mercruiser STERN DRIVES & INBOARDS

service bulletin

TO: SERVICE MANAGER ☐ TECHNICIANS ☐
PARTS MANAGER ☐

No. 93-29

MCM 350 EFI Magnum Tournament Ski Inboard Specifications

NOTE: This engine has a steel camshaft and roller lifters.

A. Tune-up Specifications
B. Electrical Specifications
C. Fuel System
D. Internal Engine Specifications
E. Wiring Diagram (Engine)
F. Water Flow Diagram

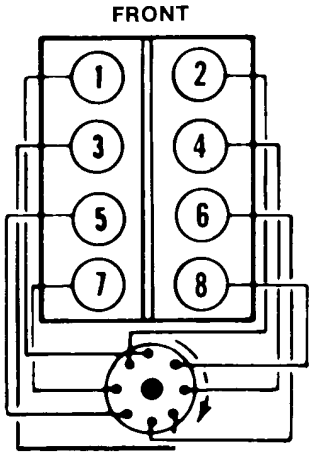
A. TUNE-UP SPECIFICATIONS

Model	350 MTS Inboard
Propshaft Horsepower (Kilowatts)	265 (197)
Displacement	350 CID (5.7L)
Engine Type and Number of Cylinders	V8
Bore	4.00 in. (101.6mm)
Stroke	3.48 in. (88.39mm)
Compression Ratio	9.3:1
Compression Pressure	150 psi (1035 kPa)
Ignition	Delco EST/EFI
Spark Plug Type	AC-MR43T or Champion RV15YC4
Spark Plug Gap	.035 in. (0.9mm)
Timing at Idle RPM	8° BTDC (Note 1)
Maximum RPM at Wide-Open-Throttle	4400-4800
Idle RPM in Forward Gear	550-650
Firing Order	1-8-4-3-6-5-7-2
Fuel Required (Minimum Octane)	87 (R+M) /2 or 92 RON
Fuel Pump Pressure	3-9 psi (21-63 kPa)
Electrical System	12V Negative (-) Ground
Alternator Rating	65 Amps
Minimum Battery Rating Required	550 cca or 90 Ah

Model	350 MTS Inboard
Crankcase Oil Capacity with New Filter	Approx. 4 U.S. Qts. (3.8L) (Note 2)
Oil Pressure at 2000 RPM	30-60 psi (207-414 kPa)
Minimum Oil Pressure @ Idle	4 psi (28 kPa)
Valve Lash	1 Turn Down from Zero Lash
Thermostat	160° F (71° C)
Cooling System Capacity	15 U.S. Qts. (14.2L)
Closed Cooling System Capacity	20 U.S. Qts. (18.9L)
Transmission (Borg-Warner) 1:1	2 U.S. Qts. (1.9L) (Note 2)
Transmission (Borg-Warner) 1.5:1	3 U.S. Qts. (2.8L) (Note 2)

Note 1: Special timing procedure. Same as 502 EFI, see Number 16 Service Manual until Service Supplement (90-823225940) for this engine comes out.

Note 2: Approximately, ALWAYS use dipstick to determine exact quantity of oil required.



Firing Order
1-8-4-3-6-5-7-2

Figure 1. L.H. Rotation

B. ELECTRICAL SPECIFICATIONS

Coil Specification

NOTE: See Service Supplement (90-823225940) for this information.

Starter Motor Specifications

Part Number (Delco-Remy Number)	No Load Test					Brush Spring Tension
	Volts	Min. Amps	Max. Amps	Min. RPM	Max. RPM	
50-812428A_ (90000762) 50-812604A_ (9000768)	10.6	60	90	3,000	3,300	83-104 oz. (2353-2948 g)

C. FUEL SYSTEM

Special Information

The Fuel Pump is different than on other MerCruiser engines. The VST in different than the one used on 454 and 502 EFI engines. They can not be interchanged. Refer to Parts List for this engine for correct part numbers.

D. INTERNAL ENGINE SPECIFICATIONS

Special Camshaft Information

This engine uses a steel camshaft because of the roller lifters in the engine. The fuel pump push rod is made from a material that will not wear when used with a steel camshaft. Do not use a fuel pump push rod from an engine that does not have a steel camshaft because it will wear severely in a short period of time.

