 gears (10 gears).
- 10 gears.
- 10 gears (10 gears).
- 10 gears (10 gears).
- 10 gears (10 gears).

## 2004 Model Year Engine Options (900-440-440)

The 2004 model year is designed to provide the high power and rugged characteristics expected in the work range of industrial applications. The 2004 model year is designed to provide the high power and rugged characteristics expected in the work range of industrial applications. The 2004 model year is designed to provide the high power and rugged characteristics expected in the work range of industrial applications.

# Basic Engine Data

ENGINE MODEL		800-000	800-001	800-003*	800-442	800-444	800-446†
No. of Cylinder		3	3	3	4	4	4
Displacement	litres	3.14	3.20	3.20	4.19	4.20	4.20
	cu. in.	193	195	197.1	256	258	258
Type of Aspiration		Normal	Normal	Normal	Normal	Normal	Intercooled
Bore	mm	111.76	111.76	111.76	111.76	111.76	111.76
Stroke	mm	106.7	111.76	111.76	106.7	111.76	111.76
Compression Ratio		16.0:1	16.0:1	16.0:1	16.0:1	16.0:1	16.0:1
Weight	kg	814	814	814	814	814	881
Width	mm	427	427	427	427	427	427
Length	mm	764	764	764	814	814	881
Weight	kg	319.8	323.8	323.8	400.3	400.3	408.2
Max. S&P	bar	7.53	7.48	8.58	7.48	8.27	10.47
Max. Ring Pressure	bar	60.75	60.75	66.28	66.28	60.10	100.49
Flywheel Weight	kg	40.5	40.5	40.5	40.5	40.5	40.5

Note: Due to balancing requirements of the 3-cylinder engines their flywheels must not be interchanged, nor can flywheels from other models be used.

The installation Engineering Department, Ford New Holland, should be consulted before finalising any new or prototype engine mounting installation for 3 cylinder engines.

# Power Ratings

## Power Rating Summary:

Extracts from full power curves (power curves for 80 50M, 60T & 60M-60T) are included at the end of this specification.

Power curves for 80 70000 are available on request from Ford New Holland, Product Engineering.

Engine Model	80 50M (80-62T) INTERMITTENT		80 50M (80-62T) CONTINUOUS		80 70000	
	Power kW @ rev/min	Torque Nm @ rev/min	Power kW @ rev/min	Torque Nm @ rev/min	Power kW @ rev/min	Torque Nm @ rev/min
800-000	33.4 2000	181 1200	31.3 2000	164 1200	33.4 2000	187 1200
800-001	34.7 2000	194 1400	34.8 2000	178 1400	34.7 2000	200 1400
800-003*	44.5 2000	219 1400	41.4 2000	178 1400	44.5 2000	222 1400
800-442	61.8 2100	262 1400	47.1 2100	200 1400	63.8 2100	275 1400
800-444	68.8 2100	287 1400	52.7 2100	248 1400	68.3 2100	298 1400
800-446†	73.2 2100	274 1400	68.4 2100	248 1400	73.5 2100	440 1400

## Power Take-Offs

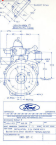
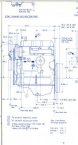
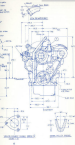
Power Take-Off Location	Drive Method	Drive Ratio	Torque (Nm)	
			3 cyl	4 cyl
Crankshaft front	V-Belt Axial	Direct 1:04:21	140.0 151.0	140.0 151.0
Common†	Gear	1:2	141.0	151.0

Tachometer Drive – Mechanical  
Location – LH side of cylinder block  
Ratio – 1:2

Note: † This may be taken from front or rear gear or split between each providing total does not exceed value quoted.

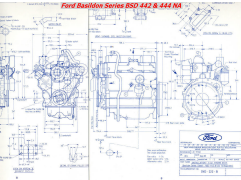
at cranshaft speed.

# Ford Basildon Series-332-33/H



	
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**Ford Basildon Series BSD 442 & 444 N64**



# Ford Basildon Series BSD 444 T

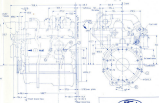
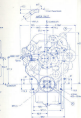


Fig. 101.1



Fig. 101.2



Fig. 101.3

Dimensions in millimeters  
 25.4 (1) in 1  
 inch = 25.4 mm



Ford Motor Company Limited Ford Engineering Department, Ford Works Ford Road, Basildon, Essex, S.S. 16 5LN, England	
Drawing No. BSD 444 T Part No. 101.1	Date: 1970.12.15 Drawn by: J. H. G.
Ford Engineering Department Ford Motor Company Limited Ford Road, Basildon, Essex, S.S. 16 5LN, England	Part No. 101.1 Date: 1970.12.15
Drawing No. BSD 444 T Part No. 101.1	Date: 1970.12.15 Drawn by: J. H. G.

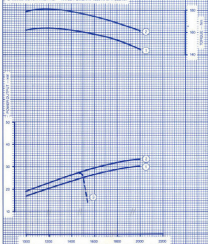
101-101-C



<b>2000 Power Stroke</b> Turbo-Diesel 6.0L Power Stroke		<b>2000 Power Stroke</b> Turbo-Diesel 6.0L Power Stroke		<b>6.0L SOHC DI-TSI</b> Diesel 6.0L Power Stroke		Engine Model 6.0L Power Stroke
<b>Net Power</b> 150.0 kW @ 2000 RPM	<b>Net Power</b> 150.0 kW @ 2000 RPM	<b>Net Power</b> 150.0 kW @ 2000 RPM	<b>Net Power</b> 150.0 kW @ 2000 RPM	<b>Net Power</b> 150.0 kW @ 2000 RPM	<b>Net Power</b> 150.0 kW @ 2000 RPM	Model by Model Model by Model
<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>Net Power</b> 134.0 kW @ 2000 RPM	<b>6.0L</b> <b>3.9L</b>

1. 0-20 GENERAL PURPOSE GOVERNANCE

2. 0-20 GOVERNANCE I + 2 — RATED POWER AT 2000 RPM = 150 kW



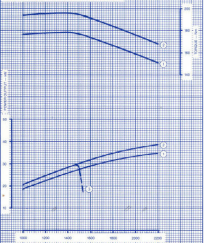


<p>2.5L I-4 Power Stroke 2000-2003, 2005-2006</p> <p>3.0L I-5 Power Stroke 2000-2003, 2005-2006</p>	<p>3.0L I-5 Power Stroke 2004-2006</p>	<p>6.0L Power Stroke 2001-2003, 2005-2006</p>	<p>6.0L Power Stroke 2004-2006</p>
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<p>6.0L Power Stroke 2001-2003, 2005-2006</p>	<p>6.0L Power Stroke 2004-2006</p>
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Engine Model  
 Motor Model  
 Model No. Motor  
 Motor Name  
**850**  
**333**

① GENERAL PURPOSE GOVERNING  
 ② CLOSE GOVERNING P.I.E. — RATED POWER AT 1800RPM = 275 HP



ENGINE SPEED — RPM



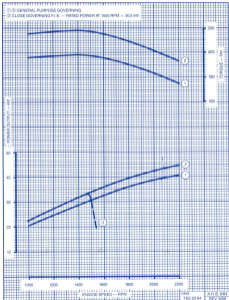


Power  
Products

Reference from Cummins Application Manual	Reference - Cummins Engine Manual & Application Manual
Model Number Series	4-400 x 6 (BLACK)
Rated Power kW (hp)	424 kW (572 hp) @ 2300 RPM
Rated Power kW (hp)	442 kW (595 hp) @ 2500 RPM

