

**4B-4BT-4BTA**

**Generator Drive**

**Sales Handbook**

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## 4B/4BT/4BTA GENERATOR DRIVE

### Sales Handbook Usage Instructions

In addition to option graphics and text, this sales handbook contains other information to assist in the development of customer engine specification or quotation. Please read all information in this handbook prior to the quotation and ordering of engines.

1. Table of Contents
2. Product Summary Page - Cross reference of technical configuration numbers, model names, product identifiers, pricing specifications and power ratings. These numbers will assist you in selecting the product identifiers for use when placing orders.

Product Identifier - A means of identifying base engines, controlling the maximum horsepower and rated speed of each base model. Each product identifier has its own base engine price and is a mandatory option. Add the product identifier for the desired engine model to the engine order or specification sheet similar to other mandatory options.

Graphics and Notes Section.

Option by Configuration Section - Appendix A

This section is not used by the Generator Drive Sales Handbooks

Installation Drawings -

A listing of current installation drawings available on the Industrial Customer Engineering Technical Data Web site may be accessed by using the link below:

[http://cobmk4.cob.cummins.com/installations/installations\\_1.html](http://cobmk4.cob.cummins.com/installations/installations_1.html)

CADD files available. Request from CADD Marketing department.

DATA INCLUDED IN THIS MANUAL ARE SUBJECT TO CHANGE WITHOUT NOTICE. Option compatibilities, configuration information, option drawings and other data listed in this manual are subject to change. Consult the Cummins IMS database and the Technical Data Intranet site (<http://cobmk4.cob.cummins.com/curves/database/options/options.html>) for the latest information or contact your Cummins representative. To view the CLS menu screen type 'ECVZ CEC' in IMS. Select PF key associated with the desired activity. CLS 'PRIC' Pricing Specifications and CLS options can be exploded to show part number content through IMS screens 'ECWC CEC' and 'ECWD CEC'. Dimensions included in this handbook are included for comparing only and should not be used for other purposes.

### Technical Data Issues:

Please refer any questions or revisions regarding technical content of the Sales Handbook to Jim Peters, (812-377-5966).

### All Other Issues:

Contact C.E. (Charles) Faulkner, (812-377-3867).

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**4B SERIES GENERATOR DRIVE  
ENGINE PRODUCT SUMMARY**

**May 2002**

Model Name	Configuration Number	Application	Max Gross BHP (SAE)	
			1800 rpm	1500 rpm
4B3.9-G2	D381004GX02	Standby Power	68	55
		Prime Power	60	50
		Continuous Power	40	40
4BT3.9-G3	D382012GX02	Standby Power	86	74
		Prime Power	78	67
		Continuous Power	64	54
4BT3.9-G4	D382012GX02	Standby Power	102	87
		Prime Power	93	79
		Continuous Power	64	55
4BTA3.9-G1	D383030DX02	Standby Power	N/A	98
		Prime Power	N/A	89
		Continuous Power	N/A	81
4BTA3.9-G2	D383030DX02	Standby Power	114	N/A
		Prime Power	104	N/A
		Continuous Power	93	N/A

**\* Note:**

- All components and accessories are mounted and plumbed or wired unless otherwise noted.
- Graphics for standard configuration options may be seen on the installation diagrams.
- N.A. denotes item not available.

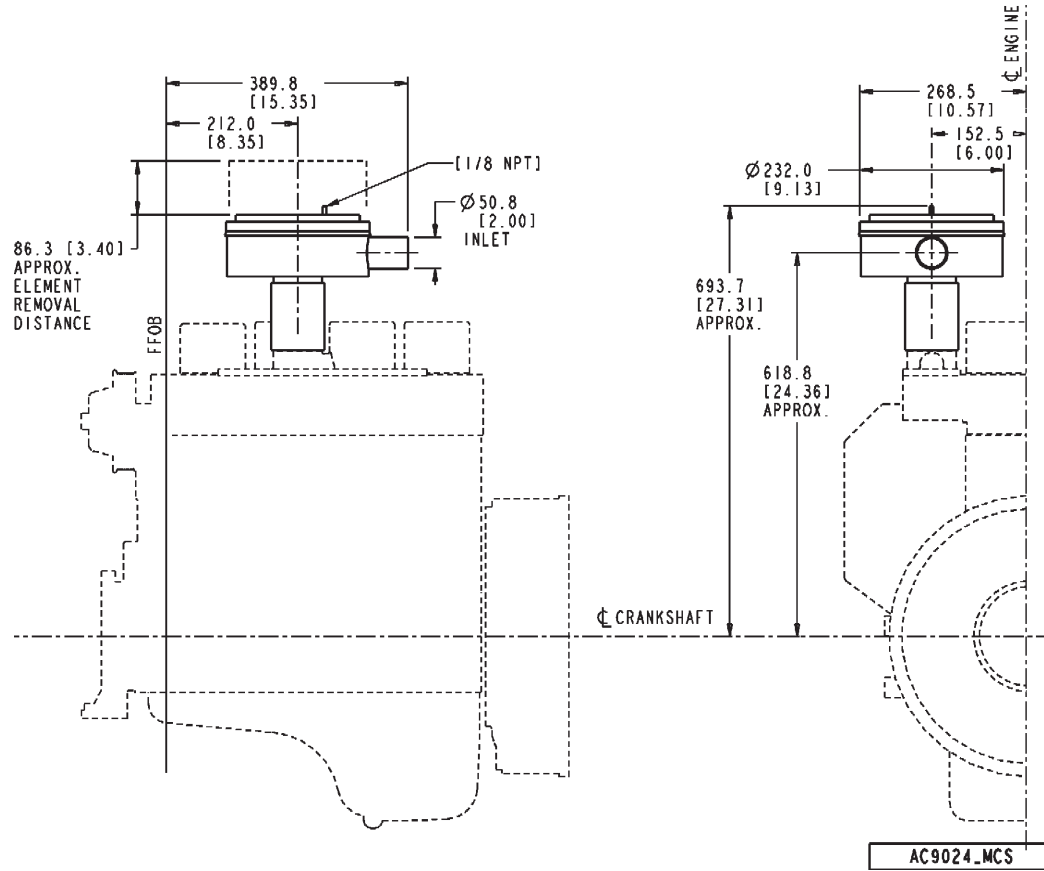
**Caution:**

Proving torsional compatibility of an engine-generator set is the responsibility of the generator-set assembler. Cummins will supply the appropriate engine mass elastic data necessary for the calculations and is prepared to offer assistance with torsional questions concerning the engine.

# 4BTGDRIVE

AC - Air Cleaner

**AC9024**



AC9024 [G]

Option #	Mfg./Model	Duty Rating	Open or Closed Crankcase Ventilation	Inlet/Outlet Dia.	Mounted or Kitted	Notes
AC 9024	Coopers	Light	-	59.0 mm [2.32 in.]	Mounted	Indoor use

Duty rating: Light  
 Air cleaner exhaust O.D.: 59.0 mm [2.32 in.]  
 Mounting location: Intake cover  
 Manufacturer: Coopers  
 Filter quantity: 1

Environment capability: Indoor  
Filter disposition: Reusable  
Supply method: Mounted  
Engine family: B series  
Structure code: 02 EBM  
Cylinders: 4  
Aspiration: Naturally aspirated

# 4BTGDRIVE

## AC - Air Cleaner

**AC9025**

ac9025\_mcs

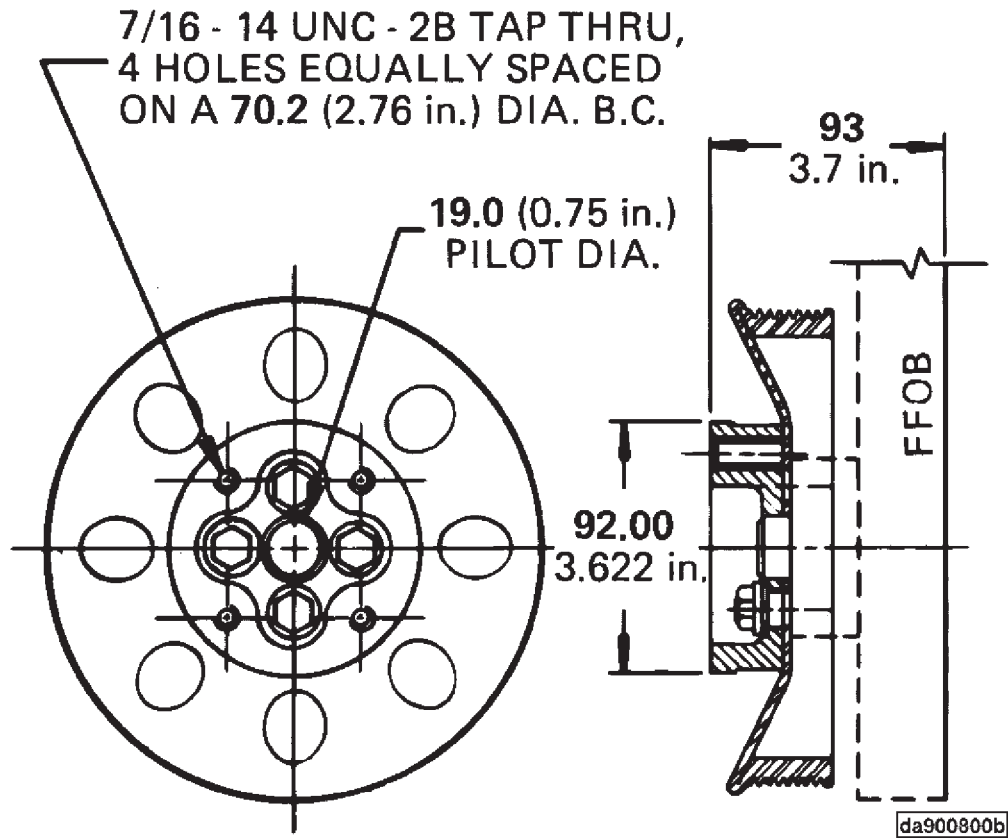
### AC9025 [G]

Option #	Mfg./Model	Duty Rating	Open or Closed Crankcase Ventilation	Inlet/Outlet Dia.	Mounted or Kitted	Notes
AC 9025	Coopers	Light	-	93.7 mm [3.68 in.]	Mounted	Indoor use

Duty rating: Light  
Air cleaner exhaust O.D.: 93.7 mm [3.68 in.]  
Mounting location: On turbocharger  
Manufacturer: Coopers  
Filter quantity: 1  
Environment capability: Indoor  
Filter disposition: Reusable  
Supply method: Mounted  
Engine family: B series  
Structure code: 02 EBM  
Cylinders: 4  
Aspiration: Turbocharged

AF - Front Drive Adapter

AF9002



AF9002 [M]

Option #	Belt Type/Grooves	Pulley Dia.	Front PTO Adapter	Torque Limit	#Holes/Bolt Circle	Notes
AF 9002	8-groove	173.76 mm [6.841 in.]	Yes	285 N•m [210 lb-ft.]	4/70.16 mm [2.762 in.]	-

173.76 mm [6.841 in.] dia. 8-groove drive pulley. Includes a front PTO adaptor 92.0 mm [3.62 in.] dia. with 4 holes on a B.C. of 70.16 mm [2.762 in.]. Will accept Great Lakes coupling No. 202413.

Torque limit: 285 N•m [210 lb-ft.]

Aspiration: Naturally aspirated and turbocharged

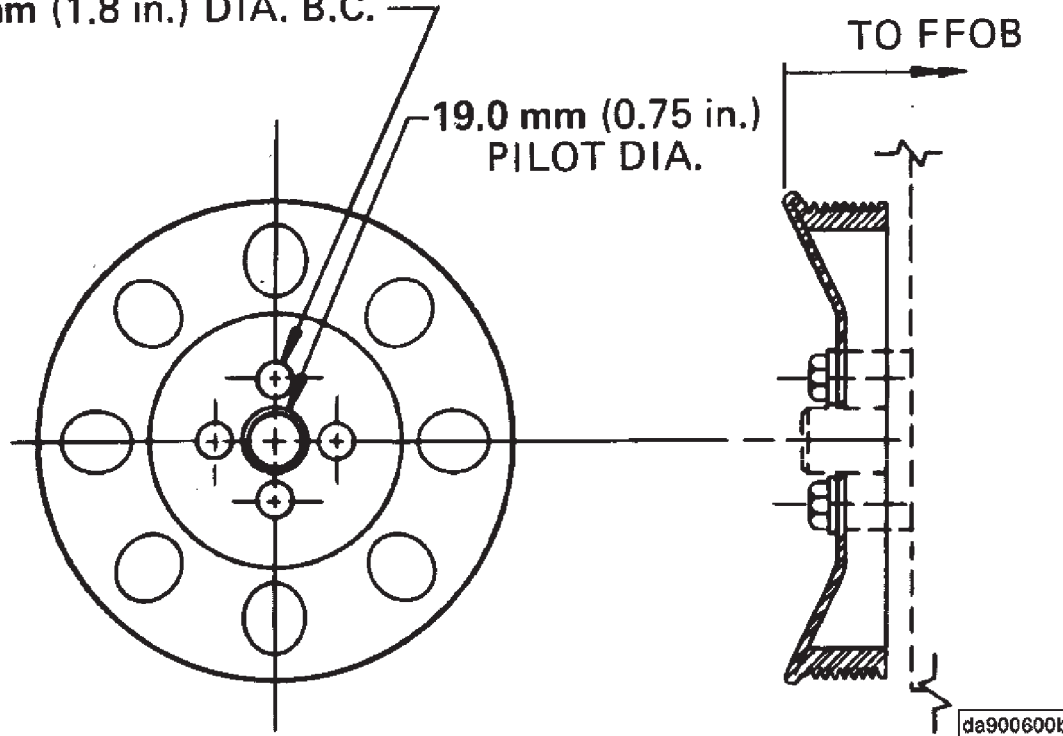
AF - Front Drive Adapter

AF9006

13 mm (0.5 in.) DIA. 4 HOLES  
EQUALLY SPACED ON A  
45 mm (1.8 in.) DIA. B.C.

19.0 mm (0.75 in.)  
PILOT DIA.

86 mm (3.4 in.)  
TO FFOB



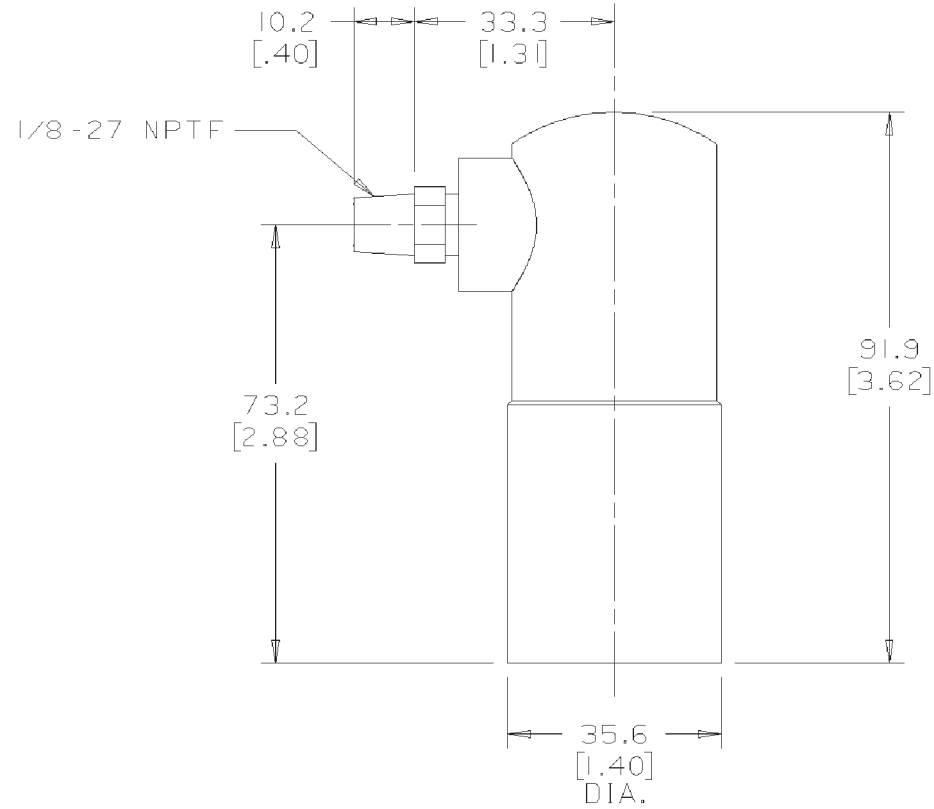
AF9006 [M]

Option #	Belt Type/Grooves	Pulley Dia.	Front PTO Adapter	Torque Limit	#Holes/Bolt Circle	Notes
AF 9006	8-groove	173.76 mm [6.841 in.]	No	285 N•m [210 lb-ft.]	4 x 13.0 mm [0.51 in.]	4 and 6 cyl.

173.76 mm [6.841 in.] dia. 8-groove drive pulley.  
Torque limit: 285 N•m [210 lb-ft.]  
Adaptable to PTO: No

AG - Restriction Indicator

**AG8002**



AG8002 [G]

Option #	Restriction	Notes	Weight	Value Code
AG 8002	635 mm [25 in.] of water	Supplied in kit for mounting to customer supplied air intake system	n/a	-

Air cleaner restriction service indicator set at 635 mm [25 in.] of water. Supplied in kit for mounting to customer supplied air intake system.

AP - Agency Approval

AP9001

**(No Graphics Required)**

AP9001 [M]

Option #	Agency	Emission Level				Notes
AP 9001	None	Not certified				-

Certified by: None  
Application: N/A  
Cert. level: None  
Special allowance: None  
Cert. agent: None  
Comments: None  
Fuel type: Diesel  
Manufacturer of record: Cummins  
Language: English  
Structure code: 02 EBM  
Engine family: B series, C series  
In place of 3931342 BZL may use P/N 3974780

AP - Agency Approval

AP9160

**(No Graphics Required)**

AP9160 [M]

Option #	Agency	Emission Level				Notes
AP 9160	EPA, CARB	Tier 1, Tier 1				-

Certification agency: EPA, CARB  
 Application: Generator  
 Certification year: 2000  
 Mfg. location: USA  
 Language: English and French

BP - Base Parts

BP9037

(No Graphics Required)

BP9037 [M]

Option #	Description					Notes
BP 9037	4 B engines					-

Engine: B Series  
 Cylinders: 4  
 Fuel type: Diesel  
 Tapped fittings: STORM  
 Premium casting: Yes  
 Structural block: No  
 Aspiration: Naturally aspirated  
 For use with Encore-like block in place of BP 9001.

BP - Base Parts

**BP9038**

**(No Graphics Required)**

**BP9038 [M]**

Option #	Description					Notes
BP 9038	4 BT engines					-

Engine: B series  
 Cylinders: 4  
 Fuel type: Diesel  
 Tapped fittings: STORM  
 Premium casting: Yes  
 Structural block: No  
 Aspiration: Turbocharged  
 For use with Encore-like block in place of BP 9002.

BP - Base Parts

BP9039

(No Graphics Required)

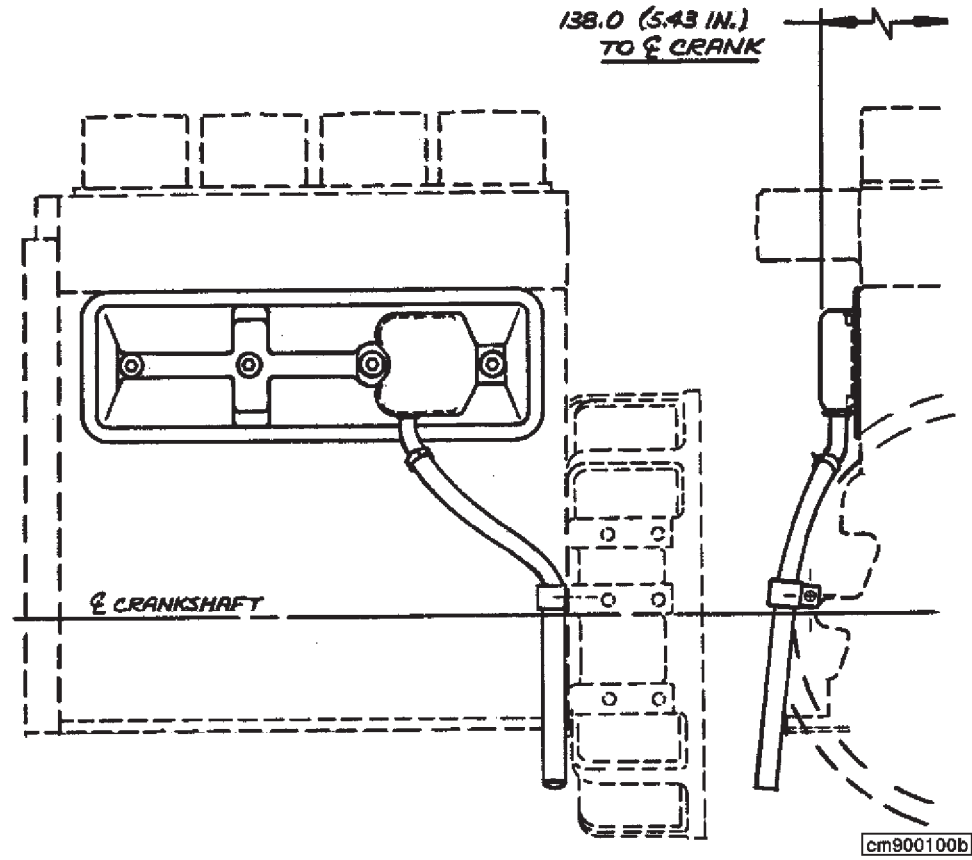
BP9039 [M]

Option #	Description					Notes
BP 9039	4 BTA engines					-

Engine: B series  
 Cylinders: 4  
 Fuel type: Diesel  
 Tapped fittings: STORM  
 Premium casting: Yes  
 Structural block: No  
 Aspiration: Charge air cooled, Jacket water aftercooled  
 For use with Encore-like block in place of BP 9003.

CM - Cam Follower Cover

CM9001



CM9001 [M]

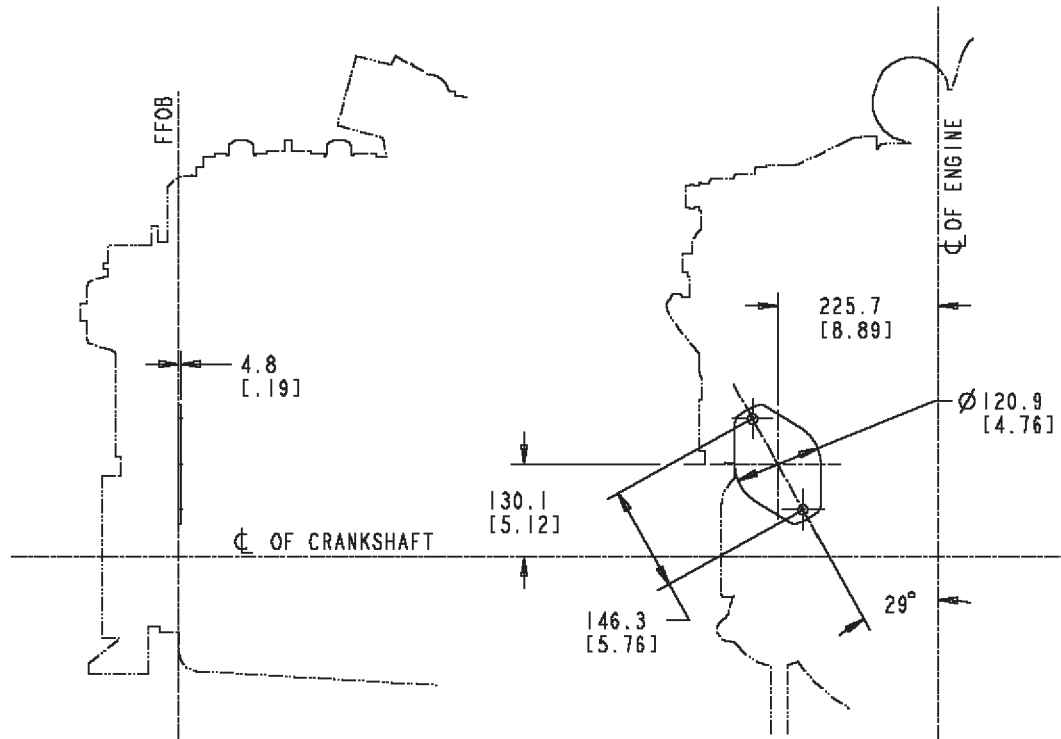
Option #	Hose Length	Breather Orientation				Notes
CM 9001	360.0 mm [14.17 in.]	Bottom of tappet cover				4 cylinder

4 cylinder engine tappet cover with breather tube located in bottom of tappet cover. Includes a 360.0 mm [14.17 in.] breather hose.  
**4 cylinder only.**

# 4BTGDRIVE

## DF - Front Gear Train Accessory Drive

DF9051



### DF9051 [M]

Option #	Description	Shaft Type	Torque @ rpm	Drive Ratio	Location	Notes
DF 9051	Cover plate	-	-	-	-	Must use if air compressor, sea water pump or hydraulic pump is NOT specified

Contains cover plate. Must use this option if an air compressor, sea water pump or hydraulic pump is NOT specified.

## DL - Fuel Drain Location

DL9001

**(No Graphics Required)**

DL9001 [M]

Option #	Plumbing for	Attachment Location	Attachment Size			Notes
DL 9001	Fuel drain	Tappet Cover - rear	4.76 mm [3/16 in.]			No content option

Drain tube O.D.: 4.76 mm [3/16 in.]

Connection type: Beadless

Customer connect location: Tappet cover - rear

Engine family: B series

Restricted fuel pump mfg/model: Bosch VE, Bosch VP-14, CAV DPA, CAV PDPS, Stanadyne DP4

No content option. Used as a pointer to select the correct fuel tubing.

DL - Drain Location

DL9002

**(No Graphics Required)**

DL9002 [M]

Option #	Plumbing for	Attachment Location	Attachment Size			Notes
DL 9002	-	Tappet cover - rear	-			-

Drain tube I.D.: 6.35 mm [0.25 in.]

Connection type: Dual bead

Customer connect location: Tappet cover - rear

Engine family: B series

No content option. Used as a pointer to select the correct fuel tubing.

