



**M-6007-D347SR
Sealed Racing Engine
INSTRUCTION SHEET**

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FORD RACING PERFORMANCE PARTS



M-6007-D347SR Sealed Racing Engine Specifications and Owner's Manual

fordracingparts.com/circletrack

Techline 1-800-367-3788

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

IS-1850-0199



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Please visit www.fordracingparts.com for the most current instruction information

**!!! 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 !!!**

INSTALLATION INSTRUCTIONS:

These instructions consist of (4) Sections:

1. Technical Specifications M-6007-D347SR Sealed Crate Engine
2. Lubrication Priming Procedure
3. Bill of Materials Sealed Crate Engine
4. Torque Specifications
5. Engineering Updates for M-6007-D347SR

1. Technical Specifications M-6007-D347SR Sealed Crate Engine

Crate Engine Part Number	M-6007-D347SR
Engine Type	302 Based Small Block
Displacement (cubic inches)	347
Block M-6010-BOSS302	Cast Iron; 4 Bolt Main (center 3)
Bore	4.030
Stroke	3.400
Crankshaft (M-6303-C340)	Forged Steel (Flywheel bolts require sealer)/ 0 balance
Vibration Damper (M-6316-D302)	Neutral Balance
Connecting Rod (2-1CR5400-927)	Forged Steel (5.400 Center to Center .927 Pin)
Piston (SBF090030F06)	Forged Aluminum
Camshaft (M-6250-F303)	Hydraulic Roller
Cam Timing	Position "0" (multi index crank sprocket)
Int./Ex. Lobe Centerlines	109° Int. Centerline/119° Ex. Centerline
Camshaft Duration	226° @ .050" lift (int. and ex.)
Camshaft Lift	.528" (int. and ex.)
Cylinder Head (M-6049-Z304DA)	Aluminum
Chamber Volume	63cc
Valve Diameter Int./Ex.	2.020" Int./1.600 Ex.
Compression Ratio	10:1
Rocker Arm (M-6564-F351)	Aluminum Roller 1.65:1 Ratio
Recommended Timing	34° BTDC Total 4000 rpm
Maximum Rated rpm	6200 rpm
Oil Pan	7 Quart plus filter/cooler
Oil Filter	M-6731-FL1A
Oil Pressure	60-70 psi @ 240° F/ 4000 rpm
Recommended Oil	15w-50 Mobil 1
Max Oil Temperature	280° F
Recommended Coolant Temperature	195° F
Spark Plugs	AGSP-32C

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Firing Order 1-3-7-2-6-5-4-8
Fuel Pressure (@ carburetor) 6-7 psi

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)

Oil pressure fitting in the left front block is ½ pipe thread.

Standard Operating Specifications

Main Bearing Clearance	.0020" -.0025"
Rod Bearing Clearance	.0020" -.0025"
Crankshaft End Float	.005"-.007"
Wrist Pin to Rod Clearance	.0010"-.0012"
Wrist Pin to Piston Clearance	.0010"-.0012"
Piston to Deck Distance	.010" Below Deck (+/- .005")
Piston to Bore Clearance	(follow Piston mfg. recommendations)
Valve Spring Installed Height	1.750" - 1.800"
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 recommended oil.
2. Hand rotate engine to cylinder #1 TDC firing or 0 degree position on balancer
3. Remove distributor cap.
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 oil pump drive shaft counter clockwise with an electric drill until oil flow is visible from pushrods to the rocker arm 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.