BS 2044/2045/2047	Engine Model
383 160712	Model Number
190.7kW @ 1420 RPM	Rated Power
240.7kW @ 1420 RPM	Rated Power

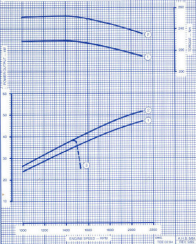
Engine Model  
383H Model  
Model No. 160712  
Model No. 160712  
**BSD**  
**333H**





<b>OPERATING RANGE</b> 1000-2000 RPM 1000-2000 RPM		<b>500 CONVERSION RPM</b> 1000-2000 RPM 1000-2000 RPM		<b>Engine Model</b> 442
<b>1000 RPM</b> 1000 RPM 1000 RPM	<b>1500 RPM</b> 1500 RPM 1500 RPM	<b>2000 RPM</b> 2000 RPM 2000 RPM	<b>2500 RPM</b> 2500 RPM 2500 RPM	<b>Model No.</b> 442
<b>1000 RPM</b> 1000 RPM 1000 RPM		<b>1500 RPM</b> 1500 RPM 1500 RPM		<b>Model No.</b> 442

(1) GENERAL PURPOSE COVERING  
 (2) CLOSE COVERING F.I.E. — RATED POWER AT 1500 RPM — 2500 RPM

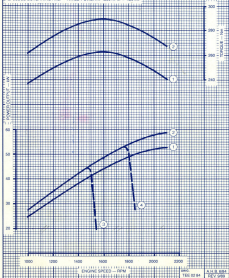




Reference Power Station Ford 4-cylinder engine		Reference - North American Standard electrical system		500-51420N-8271		Engine Model	
Type	Reference Voltage	4 432 x 71/64" (TRILADE)	Generator Capacity	Wiring Requirements	SEE NOTES	Model No. Motor	
	1	52.9 kW @ 2100 RPM		1	263 Amps @ 1800 RPM	Model No. Motor	
	2	52.9 kW @ 2100 RPM		2	263 Amps @ 1800 RPM	Model No. Motor	
1. Generator Output 2. Generator Output 3. Generator Output	1. Generator Output 2. Generator Output 3. Generator Output			1. Generator Output 2. Generator Output 3. Generator Output			

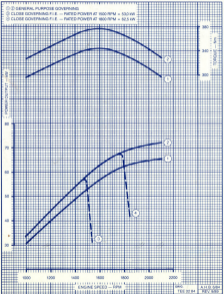
**BSD**  
**444**

- ① GENERAL PURPOSE GENERATING
- ② CLOSE GENERATING F.I.E. — RATED POWER AT 1800 RPM = 41.0 kW
- ③ CLOSE GENERATING F.I.E. — RATED POWER AT 1800 RPM = 48.8 kW





Engine Power Output Puissance Motor Motorleistung		Torque Output Couple Moteur Drehmoment		BS/MSA/DIN 6271		Engine Model Motor Model Modèle de moteur
Type Type	Number of Cylinders Nombre de Cylindres	Displacement Déplacement	Compression Ratio Rapport de Compression	Horsepower Cheval Vapeur	Revolutions Révolutions	Motor Model Modèle de moteur
1 2 3	4 5 6	7 8 9	10 11 12	13 14 15	16 17 18	<b>BSD</b> <b>444T</b>
85.4 kW @ 2100 RPM 115.2 kW @ 2100 RPM	344 Nm @ 1600 RPM 276 Nm @ 1600 RPM					



ENGINE SPECIFICATION

# XLD RANGE

XLD 418

XLD 418T

AUTOMOTIVE • MARINE • INDUSTRIAL



# Introduction

The XLD range of turbocharged and naturally aspirated 1.8 litre indirect injection engines is described in this brochure. The engines are a further development of the Ford lightweight high speed diesel theme, aimed at meeting increasingly severe ecological regulations whilst maintaining a fully competitive performance with excellent fuel economy. The engines are well proven for automotive applications. They will equally satisfy many industrial and marine applications.

Principal design features contributing to the overall performance and economy of the XLD range are:

- Optimised combustion chamber shape.
- Computer aided component assembly.
- Single overhead camshaft.
- Cylinder head with optimised airflow.
- Graded cylinder head gaskets to control bump clearance.
- Twin outlet exhaust pipes on naturally aspirated engines.
- Rotary fuel injection pump with 2-speed governor for automotive use or all speed governor for industrial use.
- Automatic high speed glow-plug control for starting down to  $-20^{\circ}\text{C}$ .

The XLD 418T was developed as a turbocharged engine with stiffened structure and bearings to accommodate the high power output and to reduce crankcase emitted noise. The design

policy of commonality throughout the range with all major components further benefits the XLD 418 naturally aspirated engine and ensures excellent fuel economy plus reliability and durability to match the existing demands of high speed operation.

Features incorporated in the XLD range to achieve the stringent reliability and durability objectives with low maintenance costs are principally:

- Reef resistant iron pre-combustion chambers.
- Five bearing crankshaft with fillet rolled induction hardened journals, fully balanced by eight counter-balanced weights.
- Crankshaft pulley with integral TV damper.
- Chilled iron camshaft.
- Low maintenance tappets.
- Pistons incorporate armoured top ring carrier and are cooled by oil jets.
- Hardened valve seat inserts with increased cooling.
- Camshaft and crankshaft have long life fluorocastomer oil seals.
- Structural cast aluminium oil pan on all naturally aspirated engines.
- Controlled compression one piece oil-pan gaskets.
- Plated camshaft, fuel-injection pump and auxiliary drive shaft pulleys on marine engines.
- Plated crankshaft, water-pump and alternator pulleys on all engines.

## Basic Engine Data

Engine Model		XLD 418	XLD 418T
Displacement	litre	1.753	1.753
Number of cylinders		4	4
Bore	mm	82.5	82.5
Stroke	mm	83.0	83.0
Compression Ratio		21.5-1	21.5-1
Maximum BMEP	bar	7.6	10.8
Weight (See note)	kg	143	147

Note: Dry weight with standard flywheel less exhaust manifold, inlet manifold, oil cleaner and vacuum pump.

Engine Package Dimensions		XLD 418 Auto Inhd	XLD 418T Auto Inhd		
Length nominal	mm	623	753	646	756
Width nominal	mm	574	574	645	645
Height nominal	mm	660	660	660	660

Note: Nominal lengths of industrial versions include steel fan and spacer. See general arrangement drawings for further information.

# Options

Each engine is fitted with an exhauster. To suit special build requirements, the exhauster, exhaust manifold (naturally aspirated only) and the flywheel may be deleted.

Additional build options depending on the base model include: Side outlet exhaust manifold (naturally aspirated only), remote electric cooling fan, industrial water pump with metal or plastic (plastic) water pump mounted fans, air cleaner, alternator, starter motor, engine rear cover plate, SAE 5 housing, automotive clutch and release mechanism, 5-speed gearbox etc. For a full list of current options please refer to the latest issue of the engine build scheme chart.