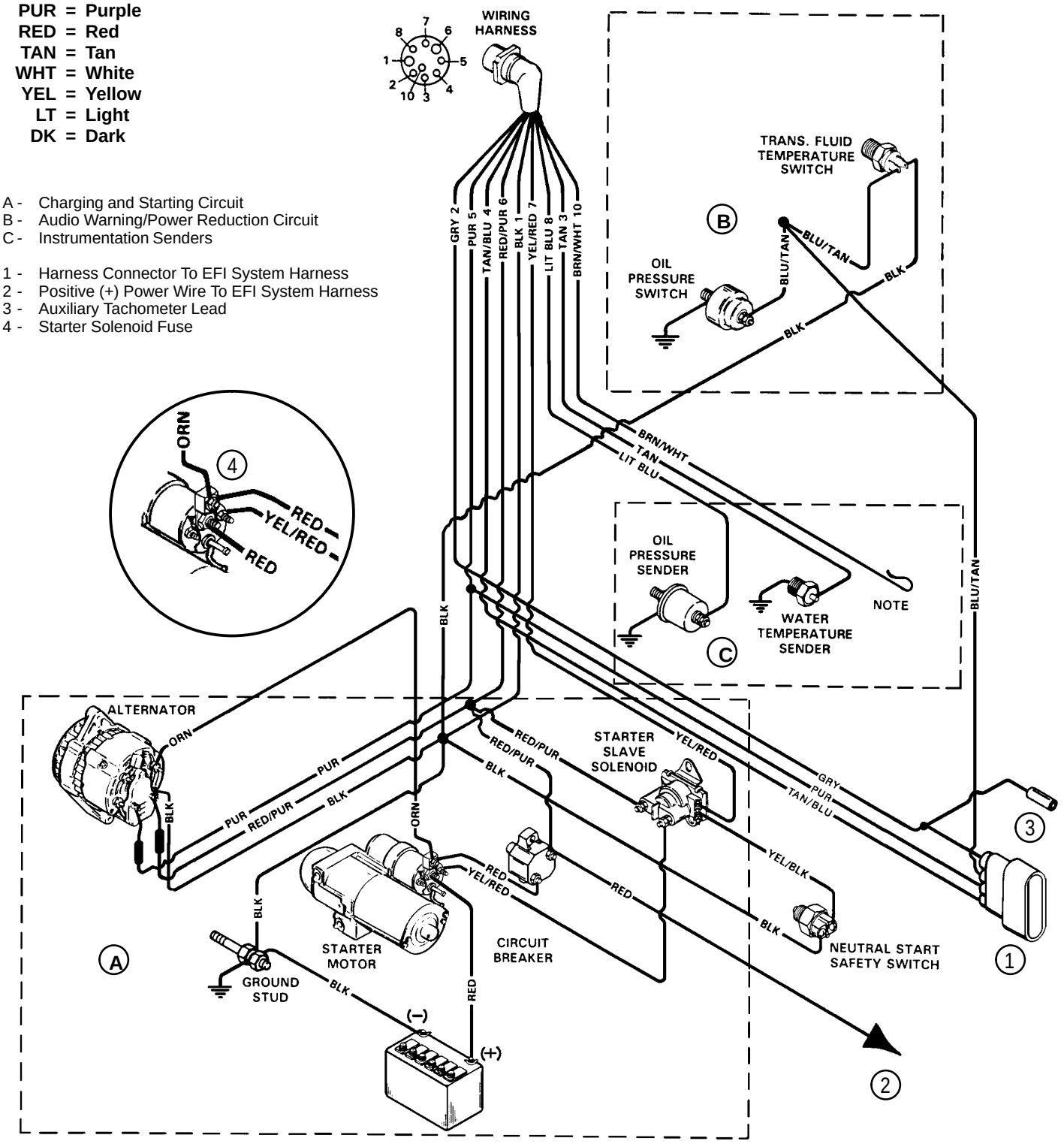
NOTE: Refer to section 3A of Number 17 Service Manual for internal engine specifications. This engine is the same as the MIE 350 MTS.