Restricted fuel pump mfg./model:

Bosch VE

Bosch VP-14

Cav DPA

EC - Thermostat

EC9001

**(No Graphics Required)**

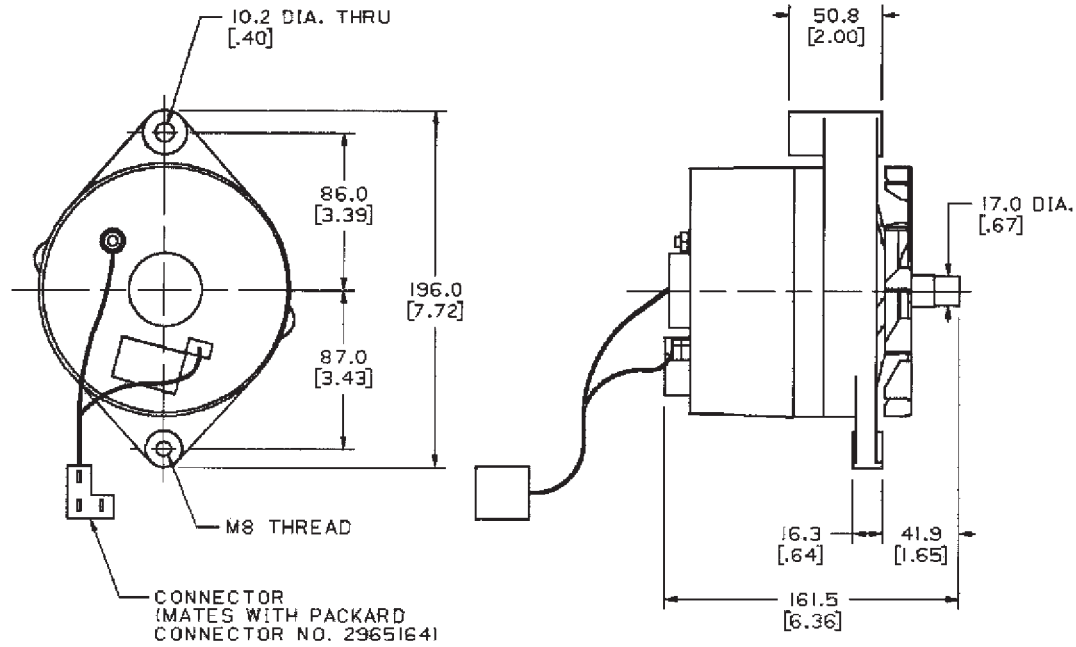
EC9001 [M]

Option #	Description	Opening Temp.			Notes
EC 9001	Jiggle-pin vented thermostat	83 °C [181 °F]			-

Temp. thermostat opens: 83 °C [181 °F]  
 Number of thermostats: 1  
 Thermostat type: Jiggle-pin  
 Vented non-vented: Vented  
 Requires by-pass housing: No  
 Engine family: B Series  
 Required housing bore dia.: 54.10 mm [2.130 in.]  
 Structure code: 02 EBM

EE - Alternator

EE9023



EE 9023

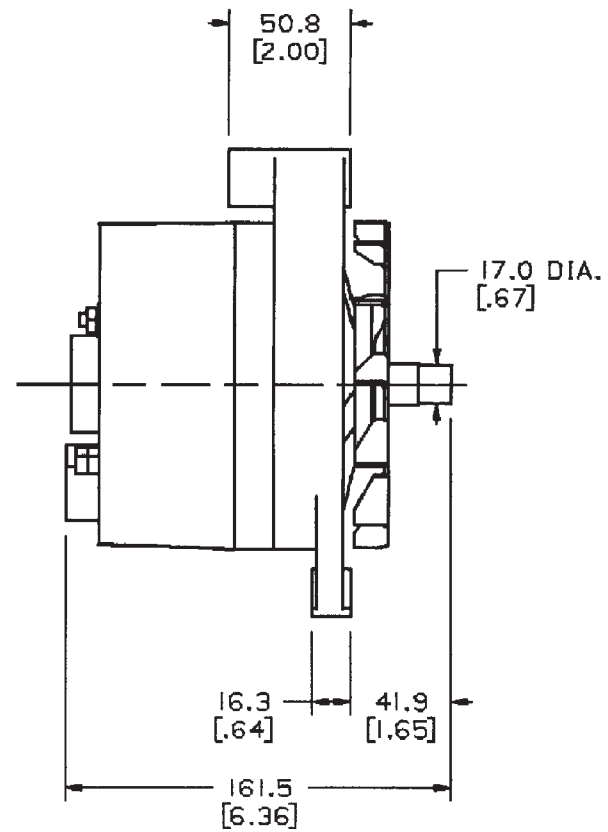
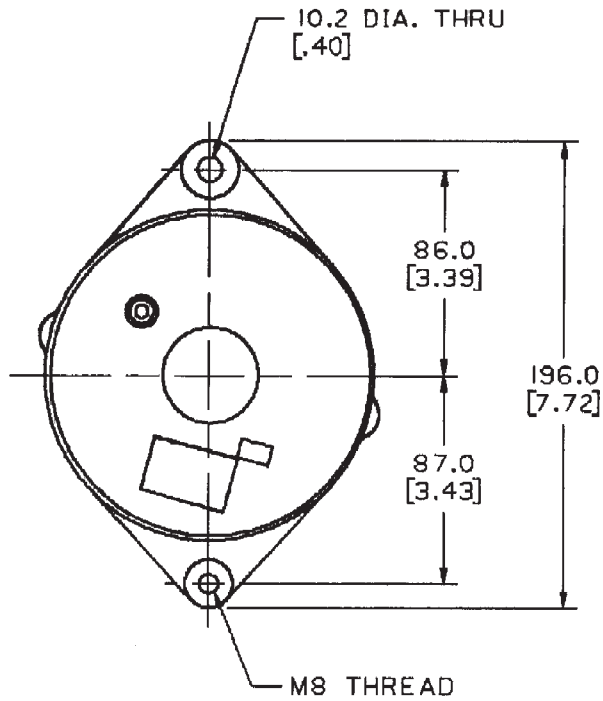
EE9023 [G]

Option #	Mfr./Model	Voltage/Amps	Mounting Type	Grounding Type	Cummins-Branded	Notes
EE 9023	Bosch/ K1	12V/65A	-	-	-	Functions with horizontal oil filter

Functions with Horizontal Oil Filter: Yes  
 Alternator Body Length 128.0 mm [5.04 in.]  
 Engine family: B series, C series  
**Use with EH 9001 or EH 9242.**

EE - Alternator

EE9051



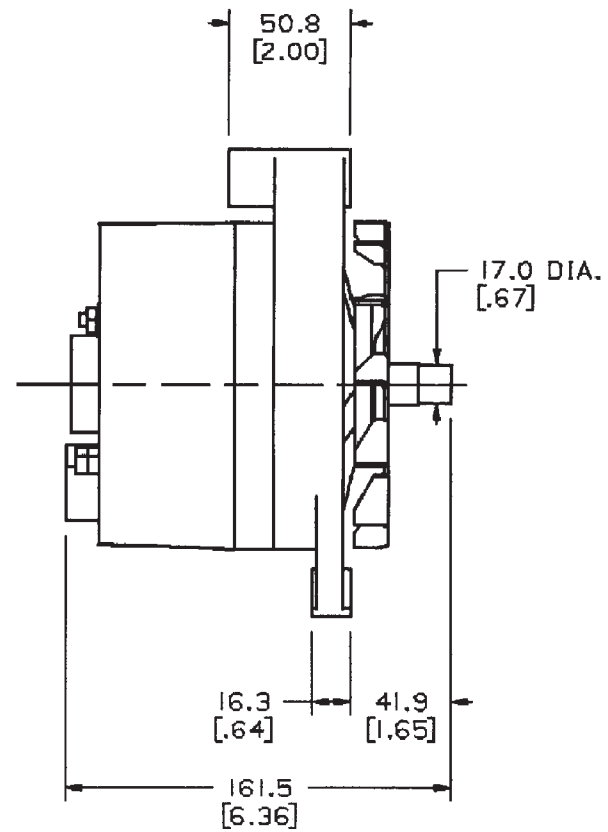
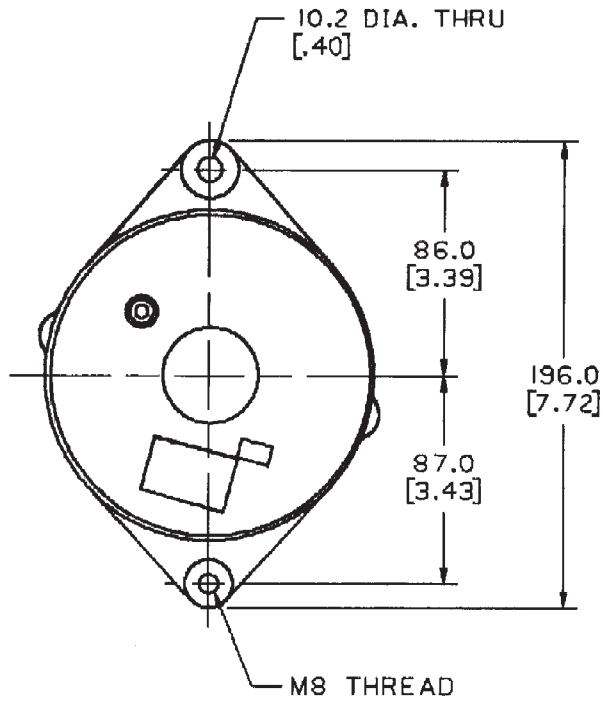
EE9051 [G]

Option #	Mfr./Model	Voltage/Amps	Mounting Type	Grounding Type	Cummins-Branded	Notes
EE 9051	Bosch/ K1	12V/65A	-	Negative	-	Functions with horizontal oil filter

Functions with Horizontal Oil Filter: Yes  
 Alternator Body Length: 128.0 mm [5.04 in.]  
 Engine family: B series, C series  
**Use with EH 9001 or EH 9242.**

EE - Alternator

EE9052



EE9052 [G]

Option #	Mfr./Model	Voltage/Amps	Mounting Type	Grounding Type	Cummins-Branded	Notes
EE 9052	Bosch/ K1	24V/40A	-	Negative	-	Functions with horizontal oil filter

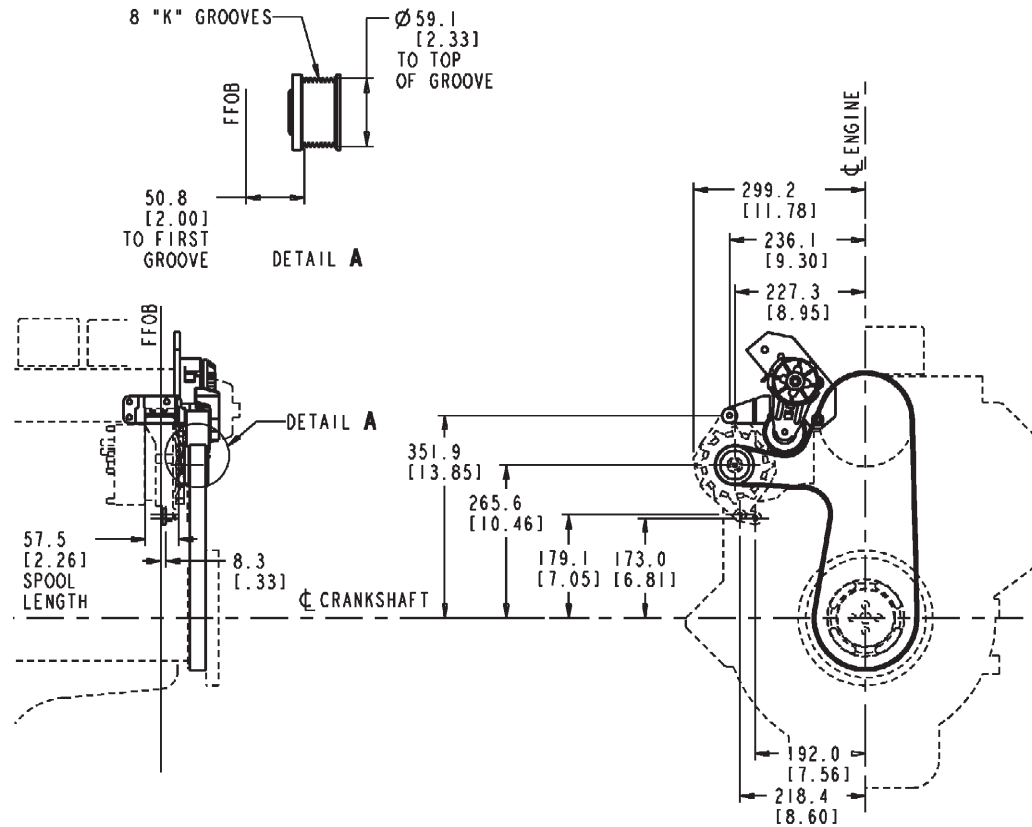
24V, 40A negative ground Bosch K1 alternator. Includes alternator fan for clockwise rotation.

Engine family: B series, C series

Use with EH 9001 or EH 9242.

EH - Alternator Mounting

**EH9001**



**EH9001\_MCS**

EH9001 [M]

Option #	Use With	Mount Type	Drive Ratio	Belt Type	Tensioner Type	Notes
EH 9001	Bosch, Leece Neville, and Lucas alternators	50.8 mm [2 in.] spool	2.9:1	-	-	Effective damper pulley dia. 173.76 mm [6.8 in.]

Alternator mfg./model:

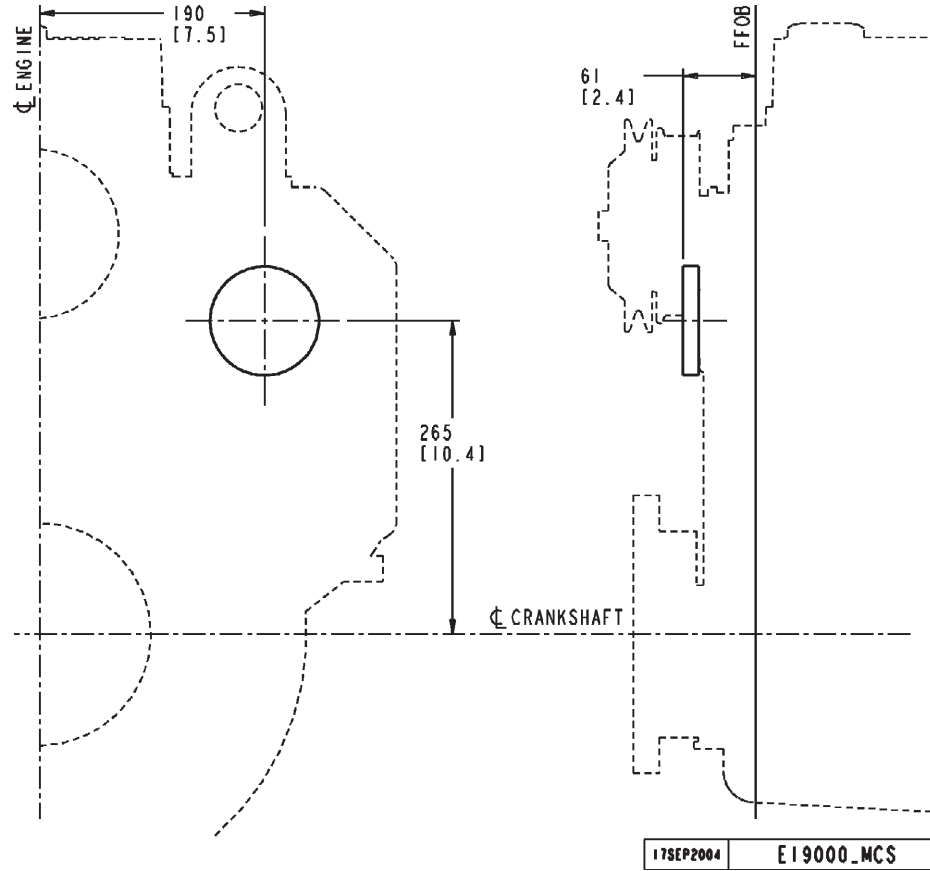
- Bosch K-1
- Leece Neville 8AR2207L-CD
- Lucas TVS/SA 23-12V

## 4BTGDRIVE

Lucas TVS/SA 23-24V  
Engine design phase: Current product  
Pulley retainer provided: Yes  
Alternator pulley provided: Yes  
Belt supplier: Cummins  
Belt tensioner supplier: Cummins  
Alternator drive speed: 2.9  
Alternator mount type: 50.8 mm [2 in.] spool  
Pulley location horz. from crank C/L: -236.1 mm [-9.30 in.]  
Pulley location vert. from crank C/L: 265.6 mm [10.46 in.]  
Structure code: 02 EBM  
Damper pulley effective dia.: 173.76 mm [6.841 in.]  
Alternator driven by aux. belt: No  
Required tensioner pulley material: Steel  
Pad for freon compressor provided: No  
Engine family: B series  
Required water pump pulley type: Hardened, standard  
Stud for wiring harness attachment: No  
Alternator tail support required: No  
Refrigerant compressor mtg. hardware included: No  
Tall tensioner bracket: No  
**Use with FA 9000, FA 9002, FA 9003, FA 9004, FA 9005, FA 9012, FA 9013, FA 9014, FA 9015, FA 9062 or FA 9077; WP 9001.**

EI - Electronic Engine Monitor

**EI9000**



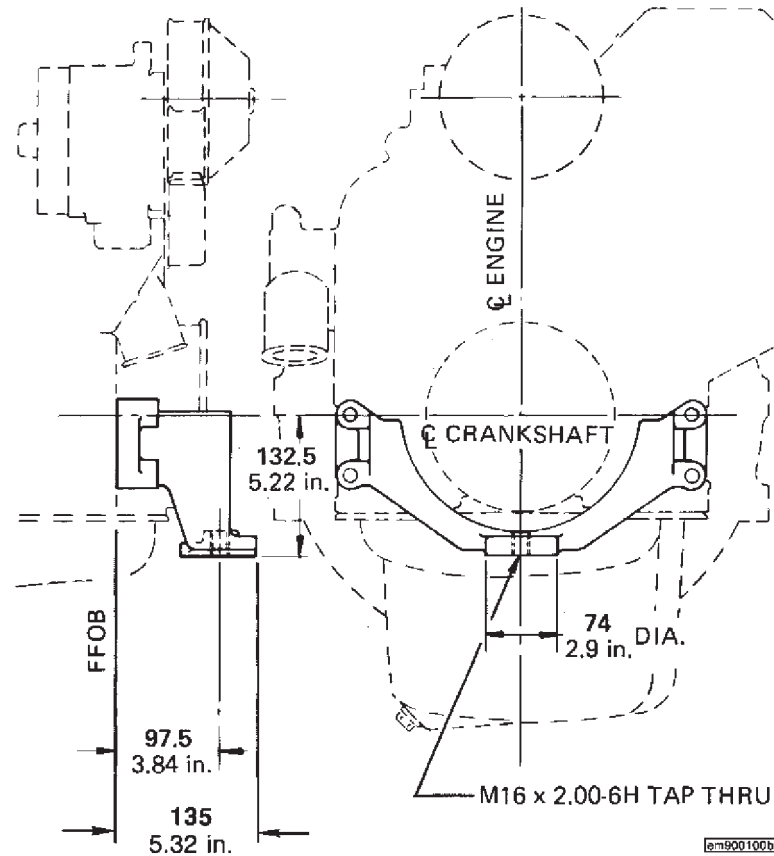
**EI9000 [M]**

Option #	Tach.Type	Orientation	Drive Type	Connection Type	Notes
EI 9000	-	-	-	-	No content option

No content option. For B and C series engine families. To provide accessory hole cover when no mechanical tachometer drive or front oil fill is specified.

EM - Front Engine Support

**EM9001**



EM9001 [G]

Option #	Type	Attachment Hole	Damper Size	Weight	Notes
EM 9001	Single point	M16 x 2.00 - 6H	225.0 mm [8.86 in.]	-	-

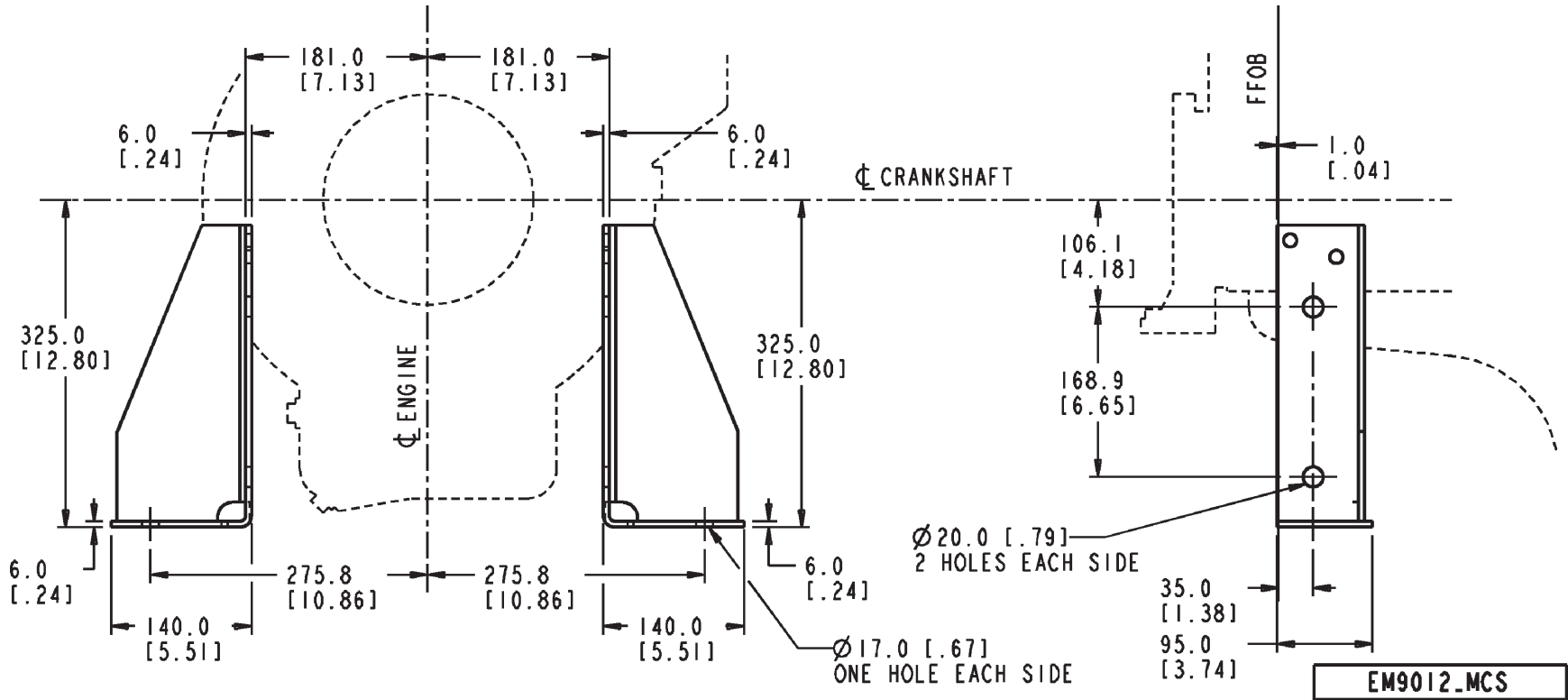
Front engine support for single point mount. (M16 x 2.00 - 6H tapped through attachment hole). Will accommodate up to a 225.0 mm [8.86 in.] damper.

**D381004GX02 and D383030DX02: Use with AF 9002 or AF 9006; DA 9026.**

**D382012GX02: Use with AF 9002 or AF 9006; DA 9026.**

EM - Front Engine Support

EM9012



EM9012\_MCS

EM9012 [G]

Option #	Type	Attachment Hole	Damper Size	Weight	Notes
EM 9012	Double point mounting	17.0 mm [0.67 in.] each side	228.0 mm [8.98 in.]	-	Material - 30,008

Structure code: 02 EBM  
 Engine family: B series  
 Support location: Front - side  
 Mount type: Double  
 Threaded mounting holes: No  
 Mounting hole size: 19.0 mm [0.75 in.]  
 Mounting centers: 551.6 mm [21.72 in.]  
 Max. damper diameter: 228.0 mm [8.98 in.]

**4BTGDRIVE**

Mount material: 30008  
Isolator load rating: TBD

EO - Oil Pressure Sensor

EO9055

# (No Graphics Required)

EO9055 [G]

Option #	Description	Mounting/Thread	Electrical Connector			Notes
EO 9055	Pressure sensor	10.0 mm [0.39 in.] STORM block thread	-			Customer supplied

Customer supplied pressure sensor. Contains (2) female connectors which allows the customer's 1/8 NPTF to be adapted to the 10.0 mm [0.39 in.] STORM block thread.

**D381004GX02: Use with BP 9037.**

**D382012GX02: Use with BP 9038.**

**D383030DX02: Use with BP 9039.**

**4BTGDRIVE**

**EO - Signal Generating Device**

**EO9062**

eo9062\_mcs

**EO9062 [G]**

Option #	Description	Mounting/Thread	Electrical Connector			Notes
EO 9062	Oil pressure sensor	#1 oil rifle hole/10 mm [0.39 in.] STORM	-			-

Engine family: B series  
 Sensor voltage: 12V, 24V  
 Sensor activate: 241 kPa [35 psi]  
 Sensor deactivation: 172 kPa [25 psi]  
 Sensor thread: 10 mm [0.39 in.] STORM  
 Sensor connection: Packard  
 Sensor mounting location: #1 oil rifle hole  
 Pressure sensor type: Oil only  
 Sensor is not to be used with any air compressor, hydraulic pump or inline fuel pump located off the back of the gear housing.  
 For use with interact B block in place of SD 9022.  
**D381004GX02: Use with BP 9037.**  
**D382012GX02: Use with BP 9038.**  
**D383030DX02: Use with BP 9039.**

ES - Electronic Speed Governor

**ES9024**

es9024\_mcs

**ES9024 [G]**

Option #	Description					Notes
ES 9024	12V electronic governor					-

Structure code: 02 EBM  
 Engine design phase: Current product  
 Supply method: Kit  
 Supplier: Barber-Coleman  
 Voltage: 12V  
 Actuator supplied: Yes  
 Controller supplied: Yes  
 Premium controller: No  
 Wiring harness: No  
 Linkage/mag pick-up supplied: Yes  
 Restricted fuel pump: Stanadyne DB4  
 Controller adjustable features: No

**4BTGDRIVE**

**ES - Electronic Speed Governor**

**ES9025**

es9025\_mcs

**ES9025 [G]**

Option #	Description					Notes
ES 9025	24V electronic governor					-

Structure code: 02 EBM  
 Engine design phase: Current product  
 Supply method: Kit  
 Supplier: Barber-Coleman  
 Voltage: 24V  
 Actuator supplied: Yes  
 Controller supplied: Yes  
 Premium controller: No  
 Wiring harness: No  
 Linkage/mag pick-up supplied: Yes  
 Restricted fuel pump: Stanadyne DB4  
 Controller adjustable features: No

ES - Electronic Speed Governor

**ES9026**

es9026\_mcs

**ES9026 [G]**

Option #	Description					Notes
ES 9026	12V electronic governor					-

Structure code: 02 EBM  
 Engine design phase: Current product  
 Supply method: Kit  
 Supplier: Barber-Coleman  
 Voltage: 12V  
 Actuator supplied: Yes  
 Controller supplied: Yes  
 Premium controller: Yes  
 Wiring harness: No  
 Linkage/mag pick-up supplied: Yes  
 Restricted fuel pump: Stanadyne DB4  
 Controller adjustable features: Yes

**4BTGDRIVE**

**ES - Electronic Speed Governor**

**ES9027**

es9027\_mcs

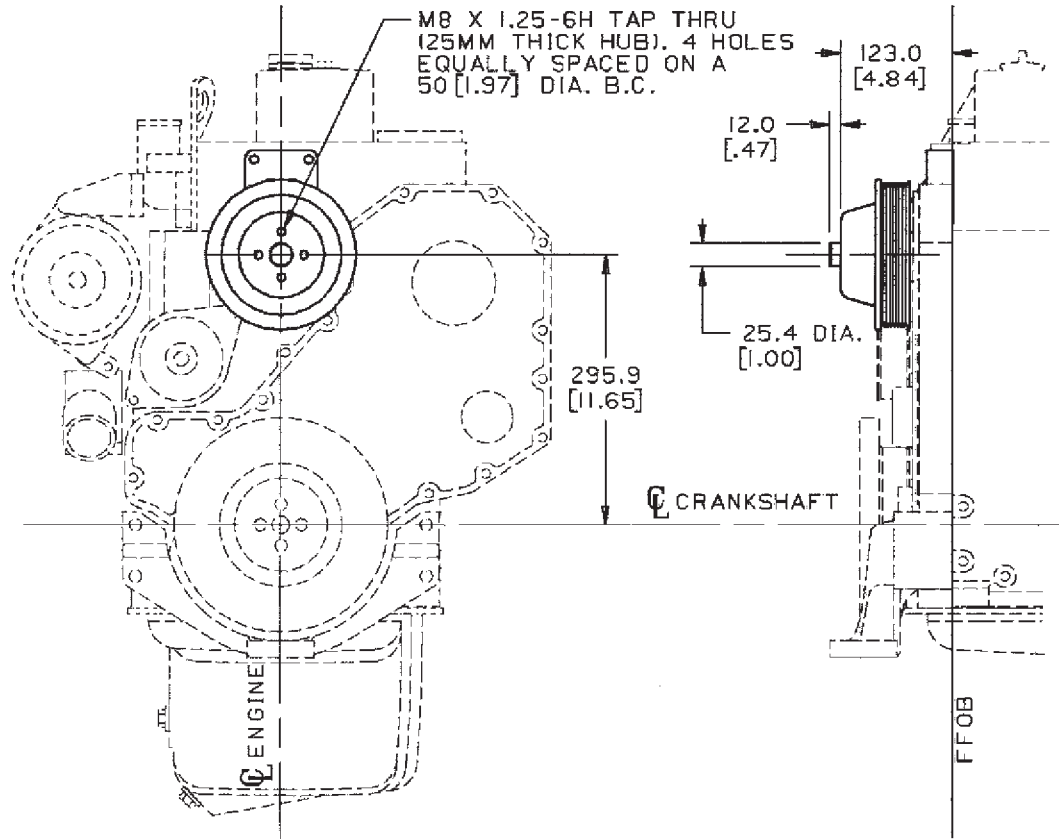
**ES9027 [G]**

Option #	Description					Notes
ES 9027	24V electronic governor					-

Structure code: 02 EBM  
 Engine design phase: Current product  
 Supply method: Kit  
 Supplier: Barber-Coleman  
 Voltage: 24V  
 Actuator supplied: Yes  
 Controller supplied: Yes  
 Premium controller: Yes  
 Wiring harness: No  
 Linkage/mag pick-up supplied: Yes  
 Restricted fuel pump: Stanadyne DB4  
 Controller adjustable features: Yes

FA - Fan Drive

**FA9002**



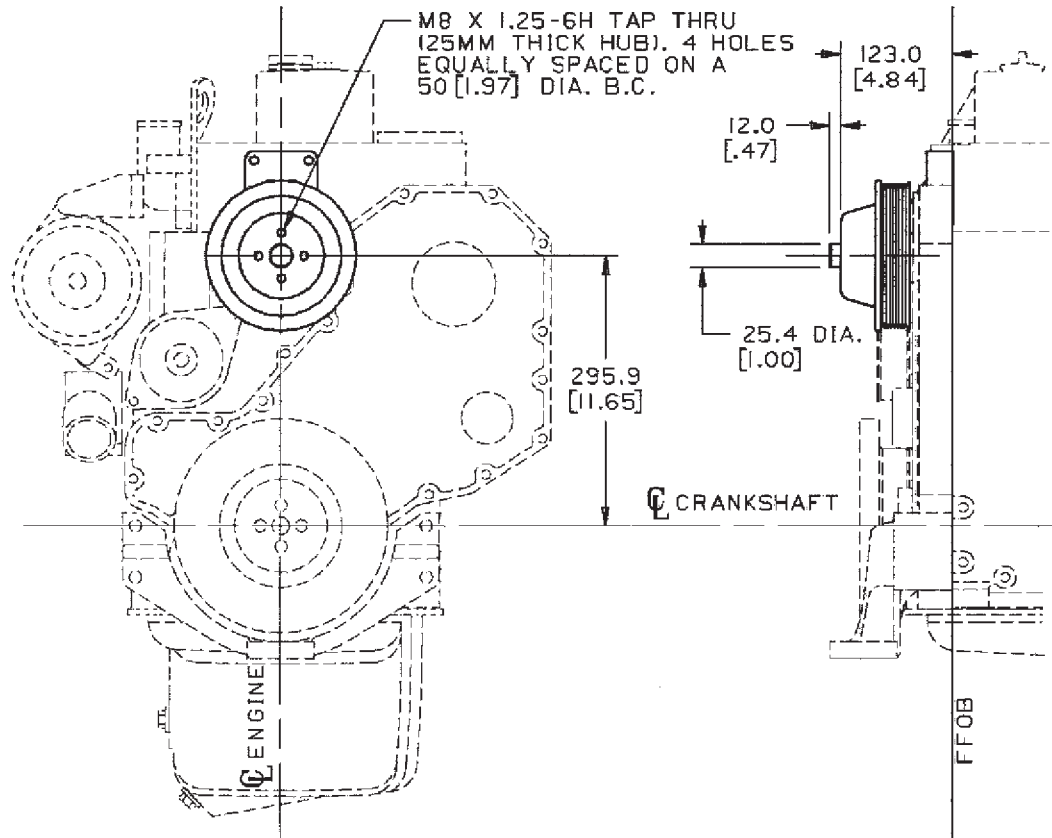
FA9002 [M]

Option #	Bolt Circle	Drive Ratio	Fan Center	Tensioner Type	Fan Drive	Notes
FA 9002	50.0 mm [1.97 in.]	1.10:1	295.9 mm [11.65 in.]	-	Serpentine	-

Fan center distance at 295.9 mm [11.65 in.] above crank centerline and on engine centerline. Fan mounting holes are on a 50.0 mm [1.97 in.] B.C.