# Power Ratings

Power curves are included at the end of this brochure. The following figures are extracted from those power curves:

Model	XLD 418	XLD 418	XLD 418T	XLD 418T
Power Standard	DIN 70020	BS 5514/DIN 6271 (Intermittent)	DIN 70020	BS 5514/DIN 6271 (Intermittent)
Injection Pump	Automotive	Industrial	Automotive	Industrial
Maximum Power	44 kW @ 4800 RPM	37 kW @ 3600 RPM	55 kW @ 4000 RPM	47 kW @ 3600 RPM
Maximum Torque	118 Nm @ 2600 RPM	98 Nm @ 2500 RPM	152 Nm @ 2200 RPM	143 Nm @ 2200 RPM

# Exhaust Emission Certification

The XLD engines described in this brochure are based on engines which, when installed in the relevant Ford vehicle, have been specifically developed to meet EC E 15.04 and 5th Amendment emission control standards.

The test procedures required to validate conformity with emission regulations are varied and complex. Conformity can be affected by factors such as vehicle weight, tyre size, gearbox

ratio, axle ratios and non-standard engine ancillaries such as air cleaners and exhaust systems.

When the engines are used to power other vehicles there will inevitably be differences that are beyond the control of Ford. It is therefore the responsibility of the C.E.M. to ensure that his equipment complies with any exhaust emission regulations that may apply.

- 1. Overall width (max.) 24" (610 mm)
- 2. Overall height (max.) 20" (508 mm)
- 3. Overall length (max.) 24" (610 mm)
- 4. Overall weight (max.) 20" (508 mm)
- 5. Overall depth (max.) 20" (508 mm)
- 6. Overall diameter (max.) 20" (508 mm)
- 7. Overall radius (max.) 20" (508 mm)
- 8. Overall thickness (max.) 20" (508 mm)
- 9. Overall volume (max.) 20" (508 mm)

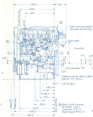


Overall width (max.) 24" (610 mm)



Overall width (max.) 24" (610 mm)

# FORD XLD 418



**PRELIMINARY DRAWING**  
 SUBJECT: **FORD XLD 418**  
 DRAWING NO. **100-100000-100**  
 DATE: **10/10/10**

- 1. Overall width (max.) 24" (610 mm)
- 2. Overall height (max.) 20" (508 mm)
- 3. Overall length (max.) 24" (610 mm)
- 4. Overall depth (max.) 20" (508 mm)
- 5. Overall diameter (max.) 20" (508 mm)
- 6. Overall radius (max.) 20" (508 mm)
- 7. Overall thickness (max.) 20" (508 mm)
- 8. Overall volume (max.) 20" (508 mm)
- 9. Overall weight (max.) 20" (508 mm)
- 10. Overall mass (max.) 20" (508 mm)
- 11. Overall density (max.) 20" (508 mm)
- 12. Overall pressure (max.) 20" (508 mm)
- 13. Overall force (max.) 20" (508 mm)
- 14. Overall torque (max.) 20" (508 mm)
- 15. Overall power (max.) 20" (508 mm)
- 16. Overall energy (max.) 20" (508 mm)
- 17. Overall momentum (max.) 20" (508 mm)
- 18. Overall angular momentum (max.) 20" (508 mm)
- 19. Overall angular velocity (max.) 20" (508 mm)
- 20. Overall angular acceleration (max.) 20" (508 mm)

Model:	XLD 418
Year:	10/10/10
Engine No.:	100-100000-100
Serial No.:	100-100000-100
Weight:	20" (508 mm)
Height:	20" (508 mm)
Length:	24" (610 mm)
Depth:	20" (508 mm)
Diameter:	20" (508 mm)
Radius:	20" (508 mm)
Thickness:	20" (508 mm)
Volume:	20" (508 mm)
Weight:	20" (508 mm)
Mass:	20" (508 mm)
Density:	20" (508 mm)
Pressure:	20" (508 mm)
Force:	20" (508 mm)
Torque:	20" (508 mm)
Power:	20" (508 mm)
Energy:	20" (508 mm)
Momentum:	20" (508 mm)
Angular Momentum:	20" (508 mm)
Angular Velocity:	20" (508 mm)
Angular Acceleration:	20" (508 mm)



# Ford XLD-418 (1.81DI Diesel)-N/A

- 1) 2000mm
- 2) 2000mm
- 3) 2000mm
- 4) 2000mm
- 5) 2000mm



DIMENSIONS AND WEIGHTS (kg)	
Overall width	2000
Overall height	2000
Overall depth	1000
Weight (dry)	1500
Weight (with oil)	1700



- 1) 2000mm
- 2) 2000mm
- 3) 2000mm
- 4) 2000mm
- 5) 2000mm

- 1) 2000mm
- 2) 2000mm
- 3) 2000mm
- 4) 2000mm
- 5) 2000mm

For more information, visit [www.ford.com](http://www.ford.com)



Model	XLD-418
Year	2000
Engine type	1.81DI Diesel
Power (kW)	100
Power (hp)	136
Displacement (L)	1.81
Stroke (mm)	80
Bore (mm)	70
Compression ratio	17.5:1
Valves	12
Timing	Timing belt
Injection	Common rail
Alternator	100A
Generator	100A
Water pump	100A
Air filter	100A
Fuel filter	100A
Injection pump	100A
Injection nozzles	100A
Piston and rings	100A
Valves	100A
Camshaft	100A
Timing chain	100A
Timing gears	100A
Timing sprockets	100A
Timing belt tensioner	100A
Timing belt guide	100A
Timing belt cover	100A
Timing belt cover housing	100A
Timing belt cover housing gasket	100A
Timing belt cover housing bolts	100A
Timing belt cover housing nuts	100A
Timing belt cover housing washers	100A
Timing belt cover housing spacers	100A
Timing belt cover housing shims	100A
Timing belt cover housing spacers	100A
Timing belt cover housing shims	100A

**PRELIMINARY DRAWING**

2000-0000

# Ford XLD-418 (1.8 IDI Diesel)-Turbocharged

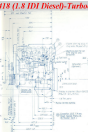
- ① Overall height
- ② Maximum fuel tank capacity
- ③ Max. fuel tank capacity (with fuel filler) (litres)
- ④ Maximum fuel tank capacity (with fuel filler) (gallons)
- ⑤ Fuel tank capacity (litres)
- ⑥ Fuel tank capacity (gallons)



① Overall height  
 ② Maximum fuel tank capacity  
 ③ Max. fuel tank capacity (with fuel filler) (litres)  
 ④ Maximum fuel tank capacity (with fuel filler) (gallons)  
 ⑤ Fuel tank capacity (litres)  
 ⑥ Fuel tank capacity (gallons)



① Overall height  
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① Overall height  
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① Overall height  
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 ③ Max. fuel tank capacity (with fuel filler) (litres)  
 ④ Maximum fuel tank capacity (with fuel filler) (gallons)  
 ⑤ Fuel tank capacity (litres)  
 ⑥ Fuel tank capacity (gallons)

- ① Overall height
- ② Maximum fuel tank capacity
- ③ Max. fuel tank capacity (with fuel filler) (litres)
- ④ Maximum fuel tank capacity (with fuel filler) (gallons)
- ⑤ Fuel tank capacity (litres)
- ⑥ Fuel tank capacity (gallons)

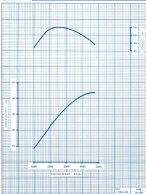
**FORD MOTOR COMPANY**  
 1000 Ford Road  
 Dearborn, Michigan 48120-1900  
 U.S.A.