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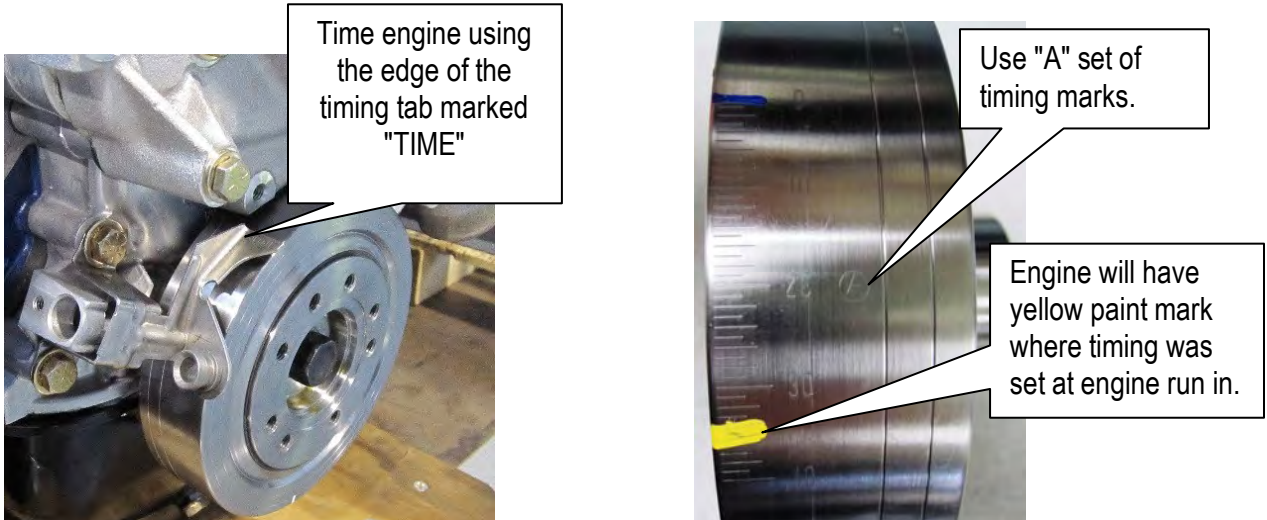
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13. Install distributor hold down.
14. Check oil level.
15. Set timing as recommended (total advance of 34° BTDC @ 4,000 rpm).

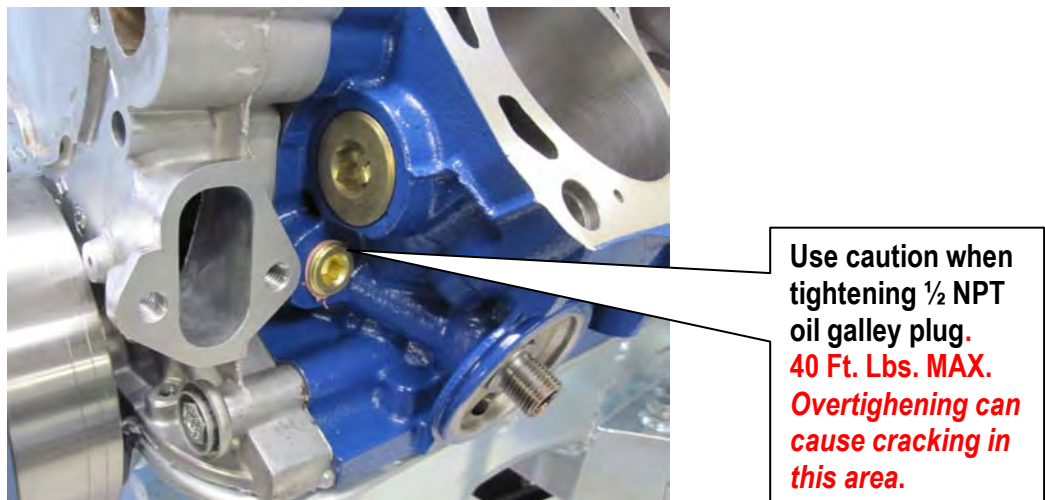
NOTE: MAX ENGINE SPEED IS 6,200 RPM

Setting the Timing

- Dyno testing has shown that 34 degrees of total timing produces the best overall performance.
- Check total timing at 4,000 RPM to make sure the full mechanical advance has been achieved



Installation Notes



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3. Bill of Materials

Assembly Part Number **# M-6007-D347SR**
Description Bill of Materials Sealed Crate Engine
Date of Revision 10-20-2009

COMPONENT PART #	COMPONENT DESCRIPTION	SOURCE
6100SB PICKUP	OIL SCREEN/pick up with pan	Champ Pans
CP6100LT	OIL PAN	Champ Pans
JR 131	DIPSTICK & TUBE	Champ Pans
P13264R	RUBBER V/C GASKET	Fel Pro
388192-S	TIMING COVER DOWEL	Ford Dealer Sales
388813-S	BALANCER BOLT	Ford Dealer Sales
AGSP-32C	SPARK PLUG	Ford Dealer Sales
C3AZ-6287-B302	ECCENTRIC	Ford Dealer Sales
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	TRANS DOWEL	Ford Dealer Sales
F67Z-6378-AA	CRANK DAMPER WASHER	Ford Dealer Sales
EOAZ-6626-B	OIL PUMP PICKUP GASKET	Ford Dealer Sales
F1SZ-6701-A	REAR MAIN SEAL	Ford Dealer Sales
F1TZ-6023-A	TIMING POINTER	Ford Dealer Sales
F1AZ-6890-B	OIL FILTER INSERT	Ford Dealer Sales
F3SZ-6278-A	CAM GEAR WASHER	Ford Dealer Sales
F3TZ-6020-A	FRONT COVER GASKET	Ford Dealer Sales
F5TZ-6710-CB	OIL PAN GASKET	Ford Dealer Sales
F87Z-8255-CA	THERMOSTAT HOUSING GASKET	Ford Dealer Sales
FOZZ-8592-B	WATER OUTLET	Ford Dealer Sales
42910-S	CAM PLATE BOLTS	Ford Dealer Sales
F3ZZ-6A008A	HEAD DOWELS	Ford Dealer Sales
Not Serviced	MAIN BOLT/STUD (for oil pump pickup)	Ford Dealer Sales
M-6014-Z304	HEAD STUD KIT	Ford Racing
M-6731-FL1A	OIL FILTER	Ford Racing
M-12270-A302	DISTRIBUTOR CLAMP	Ford Racing
M-12390-C	DISTRIBUTOR GEAR	Ford Racing
M M-6010-BOSS302	BOSS 302 RACE BLOCK	Ford Racing
M-6049-Z304DA	CYLINDER HEAD	Ford Racing