E. ENGINE WIRING DIAGRAM

BLK = Black
BLU = Blue
BRN = Brown
GRY = Gray
GRN = Green
ORN = Orange
PNK = Pink
PUR = Purple
RED = Red
TAN = Tan
WHT = White
YEL = Yellow
LT = Light
DK = Dark

A - Charging and Starting Circuit
B - Audio Warning/Power Reduction Circuit
C - Instrumentation Senders

1 - Harness Connector To EFI System Harness
2 - Positive (+) Power Wire To EFI System Harness
3 - Auxiliary Tachometer Lead
4 - Starter Solenoid Fuse



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E. ENGINE WIRING DIAGRAM

1 - Vapor Separator Tank (VST)
2 - Throttle Body
3 - Distributor
4 - Coil
5 - Knock Sensor (KS) Module
6 - Data Link Connector (DLC)
7 - Manifold Absolute Pressure (MAP) Sensor
8 - Knock Sensor
9 - Idle Air Control (IAC)
10 - Throttle Position (TP) Sensor
11 - Engine Coolant Temperature Sensor (ECT)
12 - Electronic Control Module (ECM)
13 - Fuel Pump Relay
14 - Ignition/System Relay
15 - Fuel Pump Fuse
16 - Fuse (15 Amp) ECM, DLC, Battery
17 - Fuse (10 Amp) ECM/Ignition/Injector/Knock Sensor Module
18 - Harness Connector To Starting/Charging Harness
19 Harness Connector To Lanyard Stop Switch (Optional)
20 Harness Connector For Dual Engine Data Link Cable
21 - Positive (+) Power Wire To Engine Circuit Breaker