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Part Number	Series	Power Dissipation	240 W (200)	Thermal Node	None
Part Number	Series	Power Dissipation	240 W (200)	Thermal Node	None
240 W (200)		240 W (200)		240 W (200)	
				<b>240 W (200)</b> <b>418</b>	





Power  
Products

Technical Power Products      Service - John Deere  
Parts Department      Parts & Service Centers

88-3560 204 671

Engine Model

Motor Model

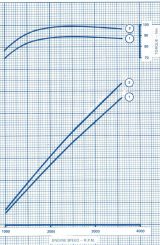
Model No. Motor

Model No. Motor

**XLD 418**

**INDUSTRIAL**

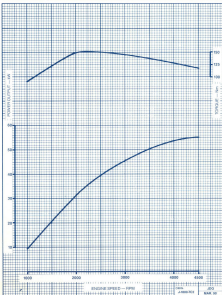
Oil	Oil Grade	Oil Type	Oil Quantity	Oil Pressure	Oil Temperature	Oil Level
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40
SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40	SAE 15W-40

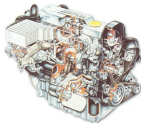




Power  
Products

Reference Power Standard Net Indicated Horsepower		Reference Power Standard Net Brake Horsepower		GM 7000		Engine Model	
Vol. / Liters	Weight / Kilograms	RPM		Starting System	Power Requirement	Approx. Model	
1.0 1.3 1.6 2.0 2.3 2.6 3.0 3.3 3.6 4.0 4.4 4.7 5.0	1000 1500 2000 2500 3000 3500 4000 4500 5000	5000 g @ 1500 RPM		1.0 1.3 1.6 2.0 2.3 2.6 3.0 3.3 3.6 4.0 4.4 4.7 5.0	52700 g @ 2500 RPM		Model to Match
							Model to Match
						<b>XLD 416T</b>	





## Technical Features:

- Optimized combustion chamber
- Computer-aided component assembly
- Hardened overhead camshaft
- Cylinder head with optimized airflow
- Twin outlet exhaust manifold for naturally aspirated engines
- Automotive high speed glow plug control for starting down to -20°C
- Thermostatically-controlled fuel preheater
- Five bearing crankshaft with flat-rolled induction-hardened journals, fully balanced by eight counter-balanced weights
- Crankshaft pulley with integral TV damper
- Low maintenance tappets
- Pistons incorporate armoured top ring carriers and cooled by jets
- Hardened valve seats
- Camshaft and crankshaft with long life fluor elastomer oil seals
- Aluminium oil pans on all engines
- One-piece oil pan gaskets



## Technische Eigenschaften:

- Optimierter Brennraum
- Rechnergestützte Bauteilmontage
- Gehärtete oberliegende Nockenwelle
- Zylinderkopf mit optimierter Luftströmung
- Zweiflutige Auspuffkammer beim Saugmotor
- Glühkerzen für optimales Starten bis -20°C
- Thermostatgesteuerte Kraftstoffvorwärmung
- Fünffach gelagerte Kurbelwelle mit gerollten, Induktionsgehärteten Kurbelzapfen; acht Gegengewichte
- Kurbelwellen-Riemenscheibe mit integriertem Torsionsschwingungsdämpfer
- Wartungssame Stößel
- Kolben mit oberem Kolbenringträger und Spritzkühlung
- Gehärtete Ventilsitze
- Nockenwelle und Kurbelwelle mit langzeitigen Fluorelastomer-Dichtungen
- Alle Motoren mit Aluminium-Ölwanne
- Einsteilige Ölwanneichtung



## Caractéristiques Techniques Principales:

- Forme de chambre de combustion optimale
- Assemblage des composants assisté par ordinateur
- Arbre à cames en tôle en métal trempé
- Culasse à flux d'air optimisé
- Tuyaux d'échappement jumelés sur les moteurs à aspiration naturelle
- Commande de bougie de préchauffage rapide pour démarrage jusqu'à -20°C
- Dispositif de chauffage de carburant à contrôle thermostatique
- Vibrequin à cinq paliers avec portées roullées et frempées par induction, totalement équilibré par huit masselottes
- Poulie de vibrequin avec amortisseur de vibrations de torsion intégré
- Poussoirs à faible entretien
- Les pistons sont équipés de porte-segments supérieurs blindés et sont refroidis par jets d'huile
- Sièges de soupape trempés
- L'arbre à cames et le vibrequin sont équipés de joints d'huile longue durée en fluorélastomère
- Carter moteur structural coulé en aluminium sur tous les moteurs
- Joint de carter d'huile en une pièce



## Características técnicas principales:

- Forma optimizada de las cámaras de combustión
- Ensamblaje de componentes asistido por ordenador
- Árbol de levas templado, en culata
- Culata con flujo de aire optimizado
- Colector de escape de doble flujo en los motores atmosféricos
- Bujías de incandescencia para arranque óptimo hasta -20°C
- Precalentamiento del combustible controlado por termostato
- Cigüeñal de cinco apoyos, con muñequillas templadas por inducción, laminadas, con ocho contrapesos
- Polea del cigüeñal con amortiguador de vibraciones torsionales integrado
- Taqués que precisan poco mantenimiento
- Los pistones incorporan porta-segmentos superiores y se refrigeran con chorro de aceite
- Asientos de válvulas templados
- El árbol de levas y el cigüeñal tienen retenes de aceite de larga duración, de elastómero fluorado
- Todos los motores con cárter de aluminio
- Juntas de cárter de una sola pieza



## Principali caratteristiche tecniche:

- Camera di combustione di forma ottimizzata
- Montaggio componenti assistito da computer
- Albero a camme in testa temprato
- Testata a flusso gas ottimizzato
- Collettore di scarico a due scanalature sul motore di aspirazione
- Candele a incandescenza per avviamento ottimale fino a -20°C
- Recaldamento combustibile controllato termostaticamente
- Albero a gomiti su cinque cuscinetti di bilanciamento, con panni temprati ad induzione e raccordi rollati, otto contrappesi
- Puleggia su albero a gomiti con ammortatore di vibrazioni torsionali incorporato
- Puntiere a bassa manutenzione
- Pistoni con raffreddamento a getto e cava superiore riportata
- Sedili valvole riportate temprate
- Guarnizioni dell'albero a camme dall'albero a gomiti in fluor elastomero
- Coppie olio in alluminio in dotazione a tutti i motori
- Guarnizione cappa olio in un solo pezzo

## Power Curves



Order Model	No. of Burners	Capacity (BTU)	Gas input (BTU/hr)	Flow (BTU/hr)	Stack (BTU/hr)	Max. Pressure (in. H <sub>2</sub> O)	Max. Input (BTU/hr)	Max. Output (BTU/hr)	Max. Gas Flow (CFM)	Max. Water Flow (GPM)	Dimensions (L x W x H) (inches)	Weight (lb)	
20000	4	20000	17.5	20.0	50	27"	18000	18000	100	20000	14.0	30.0 x 20.0 x 27.0	1
25000	4	25000	17.5	20.0	50	27"	18000	18000	100	20000	14.0	30.0 x 20.0 x 27.0	1.2
30000	4	30000	17.5	20.0	50	27"	18000	18000	100	20000	14.0	30.0 x 20.0 x 27.0	1.5
35000	4	35000	17.5	20.0	50	27"	18000	18000	100	20000	14.0	30.0 x 20.0 x 27.0	1.5

1" = 25.4mm (approx.) 1" = 25.4mm (approx.) 1" = 25.4mm (approx.) 1" = 25.4mm (approx.)