FA - Fan Drive

**FA9012**



FA9012 [M]

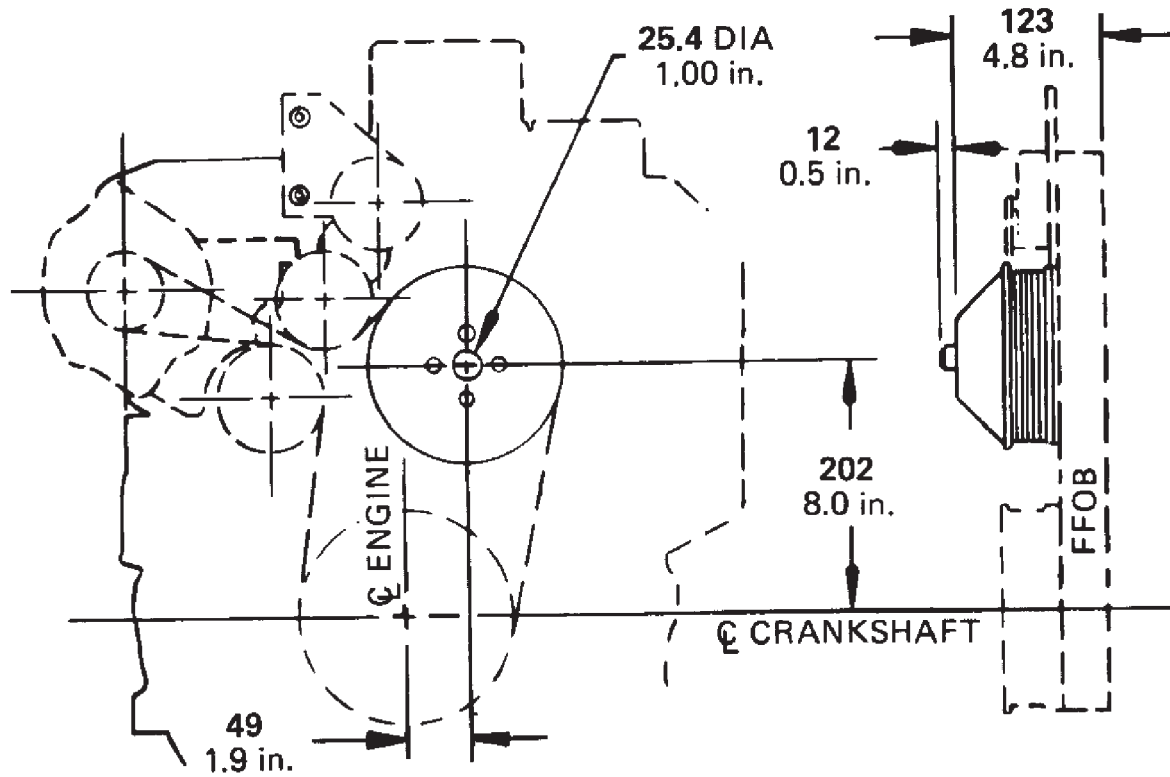
Option #	Bolt Circle	Drive Ratio	Fan Center	Tensioner Type	Fan Drive	Notes
FA 9012	50.0 mm [1.97 in.]	1.35:1	295.9 mm [11.65 in.]	-	Serpentine	-

Drive hardware supplier: Cummins  
 Fan drive ratio: 1.35:1  
 Mounting bolt circle: 50.0 mm [1.97 in.]  
 Engine fan center: 295.9 mm [11.65 in.]  
 Horizontal offset: 0.0

Fan hub pulley material: Spun steel  
Required damper pulley diameter: 173.76 mm [6.841 in.]  
Structure code: 02 EBM  
Engine design phase: Current product  
Bearing design: Single double row bearings  
Additional fan drive type: Serpentine  
Fan drive pulley diameter: 128.71 mm [5.067 in.]  
Fan clutch type: Mechanical  
Engine family: B series

FA - Fan Drive

FA9062



fa906200b

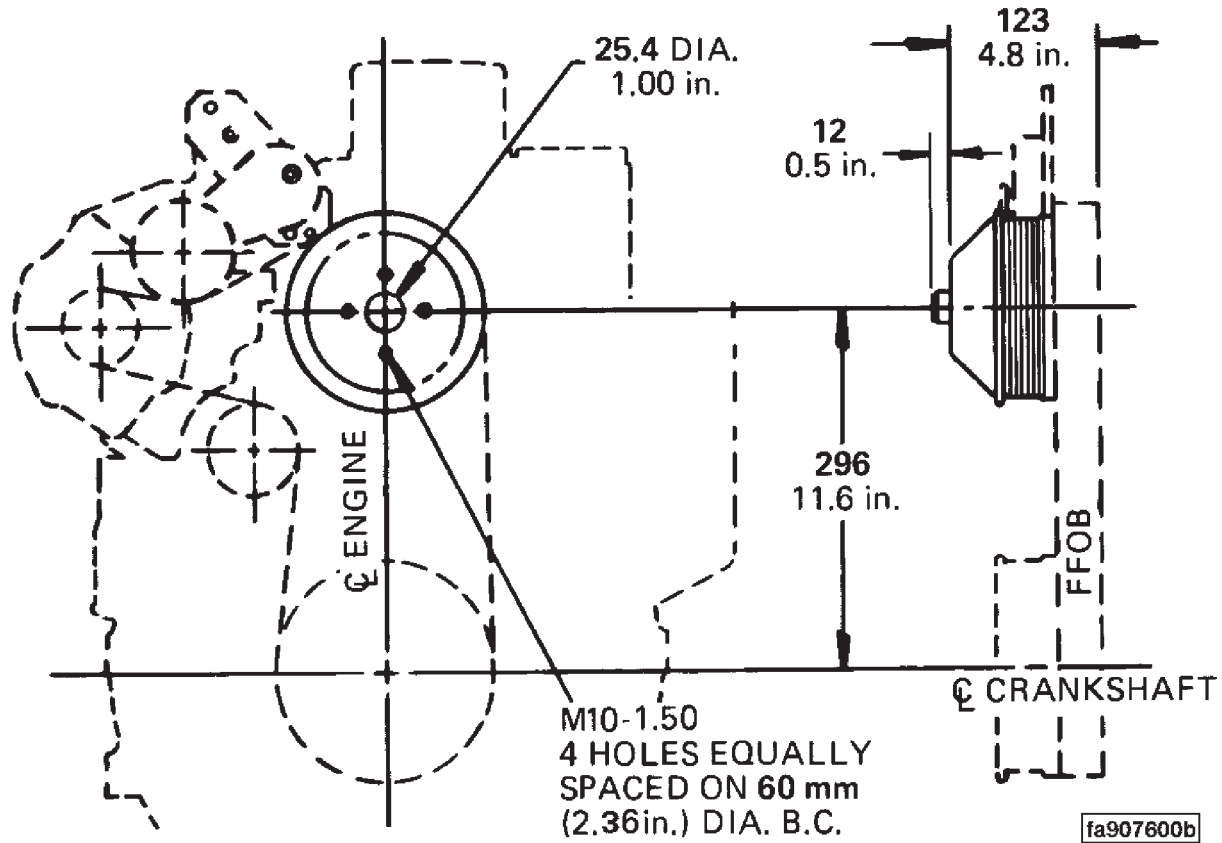
FA9062 [M]

Option #	Bolt Circle	Drive Ratio	Fan Center	Tensioner Type	Fan Drive	Notes
FA 9062	50.0 mm [1.97 in.]	1.10:1	203.2 mm [8.00 in.]	-	-	Increased fan weight capability

Fan center distance at 203.2 mm [8.00 in.] above crank centerline and offset 49.0 mm [1.93 in.] to the fuel pump side of the engine. Has increased fan weight capability hub with 4 holes M8 x 1.25 equally spaced on a 50.0 mm [1.97 in.] B.C.

FA - Fan Drive

FA9077



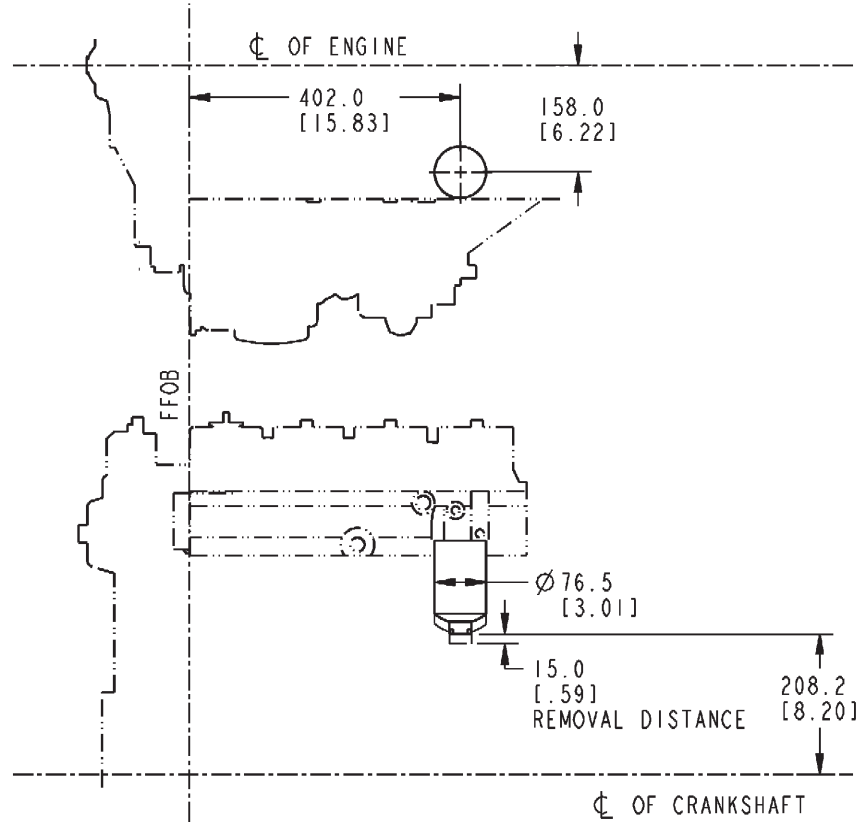
FA9077 [M]

Option #	Bolt Circle	Drive Ratio	Fan Center	Tensioner Type	Fan Drive	Notes
FA 9077	60.0 mm [2.36 in.]	1.35:1	295.9 mm [11.65 in.]	-	Serpentine	Increased fan weight capability

Fan center distance at 295.9 mm [11.65 in.] above crank centerline and on engine centerline. Has increased fan weight capability hub. Has high strength fan support.

FF - Fuel Filter

**FF9003**



**FF9003\_MCS**

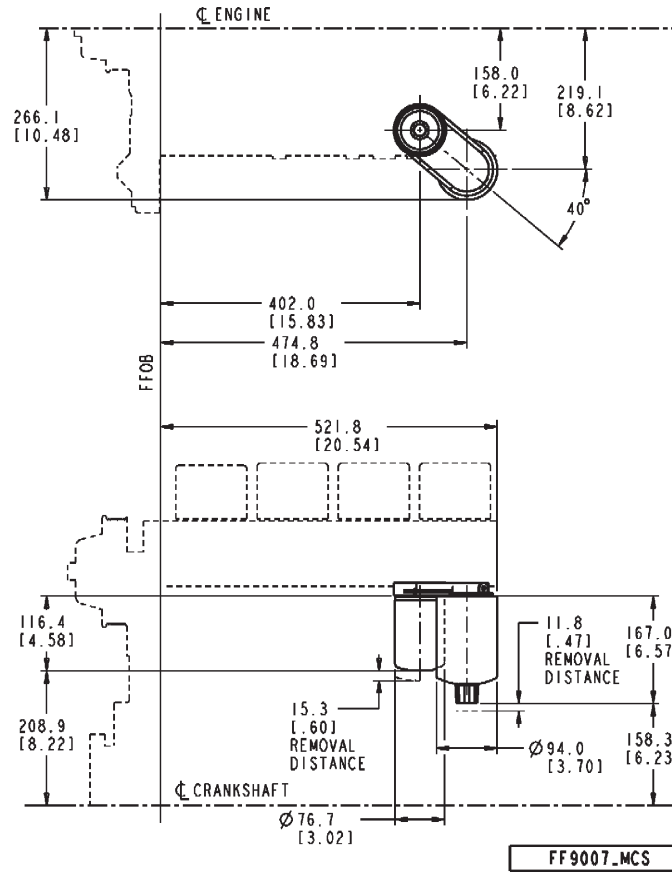
**FF9003 [M]**

Option #	Element Type / Qty.	Filtration	Water Separator/ WIF Sensor	Location	Hose Length	Notes
FF 9003	Spin on / Single	25 microns	Yes/No	#4 cylinder	-	-

Spin-on single element filter arrangement having water separator and drain. Absolute filtration 25 microns.

FF - Fuel Filter

**FF9007**



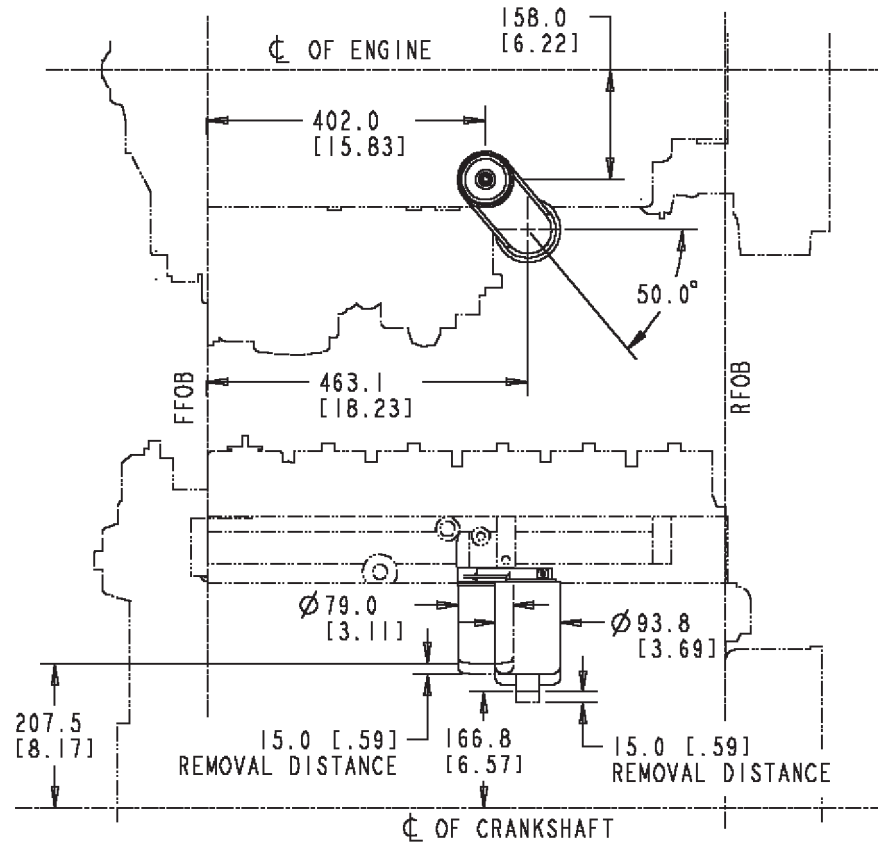
FF9007 [M]

Option #	Element Type / Qty.	Filtration	Water Separator/ WIF Sensor	Location	Hose Length	Notes
FF 9007	Spin on / Dual	25 microns	Yes/No	#4 cylinder	-	Mounted 40 deg. rearward

Spin-on dual element filter arrangement. Primary element mounted 40 deg. rearward, with water separator and drain. Absolute filtration 25 microns.

FF - Fuel Filter

**FF9020**



FF9020 [M]

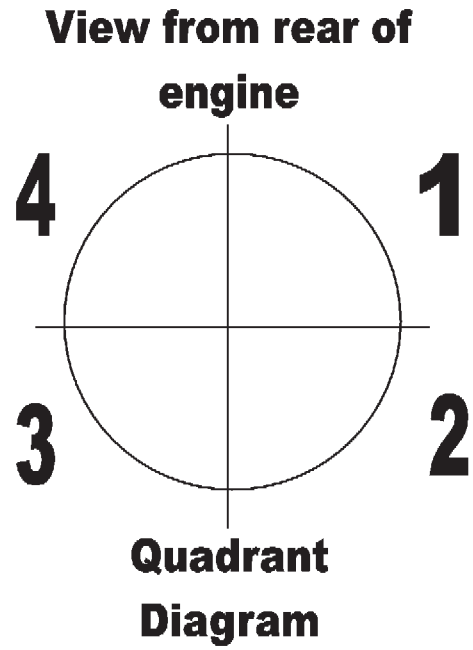
Option #	Element Type / Qty.	Filtration	Water Separator/ WIF Sensor	Location	Hose Length	Notes
FF 9020	Spin on / Dual	25 microns	Yes/No	#4 cylinder	-	Mounted 50 deg. rearward

Spin-on dual element filter arrangement. Primary element mounted 50 deg. rearward, with water separator and drain. Absolute filtration 25 microns.

FH - Flywheel Housing

**FHQUAD**

**Starter quadrant location on the flywheel housing as viewed  
from rear of engine as illustrated below**

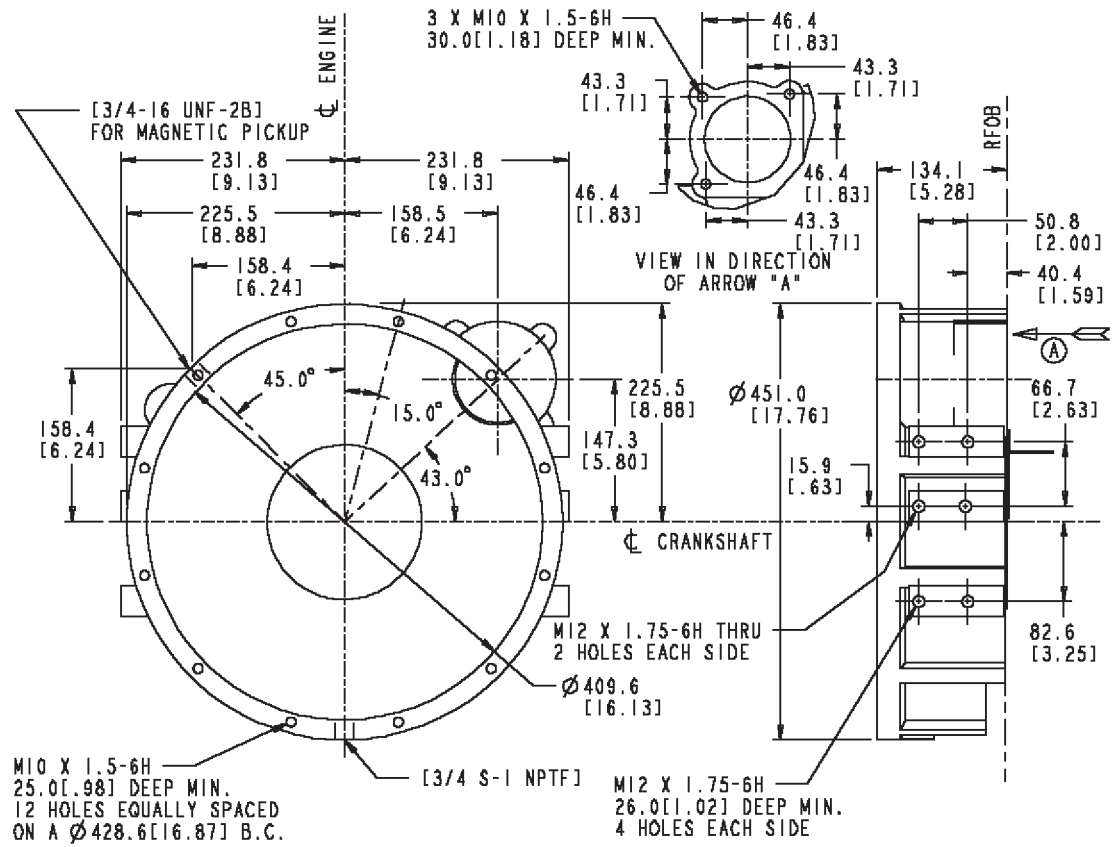


FHQUAD [G]

# 4BTGDRIVE

## FH - Flywheel Housing

**FH9002**



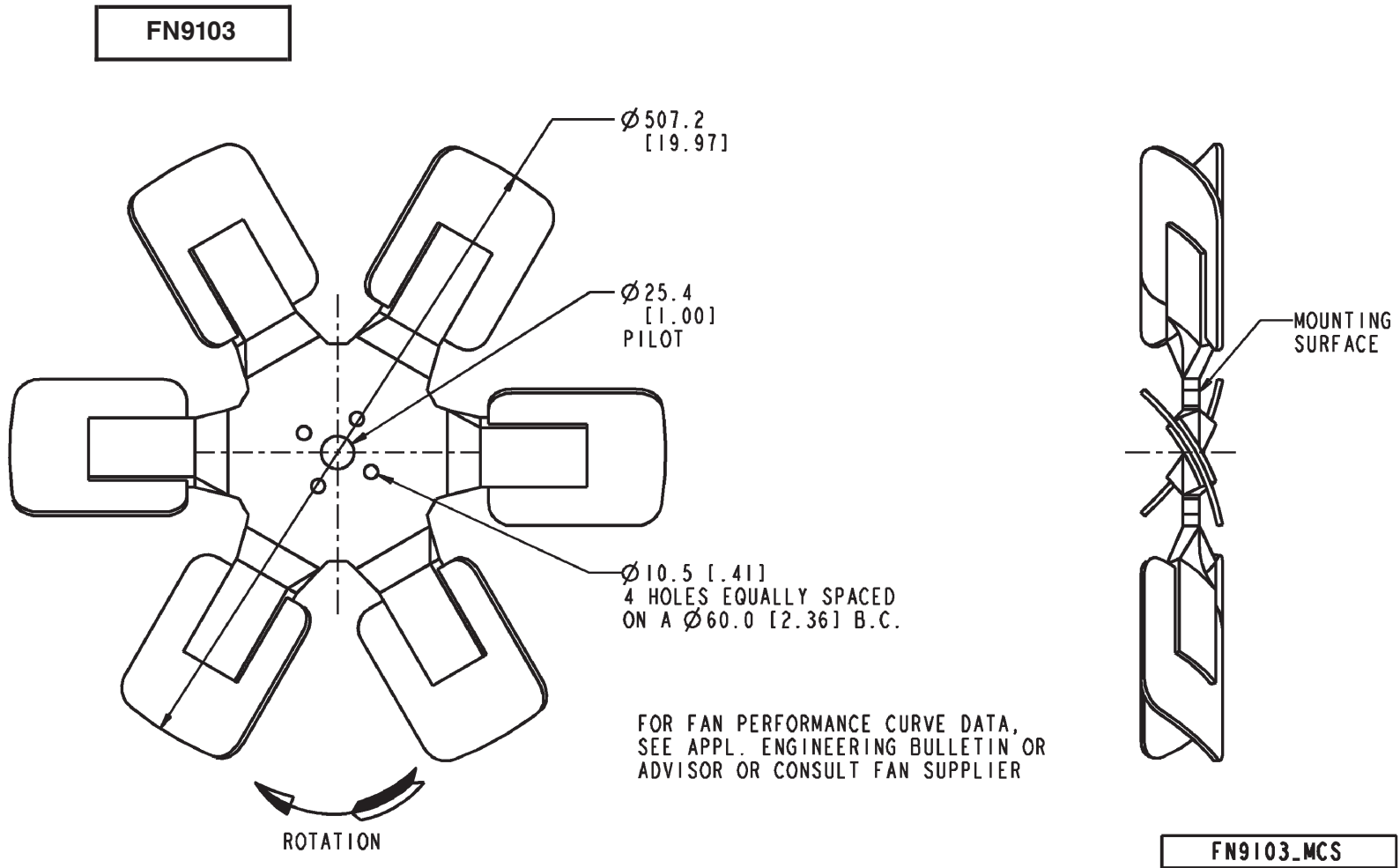
FH9002 [M]

Option #	SAE/Wet or Dry	Engine Mount Type	Material/Duty Type	Starter Quadrant	Weight	Notes
FH 9002	#3/Dry	Pad	Aluminum	1st	-	-

Structure code: 02 EBM  
 Engine design phase: Current product  
 Wet/Dry clutch: Dry  
 Housing material: Aluminum  
 SAE size or type: SAE 3

Starter mount SAE: SAE #1 - 3 bolt 90 deg.  
Starter mount thread type: Metric  
Starter quadrant: 1st  
Starter pad offset from RFOB: 0.0  
Starter mounting hole diameter: 88.90 mm [3.500 in.]  
Mount type: Pad  
Engine mounting hole dimension: M12 x 1.75 6h  
Number of mounting holes: 12  
Engine mounting top hole from crank C/L: 82.5 mm [3.25 in.]  
Tach sensor location: 4th  
Tach size: 3/4-16 UNF  
Tach count: 1  
Trans. mtg. holes count/thread: (12) / M10 x 1.5 x 25  
Starter pad:  
    From crank C/L Y axis: 147.31 mm [5.800 in.]  
    From crank C/L X axis: 158.53 mm [6.241 in.]  
Starter bore angle: 47 deg.  
Flywheel hsg. attachment provision: Cylinder block  
Starter center distance: 216.407 mm [8.5200 in.]  
Doweled for oil pan: No  
Engine family: B series  
Not to be used with LMRO turbo locations.  
BZL to use 3357844 instead of 3946090.  
**Not to be used with low mount rear out turbo locations.**

FN - Fan



FN9103 [G]

Option #	Type/No. Blades	Diameter	Max. Speed	Material	Weight	Notes
FN 9103	Blower/6	508 mm [20 in.]	Unknown	Metal	4.17 kg [9.2 lb.]	-

Fan type: Blower  
 Restricted engine cylinders: 4/6  
 Fan blade count: 6  
 Fan provided: Yes  
 Fan mounting bolt circle: 60 mm [2.36 in.]

Mounting flange thickness: 10.20 mm [0.402 in.]  
Maximum speed: Unknown  
Fan blade material: Metal  
Fan diameter: 508 mm [20 in.]  
Fan weight: 4.17 kg [9.2 lb.]  
Fan pilot diameter: 25.4 mm [1.00 in.]  
Capscrew size for 50 mm [1.96 in.] bolt circle: N/A  
For 4B, 4BT and 6BT DEP built 'Starpac' engines

This hardware is available only on engines built at Darlington Engine Plant (DEP).

