



**M-6007-S347JR  
Sealed Crate Engine  
INSTRUCTION SHEET**

NO PART OF THIS DOCUMENT MAY BE REPRODUCED WITHOUT PRIOR AGREEMENT AND WRITTEN PERMISSION OF FORD RACING PERFORMANCE PARTS.

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**!!! PLEASE READ ALL OF THE FOLLOWING INSTRUCTIONS CAREFULLY PRIOR TO INSTALLATION.  
AT ANY TIME YOU DO NOT UNDERSTAND THE INSTRUCTIONS, PLEASE CALL THE FORD RACING  
TECHLINE AT 1-800-367-3788 !!!**

# ***M-6007-S347JR***

## **Sealed Racing Engine Specifications and Owner's Manual**



Factory Ford shop manuals are available from Helm Publications, 1-800-782-4356



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## INSTALLATION INSTRUCTIONS:

These instructions consist of five sections:

1. Technical Specifications: M-6007-S347JR Sealed Crate Engine
2. Lubrication Priming Procedure
3. Bill of Materials Sealed Crate Engine
4. Torque Specifications
5. Notes for M-6007-S347JR

### 1. Technical Specifications: M-6007-S347JR Sealed Crate Engine

Block	M-6010-BOSS302
Bore diameter	4.030"
Main bearing bore diameter	2.4415"
Main cap torque	100 Inner 35 outer (lb-ft)
Main cap material	Nodular iron
Bore spacing	4.380"
Block deck height	8.2"
Material	Iron
Weight	175 lbs
Part Number	M-6010-BOSS302

Intake Manifold	Edelbrock 7521 Performer RPM Air Gap
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Crankshaft	
Main journal size	2.250"
Rod journal size	2.123"
Stroke	3.4"
Material	Forged steel
Weight	48.75-49.25 lbs
Balance offset	Neutral balance
Part number	432300105090
Crankshaft manufacturer	SCAT

Connecting Rod	
Center to center length	5.400"
Total weight	measured per set
Big-end weight	measured per set
Small-end weight	measured per set
Material	Forged steel

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Floating or press fit	Floating
Connecting rod part number	2-1CR5400-927
Connecting rod manufacturer	SCAT
Piston	
Piston manufacturer	Mahle
Bore	4.03"
Dish or dome volume	6 cc effective dish
Ring set part number	Mahle supplied
Compression height	1.090"
Weight	Individually balanced
Pin oiling type	Thru ring
Pin bore diameter	0.927"
Piston part number	SBF090030F06
Piston material	forged aluminum 4032
Timing set part number	M-6268-A302
Cylinder Head	
Head material	Aluminum
Head part number	M-6049-X306
Intake valve	Ford Racing
Intake valve part number	M-6507-J302
Intake valve length	stock
Intake valve material	stainless steel
Intake valve stem diameter	0.343"
Exhaust valve	Ford Racing
Exhaust valve part number	M-6505-G302
Exhaust valve length	stock
Exhaust valve material	stainless steel
Exhaust valve stem diameter	0.343"
Valve spring locator	F4ZE-6A536-AA
Valve spring part number	M-6513-A50
Valve spring installed height	1.820"
Valve spring closed pressure	110
Valve spring open pressure	240 @ 1.400"
Retainer material	steel
Retainer Part Number	M-6514-A50
Valve lock	M-6518-B351 (Comp PL99097)
Valve stem seal part number	M-6571-A50
Rocker stud part number	M-6527-D311
Camshaft part number	35-410-04 (Comp Cam)
Camshaft type	Hydraulic roller
Base circle diameter	N/A

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Intake Centerline	106°
Advertised duration Intake	260° @ .006 lift
Advertised duration Exhaust	260° @ .006 lift
Duration @ .050 Intake	206°
Duration @ .050 Exhaust	206°
Valve lift intake	0.533"
Valve lift exhaust	0.533"
Lifter type	M-6500-R302
Lifter part number	stock
Push rod manufacturer	stock
Push rod length	stock
Push rod part number	M-6565-L302
Push rod diameter	0.312"
Rocker arm part number	M-6564-B351
Rocker arm ratio	1.6:1
Valve lash	0