## Overall Dimensions



The Source for Power...  
Worldwide™



# XLD Range Engines

## XLD 418FC Engine



The XLD range of turbocharged naturally aspirated 4.1 litre inline injection engines is further developed ultra-lightweight high speed diesels, offering outstanding energy output, engine regulation, performance & fully competitive performance and emissions economy.

The engines are optimised for automotive applications and give extremely safety, light installation and maintenance applications.

The complete range consists of the following engines:

**XLD 418FC (turbo) Naturally aspirated engine with turbo 2 speed governed full injection pump.** The electronic management system with the engine control is suitable for automotive applications only.

**XLD 418FC (turbo) Naturally aspirated engine with Turbo-Diesel variable speed governed full injection pump suitable for industrial applications.**

**XLD 418FC (turbo) Naturally aspirated engine with Turbo-Diesel 2 speed governed full injection pump suitable for marine and agricultural applications.**

**XLD 418FC (turbo) Naturally aspirated and electronically governed full speed governed full injection pump.** The electronic management system used with the engine control is suitable for automotive applications only.

Typical performance figures were extracted from the power curve for 1000 RPM. Details are available upon request in the data sheet.

	Min. Speed	Max. Speed
<b>Application</b>	1400 RPM	1800 RPM
<b>Min./Max. Power</b>	12.0 kW / 18.0 kW	18.0 kW / 24.0 kW
<b>Min./Max. Torque</b>	10.0 Nm / 15.0 Nm	15.0 Nm / 20.0 Nm
<b>Min./Max. Fuel</b>	5.0 l/h / 8.0 l/h	8.0 l/h / 12.0 l/h
<b>Min./Max. Weight</b>	12.0 kg / 18.0 kg	18.0 kg / 24.0 kg

Detailed data: Call your dealer

### GENERAL TECHNICAL FEATURES

- Common-rail injection system design.
- Complete steel component assembly.
- Overhead injection concept.
- Cylinder head with injection valves.
- Coated cylinderhead gaskets for better thermal insulation.
- Two speed electronic governor for the natural aspirated engine.
- Adaptive high speed engine stop control for starting down to 100°C.
- Thermally insulated cylinder head.
- Low coolant engine temperature operation.
- Increasing coolant with the rated engine speed/governor fully balanced by hydraulic balance weights.
- Overhead gallery with integral 70 degree.
- Low maintenance design.
- Heavy supports provided for the cylinder and head assembly of the engine.
- Reduced ring end clearance with increased cooling.
- Overhead air-cooled valve springs for maintenance ease.
- Structure cast stainless steel or Al-Mg alloy.
- Cylinder component are made from grey cast.

Manufactured by  
**XLD 418 naturally aspirated engine**  
powered by the XLD 418FC engine  
powered by the XLD 418FC engine



The 6.0L engine was developed as a turbocharged and intercooled diesel and features an aluminium alloy crankcase and a cast-iron cylinder-head. It is equipped with an air-to-air intercooler and a variable geometry turbocharger to provide optimum torque and power. The engine also incorporates an exhaust after-treatment system.

## TECHNICAL DATA

	6.0L 400 (Power)	6.0L 400 (Max. Torque)	6.0L 400 (Max. Torque) (overlight engine)	6.0L 4000 (Max. Torque)
Displacement	5.9 litres	5.9 litres	5.9 litres	5.9 litres
Bore	82.0 mm	82.0 mm	82.0 mm	82.0 mm
Stroke	94.0 mm	94.0 mm	94.0 mm	94.0 mm
Compression Ratio	17.0:1	17.0:1	17.0:1	17.0:1
Maximum RPM	1,750	1,750	1,750	1,750
Cylinder Control	Valve	Valve	Valve	Valve

## Operating Angles

Maximum operating angles, including installed angles, for continuous operation:

- Forward: 30°
- Reverse: 21°
- Steered: 37°

## Specific Fuel Consumption at Full Load in g/kWh (B20)

Engine	6.0L 400 (Power)	6.0L 400 (Max. Torque) (overlight engine)	6.0L 4000 (Max. Torque)
1000	204	211	211
1200	214	221	221
1400	224	230	230
1600	234	240	240
1800	244	-	-

## Electrical Equipment

- Alternator: 100 A/28V
- Start motor type: Peripagat
- Control equipment:
  - Hydro-pneumatic
  - Variable gear
  - Programmable controller

## Exhaust Emission Certificate

The EC engine described in this bulletin are based on engines, which have obtained the necessary test results from specifically-developed to meet all EC or CE Mark exhaust emission regulations.

## OPTIONAL EQUIPMENT

The available options include:

- Remote control, parking lot, air-charge, alternate water-mixer, angle set, water jets, 24V 3 housing, intercooler and waste mechanism and a 3-speed manual control.



ENGINE SPECIFICATION

# FSD 425 TCM

2,5 litre turbocharged  
intercooled marine diesel  
engine



Power Products

# Basic Engine Data

General arrangement	2.0L 16V
Number of cylinders	4
Size	95.7 mm
Stroke	66 mm
Compression Ratio	12.1:1

Maximum RPM	7500 RPM
Length	420 mm
Width	195 mm
Height	165 mm
Weight with coolant	21 kg

NOTE: Engine weight does not include without mounting hardware, oil, oil change, intermediate air intake pump.

## Power Ratings

A power curve (ENR204-80) can be viewed at [www.ford.com](http://www.ford.com) under the engine specifications.

Maximum Power	120 kW (165 hp) @ 5500 rpm	Maximum Torque	180 Nm (133 lb-ft) @ 3000 rpm
Minimum Torque	27 Nm (20 lb-ft) @ 2000 rpm	Minimum Power	100 Nm (74 lb-ft) @ 2000 rpm

## Installation Data

### Mounting Angles

Maximum installed angle/maximum	15.1° clockwise without mounting oil/fuel pump
Continuous operation	0° clockwise without mounting alternator, normal 15.2° left and rearward

Performance operation	15.2° clockwise without mounting alternator
	15.1° clockwise without mounting alternator, normal 15.2° left and rearward.

### Continual Use Limit

Always keep the total long duration horsepower greater than indicated below:

#### 4-Act Cycle

Forward (brakeless)	100 % continuous
Reverse (brakeless)	100 % continuous

#### Brake Cycle

Max. forward (brakeless)	100 %
Brake (brakeless)	100 %

Where n = the highest number of seconds spent in each direction of the cycle.

### Power Take-Off

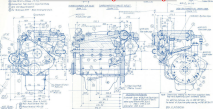
Optional PTO  
The optional four PTO arrangement consists of a 12.1:1 transmission with a gear change with mechanical electric shifter which fits the frame (part number 6-20200).

### Installation Notes

- The rear water pump must be mounted directly on the engine block with studs because a 1/2" offset will result in damage to the rear water pump. Always a marine drive bearing assembly should be used.
- Note the direction of the oil and coolant pipe fits to the water pump housing.
- The synchro should be supplied with a torque transducer that enables issue control.

- Connect the turbocharger oil and drain connections. The drain oil pan has a 1/2" hole for the drain.
- Connect the exhaust header tube to the flange on the turbocharger. The hole through the flange of the tube provides an alternative exhaust connection.
- Install oil pan. Always the rear end drain hole (see figure) is drilled top — the cooling is better. The oil pan is used for the pressure are intended oil. Do not attempt to change the hole.