**D381004GX02 and D382012GX02: Use with FA 9077 and RA 9013.**

FR - Fuel Rating

FR90234

**(No Graphics Required)**

FR90234 [M]

Option #	Power	Torque Peak	Max. Power	Rating Type	Certification Level	Notes
FR 90234	73 kW [98 bhp] @ 1500 rpm	-	73 kW [98 bhp] @ 1500 rpm	-	None	-

Advertised hp: 73 kW [98 bhp] @ 1500 rpm  
 Secondary adv. hp: N/A @ N/A rpm  
 Governed hp: 73 kW [98 bhp] @ 1500 rpm  
 Governor regulation: 11.8%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 2.0 mm [0.08 in.]  
 Low idle setting: 1050 rpm  
 High idle: 1700 rpm  
 Engine application: Nonroad  
 CPL: 2246  
 Certification agency: None  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 73 kW [98 bhp] @ 1500 rpm  
 Governor break: 1520 rpm  
 Dual power rating: No  
 Fuel pump gear timing (deg. crank): 0 deg retarded  
 Engine design phase: Current product  
 Engine aspiration: Jacket water aftercooled  
 High altitude (10K feet) rating: No  
 Managed torque: No  
 Speed sensor location: N/A  
 Fuel pump mounted angle: 35 deg.  
 Stanadyne DB4 fuel pump with mechanical governor and pump mounted solenoid

## FR - Fuel Rating

FR90235

**(No Graphics Required)**

FR90235 [M]

Option #	Power	Torque Peak	Max. Power	Rating Type	Certification Level	Notes
FR 90235	85 kW [114 bhp] @ 1800 rpm	-	85 kW [114 bhp] @ 1800 rpm	-	None	-

Advertised hp: 85 kW [114 bhp] @ 1800 rpm  
 Secondary adv. hp: N/A @ N/A rpm  
 Governed hp: 85 kW [114 bhp] @ 1800 rpm  
 Governor regulation: 9.9%  
 Peak torque (lb-ft.): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump type: Rotary  
 High pressure fuel line .D.: 2.0 mm [0.08 in.]  
 Low idle setting: 1050  
 High idle: 2000  
 Engine application: Nonroad  
 CPL: 2248  
 Certification agency: None  
 Engine cylinders: 4  
 Timing gear code: A  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 85 kW [114 bhp] @ 1800 rpm  
 Governor break: 1820 rpm  
 Dual power rating: No  
 Fuel pump gear timing (deg. crank): 0 deg retarded  
 Engine design phase: Current product  
 Engine aspiration: Jacket water aftercooled  
 High altitude (10K feet) rating: No  
 Managed torque: No  
 Speed sensor location: N/A  
 Fuel pump mounted angle: 35 deg.

Stanadyne DB4 fuel pump with mechanical governor and pump mounted solenoid

FR - Fuel Rating

FR90381

# (No Graphics Required)

FR90381 [M]

Option #	Standby	Prime	Continuous	Certification Level	Notes
FR 90381	-	51 kW [68 bhp] @ 1800 rpm	51 kW [68 bhp] @ 1800 rpm	Tier 1, Tier 1	-

Advertised hp: 51 kW [68 bhp] @ 1800 rpm  
 Secondary adv. hp: 51 kW [68 bhp] @ 1800 rpm  
 Governed hp: 51 kW [68 bhp] @ 1800 rpm  
 Governor regulation: 9.9%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 degree  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1100  
 High idle: 2000  
 Engine application: Generator  
 CPL: 1522  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 68  
 Governor break: 1820 rpm  
 Derate to no air curve provision: No  
 Fuel pump gear timing (deg. crank): 0 deg retarded  
 Engine design phase: Current product  
 Engine aspiration: Naturally aspirated  
 High altitude (10K feet) rating: No  
 Managed torque: No  
 Speed Sensor Location: N/A

Cert. level: Tier 1, Tier 1

FR - Fuel Rating

FR90382

# (No Graphics Required)

FR90382 [M]

Option #	Standby	Prime	continuous	Certification Level	Notes
FR 90382	-	41 kW [55 bhp] @ 1500 rpm	41 kW [55 bhp] @ 1500 rpm	-	-

Advertised hp: 41 kW [55 bhp] @ 1500 rpm  
 Secondary adv. hp: 41 kW [55 bhp] @ 1500 rpm  
 Governed hp: 41 kW [55 bhp] @ 1500 rpm  
 Governor regulation: 11.8%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 degree  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1100  
 High idle: 1700  
 Engine application: Generator  
 CPL: 1522  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 55  
 Governor Break RPM: 1520  
 Derate to no air curve provision: No  
 Fuel pump gear timing (deg. crank): 0 deg retarded  
 Engine design phase: Current product  
 Engine aspiration: Naturally aspirated  
 High altitude (10K feet) rating: No  
 Managed torque: No  
 Speed sensor location: N/A

Cert. level: Tier 1, Tier 1

FR - Fuel Rating

FR90784

# (No Graphics Required)

FR90784 [M]

Option #	Standby	Prime	Continuous	Certification Level	Notes
FR 90784	64 kW [86 bhp] @ 1800 rpm & 55kW [74 bhp] @ 1500 rpm	64 kW [86 bhp] @ 1800 rpm & 55kW [74 bhp] @ 1500 rpm	64 kW [86 bhp] @ 1800 rpm & 55kW [74 bhp] @ 1500 rpm	Tier 1, Tier 1	Light load advance mechanism

Advertised hp: 64 kW [86 bhp] @ 1800 rpm  
 Secondary adv. hp: 55kW [74 bhp] @ 1500 rpm  
 Governed hp: 64 kW [86 bhp] @ 1800 rpm  
 Governor regulation: 2.1%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 deg.  
 Governor type: Isochronous  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1100 rpm  
 High idle: 1920 rpm  
 Engine application: Generator  
 CPL: 2377  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 64 kW [86 bhp] @ 1800 rpm  
 Governor break: 1800 rpm  
 Derate to no air curve provision: Yes  
 Engine design phase: Current product  
 Engine aspiration: Turbocharged  
 Cert. level: Tier 1, Tier 1

## 4BTGDRIVE

Fuel pump gear timing (deg. crank): 0 deg. retarded  
High altitude (10K feet) rating: No  
Managed torque: No  
Unique characteristics: Light load advance mechanism

FR - Fuel Rating

FR90785

# (No Graphics Required)

FR90785 [M]

Option #	Standby	Prime	Continuous	Certification Level	Notes
FR 90785	55 kW [74 bhp] @ 1500 rpm & 64 k/W [86 bhp] @ 1800 rpm	55 kW [74 bhp] @ 1500 rpm & 64 k/W [86 bhp] @ 1800 rpm	55 kW [74 bhp] @ 1500 rpm & 64 k/W [86 bhp] @ 1800 rpm	Tier 1, Tier 1	Light load advance mechanism

Advertised hp: 55 kW [74 bhp] @ 1500 rpm  
 Secondary adv. hp: 64 k/W [86 bhp] @ 1800 rpm  
 Governed hp: 55 kW [74 bhp] @ 1500 rpm  
 Governor regulation: 2.5%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 deg.  
 Governor type: Isochronous  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1100 rpm  
 High idle: 1620 rpm  
 Engine application: Generator  
 CPL: 2377  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 55 kW [74 bhp] @ 1500 rpm  
 Governor break: 1580 rpm  
 Derate to no air curve provision: Yes  
 Engine design phase: Current product  
 Engine aspiration: Turbocharged  
 Cert. level: Tier 1, Tier 1

## 4BTGDRIVE

Fuel pump gear timing (deg. crank): 0 deg. retarded  
High altitude (10K feet) rating: No  
Managed torque: No  
Unique characteristics: Light load advance mechanism

FR - Fuel Rating

FR90801

# (No Graphics Required)

FR90801 [M]

Option #	Standby	Prime	Continuous	Certification Level	Notes
FR 90801	76 kW [102 bhp] @ 1800 rpm & 65 kW [87 bhp] @ 1500 rpm	76 kW [102 bhp] @ 1800 rpm & 65 kW [87 bhp] @ 1500 rpm	76 kW [102 bhp] @ 1800 rpm & 65 kW [87 bhp] @ 1500 rpm	Tier 1, Tier 1	Light load advance mechanism

Advertised hp: 76 kW [102 bhp] @ 1800 rpm  
 Secondary adv. hp: 65 kW [87 bhp] @ 1500 rpm  
 Governed hp: 76 kW [102 bhp] @ 1800 rpm  
 Governor regulation: 9.9%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 deg.  
 Governor type: Isochronous  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1050 rpm  
 High idle: 2000 rpm  
 Engine application: Generator  
 CPL: 2377  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine Cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 76 kW [102 bhp] @ 1800 rpm  
 Governor break: 1820 rpm  
 Derate to no air curve provision: Yes  
 Engine design phase: Current product  
 Engine aspiration: Turbocharged  
 Cert. level: Tier 1, Tier 1

Light load advance mechanism

FR - Fuel Rating

FR90802

# (No Graphics Required)

FR90802 [M]

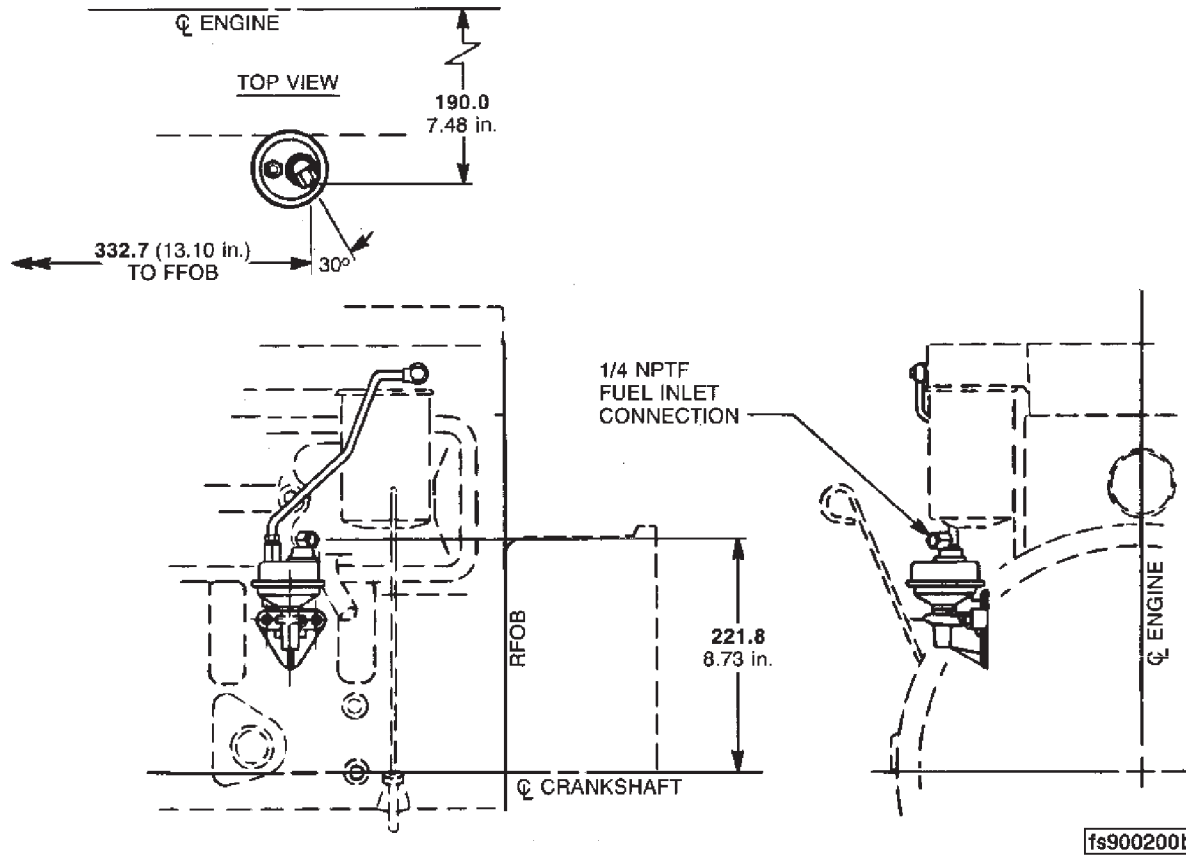
Option #	Standby	Prime	Continuopus	Certification Level	Notes
FR 90802	65 kW [87 bhp] @ 1500 rpm & 76 kW [102 bhp] @ 1800 rpm	65 kW [87 bhp] @ 1500 rpm & 76 kW [102 bhp] @ 1800 rpm	65 kW [87 bhp] @ 1500 rpm & 76 kW [102 bhp] @ 1800 rpm	None	Light load advance mechanism

Advertised hp: 65 kW [87 bhp] @ 1500 rpm  
 Secondary adv. hp: 76 kW [102 bhp] @ 1800 rpm  
 Governed hp: 65 kW [87 bhp] @ 1500 rpm  
 Governor regulation: 11.8%  
 Peak torque (lb-ft): N/A @ N/A  
 Pump manufacturer/model: Stanadyne DB4  
 Fuel pump mounted angle: 35 deg.  
 Governor type: Isochronous  
 Fuel pump type: Rotary  
 High pressure fuel line I.D.: 1.8 mm [0.07 in.]  
 Low idle setting: 1050 rpm  
 High idle: 1700 rpm  
 Engine application: Generator  
 CPL: 2377  
 Certified by: EPA, CARB  
 Certification year: 2002  
 Engine cylinders: 4  
 Engine family: B series  
 Structure code: 02 EBM  
 Manufacturer of record: Cummins  
 Fuel type: Diesel  
 Cylinder head material: Cast iron  
 Peak power: 65 kW [87 bhp] @ 1500 rpm  
 Governor break: 1520 rpm  
 Derate to no air curve provision: Yes  
 Engine design phase: Current product  
 Engine aspiration: Turbocharged  
 Cert. level: None

Light load advance mechanism

FS - Fuel System Accessories

**FS9002**



FS9002 [M]

Option #	Description					Notes
FS 9002	Federal Mogul lever style lift pump					Lift pump required when fuel supply tank is below regular fuel pump.

Structue code: 02 EBM  
 Pump style: Lever  
 Pump manufacturer: Federal Mogul

## 4BTGDRIVE

Pump stand measured flow: 191.5 litre/hr. [50.59 U.S. gph] @ 1800 rpm

Fuel inlet size: 1/4-18 NPTF

Filter location: #4 cylinder

Pre-filter provided: No

Engine design phase: Current product

Solenoid bracket provision: No

Fuel cooler plumbing provision: N/A

Restricted fuel pump: Bosch VE, Bosch VP-14, CAV DPA, Stanadyne DB4

Cylinders: 3, 4

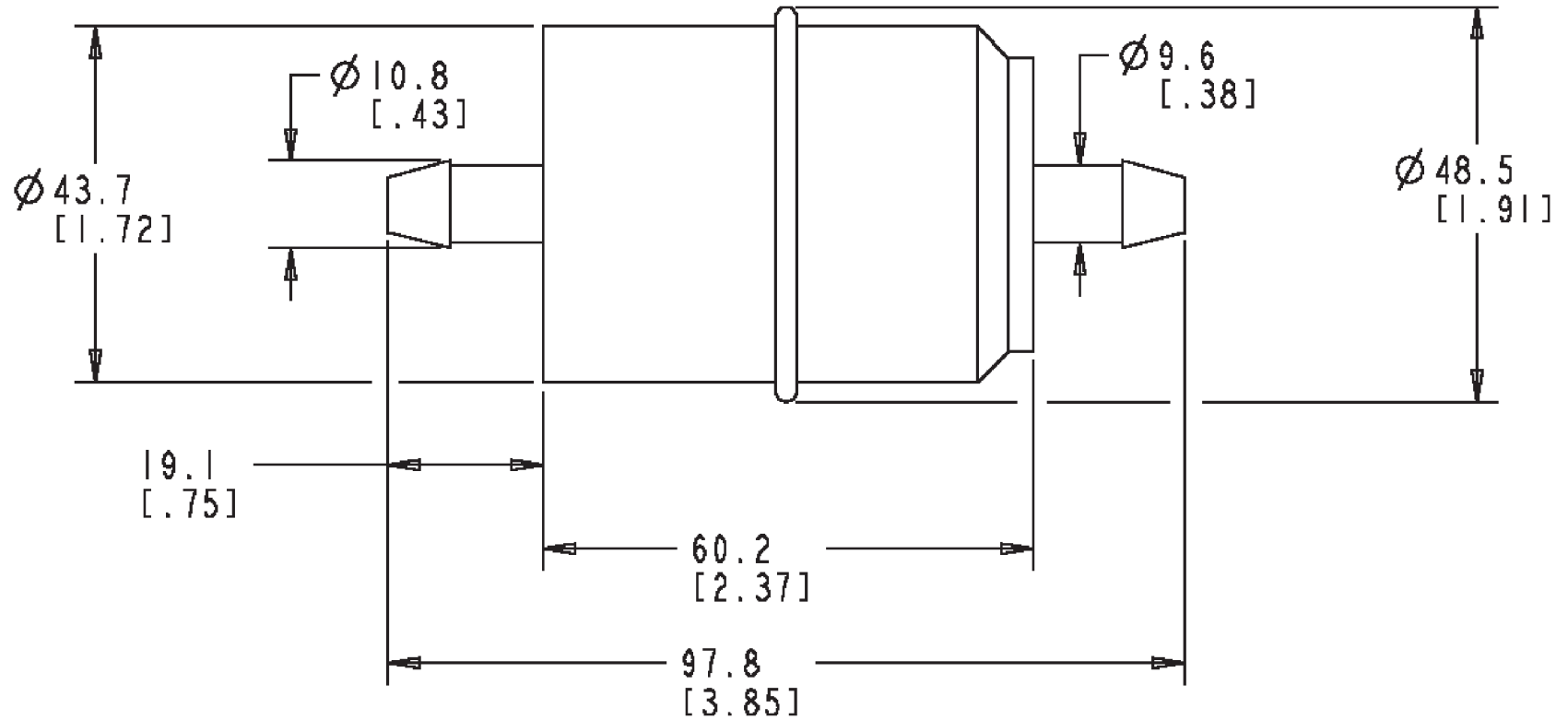
Engine family: B series

**D381004GX02 and D382012GX02: Use with FF 9001, FF9002, FF 9003, FF 9007 or FF 9020.**

**D383030DX02: Use with FF 9003 or FF 9007.**

FS - Fuel System Accessories

**FS9033**



**FS9033 [G]**

Option #	Description					Notes
FS 9033	Inline fuel strainer					9.5 mm [0.37 in] push on hose end

Inline fuel strainer plumbed to the lift pump fuel inlet with 356 mm [14 in] long hose to protect the lift pump from debris. Provides a 9.5 mm [0.37 in] push on hose end.

**D381004GX02 and D383030DX02: Use with FS 9002.**

**D382012GX02: Use with FS 9002 or FS 9051.**

FV - Fuel Shutoff Valve

FV9001

(No Graphics Required)

FV9001 [M]

Option #	Voltage/Amps	Location	Type			Notes
FV 9001	12V	Fuel pump	-			"ATR"

Valve activation: Electrical  
 Structure code: 02 EBM  
 Voltage: 12V  
 Solenoid activation: ATR  
 Solenoid lever design: N/A  
 Bolt-on governor: No  
 Fuel pump mfg./model: Bosch VE, Bosch VP-14, CAV DPA, CAV DPS, Stanadyne DB2, Stanadyne DB4  
 No content option used as a pointer to select the correct fuel pump.  
 To be used with a mechanical fuel pump without an integrated actuator.

**D381004GX02: Use with FR 90381 or FR 90382.**  
**D382012GX02: Use with FR 90363, FR 90364, FR 90371 or FR 90372.**  
**D383030DX02: Use with FR 90234 or FR 90235.**

FV - Fuel Shutoff Valve

FV9002

# (No Graphics Required)

FV9002 [M]

Option #	Voltage/Amps	Location	Type			Notes
FV 9002	24V	Fuel pump	-			"ATR"

Valve activation: Electrical  
 Structure code: 02 EBM  
 Voltage: 24V  
 Solenoid activation: ATR  
 Solenoid lever design: N/A  
 Bolt-on governor: No  
 Fuel pump mfg./model: Bosch VE, Bosch VP-14, CAV DPA, CAV DPS, Stanadyne DB2, Stanadyne DB4  
 No content option used as a pointer to select the correct fuel pump.  
 To be used with a mechanical fuel pump without an integrated actuator.

**D381004GX02: Use with FR 90381 or FR 90382.**  
**D382012GX02: Use with FR 90363, FR 90364, FR 90371 or FR 90372.**  
**D383030DX02: Use with FR 90234 or FR 90235.**

**4BTGDRIVE**

**FV - Fuel Shutoff Valve**

**FV9266**

fv9266\_mcs

**FV9266 [M]**

Option #	Voltage/Amps	Location	Type			Notes
FV 9266	12V	-	-			-

Valve activation: Electrical  
Structure code: 02 EBM  
Engine design phase: Current product  
Voltage: 12V  
Cylinders: 6  
Solenoid lever design: N/A  
Bolt-on governor: Yes  
Fuel pump manufacturer/model: Stanadyne DB4  
Engine family: B series  
To be used with Stanadyne mechanical fuel pump with Barber-Coleman integrated actuator.  
No content option used as a pointer to select the correct fuel pump.

FV - Fuel Shutoff Valve

FV9267

fv9267\_mcs

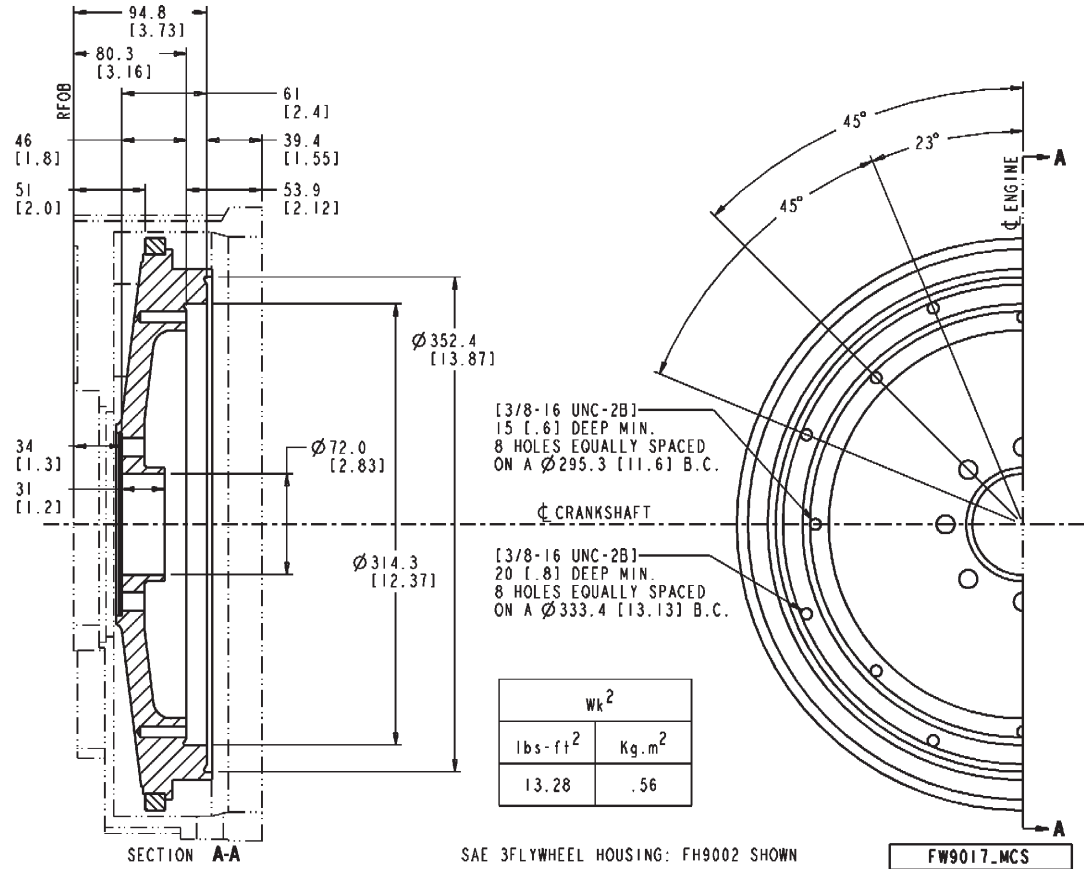
FV9267 [M]

Option #	Voltage/Amps	Location	Type			Notes
FV 9267	24V	-	-			-

Valve activation: Electrical  
 Structure code: 02 EBM  
 Engine design phase: Current product  
 Voltage: 24V  
 Cylinders: 6  
 Solenoid lever design: N/A  
 Bolt-on governor: Yes  
 Fuel pump manufacturer/model: Stanadyne DB4  
 Engine family: B series  
 To be used with Stanadyne mechanical fuel pump with Barber-Coleman integrated actuator.  
 No content option used as a pointer to select the correct fuel pump.

FW - Flywheel

**FW9017**



FW9017 [M]

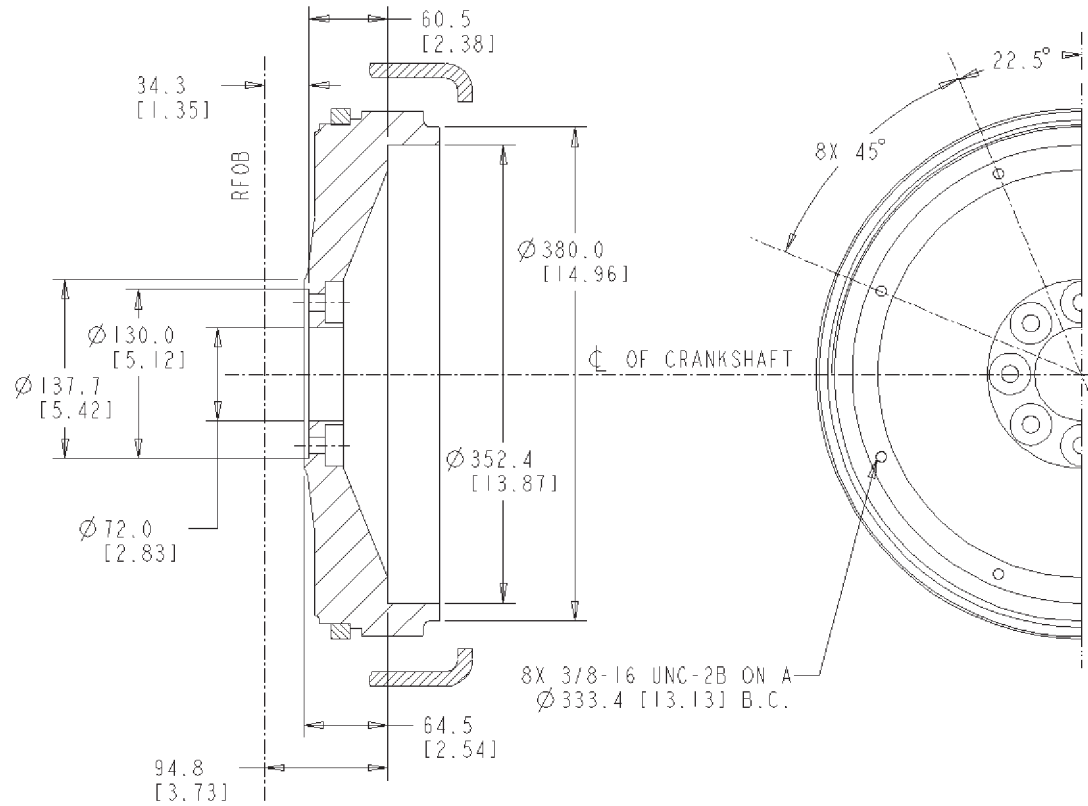
Option #	Use with FH SAE#	Pilot Bearing Bore Dia.	Ring Gear Pitch/Teeth	Indicated Drive/Clutch Size	# Holes/Bolt Circle	Notes
FW 9017	#3	71.973 mm [2.8336 in.]	10/12 / 159	254.0 mm [10 in.] & 292.1 mm [11.5 in.] O.C. clutch	Material spec. 40001	-

Type: Flywheel  
 Housing SAE size or type: SAE 3  
 Intended drive hardware: 254.0 [10 in.] and 292.1 mm [11.5 in.] clutch

Material specification: 40001  
Ring gear pitch: 10/12  
Ring gear pitch dia.: 403.86 mm [15.900 in.]  
Ring gear tooth count: 159  
Crank flange to ring gear leading edge: 16.71 mm [0.658 in.]  
Maximum speed: 2940 rpm  
Pilot bearing bore dia.: 71.973 mm [2.8336 in.]  
Clutch mounting bolt circle dia.: 333.38 mm [13.125 in.]  
Clutch mounting hole count: 16  
Clutch mounting hole nomenclature: 3/8-16 UNC-2B  
Moment of inertia: 0.56 Kg•m<sup>2</sup> [13.289 lb-ft.<sup>2</sup> ]  
Structrue code: 02 EBM  
Required starter center distance: 216.40 mm [8.52 in.]  
Applicable engine families: B series  
Multiple clutch face bolt circle.  
**Use with FH 9002.**

FW - Flywheel

**FW9134**



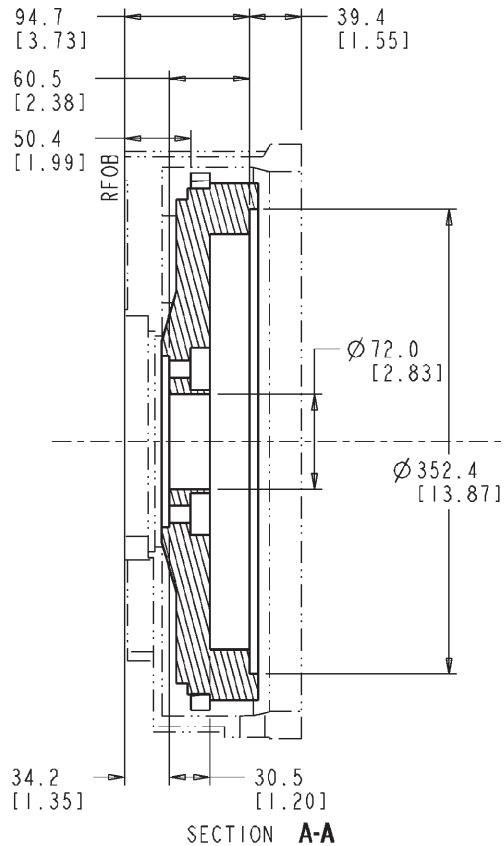
FW9134 [M]

Option #	Use with FH SAE#	Pilot Bearing Bore Dia.	Ring Gear Pitch/Teeth	Indicated Drive/Clutch Size	# Holes/Bolt Circle	Notes
FW 9134	#3	71.793 mm [2.8336 in.]	10/12 / 159	292.1 mm [11.5 in.] O C Clutch	-	-

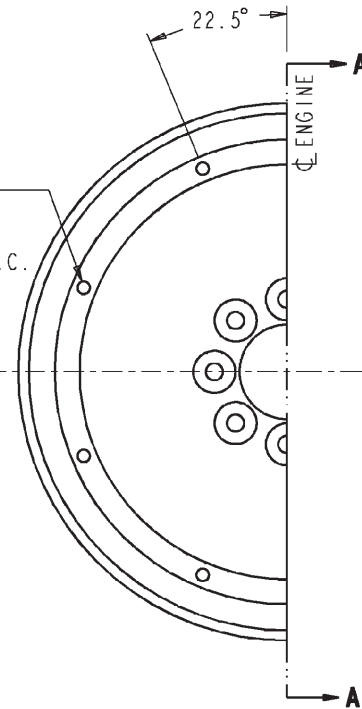
Flywheel for 292.1 mm [11.5 in] overcenter clutch. Includes 159 tooth, 10/12 pitch ring gear. Maximum 4400 rpm.  
 Moment of inertia: 1.16 kg•m<sup>2</sup> [27.527 lb-ft.<sup>2</sup>]

FW - Flywheel

**FW9420**



[3/8-16 UNC-2B]  
 15.0 [ .59] DEEP MIN  
 8 HOLES EQUALLY SPACED  
 ON A Ø333.4 [13.13] B.C.