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M-6051-CP331	CYLINDER HEAD GASKET	Ford Racing
M-6059-D351	FRONT COVER	Ford Racing
M-6250-F303	ROLLER CAMSHAFT	Ford Racing
M-6253-A50	ROLLER CAM CONVERSION KIT	Ford Racing
M-6268-A302	TIMING SET	Ford Racing
M-6303-C340	FORGED CRANKSHAFT	Ford Racing
M-6316-C351	CRANK DAMPER	Ford Racing
M-6500-R302	HYDRAULIC ROLLER LIFTERS	Ford Racing
M-6564-F351	ROCKER ARMS	Ford Racing
M-6582-CT	VALVE COVERS	Ford Racing
M-6600-D2	OIL PUMP	Ford Racing
M-6605-A302	OIL PUMP SHAFT	Ford Racing
M-8501-F351	WATER PUMP	Ford Racing
M-9424-D302	INTAKE MANIFOLD	Ford Racing
M-9439-A50	INTAKE MANIFOLD GASKET	Ford Racing
M-6261-J351	CAM BEARINGS	Ford Racing
SBF090030F06	FORGED PISTON	Mahle
CB-634H	ROD BEARING	Michigan 77/CLEVITE
MS 590 H	MAIN BEARING	Michigan 77/CLEVITE
8582 WBRZG	DISTRIBUTOR	MSD
2-1CR5400-927	CONNECTING ROD	SCAT Enterprises
7187	BREATHER CAP	Specialty Products Co.
T650805	PUSHRODS	Trend
PK-131	CRANK KEY	
EDL 7253	WATER PUMP GASKET SET (service)	EDELBROCK

Note: Cylinder Head Part # M-6049-Z304DA is an assembly consisting of the following:

COMPONENT PART #	COMPONENT DESCRIPTION	SOURCE
DRP154	ROCKER ARM STUD	ARP
M-6513-BH	VALVE SPRING	Ford Racing
M-6536-BH	VALVE SPRING LOCATOR	Ford Racing
M-6518-BH	VALVE KEEPERS	Ford Racing
M-6514-BH	VALVE SPRING RETAINER	Ford Racing
M-6505-B304	EXHAUST VALVE	Ford Racing
M-6507-A304	INTAKE VALVE	Ford Racing
M-6571-B221	VALVE SEAL	Ford Racing
M-6049-Z304D	BARE CYLINDER HEAD	Ford Racing
M-6566-Z304D	PUSHROD GUIDE PLATE	Ford Racing

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Note: Piston Part #SBF090030F06 consists of the following parts:

COMPONENT PART #	COMPONENT DESCRIPTION	SOURCE
4035MS-15	RING SET	MAHLE
6436901	ROUND WIRE LOCK	MAHLE
6457808	PISTON PIN	MAHLE

4. Torque Specifications

Application	Torque (lb*ft unless otherwise noted)	Recommended Lubricant
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 studs into block	3-5	Loctite 242
Head nuts	95-105	Engine oil
Rocker studs	60-65	Loctite PFT
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. Updates for M-6007-D347SR

Distributor Gear - Part # M-12390-K is a polymer material gear was used in production until June 2010. Part # M-12390-C bronze gear replaces the polymer gear on production starting in June 2010.

Cylinder Heads – Part # M-6049-Z304DA has revised intake rocker stud location to improve valve train geometry. This rocker stud revision requires the use of rocker arms M-6564-F351 and pushrod guide plates M-6566-Z304D. The assembly comes with an updated valve spring # M-6516-BH, valve spring locator #M-6536-BH, valve spring retainer #M-6514-BH, and valve locks #M-6518-BH. This head has additional water hole drillings for improved coolant flow.