# FSD - 425 Turbocharged Marine Engine



**NOTES:**

1. All dimensions are in millimeters.
2. All dimensions are to be maintained unless otherwise specified.
3. All dimensions are to be maintained unless otherwise specified.
4. All dimensions are to be maintained unless otherwise specified.
5. All dimensions are to be maintained unless otherwise specified.
6. All dimensions are to be maintained unless otherwise specified.
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10. All dimensions are to be maintained unless otherwise specified.



**TECHNICAL SPECIFICATIONS:**

- Model: FSD-425
- Displacement: 4.25 Liters
- Configuration: In-Line 4-Cylinder
- Power Output: 45 HP @ 3000 RPM
- Maximum RPM: 3000
- Weight: 150 kg
- Dimensions: 1000 mm (L) x 600 mm (W) x 800 mm (H)

 <b>Ford</b> <b>Marine Division</b>	
Model: FSD-425 Displacement: 4.25 Liters Configuration: In-Line 4-Cylinder Power Output: 45 HP @ 3000 RPM Maximum RPM: 3000 Weight: 150 kg Dimensions: 1000 mm (L) x 600 mm (W) x 800 mm (H)	
FSD-425	Page 12



Power Products

Maximum Power Standard Model (Maximum Power Model) (Maximum Power Model)

800-541-6553 3048

Engine Model

Model Number

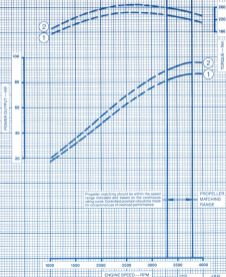
Model to Motor

Model to Motor

FSD 425  
TCM

Year / Line	Maximum Torque	Model	Maximum Torque	Model	Maximum Torque	Model
1987	87 ft-lb @ 2400 rpm	800-541-6553 3048	245 ft-lb @ 2750 rpm	800-541-6553 3048	270 ft-lb @ 2750 rpm	800-541-6553 3048
1988	88 ft-lb @ 2400 rpm	800-541-6553 3048	245 ft-lb @ 2750 rpm	800-541-6553 3048	270 ft-lb @ 2750 rpm	800-541-6553 3048

### PRELIMINARY



Propeller matching should be within the speed range indicated and based on the continuous rating curve. Consult your distributor for occasional use or special performance.

PROPELLER MATCHING RANGE

# FORD POWER PRODUCTS



## New from Ford – a 2.5 liter turbocharged intercooled engine for marine applications

Based on the award-winning turbocharged intercooled engine from our 2.5 liter diesel engine series, this new diesel engine is designed specifically for the marine market. All of the increased reliability and durability features of the turbocharged engine are retained and the use of select components maintains maximum horsepower through a standard intercooler for use on most of the 2.5 liter line.







ENGINE SPECIFICATION

# FSD RANGE

FSD 425

FSD 425 HP

FSD 425 T



# Introduction

The F50 range diesel engines are four cylinders, four stroke, high-speed units of 2.0 litre displacement with direct injection.

These engines are used in the four wheel vehicle and are well proven for automotive applications. Versions are available that will equally satisfy many industrial and marine applications as well.

Variants of the naturally aspirated standard power engines are available for Automotive, marine and industrial applications. The automotive variant is available for use with the MTDS 5-speed manual transmission and can also feature the 600 (Standard Gas Restriction) system.

The high-power naturally aspirated engine is available for automotive applications and variants are offered for use with MTDS or A4U transmissions. These engines are fitted as standard with an ISB system.

The turbocharged engine producing 70 kw at 4000 rpm is available for automotive applications and is offered for use with the MTDS manual transmission only. An ISB system is fitted as standard.

The excellent performance and fuel economy characteristics of F50 range engines can be attributed to the adoption of the latest innovative engineering technology which includes:

- A cast iron cylinder head with optimised gas flow characteristics to suit direct injection.
- Control of pump clearance to reduce compression ratio differences.
- On naturally aspirated engines, an injection pump with the following features:
  - Two speed governing and a precise fuel management system for automotive/marine applications
  - Automatic timing advance unit.
  - Torque control unit to control maximum fuel delivery throughout the speed range.
- On turbocharged engines, a complete electronically controlled engine management system is employed. This is a 'time by wire' system

which has no mechanical linkage between accelerator pedal and fuel injection pump. It constantly monitors engine requirements under all operating conditions and provides the appropriate timing. Any faults found are automatically stored in the system memory and can be extracted as fault codes by the use of the correct test equipment. Idle speed adjustment can be carried out from the driving/operating position.

Additionally, many premium features ensure that the F50 range engines meet high reliability and durability demands with low maintenance requirements.

These features include:

- Inductive hardened camshaft with flat faced journals.
- Crank led iron camshaft.
- Annotated piston top ring grooves.
- Steel on pump drive gear.
- Roller pins with bushed bearings.
- Crankshaft and camshaft with PHS seals.
- New connecting rods with improved bearings.
- New piston pins with improved finish.
- New improved piston rings.
- New water pump with higher output.
- Larger volume oil intake manifold with swirl effect on the high power version of the naturally aspirated engine.
- New improved pistons on naturally aspirated engines.

The F50 ISB turbocharged engine also has the following unique features:

- New piston's with lead edge reinforcement and longer piston pins.
- New camshaft with revised intake valve profile.
- Stainless exhaust valves.
- Dedicated engine body team.
- New flywheel.

NOTE: All gaskets used on this range of engines are now manufactured from asbestos free material.

## Basic Engine Data

Engine Model	F50-420	F50-420 HP	F50-420T
Nominal displacement	2,000 litres	2,000 litres	2,000 litres
Number of cylinders	4	4	4
Bore	90.7 mm	90.7 mm	90.7 mm
Stroke	90.0 mm	90.0 mm	90.0 mm
Compression Ratio	20.5 : 1	20.5 : 1	18.3 : 1
Maximum BMEP	13.0 bar	13.0 bar	11.12 bar
Length – Auto	667 mm	667 mm	667 mm
Width – Auto less A/C	474 mm	476 mm	480 mm
Auto plus A/C	724 mm	N/A <sup>1</sup>	720 mm
Height – Auto CAI less A/C	191 mm	N/A <sup>1</sup>	176 mm
Auto CAI plus A/C	480 mm	N/A <sup>1</sup>	493 mm
Auto Bosch less A/C	634 mm	638 mm	640
Auto Bosch plus A/C	890 mm	N/A <sup>1</sup>	890
Weight with flywheel	226 kg	232 kg	234 kg

<sup>1</sup> HP engine uses Bosch fuel injection pump and vehicle mounted A/C

<sup>2</sup> Turbo engine uses CAI fuel injection pump.

NOTE: Engine weight includes base engine plus flywheel, alternator, inlet and exhaust manifolds and fuel injection equipment.

# Options

For the current list of production options please consult the latest engine fluid Scheme Chart. Some of the options available are dependent upon the base engine selected.

The options available include:  
Injection pumps with two speed governor (for automotive and marine applications), variable speed governor (for industrial applications) or electronic governor (for the turbocharged engine). Exhaust Gas Recirculation (EGR) system with some engine variants.

Front, rear and centre-vent pressed steel oil pans, Aluminium alloy marine oil pans, Exhausts, Ancillary drive, IMB 3 and 4 Flywheel housings, Motive alternator and Starter motors, Pans, Mounting brackets, Air cleaners, Oil cooler, Flywheel PC, Clutch housings for 140 and 180 and 4-speed automatic and 5-speed manual transmissions (manual transmission only for the turbocharged engine), Dedicated engine bay team for the turbocharged engine with electronic engine management system.