Wk <sup>2</sup>	
lbs-ft <sup>2</sup>	Kg.m <sup>2</sup>
17.71	0.747

SAE 3 FLYWHEEL HOUSING : FH9002 SHOWN

**FW9420\_MCS**

FW9420 [M]

Option #	Use with FH SAE#	Pilot Bearing Bore Dia.	Ring Gear Pitch/Teeth	Indicated Drive/Clutch Size	# Holes/Bolt Circle	Notes
FW 9420	#3	71.97 mm [2.83 in.]	10/12	-	-	-

Type: Flywheel  
 Housing SAE size or type: SAE 3  
 Intended drive hardware: 11 1/2 in. clutch  
 Material specification: 41,044

## 4BTGDRIVE

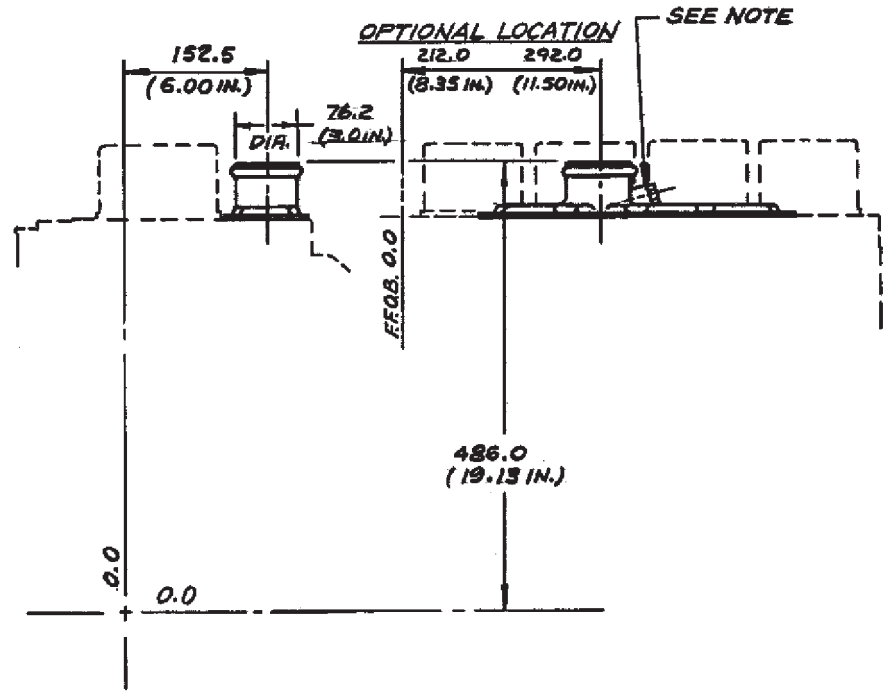
Ring gear pitch: 10/12  
Ring gear pitch dia.: 403.86 mm [15.9 in.]  
Ring gear tooth count: 159  
Crank flange to ring gear leading edge: 17.01 mm [0.66 in.]  
Maximum RPM: 4373  
Pilot bearing bore dia.: 71.97 mm [2.83 in.]  
Clutch mounting bolt circle dia: 333.38 mm [13.12 in.]  
Clutch mounting hole count: 8  
Clutch mounting hole nomenclature: 3/8-16 UNC-02B  
Reduced step clearance for starter: Yes  
Unique characteristics:  
    Crank face to transmission flange 100.1 mm [3.9 in.]  
Structure code: 02 EBM  
Required starter center distance: 216.40 mm [8.5 in.]  
Crank mount bolt circle: 110 mm [4.3 in.]  
Crank mount C/S qty: 8  
Applicable engine families: B series

**Use with FH 9002.**

**Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).**

IC - Air Intake Accessories

IC9001



NOTE: THIS BOSS WILL HAVE A 7/8" - 14 UNF INCH TAPPED HOLE WHEN ENGINES ARE ORDERED WITH AH 9007. IT WILL BE CAST CLOSED WHEN AH 9000 IS USED

ic900100b

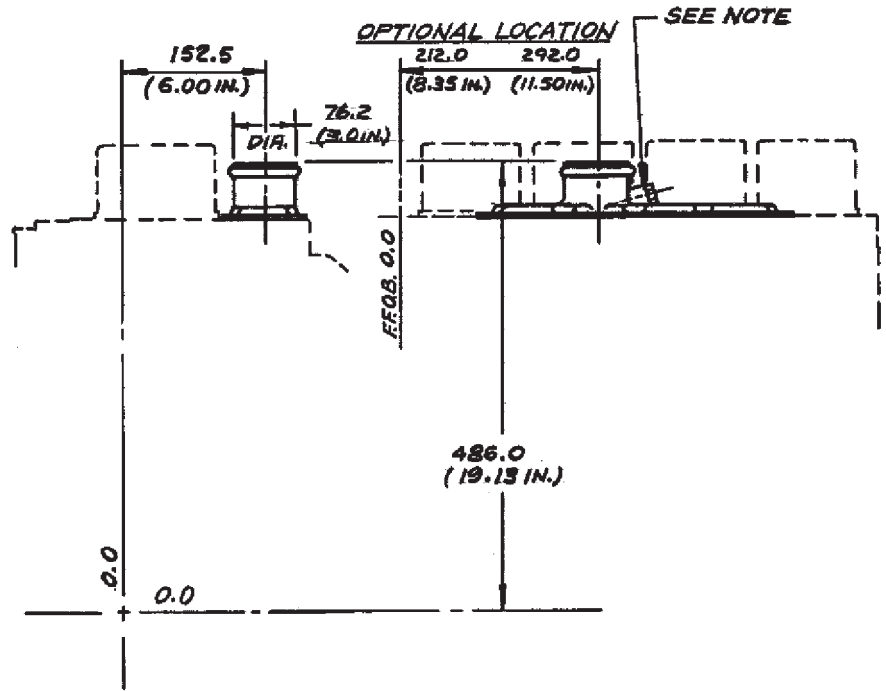
IC9001 [M]

Option #	Description/Dia.	Orientation/Location	Hose Material			Notes
IC 9001	Nat. asp. intake conn. 76.2 mm [3 in.] O.D.	Front vertical 212 mm [8.3 in.] from FFOB				

76.2 mm [3 in.] O.D. air intake connection. Front vertical connection centerline of hose connection located 212.0 mm [8.3 in.] from FFOB.

IC - Air Intake Accessories

IC9013



NOTE: THIS BOSS WILL HAVE A 7/8" - 14 UNF INCH TAPPED HOLE WHEN ENGINES ARE ORDERED WITH AH 9007. IT WILL BE CAST CLOSED WHEN AH 9000 IS USED

ic900100b

IC9013 [M]

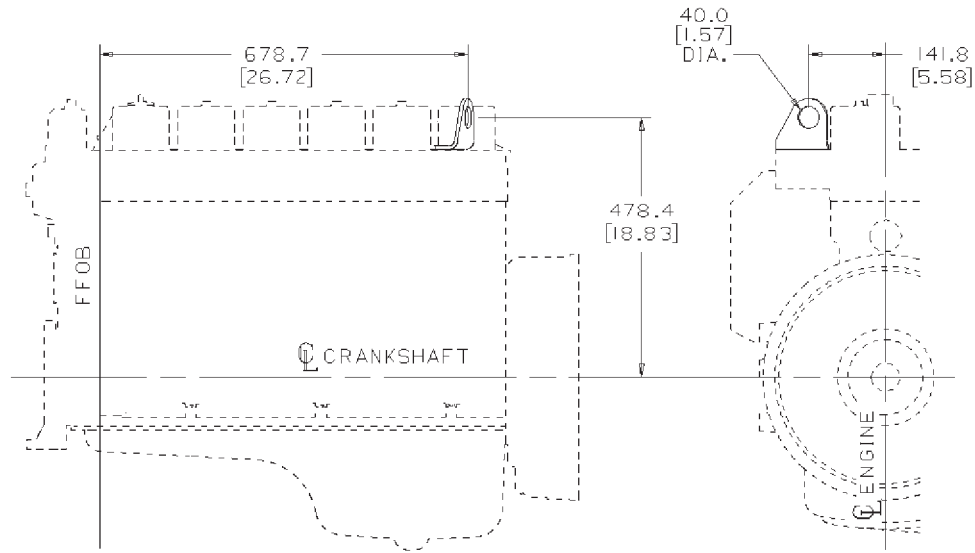
Option #	Description/Dia.	Orientation/Location	Hose Material			Notes
IC 9013	Nat. asp. intake conn. 76.2 mm [3 in.] O.D.	Rear vertical 292 mm [11.5 in.] from FFOB				-

Structure code: 02 EBM  
 Engine cylinders: 4  
 Engine family: B series

Connection orientation: Rear vertical  
76.2 mm [3 in.] O.D. air intake connection. Centerline of hose connection located 292.0 mm [11.50 in.] from FFOB.

LA - Lifting Arrangement

LA9007



LA 9007

LA9007 [M]

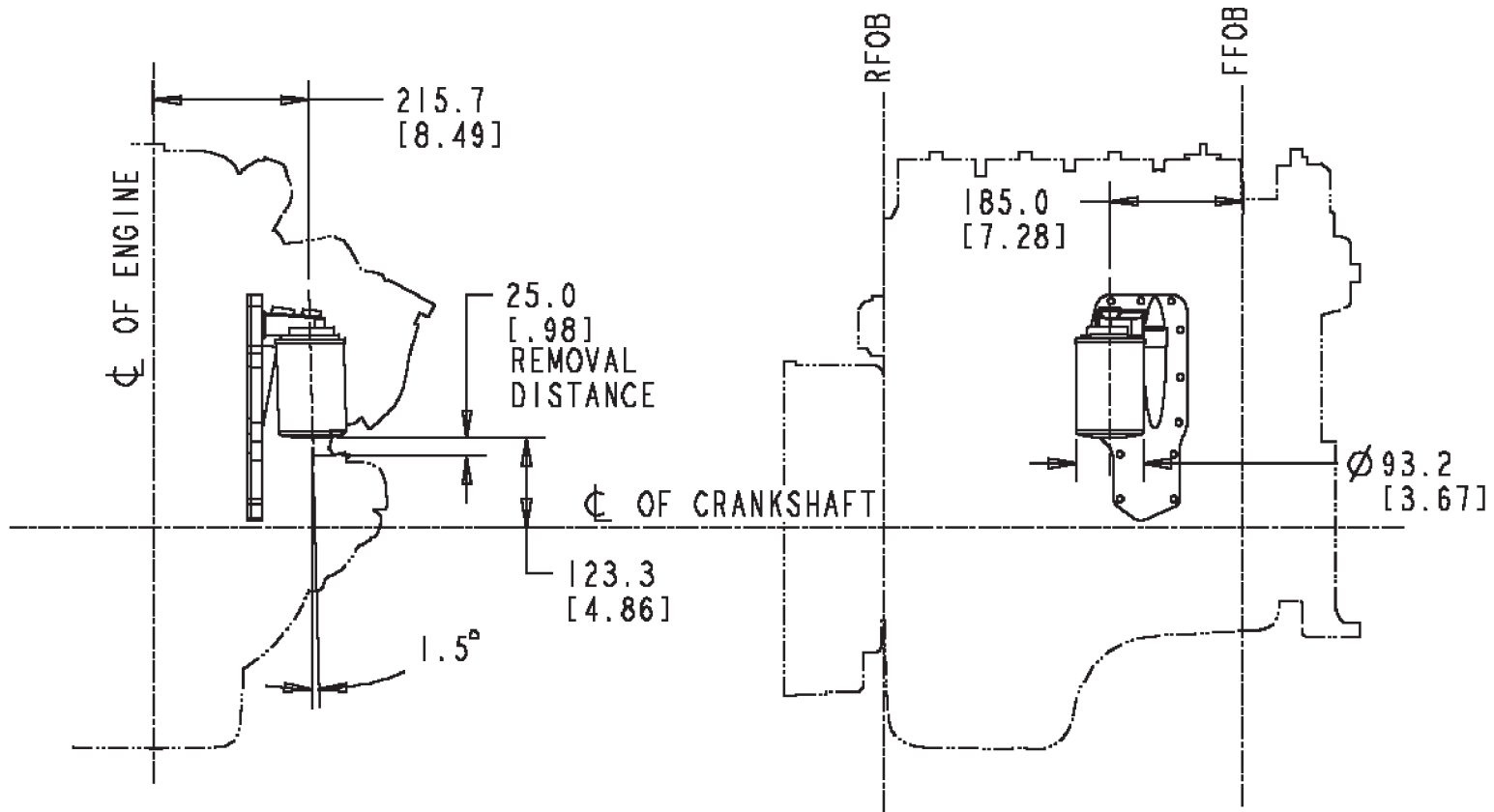
Option #	Bracket Location	# of Brackets	Maximum Lifting Load			Notes
LA 9007	Front and rear	(1) each	907.2 kg [2000 lb.]			-

Structure code: 02 EBM  
 Engine family: B series  
 Capscrew length: 30.0 mm [1.18 in.]  
 Allows for intake trunking: No  
 Max. lifting load: 907.2 kg [2000 lb.]

Bracket pre-painted: No  
Bracket(s) provided: Front and rear  
Neuss will use 25.0 mm [0.98 in.] mounting capscrews

LC - Engine Oil Cooler

LC9018



LC9018 [M]

Option #	Description				Notes
LC 9018	Plate type				Turbocharged and jacket water aftercooled engines

Structure code: 02 EBM  
 Cylinders: 4  
 Cooler type: Plate  
 Mounting position/location: Vertical

Filter material: Cellulose

Engine design phase: Current product

Engine family: B series

Restricted aspiration: Turbocharged, Jacket water aftercooled, Charged air cooled

Pressure relief set at 448.2 kPa [65 psi.].

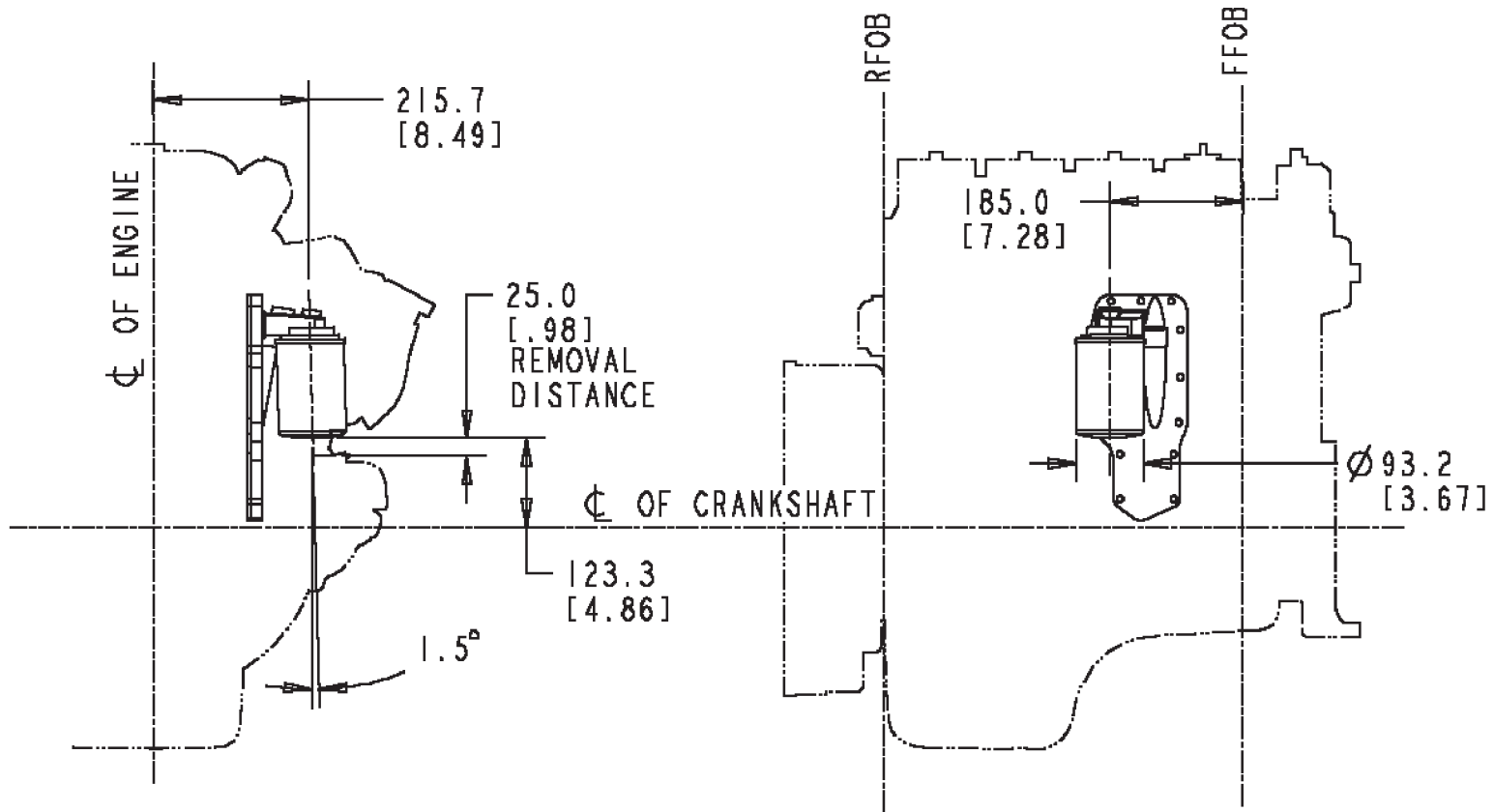
This option does not provide adequate clearance for a non return valve which provides oil starvation protection for turbocharger bearing during engine start-up.

**D383030DX02: Use with TB 9177.**

**D382012GX02: Use with TB 9001 or TB 9002.**

LC - Engine Oil Cooler

LC9121



LC9121 [M]

Option #	Description					Notes
LC 9121	Jumper tube					-

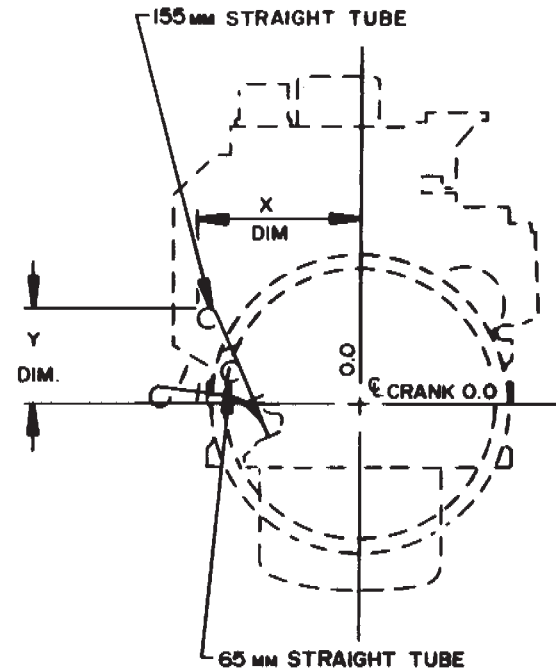
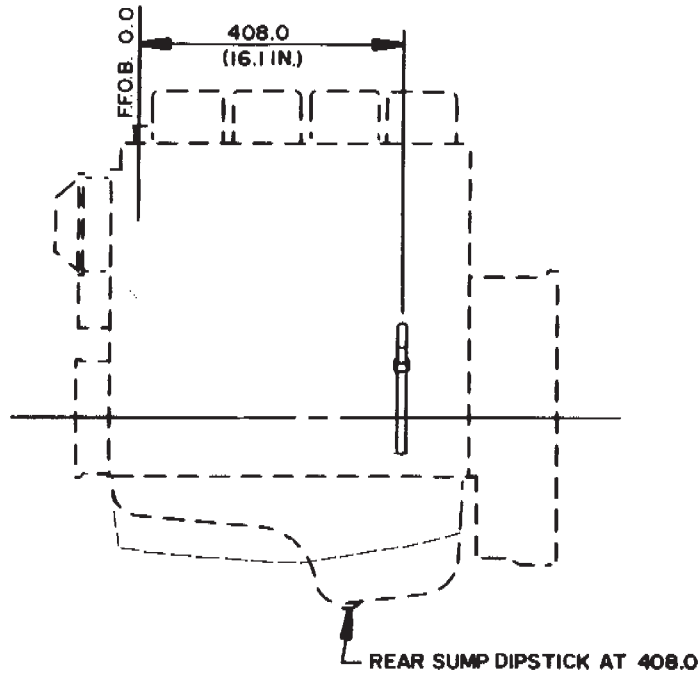
Structure code: 02 EBM  
 Cylinders: 4  
 Cooler type: Jumper tube  
 Mounting position/location: Vertical  
 Filter material: Cellulose

Engine family: B series  
Restricted aspiration: Naturally aspirated  
Pressure relief set 448.2 kPa [65 psi].

# 4BTGDRIVE

LG - Oil Level Gauge.

**LG9053**



DIPSTICK TUBE DESCRIPTION	X DIM.	Y DIM.
65 MM STRAIGHT	220.0	70.5
155 MM STRAIGHT	254.5	154.0

Ig4rs00b

LG9053 [M]

Option #	Handle Orientation	Location of Entry Into Oil Pan	Use With	Power Angle	Notes	Weight	Value Cod
LG 9053	Up	Fuel pump side	Center sump pan	0 deg.	Pull direction: vertical	-	

Structure language: 02 EBM  
 Family: B series  
 Cylinders: 4  
 Supplier: Cummins

Oil pan high limit: 9.5 litre [10 U.S. qt.]  
Oil pan low limit: 8.5 litre [9 U.S. qt.]  
Oil pan sump: Center  
Entry location from FFOB: 408.0 mm [16.06 in.]  
Power angle: 0 deg.  
Engine tilt: 0 deg.  
Pull direction: Vertical  
Functions with air compressor: Yes  
Tube termination side: Fuel pump side  
Tube effective length: 65.0 mm [2.56 in.]  
Handle location:  
    Horizontal from crank C/L: TBD  
    Vertical from crank C/L: TBD  
    Horizontal from FFOB: TBD  
Functions with balancer: No  
Restricted breather type: Open  
Block tube orientation: 45 deg. forward  
CNS may use 3905368 expansion plug in place of 3900955 expansion plug.  
**4 cylinder only.**

LT - Literature

LT8013

## (No Graphics Required)

LT8013 [G]

Option #	Description
LT 8013	

Literature included:

Declaration of Incorporation &  
Generic O & M Manual

In accordance with the machinery directive 98/37/EC as amended. Option must be selected for engine product shipped into the European Economic Area (1) where product is for Industrial/Construction or G-Drive applications (OEM sales and distributors) option should not be selected for sale into automotive, rail, ag/forestry, tractors, marine applications (but on-board equipment on fixed offshore platforms may be covered). Option calls up the documents needed for Cummins to comply with EU law (2): Declaration of Incorporation, Generic O & M. These documents must be shipped with product.

Notes (1): EEA = Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom, Norway, Iceland, Liechtenstein.

(2): EU Directive 98/37/EC on machinery covering health and safety requirements for machinery.

LT - Literature

LT9020

# (No Graphics Required)

LT9020 [G]

Option #	Description					Notes
LT 9020	Parts Catalog					-

Engine family: B series  
 Provided in kit: Yes  
 Parts Catalog provided: Yes  
 Start-up Card provided: No  
 O& M Manual provided: No  
 Language: English  
 Engine Cylinders: 4  
 Aspiration: Naturally aspirated  
     - Turbocharged  
 Application: G-Drive

LT - Literature

LT9024

# (No Graphics Required)

LT9024 [G]

Option #	Description					Notes
LT 9024	Multilingual Operation and Maintenance Manual for 4B Series					-

Multilingual (English, French, German and Spanish) Operation and Maintenance Manual for 4B Series engines. Manuals provided in kit.

**Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).**

LT - Literature

LT9127

## (No Graphics Required)

LT9127 [G]

Option #	Description					Notes
LT 9127	Parts Catalog, O& M Manual					-

Engine family: B series  
 Provided in kit: Yes  
 Parts Catalog provided: Yes  
 Start-up Card provided: No  
 O& M Manual provided: Yes  
 Language: English  
 Engine Cylinders: 4  
 Aspiration: Jacket Water Aftercooled  
 Application: G-Drive  
 In support of 4BTA-G1/G2 model

MK - Engine Masking

MK9001

(No Graphics Required)

MK9001 [G]

Option #	Description	Location				Notes
MK 9001	Exhaust manifold	-				-

Masked component: Exhaust manifold.  
Engine families: B series, C series

MK - Engine Masking

MK9002

**(No Graphics Required)**

MK9002 [G]

Option #	Description	Location				Notes
MK 9002	Turbocharger	-				

Masked component: Turbocharger.  
Engine families: B series, C series

NP - Noise Panel

NP9006

# (No Graphics Required)

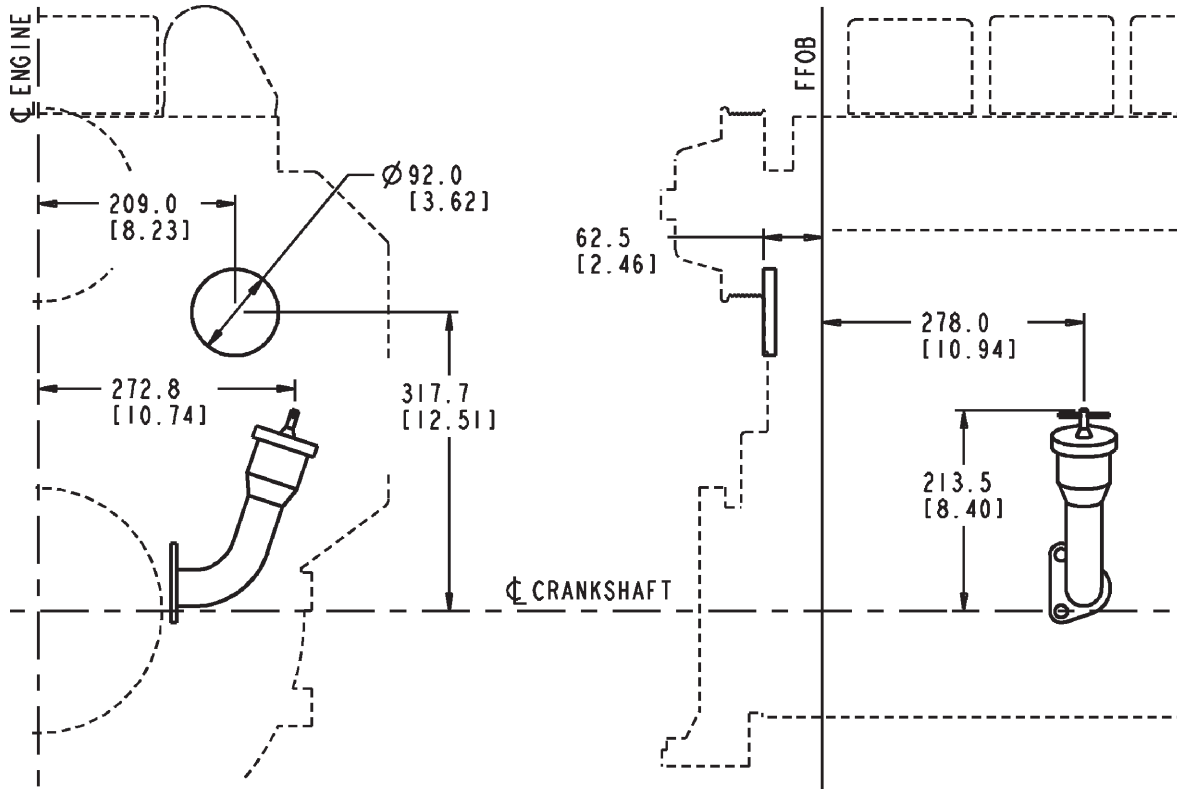
NP9006 [G]

Option #	Description	dBa Reduction				Notes
NP 9006	Double wall gear cover for noise abatement from front of engine	-				No content option

No content option. Used as a pointer to select the correct front gear cover assembly. Double wall gear cover for noise abatement from the front of the engine.