### Operating Specifications:

Recommended Timing	34° BTDC Total 4000 rpm
Maximum Rated rpm	6000 rpm
Oil Pan	7 Quart plus filter/cooler
Oil Filter	M-6731-FL1A
Oil Pressure	60 - 70psi @ 240° F/4000 rpm
Recommended Oil	15w-50 Mobil 1
Max Oil Temperature	280° F
Coolant Temperature	195° F Thermostat
Spark Plugs	AGSP-32C
Firing Order	1-3-7-2-6-5-4-8
Fuel Pressure (@ carburetor)	6 - 7psi

### Recommended Parts Not Included:

M-12259-M302	Universal Spark Plug Wire Set
or	
M-12259-M301	Pre-fit black Spark Plug Wire Set
M-6375-D302	0-Balance Flywheel (may require M-6397-A302 metric bolt kit dependent on clutch)
M-4216-A210	Flywheel Bolts (note threads have required sealer pre-applied)

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### Standard Operating Specifications:

Main Bearing Clearance	.0020 - .0025"
Rod Bearing Clearance	.0020 - .0025"
Crankshaft End Float	.0050 - .0080"
Wrist Pin to Rod Clearance	.0010 - .0012"
Wrist Pin to Piston Clearance	.0010 - .0012"
Piston to Deck Distance	.0100" Below Deck
Piston to Bore Clearance	(follow Piston mfg. recommendations)
Valve Spring Installed Height	1.8200" (110#)
Intake Valve to Guide Clearance	.0014 - .0016"
Exhaust Valve to Guide Clearance	.0018 - .0022"
Valve Lash	0 Lash plus ¼-turn Pre-load

### 2. Lubrication Priming Procedure:

1. Fill engine with 15w-50 Mobil 1 oil - check oil level.
2. Remove distributor cap.
3. Hand rotate engine to cylinder #1 TDC firing.
4. Mark rotor position on distributor housing.
5. Mark distributor housing and intake manifold interface.
6. Remove distributor.
7. Insert a ¼" deep-well 6-point socket and long extension into distributor hole and engage the oil pump drive shaft.
8. Remove valve covers.
9. Rotate counterclockwise with an electric drill until oil flow is visible in the rocker cover area.
10. Re-install valve covers.
11. Remove socket/extension from distributor hole.
12. Install distributor and align **both** rotor to distributor housing **and** distributor housing to intake manifold marks.  
Note: if distributor does not drop into place, gradually rotate oil pump drive with socket until it does. **Do not** force distributor into position.
13. Install distributor hold down.
14. Recheck oil level.
15. Set timing as recommended (total advance of 34° BTDC @ 4000 rpm).

**NOTE - MAX ENGINE SPEED IS 6200 RPM**

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### 3. Bill of Materials:

PART NUMBER	DESCRIPTION	SUPPLIER
85821	DISTRIBUTOR W/O GEAR	MSD IGNITION
2-1CR5400-927	CONNECTING ROD	SCAT ENTERPRISES
388192-S	TIMING COVER DOWEL	GENERAL FASTENERS
388448-S58	MAIN STUD	GENERAL FASTENERS
388813-S	BALANCER BOLT	GENERAL FASTENERS
AGSP-32C	SPARK PLUG	FORD DEALER SALES
C3AZ-6287-B	ECCENTRIC	FORD DEALER SALES
CB-634H	ROD BEARING	CLEVITE ENGINE PARTS
M-6010-BOSS302	5.0L BOSS BARE BLOCK	FORD RACING
M-6731-FL1A	OIL FILTER	FORD RACING
M-6766-J302	BREATHER CAP	FORD RACING
M-8501-F351	WATER PUMP	FORD RACING
M-7600-A	PILOT BEARING	FORD RACING
DOOZ-8597-B	BY-PASS HOSE	FORD DEALER SALES
E6DZ-6700-A	FRONT COVER SEAL	FORD DEALER SALES
E7AZ-6A674-A	PAN RAIL (L)	FORD DEALER SALES
E7AZ-6A674-B	PAN RAIL (R)	FORD DEALER SALES
EAD-6397-B	TRANSMISSION DOWEL	FORD DEALER SALES
EDC-6378-A	CRANKSHAFT DAMPER WASHER	FORD DEALER SALES
EOAZ-6626-B	OIL PUMP GASKET	FORD DEALER SALES
M-6701-B302	REAR MAIN SEAL	FORD RACING
F1TZ-6023-A	TIMING POINTER	FORD DEALER SALES
F2AE-6890-AA	OIL FILTER INSERT	FORD DEALER SALES
M-6500-R302	HYDRAULIC ROLLER LIFTER	FORD RACING
F3SZ-6278-A	CAMSHAFT GEAR WASHER	FORD DEALER SALES
F3TZ-6020-A	FRONT COVER GASKET	FORD DEALER SALES
M-6710-A50	OIL PAN GASKET	FORD RACING
F87E-8255-CA	THERMOSTAT HOUSING GASKET	FORD DEALER SALES
FOZZ-8592-B	WATER OUTLET	FORD DEALER SALES
M-12270-A302	DISTRIBUTOR CLAMP	FORD RACING
M-12390-K	PLASTIC DISTRIBUTOR GEAR	FORD RACING
M-6065-BOSS	HEAD BOLT KIT	FORD RACING
M-6049-X306	CYLINDER HEAD ASSEMBLY	FORD RACING
M-6051-CP331	CYLINDER HEAD GASKET	FORD RACING
M-6059-D351	FRONT COVER	FORD RACING
35-410-8	ROLLER CAMSHAFT	COMP CAMS
M-6253-A50	ROLLER CAM CONVERSION KIT	FORD RACING
M-6268-A302	TIMING SET	FORD RACING