## Power Ratings

Power curves are included at the end of this specification. For the PSD 425 engine with variable speed governing, the curves are to BS-5814/DIN 6271 whereas for the other engines in the range, the test automotive power standard BS-5814/DIN 6271 is used.

Compared to the DIN 70020 automotive power

standard, the reference conditions are different and for BS-5814/DIN 6271 the engine cooling fan is allowed to operate as in the vehicle, with the thermo viscous/fan operating normally. For DIN 70020, the fan is fixed so that it is being driven whenever the engine is running.

### PSD 425 Engine

Power Measuring Standard	Power kW	Intermittent Torque Nm		Power kW	Continuous Torque Nm		
		@ RPM	@ RPM		@ RPM	@ RPM	
BS-5814/DIN 6271	51	4008	144	2580	N/A	N/A	
BS-5814/DIN 6271	42	3008	126	2580	38	3000	124

### PSD 425 HP Engine

Power Measuring Standard	Power	Torque
BS-5814/DIN 6271	59 kW at 4000 rpm	158 Nm at 2000 rpm

### PSD 425T Engine

Power Measuring Standard	Power	Torque
BS-5814/DIN 6271	73 kW at 4000 rpm	234 Nm at 2100 rpm

## Exhaust Emission Certification

The PSD engines described in this brochure are tested on engines which, when installed in the relevant Ford vehicles, have been specifically developed to meet the following emission control standards:

Naturally aspirated automotive engines  
— EEC 5th Amendment.

Turbocharged automotive engines  
— EEC 5th Amendment (M35 L2T (Light Duty Truck)).

The test procedures required to validate conformity with emission regulations are varied and complex.

Conformity can be affected by factors such as vehicle weight, tyre size, gearbox ratios, axle ratios and non-standard engine accessories such as air cleaners and exhaust systems.

When the engines are used to power other vehicles there will inevitably be differences that are beyond the control of Ford. It is therefore the responsibility of the O.E.M. to ensure that his equipment complies with any exhaust emission regulations that may apply.

# Ford FSD-425 51kw(70Ps) Automotive

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 SUBJECT FOR INFORMATION USE ONLY  
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 CONSTRUCTION OF ANY PARTS  
 UNLESS SPECIFICALLY NOTED  
 OTHERWISE



ALL DIMENSIONS  
 UNLESS SPECIFIED  
 IN PARAGRAPHS  
 1 THROUGH 4  
 ARE IN MILLIMETERS  
 UNLESS OTHERWISE  
 SPECIFIED

1. DIMENSIONS ARE IN MILLIMETERS  
 UNLESS OTHERWISE SPECIFIED  
 2. DIMENSIONS ARE IN INCHES  
 UNLESS OTHERWISE SPECIFIED

3. DIMENSIONS ARE IN INCHES  
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 4. DIMENSIONS ARE IN MILLIMETERS  
 UNLESS OTHERWISE SPECIFIED

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**FORD**

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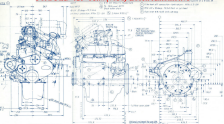
DATE: 1980-01-15  
 BY: J. L. BROWN  
 CHECKED: J. L. BROWN  
 APPROVED: J. L. BROWN

FOR INFORMATION USE ONLY

FIG. 100

Del. 14

# Ford F8D-425 51kw(70Ps) Bosch Automotive



**RECOMMENDED OIL:**  
 SAE 15W-40  
 API CF-4



Timing Belt and Pulleys



Oil Pan and Mounting

**WARRANTY:**  
 3 Years / 100,000 km



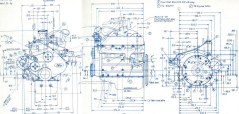
Engine Block and Head

<p><b>RECOMMENDED ACCESSORIES:</b></p> <ul style="list-style-type: none"> <li>Timing Belt</li> <li>Oil Pan</li> <li>Water Pump</li> <li>Timing Belt Tensioner</li> </ul>	
<p><b>CONTACT:</b></p> <p>150-1000-0000</p>	
<p><b>FOR MORE INFORMATION:</b></p> <p>Visit our website: <a href="http://www.ford.com">www.ford.com</a></p>	
<p><b>DISCLAIMER:</b></p> <p>This document is for informational purposes only. It is not intended to be used as a substitute for professional advice.</p>	
<p>150-1000-0000</p>	<p>150-1000-0000</p>



# Ford F5D-425 51kw(70Ps) Variable Industrial

1970-1975  
 Ford Motor Co.  
 Ford, Ohio, U.S.A.



- 1. Main bearing housing
- 2. Piston
- 3. Piston pin
- 4. Piston pin nut
- 5. Piston pin cap
- 6. Piston pin cap nut
- 7. Piston pin cap nut
- 8. Piston pin cap nut
- 9. Piston pin cap nut
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- 89. Piston pin cap nut
- 90. Piston pin cap nut
- 91. Piston pin cap nut
- 92. Piston pin cap nut
- 93. Piston pin cap nut
- 94. Piston pin cap nut
- 95. Piston pin cap nut
- 96. Piston pin cap nut
- 97. Piston pin cap nut
- 98. Piston pin cap nut
- 99. Piston pin cap nut
- 100. Piston pin cap nut

TECHNICAL DATA  
 Model: F5D-425  
 Displacement: 4.25 L  
 Power: 51 kW (70 PS)  
 Speed: 1500 RPM  
 Torque: 25 Nm  
 Fuel System: Diesel  
 Lubrication: Dry Sump  
 Cooling: Water  
 Emissions: Euro 1

Item	Value
Model	F5D-425
Displacement	4.25 L
Power	51 kW (70 PS)
Speed	1500 RPM
Torque	25 Nm
Fuel System	Diesel
Lubrication	Dry Sump
Cooling	Water
Emissions	Euro 1



PERFORMANCE DATA FROM TEST PROCEDURE

PRELIMINARY DRAWING

**Ford**  
 F5D-425 51kw(70Ps) Variable Industrial  
 1970-1975  
 Ford Motor Co.  
 Ford, Ohio, U.S.A.

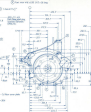
Model	F5D-425
Displacement	4.25 L
Power	51 kW (70 PS)
Speed	1500 RPM
Torque	25 Nm
Fuel System	Diesel
Lubrication	Dry Sump
Cooling	Water
Emissions	Euro 1





# FSD-425 Automatic High Power 50kw

Part Number: FSD-425-01  
 Revision: 01/01/68



Dimensions in inches

Overall Length	18.00
Overall Width	12.00
Overall Height	10.00

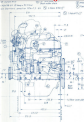
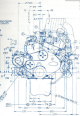


EXPLANATION  
 OF SYMBOLS  
 USED IN THIS  
 DRAWING

	
APPROVED FOR THE U.S. AIR FORCE AND THE U.S. AIR FORCE ENGINEERING CENTER WRIGHT-PATTERSON AIR FORCE BASE, OHIO	
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FSD-425	(Rev. 1)