OB - Oil Fill Arrangement

**OB9137**



**OB9137\_MCS**

OB9137 [M]

Option #	Location	Fill Type	With Dipstick	Cap OEM-Supplied	Notes
OB 9137	Fuel pump side	Oil tube	No	-	Restricted to open breather and lever type lift pump

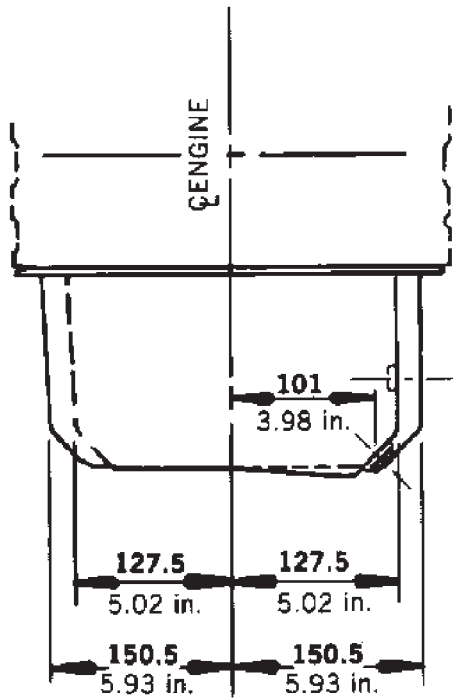
Engine family: B series  
 Fill tube supplier: Cummins  
 Oil fill location: Fuel pump side

## 4BTGDRIVE

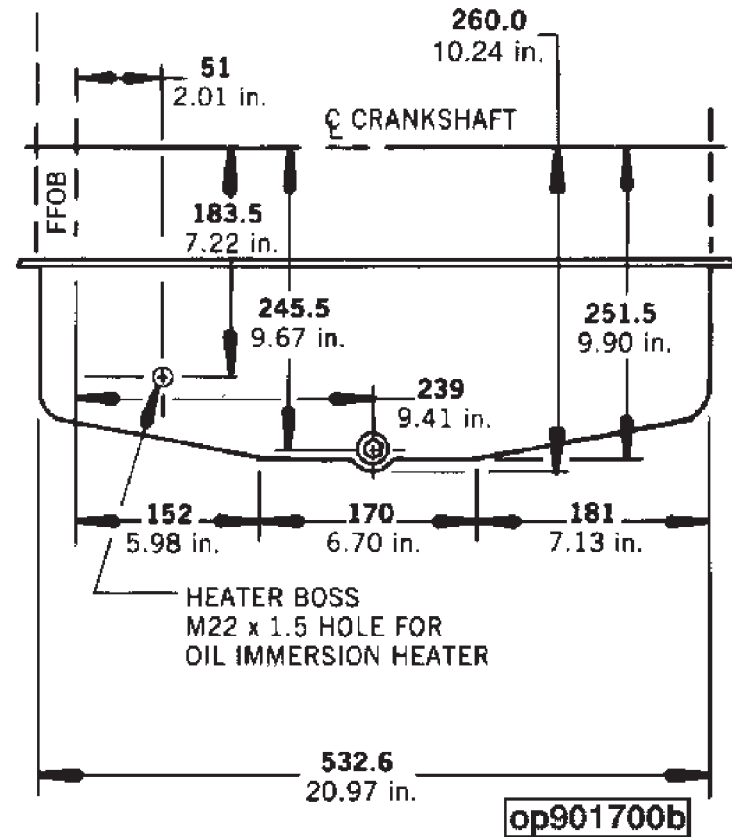
Fill position from FFOB: 278.0 mm [10.94 in.]  
Position vert from crank C/L: 174.4 mm [6.87 in.]  
Position horiz from crank C/L: 259.5 mm [10.22 in.]  
Position horiz with air CPR: 293.5 mm [11.56 in.]  
Fill cap supplier: Cummins  
Functional w/dual power ratings: No  
Structure code: 02 EBM  
Restricted breather type: Open  
Fuel type: Diesel  
Restricted lift pump type: Lever  
Air compressor restriction: To be determined:  
Engine cylinder count: 4  
P/N 3906704 o'ring seal, is interchangeable with P/N 3906696  
**Use with FS 9002.**

OP - Oil Pan

**OP9017**



WHEN THE ENGINE BALANCER IS USED WITH THIS PAN NO IMMERSION HEATER CAN BE USED



OP9017 [M]

Option #	Sump Type/Material	Drain Location	Angularity	Capacity	Weight	Notes
OP 9017	Non-isolated center sump/ Stamped steel	Fuel pump side	45 deg all directions	High: 9.5 litre [10 U.S. qt.] Low 8.5 litre [9 U.S. qt.]	-	-

Non-isolated center sump oil pan with drain located on fuel pump side of engine. Angularity limits are 45 deg. all directions. Capacity: high level 9.5 litre [10 U.S. qt.], low level

## 4BTGDRIVE

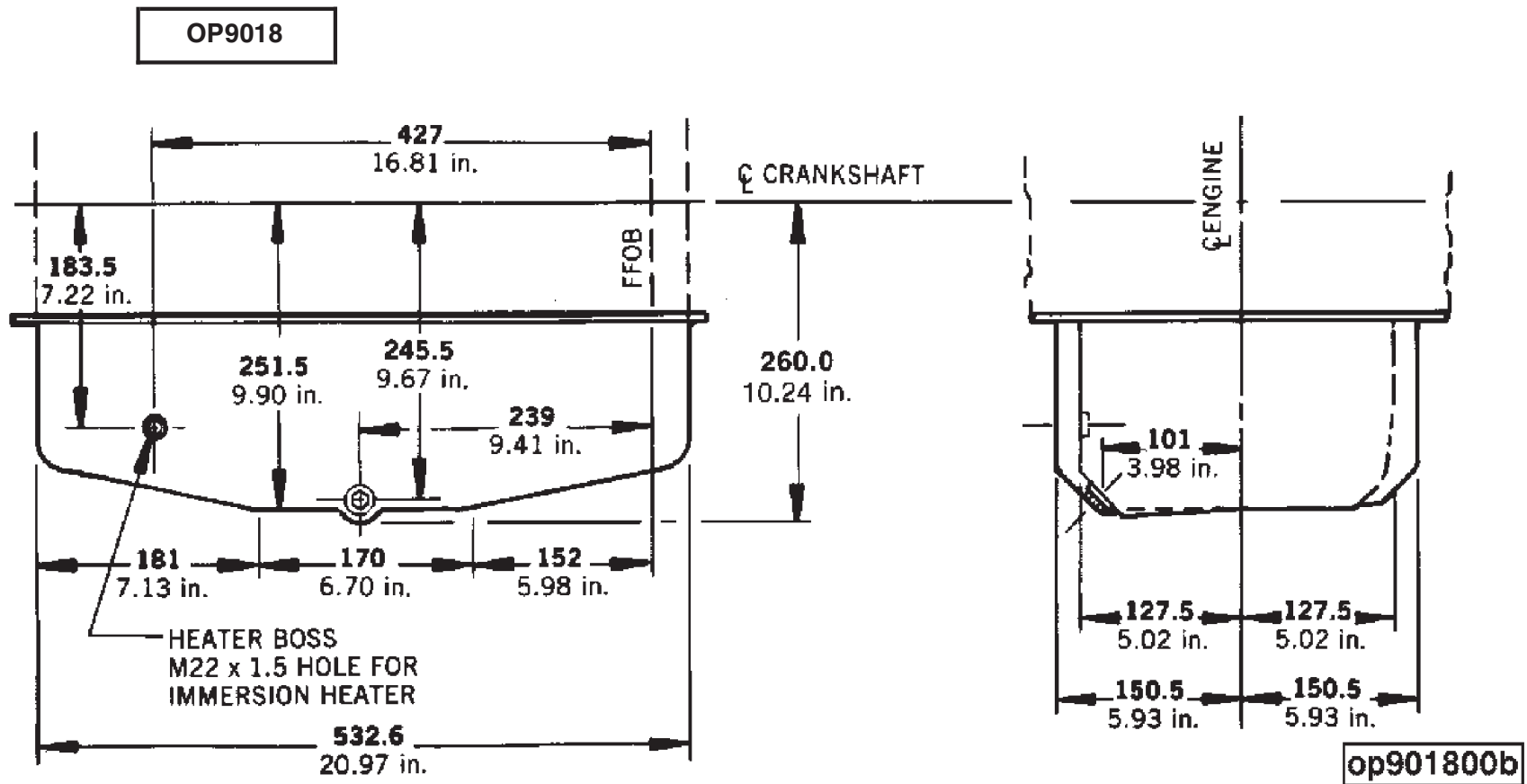
8.5 litre [9 U.S. qt.].

**Do not use immersion heater with balancer.**

**D381004GX02 and D382012GX02: Use with LG 9042 or LG 9053.**

**D383030DX02: Use with LG 9053.**

OP - Oil Pan



OP9018 [M]

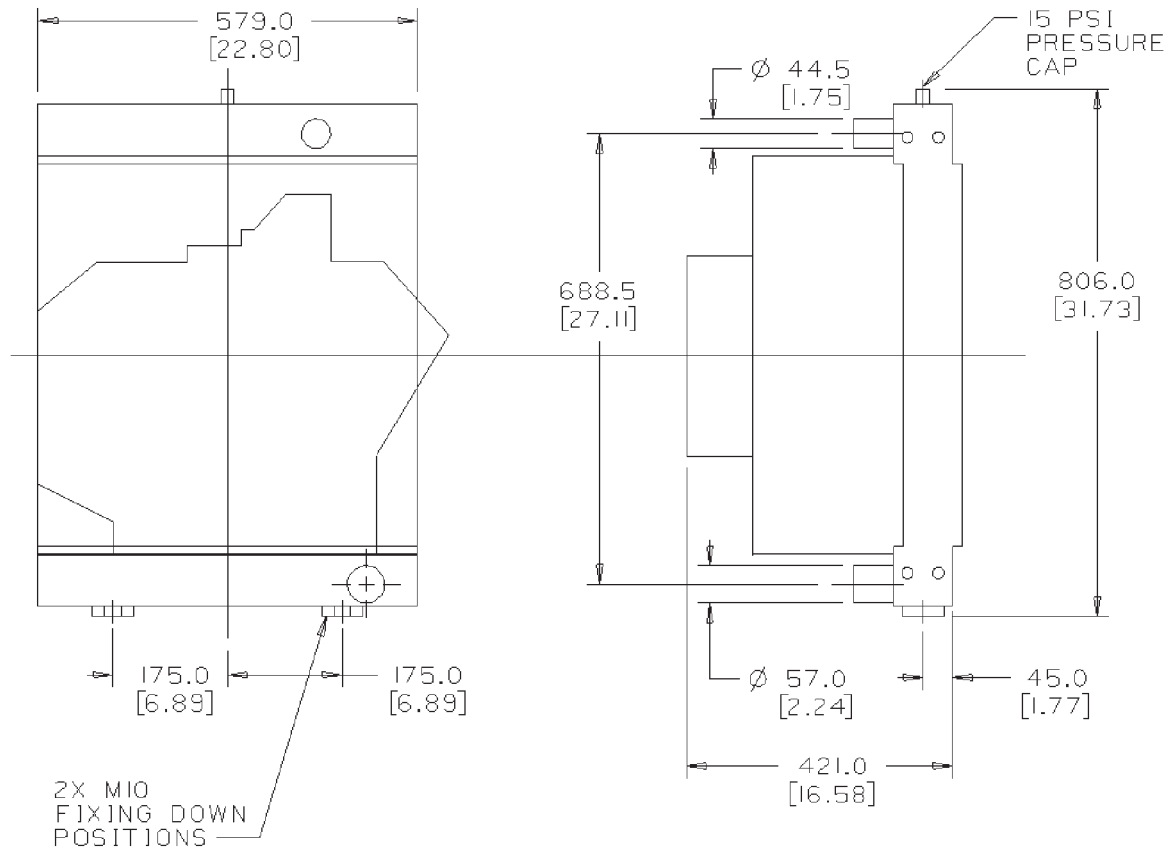
Option #	Sump Type/Material	Drain Location	Angularity	Capacity	Weight	Notes
OP 9018	Shallow center sump/ Stamped steel	Exhaust side	45 deg all directions	High: 9.5 litre [10 U.S. qt.] Low: 8.5 litre [9 U.S. qt.]	-	-

Stamped steel shallow center sump oil pan with drain located on exhaust side of engine. Angularity limits are 45 deg. all directions. Capacity: high level 9.5 litre [10 U.S. qt.], low level 8.5 litre [9 U.S. qt.].

**D381004GX02 and D382012GX02: Use with LG 9042 or LG 9053.**

RA - Radiator

**RA9013**



RA9013 [G]

Option #	Description	Mounting Type	Use With/Engine Model			Notes
RA 9013	-	Pedestal	4B and 4BT 'Starpac'			-

Radiator for 4B and 4BT 'Starpac' pedestal mounted.

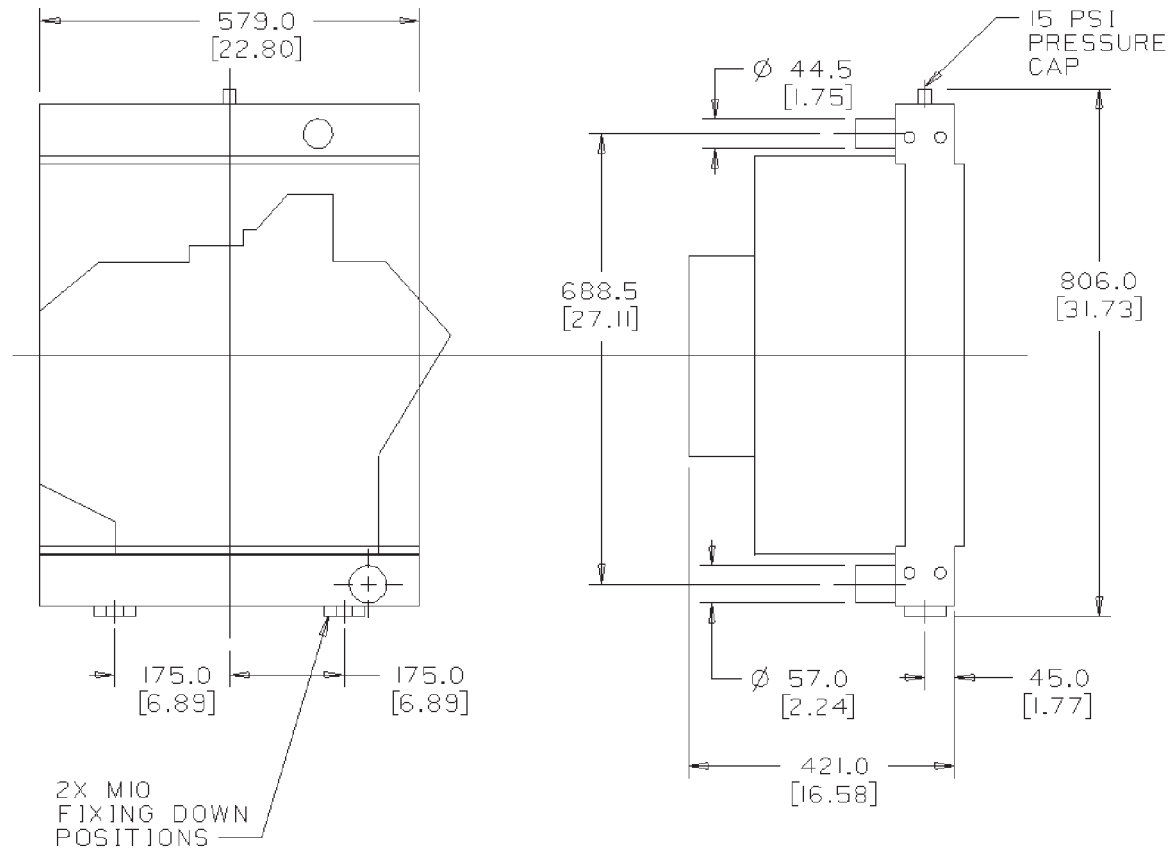
Must use with FN 9047.

D381004GX02 and D382012GX02: Use with FN 9047.

Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).

RA - Radiator

**RA9018**



RA9018 [G]

Option #	Description	Mounting Type	Use With/Engine Model			Notes
RA 9018	-	Pedestal	6BT G-1 'Starpack'			-

Radiator for 6BT G1 'Starpack' pedestal mounted.

**Must use with FN 9103 only.**

This hardware is available only on engines built at Darlington Engine Plant (DEP).

SD - Monitoring Switches

SD8022

(No Graphics Required)

SD8022 [G]

Option #	Type	Description
SD 8022		

Low lube oil pressure switch. Set at 12 psi.  
Fungus and corrosion proof.  
Cannot use with Cummins engine wiring harness.

**Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).**

## SD - Monitoring Switches

SD8024
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# (No Graphics Required)

SD8024 [G]

Option #	Type	Description
SD 8024		

High coolant temperature switch. Set at 106 °C [223 °F].  
Fungus and corrosion proof.  
Cannot use with Cummins engine wiring harness.

SG - Guard Package

SG9000

# (No Graphics Required)

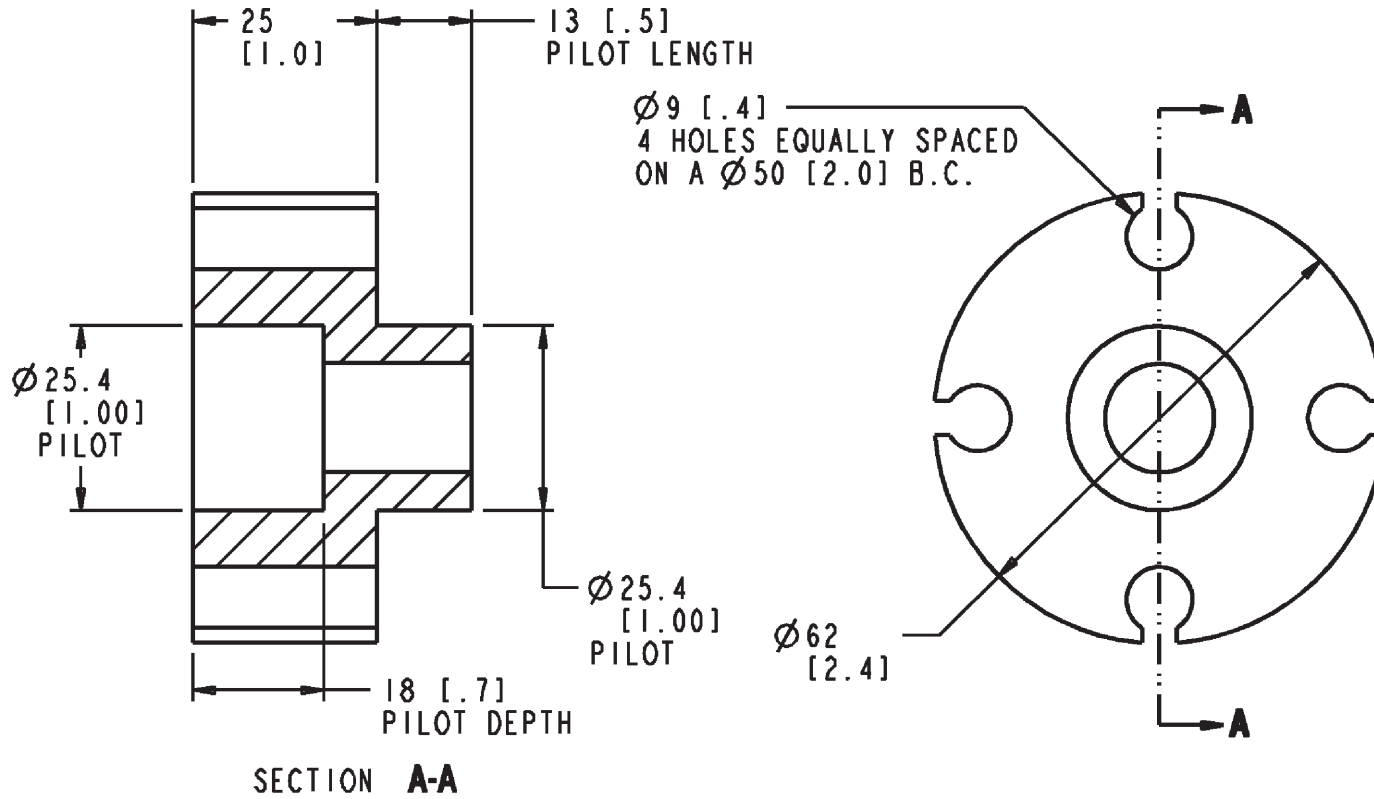
SG9000 [M]

Option #	Description	Location	Material			Notes
SG 9000	No content option	-	-			-

No content option.  
For use when customer supplies own belt guard.

SP - Fan Spacer

**SP9003**



**SP9003\_MCS**

SP9003 [G]

Option #	Description/Qty.	Thickness	Bolt Circle Dia.			Notes
SP 9003	Spacer	25.4 mm [1.00 in.]	50.0 mm [1.97 in.]			-

Spacer thickness: 25.4 mm [1.00 in.]  
 Spacer type: Spacer  
 Fan pilot dia.: 25.4 mm [1.00 in.]  
 Engine family: B series

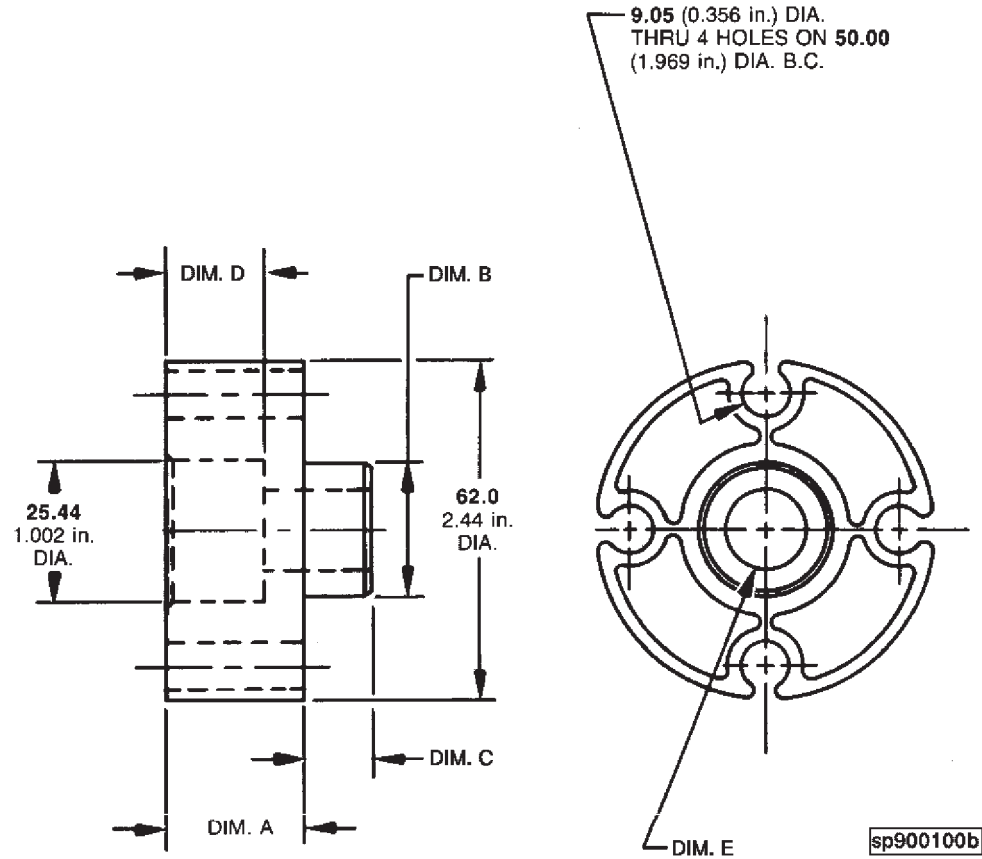
## 4BTGDRIVE

Mounting bolt circle: 50.0 mm [1.97 in.]

Use with FA 9002, FA 9003, FA 9004, FA 9005, FA 9012, FA 9013, FA 9014, FA 9015 or FA 9062.

SP - Fan Spacer

SP9004



SP9004 [G]

Option #	Description/Qty.	Thickness	Bolt Circle Dia.			Notes
SP 9004	Spacer	50.8 mm [2 in.]	50.0 mm [1.97 in.]			-

50.8 mm [2 in] fan spacer. 50.0 mm [1.97 in] bolt circle.

DIM. A = 50.8 mm [2 in]

DIM. B = 25.36 mm [1 in]

DIM. C = 12.70 mm [0.5 in]

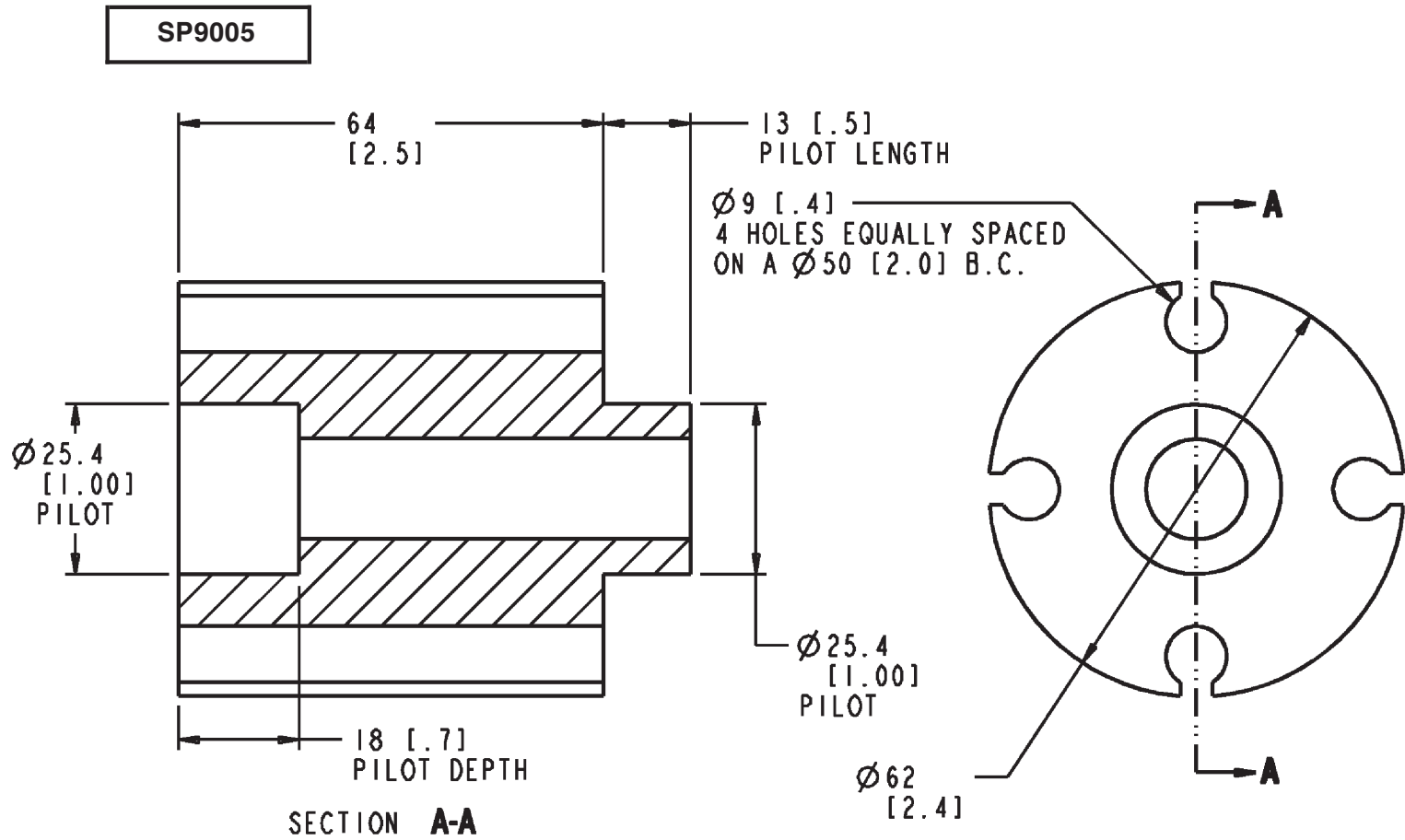
DIM. D = 18.0 mm [0.71 in]

## 4BTGDRIVE

DIM. E = 15.0 mm [0.59 in]

Use with FA 9002, FA 9003, FA 9004, FA 9005, FA 9012, FA 9013, FA 9014, FA 9015 or FA 9062.