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M-6303-C340	FORGED CRANKSHAFT	SCAT ENTERPRISES
M-6316-D302	CRANKSHAFT DAMPER	FORD RACING
M-6564-B351	ROLLER ROCKER ARM SET	FORD RACING
M-6582-E302P	VALVE COVER	FORD RACING
M-6600-D2	OIL PUMP	FORD RACING
M-6605-B302	OIL PUMP SHAFT	FORD RACING
EDL-7521	INTAKE MANIFOLD	EDELBROCK
M-9439-A50	INTAKE MANIFOLD GASKET	FORD RACING
MS 590 H	MAIN BEARING	CLEVITE ENGINE PARTS
SBF090030F06	FORGED PISTON & RING SET	MAHLE MOTORSPORTS INC.
6441489	WRIST PIN CLIPS	PART OF PISTON KIT
6457808	PIN - .927	PART OF PISTON KIT
4035MS-15	RING KIT - 4.030" + .005"	PART OF PISTON KIT
9290024	GROOVE LOCK SPACER KIT	PART OF PISTON KIT
M-6565-L302	PUSH RODS (16 PACK)	FORD RACING
XR3Z-8575-BA	THERMOSTAT	FORD DEALER SALES
M-6588-A50	CHANNEL KIT ROCKER ARM	FORD RACING
M-6529-A302	ROCKER ARM SHIM KIT	FORD RACING
42910-S	CAMSHAFT PLATE BOLTS	GENERAL FASTENER
6100SB	OIL SCREEN	CHAMP OIL PANS
C2OE-6A008-A2	HEAD DOWELS	FORD DEALER SALES
CP6100LT	OIL PAN	CHAMP OIL PANS
JR 131	DIPSTICK & TUBE	CHAMP OIL PANS
M-6261-J351	CAMSHAFT BEARINGS	FORD RACING
VS13264T	RUBBER VALVE COVER GASKET	FEL-PRO
EDL 7253	WATER PUMP GASKET SET (service)	EDELBROCK

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### 4. Torque Specifications:

<u>Application</u>	<u>Torque (lb-ft unless otherwise noted)</u>	<u>Recommended Lubricant</u>
Main studs into block 1/2 inch	3-5	Loctite 242
Main nuts 1/2 inch	95-105	Engine oil
Main splayed bolts 3/8 inch	35-45	Engine oil
Rod bolts	50	ARP Moly rod bolt lube
Head bolts	95-105	Engine oil
Rocker hold down bolt	18-20	Engine oil
Intake manifold bolts	18-20	Loctite 242
Flywheel bolts	75-80	Loctite 242 or dry-seal
Vibration damper bolt	90	Engine oil
Oil pump to block	28-35	Loctite 242
Oil pickup tube to main stud	28-35	Loctite 242
Cam bolt	40-45	Loctite 242
Cam retainer plate bolt	9-12	Loctite 242
Tappet guide retainer	9-12	Loctite 242
Oil pickup tube to oil pump	12-18	Loctite 242

### 5. Notes for M-6007-S347JR:

Distributor Gear - Part number M-12390-K is a polymer material gear.

Crankshaft Vibration Damper - Part number M-6316-D302 has an SFI-approved rating and is neutral balance.

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