Crankshaft Vibration Damper – Part #M-6316-C351 has a SFI approved rating. The 28 oz. offset weight is removed to achieve neutral balance.

Pistons – Part # SBF090030F06 (available through Mahle distributors) increased wrist pin diameter, and revised ring pack.

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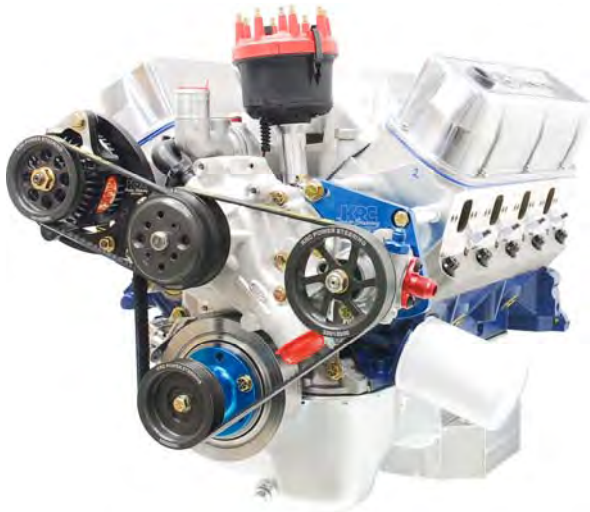
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Recommended parts for Circle Track Racing applications

Front Accessory Drive – KRC Power Steering

- KRC 66347015 - Complete D347SR/S347JR Pavement Front Engine Kit
- KRC 66347115 - Complete D347SR/S347JR Pavement Front Engine Kit with Bolt-On Tank
- KRC 66347020 - Complete D347SR/S347JR Dirt Front Engine Kit
- KRC 66347120 - Complete D347SR/S347JR Dirt Front Engine Kit with Bolt-On Tank
- KRC 66347022 - Complete D347SR/S347JR Single Drive Front Engine Kit with Bellhousing Mounted Power Steering Pump
- KRC 66347024 - Complete D347SR/S347JR Single Drive Front Engine Kit with Bellhousing Mounted Fuel Drive Power Steering Pump
- KRC 66347026 - Complete D347SR/S347JR Single Drive Front Engine Kit Only



KRC Pavement Kit



KRC Dirt Kit

KRC Power Steering
2115 Barrett Park Drive
Kennesaw, GA 30144
Phone: (770) 422-5135
techhelp@krcpower.com

Water neck w/ -16 AN fitting

- UB Machine PN 60-1250
- Moroso PN 63455

Pilot Bearing

- SKF 6202-2RSJEM Bearing 15x35x11 Sealed. 15mm ID accepts GM style input shaft

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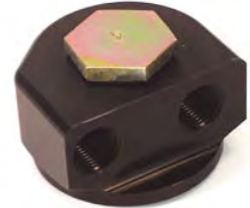


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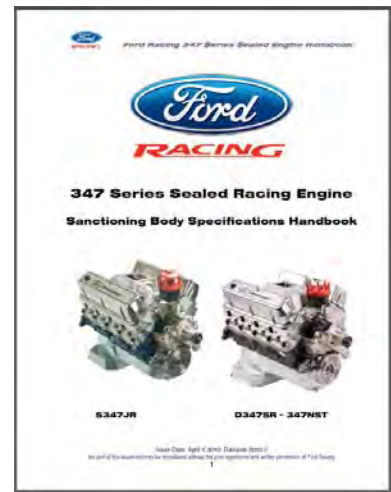
Oil Cooler Adaptor – Use of an oil cooler is recommended

Canton Racing Products - PN 22-595 – FORD 90 DEGREE ROTATING REMOTE FILTER ADAPTER This 90 deg. rotating remote oil filter adapter spins-on to 3/4"-16 thread with 2-5/8" seal stock filter locations and provides 1/2" N.P.T. in and out ports for plumbing a remote filter. It's unique design permits the two 90 degree inlet and outlet ports to be rotated. This simplifies hose and fitting connections for all applications. It is machined from billet aluminum and comes with all necessary hardware and O-Ring seals.



347 Series Sealed Racing Engine Tech Guide

Complete tech specs including rebuild specs and dimensions are included in the Ford Racing 347 Series Sealed Racing Engine Tech Guide. This can be downloaded at <http://www.fordracingparts.com/circletrack> under the D347SR engine section.



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