SP - Fan Spacer



SP9005 [G]

Option #	Description/Qty.	Thickness	Bolt Circle Dia.			Notes
SP 9005	Spacer	63.5 mm [2.50 in.]	50.0 mm [1.97 in.]			-

Spacer thickness: 63.50 mm [2.50 in.]  
 Spacer type: Spacer  
 Fan pilot dia.: 25.4 mm [1.00 in.]  
 Engine family: B series

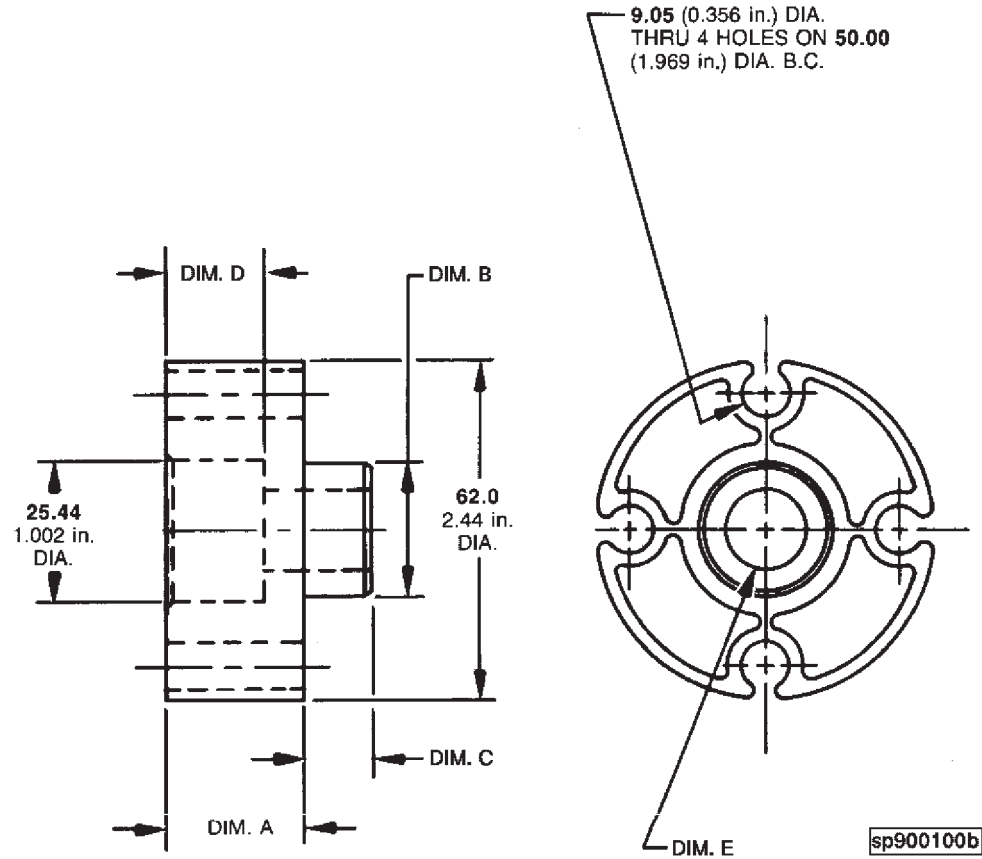
## 4BTGDRIVE

Mounting bolt circle: 50.0 mm [1.97 in.]

Use with FA 9002, FA 9003, FA 9004, FA 9005, FA 9012, FA 9013, FA 9014, FA 9015 or FA 9062.

SP - Fan Pilot Spacer

SP9006



SP9006 [G]

Option #	Description/Qty.	Thickness	Bolt Circle Dia.			Notes
SP 9006	Spacer	38.1 mm [1.50 in.]	50.0 mm [1.97 in.]			-

38.1 mm [1.50 in.] fan spacer. 50.0 mm [1.96 in.] bolt circle.

- DIM. A = 38.1 mm [1.50 in.]
- DIM. B = 25.36 mm [0.998 in.]
- DIM. C = 12.70 mm [0.500 in.]
- DIM. D = 18.0 mm [0.71 in.]

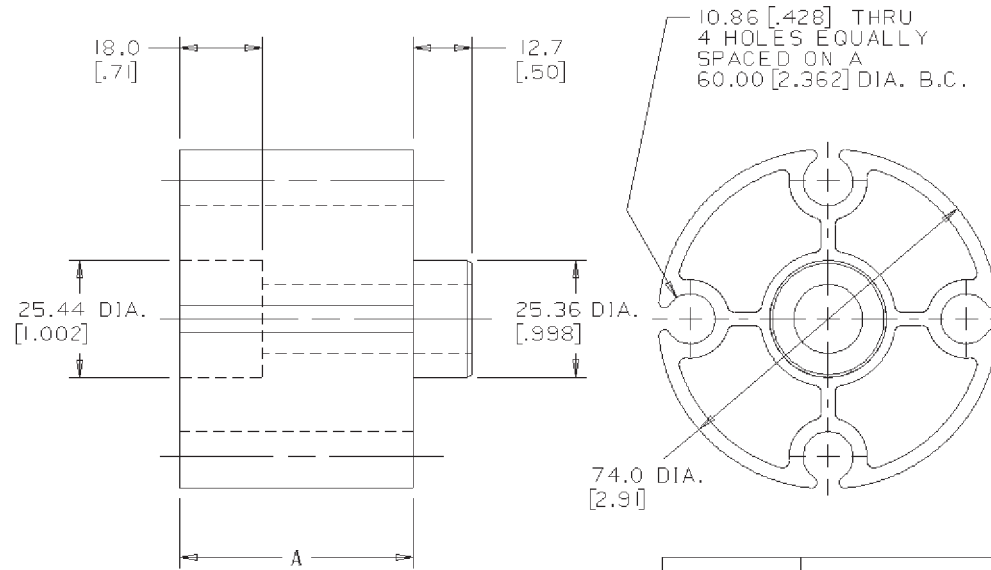
## 4BTGDRIVE

DIM. E = 15.0 mm [0.59 in.]

Use with FA 9002, FA 9003, FA 9004, FA 9005, FA 9012, FA 9013, FA 9014, FA 9015 or FA 9062.

SP - Fan Spacer

**SP9020**



OPTION	DIMENSION A
SP 9020	38.1 [1.50]
SP 9021	50.8 [2.00]
SP 9022	63.5 [2.50]

SP 9020    SP 9021    SP 9022

SP9020 [G]

Option #	Description/Qty.	Thickness	Bolt Circle Dia.			Notes
SP 9020	Spacer	38.1 mm [1 1/2 in.]	60 mm [2.36 in.]			-

25.4 mm [1.00 in.] fan pilot O.D.  
 DIM. A = 38.1 mm [1.50 in.]  
 Maximum recommended fan spacing is 76.2 mm [3 in.]  
**Use with FA 9077.**

SS - Paint

SS9001

# (No Graphics Required)

SS9001 [M]

Option #	Description					Notes
SS 9001	Cummins beige					Cummins logo

Cummins beige paint. Contains Cummins logo

**D381004GX02 and D382012GX02: Use with SS 9074, SS 9075, SS 9179, SS 9272, SS 9275, SS 9277 or SS 9278.**

**D383030DX02: Use with SS 9074, SS 9075, SS 9272, SS 9275, SS 9277 or SS 9278.**

SS - Lubricating Oil

SS9023

**(No Graphics Required)**

SS9023 [G]

Option #	Description					Notes
SS 9023	15W40					9.5 liter [10 U.S. qt.]

Cummins Premium Blue™ 15W40 engine oil. 9.5 liter [10 U.S. qt.].

**D381004GX02 and D382012GX02: Use with OP 9003, OP 9004, OP 9017 or OP 9018.**

**D383030GX02: Use with OP 9003 or OP 9017.**

**Note: This hardware is available only on engines built at Consolidated Diesel Corporation (CDC) only.**

SS - Paint

SS9031

# (No Graphics Required)

SS9031 [M]

Option #	Description					Notes
SS 9031	High gloss black					Cummins logo

High gloss black paint. Contains Cummins logo.

**D381004GX02 and D382012GX02: Use with SS 9074, SS 9075, SS 9179, SS 9272, SS 9275, SS 9277 or SS 9278.**

SS - Shipping Skid

SS9074

**(No Graphics Required)**

SS9074 [G]

Option #	Description					Notes
SS 9074	Returnable, metal shipping skid					-

Note: This hardware is available only on engines built at Consolidated Diesel Corporation (CDC) only.

SS - Shipping Skid

SS9075

**(No Graphics Required)**

SS9075 [G]

Option #	Description					Notes
SS 9075	Non-returnable, wood shipping skid					-

Non-returnable, wood shipping skid.  
Engine family: B series, C series

**Note: This hardware is available only on engines built at Consolidated Diesel Corporation (CDC) only.**

SS - Shipping Skid

SS9179

**(No Graphics Required)**

SS9179 [G]

Option #	Description					Notes
SS 9179	Wooden shipping skid for engines being shipped internationally					Non-returnable

Wooden shipping skid for bare engines being shipped internationally. Non-returnable.

**Note: This hardware is available only on engines built at Consolidated Diesel Corporation (CDC) only.**

SS - Shipping Skid

SS9275

# (No Graphics Required)

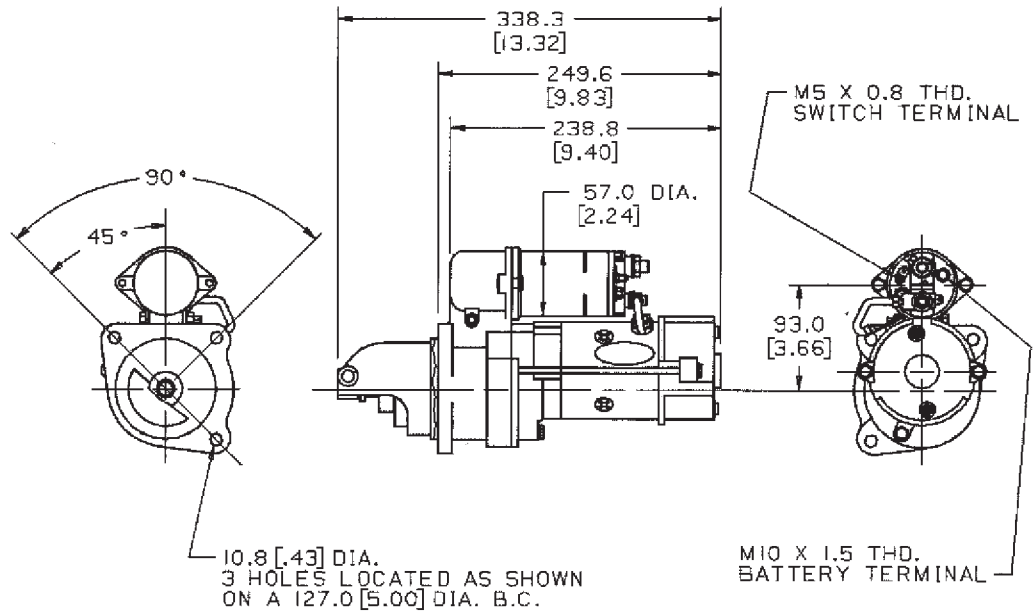
SS9275 [G]

Option #	Description					Notes
SS 9275	Wood shipping skid					Non returnable

Skid disposition: Non returnable  
 Skid material: Wood  
 Transport mode: Truck-Open  
 Oil pan bedplate capabilities: No  
 Engine cylinders: 4  
 Engine family: B series  
 Restricted engine application: Marine, G-drive, Construction and Automotive  
 For use at DEP only

ST - Starting Motor

**ST9039**



**ST 9039**

ST9039 [G]

Option #	Mfg/Model	Voltage/kW	Pinion Gear Pitch	Mounting Quadrant	Weight	Notes
ST 9039	Delco Remy/ 28 MT	12V	10/12	-	-	Type 171 starter motor

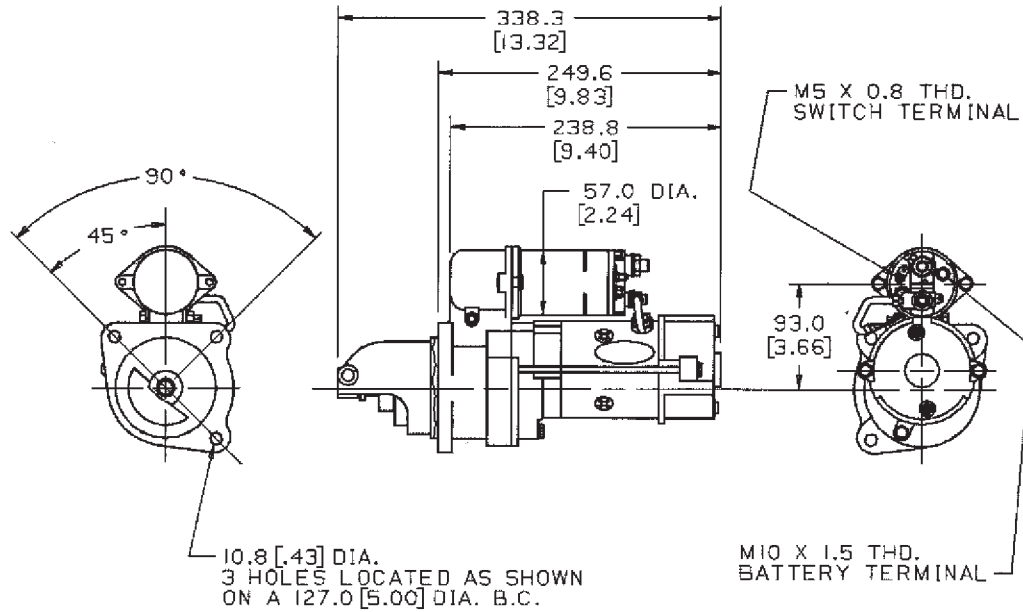
12V, Delco Remy 28 MT, type 171 starter motor. Starter solenoid angle (deg.): 315

Angle limitation - High: 135; Low: 315

Use with FH 9002, FH 9020, FW 9006, FW 9016, FW 9017, FW 9418, FW 9419 or FW 9420.

ST - Starting Motor

**ST9042**



**ST 9039**

ST9042 [G]

Option #	Mfg/Model	Voltage/kW	Pinion Gear Pitch	Mounting Quadrant	Weight	Notes
ST 9042	Delco Remy/ 28 MT	24V	10/12	Type 171 starter motor	-	-

24V, Delco Remy 28 MT, type 171 starter motor. Starter solenoid angle (deg.): 315

Angle limitation - High: 135; Low: 315

ST - Starting Motor

**ST9105**

st9105\_mcs

ST9105 [G]

Option #	Mfg/Model	Voltage/kW	Pinion Gear Pitch	Mounting Quadrant	Weight	Notes
ST 9105	Bosch B001-362-319	12V	10/12	-	-	-

Manufacturer: Bosch  
 Volt: 12  
 Model/Type: B001-362-319  
 Dia. pitch: 10/12  
 Mounting SAE: SAE #1- 3 bolt 90 degree  
 Wet/Dry: Dry  
 Pilot bore diameter: 88.9 mm [3.5 in.]  
 Mounting flange thickness: 13 mm [0.51 in.]  
 KW Rating: 2.7  
 Angle limitation high: 75 deg.  
 Angle limitation low: 285 deg.  
 Battery terminal nuts provided: Yes  
 Supply method: Mounted  
 Structure code: 02 EBM  
 Exposed starter length: 220 mm [8.66 in.]  
 Starter pinion tooth blank: 10  
 Starter pinion offset: 0 mm  
 Starter solenoid angle: 315 deg.  
 Drain tube provision: No  
 Starter body diameter: 115 mm [4.52 in.]  
 Engine family: B series  
 Earth return starter motor for 4B engines only  
 Not corrosion inhibited.  
 For G-drive configurations.  
 Cummins branded product.

**Use with FH 9002, FH 9020, FW 9006, FW 9016, FW 9017, FW 9418, FW 9419 or FW 9420.**

**Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).**

# 4BTGDRIVE

## TB - Turbocharger Arrangement

**TB9001**

tb9001\_mcs

### TB9001 [M]

Option #	Mount/Exhaust Outlet Location	Water-Cooled	Exhaust Outlet Type	Compressor Outlet Angle	Weight	Notes
TB 9001	HMFO	-	No	-	-	-

Engine family: B series

Cylinders: 4

Exhaust outlet location: HMFO

Turbo exhaust location from FFOB: 142.8 mm [5.62 in.]

Exhaust vertical from crank C/L: 551 mm [21.7 in.]

Exhaust horizontal crank C/L: 194 mm [7.63 in.]

Crossover routing: Top standard

Oil supply routing: Outboard

Boost line pick-up size: 1/2 in. NPTF

Intake cover provided: Yes

Turbine outlet flange type: 1/2 Marmon

Turbocharger type: Non-Wastegate

Structure code: 02 EBM

Engine design phase: Current product

Cylinder head type: Standard

Additional mounting bosses: 0

Turbo drain location: Front drain

Bearing housing manufacturer: Holset

Turbo drain tube type: Flexible

Exhaust support flange: 2-M14 38.76 mm [1.52 in.]

Alternator support provision: No

Base Turbo ID 17 number: 3535381, 3592109

3279245 hose may be substituted for 3916166 hose in this option.

For Brazil only: Use P/N 3930249 in place of 3901448.

## TB - Turbocharger Arrangement

TB9177
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tb9177\_mcs

## TB9177 [M]

Option #	Mount/Exhaust Outlet Location	Water-Cooled	Exhaust Outlet Type	Compressor Outlet Angle	Weight	Notes
TB 9177	No	-	-	-	-	-

Engine family: B series

Cylinders: 4

Exhaust outlet location: HMFO

Turbo exhaust location from FFOB: 142.8 mm [5.62 in.]

Exhaust vert. from crank C/L: 551 mm [21.6 in.]

Exhaust horz. crank C/L: 194 mm [7.63 in.]

Aspiration: Jacket water aftercooled

Crossover routing: Top standard

Oil supply routing: Outboard

Boost line pick-up size: 1/2 in. NPTF

Intake cover provided: Yes

Turbine outlet flange type: 1/2 Marmon

Turbocharger type: Non-wastegate

Structure code: 02 EBM

Engine design phase: Current product

Cylinder head type: standard

Additional mounting bosses: 0

Turbo drain location: Front drain

Bearing housing manufacturer: Holset

Turbo drain type: Flexible

Exhaust support flange: 2-M14 38.75 mm [1.52 in.]

Alternator support provision: No

Base turbo ID 17 number:

3528755

3535381

3537010

3538249

3592109

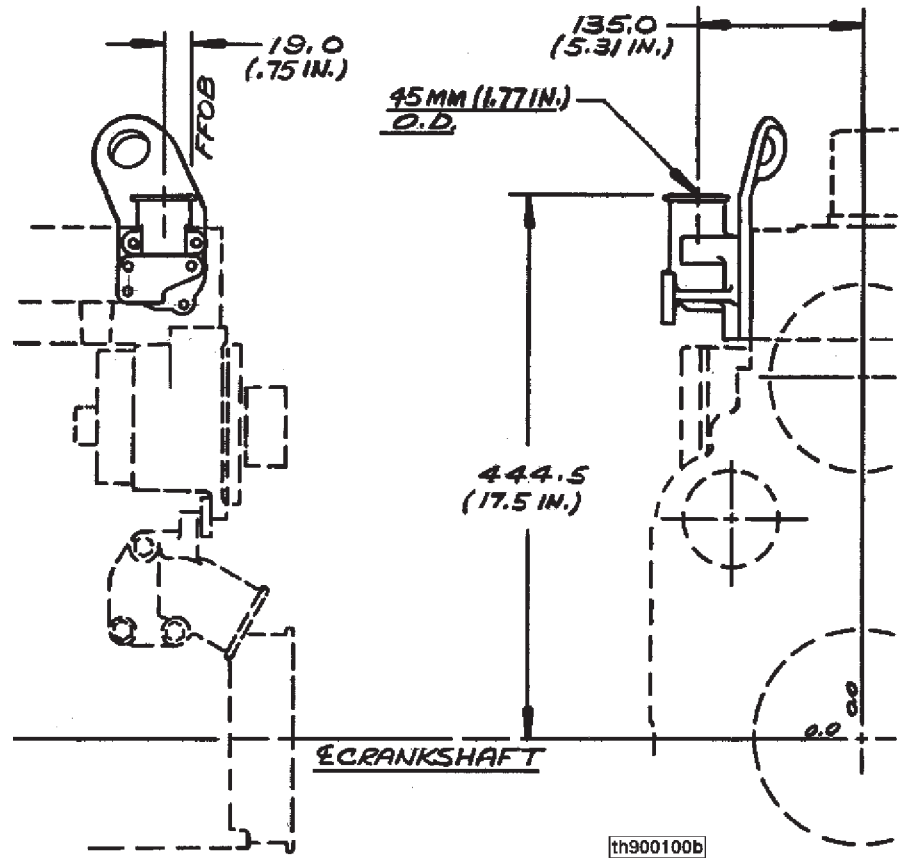
3279250 hose may be substituted for 3916167 hose in this option.

\*Hybrid core aftercooler 3910281 may be substituted for stainless steel core aftercooler 3919805.

**For use with jacket water aftercooled 4 cylinder engines.**

TH - Thermostat Housing

TH9001



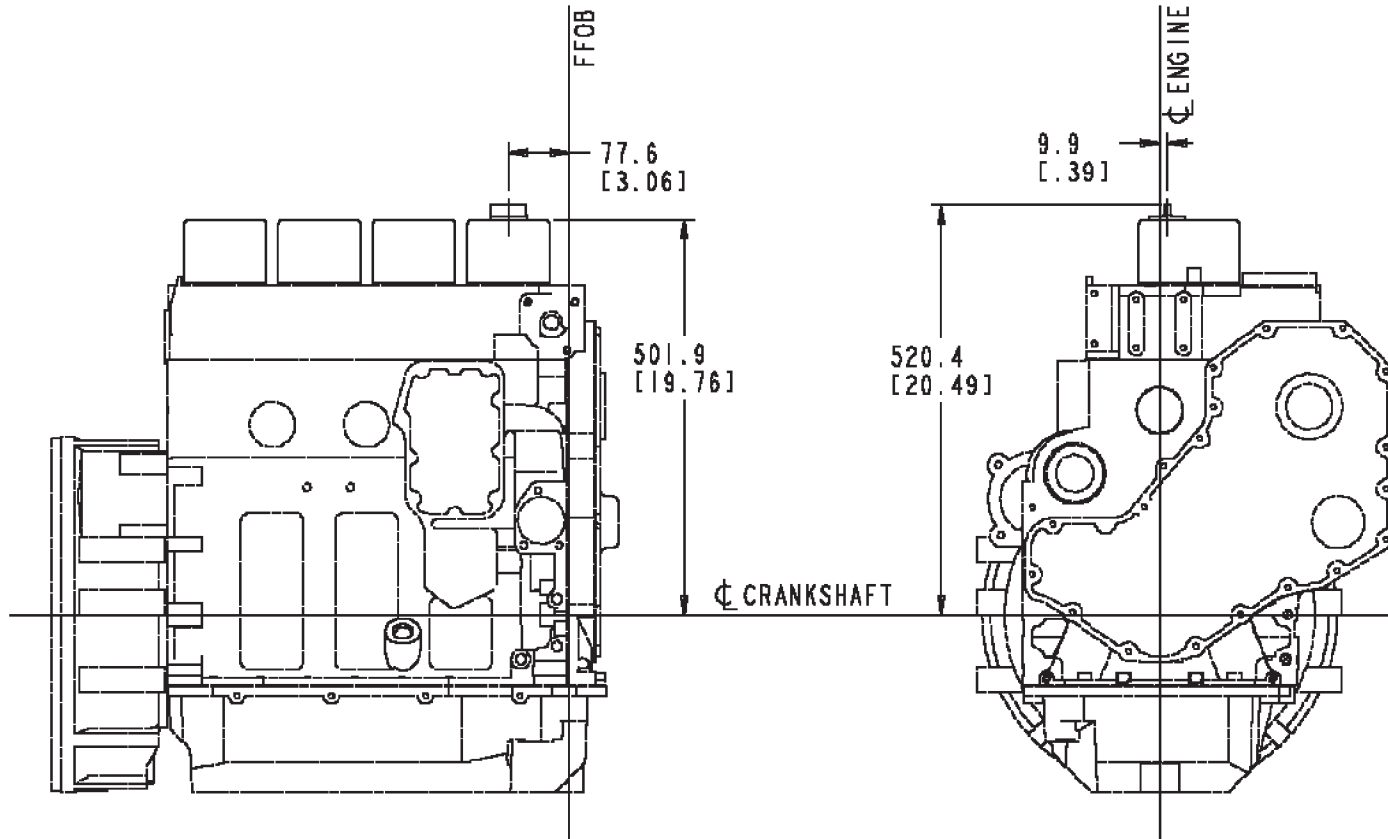
TH9001 [M]

Option #	Description	Outlet Dia.	Orientation			Notes
TH 9001	Thermostat housing	45.0 mm [1.77 in.]	Cast on vertical			Includes front engine lifting bracket

Thermostat housing with a cast on water outlet connection 45.0 mm [1.77 in.] dia. pointing up. Includes front engine lifting bracket.  
 Aeration method: Non-vented

VC - Valve Cover

VC9001



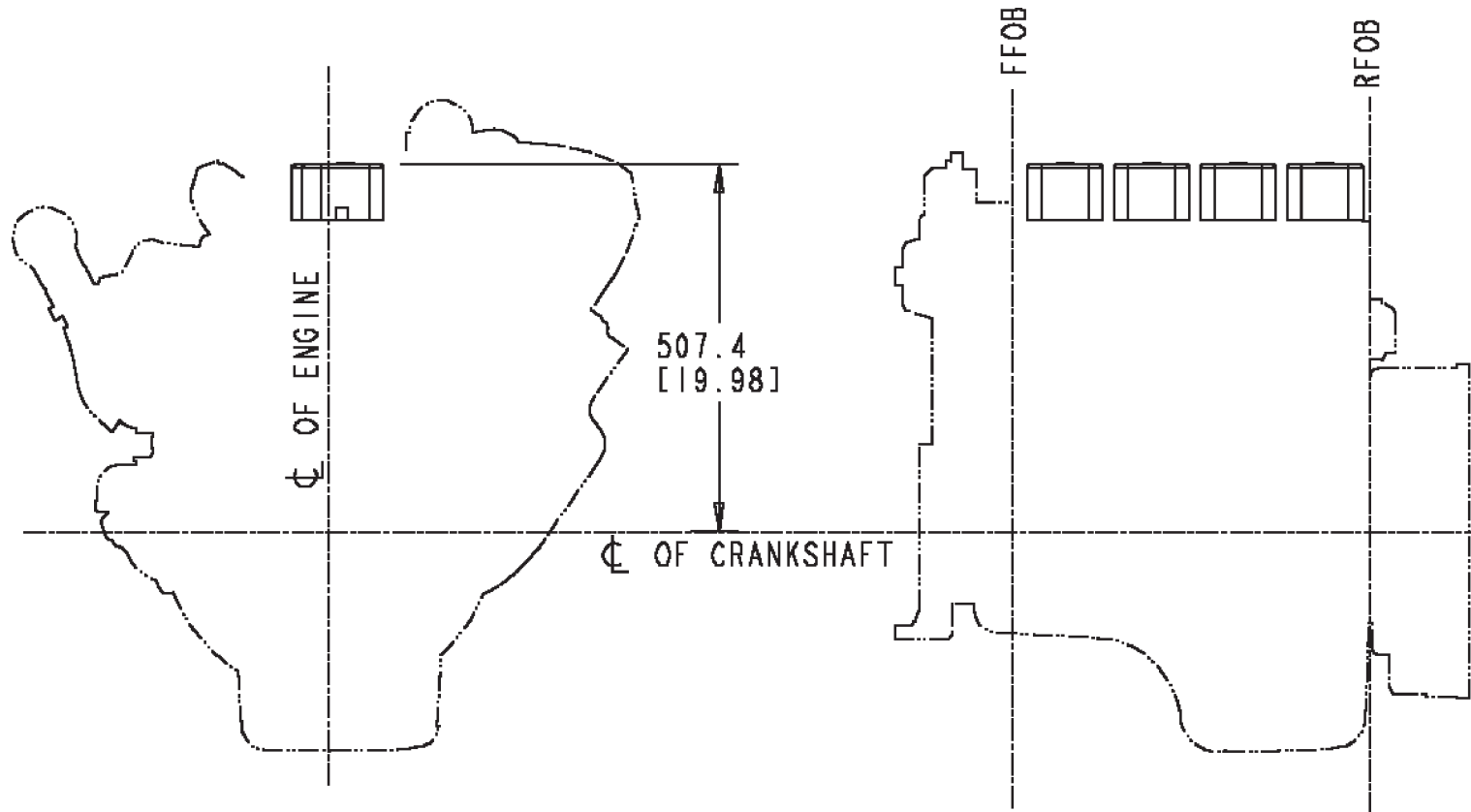
VC9001 [M]

Option #	Description	Oil Fill Location	BreatherType			Notes
VC 9001	Valve cover with oil fill	In #1 valve cover	-			-

Valve cover with oil fill located in #1 valve cover.