PRELIMINARY DRAWING

# FSD-425 Turbocharged 73.6 Aw



**Dimensions (mm)**

Overall width	1000
Overall height	1000
Block width	750
Block height	750



**REMARKS:**

**REVISIONS:**

APPROVED BY: \_\_\_\_\_

DATE: \_\_\_\_\_



**FORD MOTOR COMPANY**

1970-1971

1970-1971

1970-1971

**FELBROTH GROUP**



Power Products

# FSD 425

62759563

Model/Year/Service

Year/Configuration

Year

Configuration

Model

Year

Service

Configuration

Year

Configuration

Engine Model

Model Year

Model/Configuration

Model/Configuration

Model/Configuration

Model/Configuration



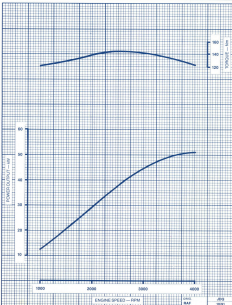
317kW @ 2500RPM



344Nm @ 2500RPM

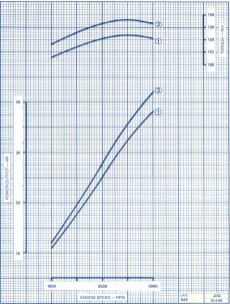
PRELIMINARY

Engine Model  
Model Year  
Model/Configuration  
Model/Configuration  
Model/Configuration  
**FSD 425  
(ECC SH)**





<b>Model Name:</b> FSD 425 Industrial <small>6071</small> <b>Model Number:</b> 054-02 + 7 BLADE		<b>Motor Type:</b> ALL-SPEED <b>Motor Voltage:</b>		<b>Engine Model:</b> <b>Motor Model:</b> <b>Model de motor:</b> <b>Modelo motor:</b>
<b>38 kW @ 3000 RPM</b> <b>52 kVA @ 3000 RPM</b>		<b>5400 g @ 3000 RPM</b> <b>5200 g @ 3000 RPM</b>		<b>FSD-425 INDUSTRIAL</b>
<small>1. Maximum Power</small> <small>2. Maximum Torque</small>	<small>1. Maximum Power</small> <small>2. Maximum Torque</small>	<small>1. Maximum Power</small> <small>2. Maximum Torque</small>	<small>1. Maximum Power</small> <small>2. Maximum Torque</small>	





Power  
Products

Reference for  
this section:

# FSD 425 High Power

For  
Use:

Tractors: **425 A, 425 B, 425 C**  
Tractors: **Tractor 425C-2**

Operating  
Range:

Rated  
Regime(s):

55kW @ 2000RPM

100HP @ 2000RPM

Engine Model:

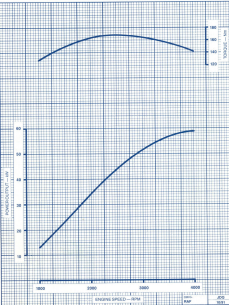
Motor Model:

Modelle de moteur:

Modelle motore:

**FSD 425  
HIGH POWER  
(55C 5m)**

PRELIMINARY



1000  
RPM

200  
HP



Power Products

Reference Power Products  
Ford Performance

# FSD 425 T VTEC

Year: 2000  
Model: FORD  
Type: FORD

Year: 2000  
Model: FORD  
Type: FORD

Year: 2000  
Model: FORD  
Type: FORD

Engine Model: FSD 425 T  
Model: FSD 425 T  
Model: FSD 425 T

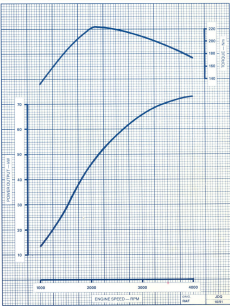


3000 lb-ft @ 4000 RPM



200 lb-ft @ 2500 RPM

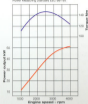
PRELIMINARY



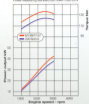


## Power Curves

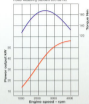
F5D-425 Inverter-Diesel Engine  
Power Measuring Standard ISO 9249



F5D-425 Industrial Engine  
Power Measuring Standard ISO 9249



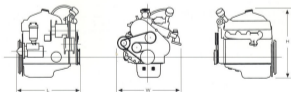
F5D-425P Engine  
Power Measuring Standard ISO 9249



Engine Model	No. of cylinders	Capacity (cc)	Compression Ratio	Bore (mm)	Stroke (mm)	Max. Power kW	Max. Power rpm	Max. Torque Nm	Average dry weight (kg)	Dimensions L x H x W (mm)	Application
F5D-425	4	2496	20,5	92,7	92,5	57 <sup>1</sup>	4000	140	228	662 x 634 x 663	A/I
F5D-425	4	2496	20,5	92,7	92,5	42 <sup>1</sup>	3000	135	228	662 x 725 x 674	I
F5D-425 HP	4	2496	20,5	92,7	92,5	58 <sup>1</sup>	4000	165	233	662 x 630 x 687	A/I

A = Automotive Applications - I = Industrial Applications - 1 = ISO 9249/ISO 9249-1 - 2 = ISO 9249

## Overall Dimensions



The Source for Power.  
Worldwide™



# Ford 2401E 39 kw 3600 Rpm

Engine Model: **2401E**

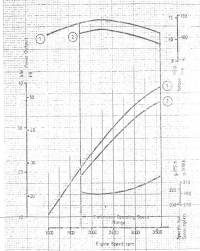
Test Cycle: SAE - Engine with Air Cleaner, Alternator, Exhaust System and Fan

Power measuring Std. **SAE J1349**

Fuel: Diesel Oil

\* Based on 15.5% SAE 1507 Class Oil

- 1) Sustained BHP Power 20.0 kW at 1800 rpm, Max. Torque 115 Nm at 2100 rpm.
- 2) Continuous BHP Power 15.7 kW at 3000 rpm, Max. Torque 107 Nm at 2100 rpm.



# Ford 2401E 45.6 kw 3600 Rpm



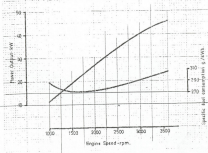
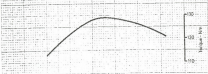
Engine Model: **2401E**

Governing - Automotive & General Purpose

Test Conditions - Air Temp. 35°C, Pressure 750mm.Hg. Dry Air

Barometric Pressure 29.95 AU IN/a: 1971 Fuel

Optional Gross Output: Power 26.8kW at 3600rpm, Torque 120 Nm. at 1350rpm.



# FORD 2.4 Litre 4AA



## FORD TRANSIT DİZEL ARAÇLARI

### 2.4 LITRELİK FORD TRANSİT YORK DİZEL MOTORLARININ TEKNİK DEĞERLERİ

2.4 LITRELİK FORD MOTORLARININ TEKNİK DEĞERLERİ						
<b>YAKIT</b>						
Yakıtın tipi	..	..	..	..	..	5AA
Akümüle edilebilir ..	..	..	..	..	..	1, 2, 4, 5,
Dizel motoru ..	..	..	..	..	..	53,00 (15,00)
Yakıt (yakıtın türüne göre) ..	..	..	..	..	..	50,00 (15,00)
Dizel motorun toplam güç/enerjisi ..	..	..	..	..	..	2300
2.4 LITRELİK 4AA						
Dizel motoru ..	..	..	..	..	..	51,0%
Yakıtın türüne göre ..	..	..	..	..	..	20,0000,000000
Dizel motorun toplam güç/enerjisi ..	..	..	..	..	..	5,0 (15,00) (11,00)
Yakıtın türüne göre ..	..	..	..	..	..	50 (100)
Yakıtın türüne göre ..	..	..	..	..	..	120,000000
Yakıtın türüne göre ..	..	..	..	..	..	200

**62 bhp 3600 rpm**