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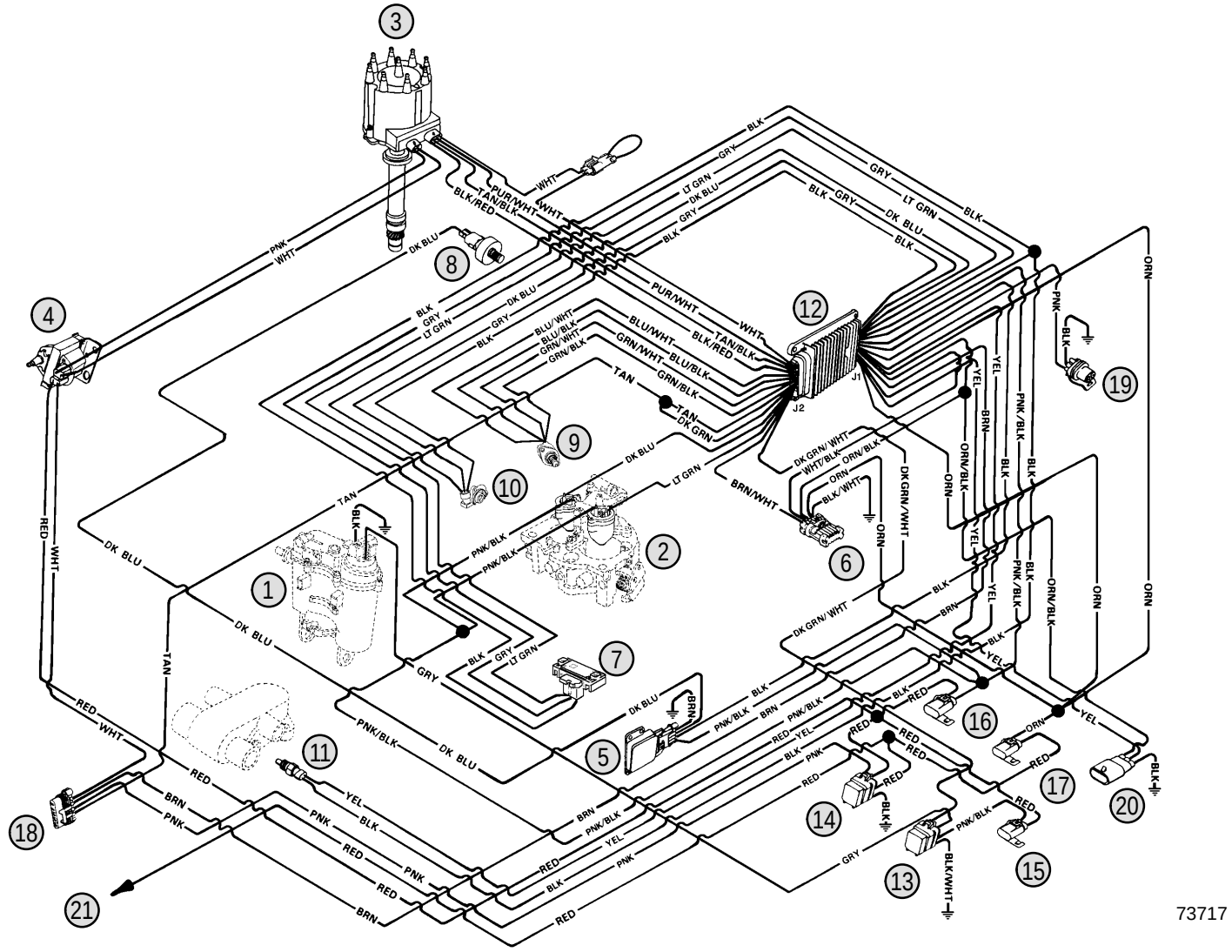
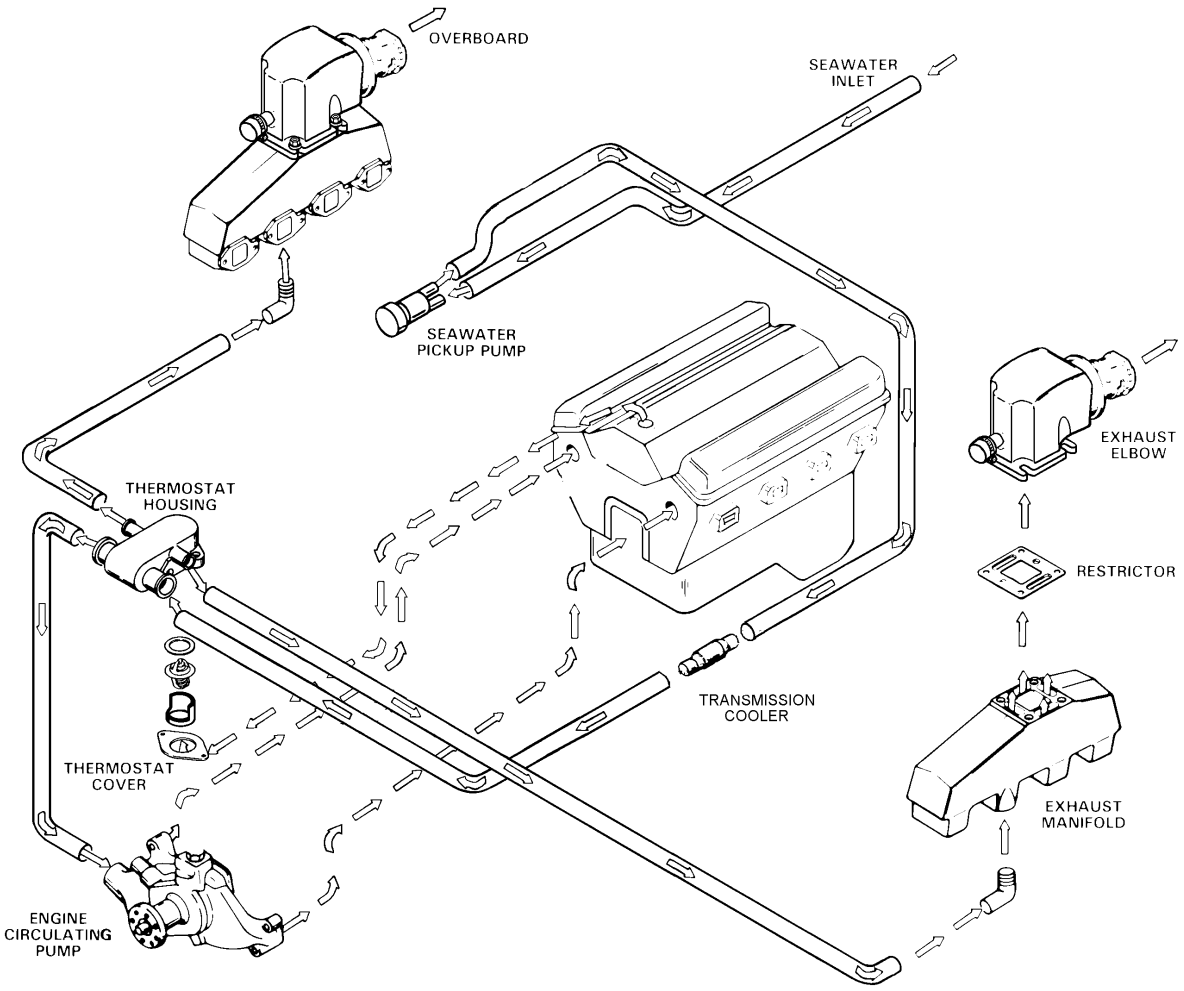


NOTE: All black wires with a ground symbol are interconnected within the E.F.I. system harness.

NOTE: Component position and orientation shown above is arranged for visual clarity and ease of circuit identification.

F. WATER FLOW DIAGRAM



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