VC - Valve Cover

VC9008



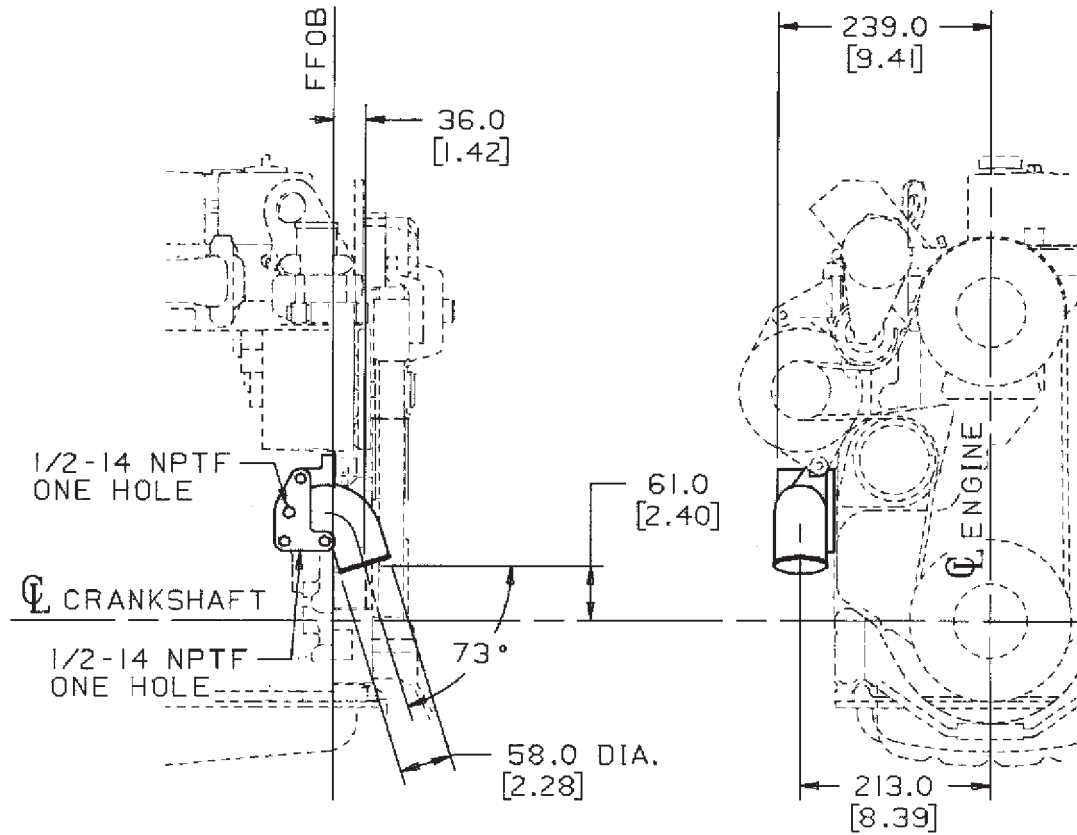
VC9008 [M]

Option #	Description	Oil Fill Location	BreatherType			Notes
VC 9008	Valve cover with no oil fill	N/A	-			-

Valve cover with no oil fill provision.

WI - Water Inlet Connection

WI9002



WI9002 [M]

Option #	Inlet O.D.	Orientation				Notes
WI 9002	58.00 mm [2.283 in.]	73 deg. down				-

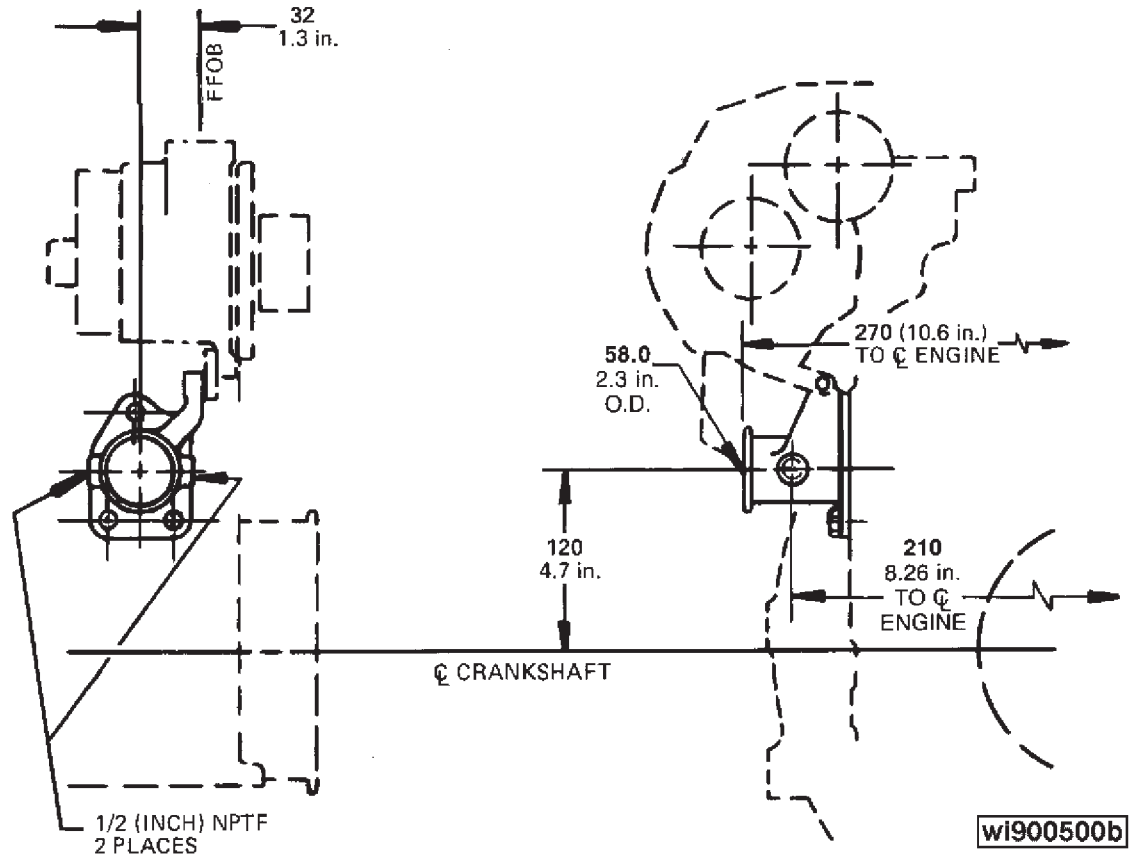
Structure code: 02 EBM  
 Engine family: B series  
 Inlet connection O.D.: 58.00 mm [2.283 in.]  
 Connection type: Beaded  
 Connection orientation: 73 deg. down

## 4BTGDRIVE

Contains mtg. pad for refrigerant compressor: No  
Tensioner mtg. provision: None  
Engine design phase: Current product  
Alternator mtg. provision: None  
Attachment for alternator brace: Yes  
Compatible w/front-side engine mounts: Yes

WI - Water Inlet Connection

WI9005



WI9005 [M]

Option #	Inlet O.D.	Orientation				Notes
WI 9005	58.00 mm [2.283 in.]	Horizontal out				-

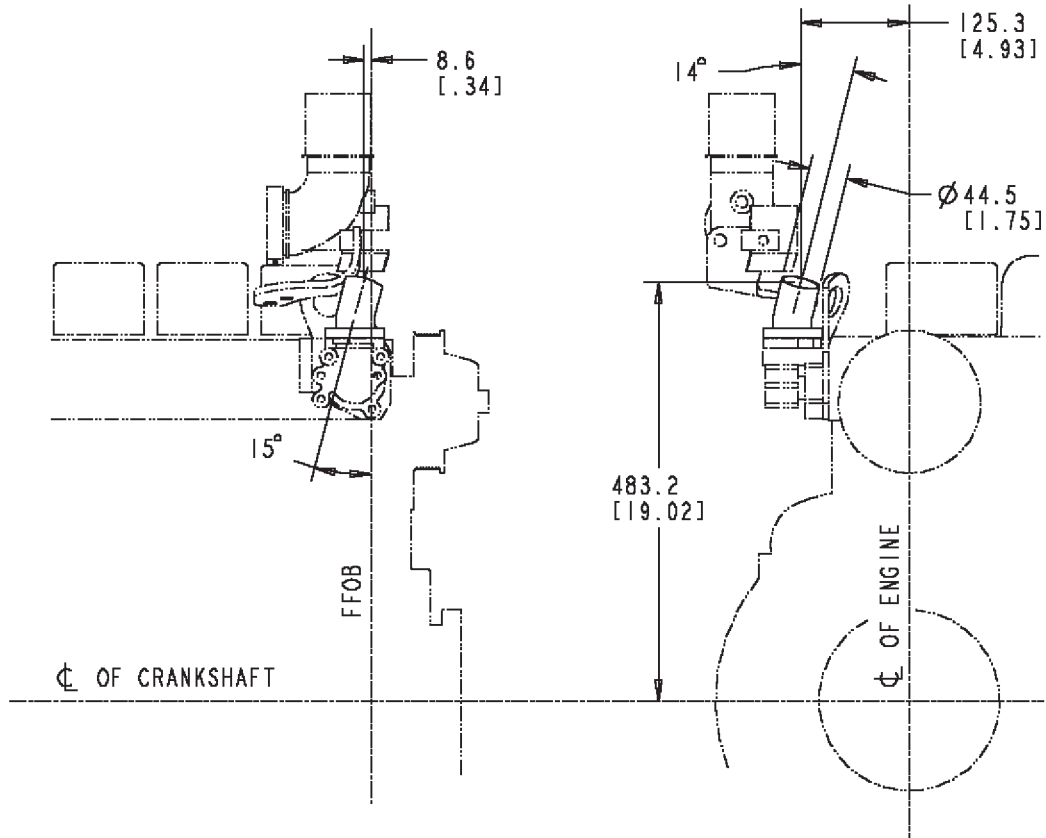
Structure code: 02 EBM  
 Engine family: B series  
 Inlet connection O.D.: 58.00 mm [2.283 in.]  
 Connection type: Beaded  
 Connection orientation: Horizontal out

## 4BTGDRIVE

Contains mtg. pad for refrigerant compressor: No  
Tensioner mtg. provision: None  
Engine design phase: Current product  
Alternator mtg. provision: None  
Attachment for alternator brace: Yes  
Compatible w/front-side engine mounts: Yes

WO - Water Outlet Connection

WO9035



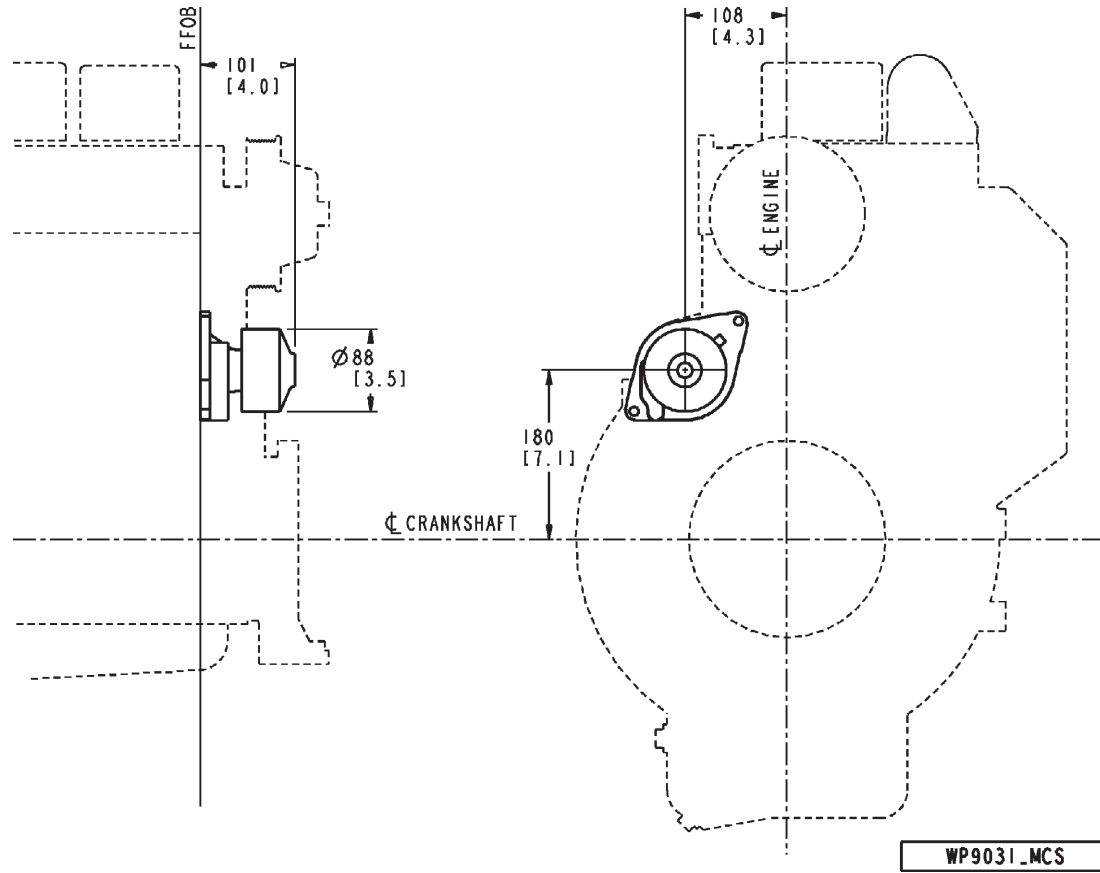
WO9035 [G]

Option #	Outlet O.D.	Orientation				Notes
WO 9035	45.0 mm [1.77 in.]	Vertical				Provision with clearance for HMFO exh. outlet conn.

Water outlet connection orientated vertically. Provision with clearance for HMFO exhaust outlet connection.

WP - Water Pump

**WP9031**



WP9031 [G]

Option #	Description					Notes
WP 9031	Standard pulley type water pump					-

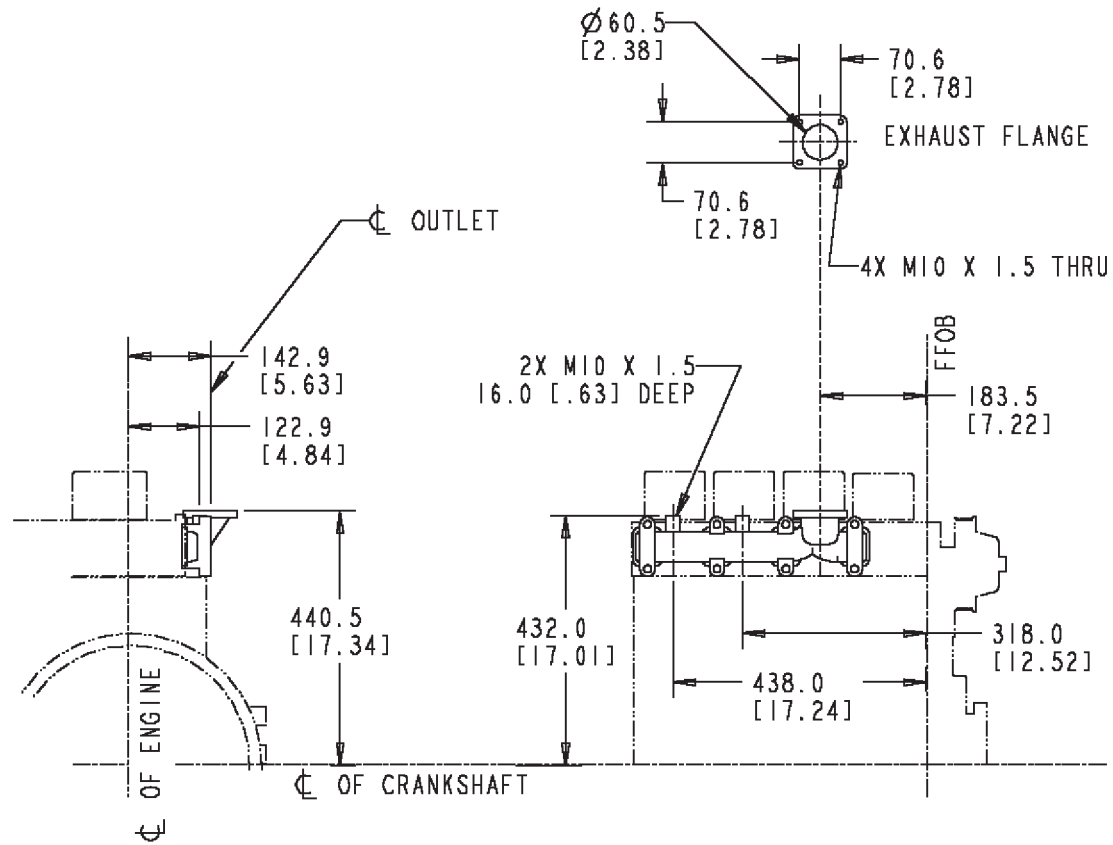
Pulley type: Standard  
 Structure code: 02 EBM  
 Pulley diameter: 88.00 mm [3.465 in.]  
 Engine design phase: Current product

Unique characteristics: Revised weep chamber  
Engine family: B series  
P/N 3903297 O-ring seal is interchangeable with P/N 3906698  
TCL may use P/N 3900227 in place of P/N 3941981  
KCEC may use P/N 3283602 in place of P/N 3285410.

# 4BTGDRIVE

## XM - Exhaust Manifold

**XM9001**

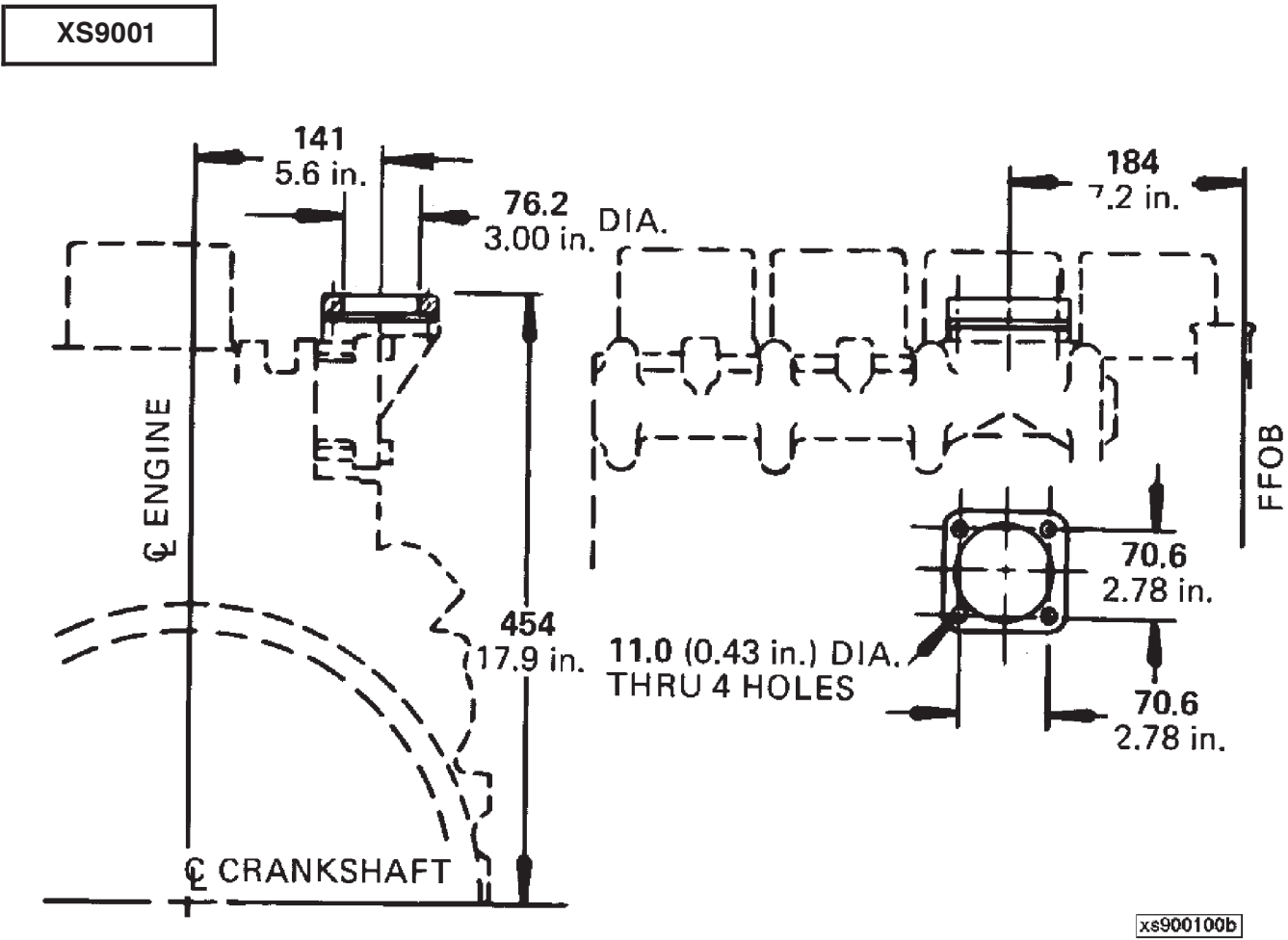


### XM9001 [M]

Option #	Description	Outlet O.D.	Outlet Location			Notes
XM 9001	Front-up exhaust outlet flange	-	-			-

Front-up exhaust outlet flange.

XS - Exhaust Outlet Connection



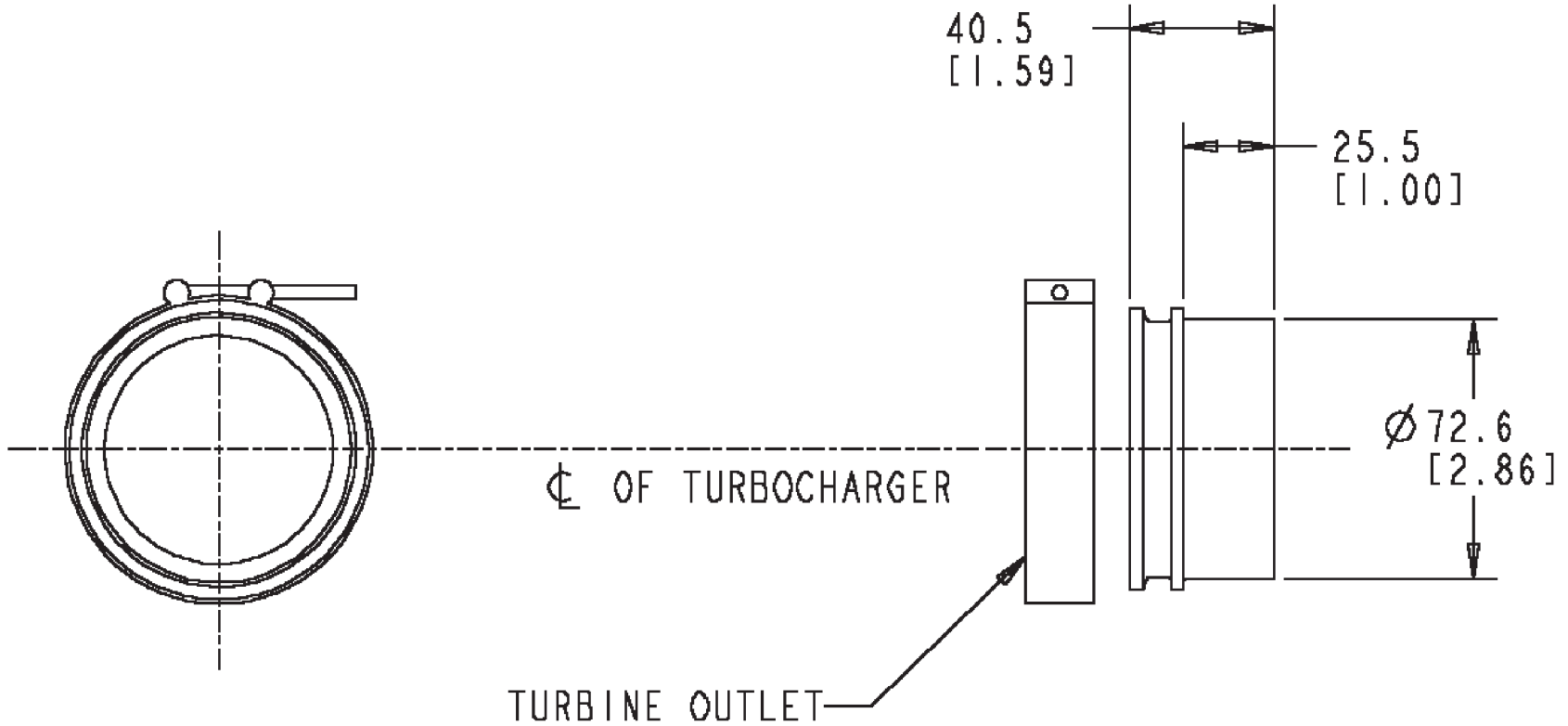
XS9001 [G]

Option #	Description	Outlet O.D.	Connection Type	Wet/Dry	Notes
XS 9001	Flange and gasket for adapting top exhaust to 76.2 mm [3 in.] pipe	-	-	Dry	-

Exhaust outlet flange and gasket for adapting top exhaust to 76.2 mm [3 in.] pipe.

XS - Exhaust Outlet Connection

XS9008



XS9008 [G]

Option #	Description	Outlet O.D.	Connection Type	Wet/Dry		Notes
XS 9008	Straight out turbo for adapting to 76.2 mm [3 in.] pipe	-	-	Dry		-

Restricted to turbocharged engines.

**TB - Turbocharger Arrangement**

**XS9016**

xs9016\_mcs

**XS9016 [G]**

Option #	Description	Outlet O.D.	Connection Type	Wet/Dry		Notes
XS 9016	-	No	Half marmon	Dry		-

Structure code: 02 EBM  
 Engine family: B series  
 Support flange bolt pattern: 2-M14 38.76 mm [1.50 in.]  
 Exhaust manifold type: Dry  
 Exhaust pipe diameter: 75.9 mm [2.99 in.]  
 Connection orientation: 90 deg. vertical  
 Mounting flange to turbo: 1/2 Marmon  
 Turbocharger type: Non-wastegate  
 Restricted cylinders: 4  
 Restricted turbocharger location: HMFO  
 Restricted aspiration: Turbocharged, jacket water aftercooled

4BTGDRIVE

TB - Turbocharger Arrangement

XS9144

xs9144\_mcs

XS9144 [G]

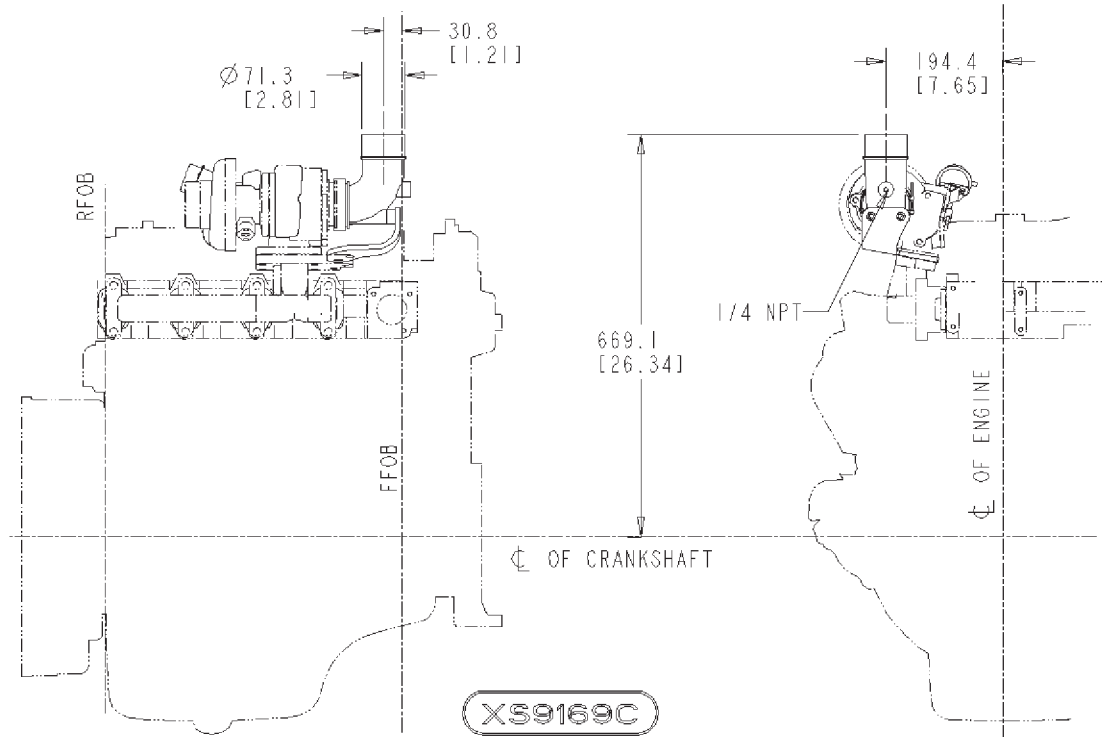
Option #	Description	Outlet O.D.	Connection Type	Wet/Dry		Notes
XS 9144	90 deg. elbow	76.2 mm [3 in.]	-	Dry		-

Structure code: 02 EBM  
 Engine family: B series  
 Exhaust manifold type: Dry  
 Exhaust pipe diameter: 76.2 mm [3 in.]  
 Connection orientation: 90 deg. vertical  
 Turbocharger type: Wastegate  
 Restricted cylinders: 4  
 Restricted turbocharger location: Top mount  
 Restricted aspiration: Turbocharged, jacket water aftercooled

**Note: This hardware is available only on engines built at Darlington Engine Plant (DEP).**

XS - Exhaust Outlet Connection

**XS9169**



**XS9169 [G]**

Option #	Description	Outlet O.D.	Connection Type	Wet/Dry	Notes
XS 9169	90 deg. vert. turbo exh. elbow	76.2 mm [3 in.]	1/2 Marmon	Dry	-

90 deg. vertical turbo exhaust elbow for a 76.2 mm [3 in.] pipe. For use with high mount turbochargers with front outlet exhaust.

**Restricted to turbocharged and jacket water aftercooled, 4 cylinder engines only.**

**D383030DX02: Use with TB 9177.**

