

service bulletin

TO: SERVICE MANAGER
TECHNICIANS
PARTS MANAGER

Revised June 1997

No. 97-14

Engine Specification

Model: 1998 MCM 5.0L Alpha and Bravo. Engine **Propshaft Power** 220 hp (164 Kw) Displacement 305 cid (5.0L) Engine Type / Rotation V8 Gen+ / LH Bore x Stroke 3.74 in. x 3.48 in. (95 mm x 88.4 mm) **Compression Ratio** 9.4:1 **Compression Pressure** Minimum 100 psi (690 kPa) Oil Pressure @ 2000 RPM Minimum 30 psi (207 kPa) Oil Pressure @ idle RPM Minimum 4 psi (30 kPa) Valve Adjustment/Lifter 1 Turn Down From '0' Lash / Roller Thermostat 160° F (71° C) Ianition Type of Ignition System Thunderbolt V Firing Order 1-8-4-3-6-5-7-2 Spark Plug Type Original: AC-MR43LTS Others: NGK BPR6EFS, Champion RS12YC Spark Plug Gap .045 in. (1.1 mm) Initial Ignition Timing 10° BTDC at Idle RPM Electrical Alternator 55 amps **Battery Required** Minimum 375 cca or 475 mca (90 Ah), 12v Negative (-) Ground Fuel Type of Fuel System MerCarb 2 bbl Carburetor with Electric Fuel Pump Minimum 87 Octane [R+M/2] / (90 RON) Fuel Required **Fuel Pressure** 3-7 psi (21-48 kPa) RPM Idle RPM 650 RPM in Neutral Gear Full Throttle RPM 4400-4800 RPM Carburetor Preliminary Idle Mixture 1-1/4 Turns 11/32 in. (9 mm) Float Level 15/16 in. (24 mm) Float Drop 5/64 in. [.080 in.] (2 mm) Choke Unloader/Pull-Off Choke Setting 2 Marks Clockwise **Capacities** Oil Change with Filter Approx. 5-1/2 US Qts. (5.2L) **Closed Cooling System** 14-1/2 US Qts. (13.7L) Sterndrive Gear Lube Same as Before **MIE Transmission** N/A MCM BlackTrac N/A Torques Exhaust Manifold or Elbow 25 lb. ft. (34 N·m) Intake Manifold 132 lb. in. (15 N·m) Same as 5.7L, See Service Manual #17 Cylinder Head Flywheel 75 lb. ft. (100 N·m) Flywheel Coupler/Driveplate 35 lb. ft. (48 N·m)

Model: 1998 MCM 5.0L EFI Alpha and Bravo.

Engine Propshaft Power Displacement Engine Type / Rotation Bore x Stroke Compression Ratio Compression Pressure Oil Pressure @ 2000 RPM Oil Pressure @ idle RPM Valve Adjustment/Lifter Thermostat	240 hp (178 Kw) 305 cid (5.0L) V8 Gen+ / LH 3.74 in. x 3.48 in. (95 mm x 88.4 mm) 9.4:1 Minimum 100 psi (690 kPa) Minimum 30 psi (207 kPa) Minimum 4 psi (30 kPa) 1 Turn Down From '0' Lash / Roller 160° F (71° C)
<u>Ignition</u> Type of Ignition System Firing Order Spark Plug Type Spark Plug Gap Initial Ignition Timing	Delco EST 1-8-4-3-6-5-7-2 Original: AC-MR43LTS Others: NGK BPR6EFS, Champion RS12YC .045 in. (1.1 mm) 8° BTDC at Idle RPM
<u>Electrical</u> Alternator Battery Required	65 amps Minimum 550 cca or 700 mca (120 Ah), 12v Negative (-) Ground
<u>Fuel</u> Type of Fuel System Fuel Required Fuel Pressure	Throttle Body with Electric Fuel Pump Minimum 87 Octane [R+M/2] / (90 RON) 30 psi (207 kPa)
<u>RPM</u> Idle RPM Full Throttle RPM	600 RPM 4400-4800 RPM
<u>Carburetor</u> Preliminary Idle Mixture Float Level Float Drop Choke Unloader/Pull-Off Choke Setting	N/A N/A N/A N/A
<u>Capacities</u> Oil Change with Filter Closed Cooling System Sterndrive Gear Lube MIE Transmission MCM BlackTrac	Approx. 5-1/2 US Qts. (5.2L) 14-1/2 US Qts. (13.7L) Same as Before N/A N/A
<u>Torques</u> Exhaust Manifold or Elbow Intake Manifold Cylinder Head Flywheel Flywheel Coupler/Driveplate	25 lb. ft. (34 N·m) 132 lb. in. (15 N·m) Same as 5.7L, See Service Manual #17 75 lb. ft. (100 N·m) 35 lb. ft. (48 N·m)

Models: 1998 MCM 5.7L Alpha and Bravo, MIE 5.7L Ski, MIE 5.7L Inboard.

Engine Propshaft Power MCM 250 hp (186 Kw), MIE 260 hp (194Kw) Displacement 350 cid (5.7L) Engine Type / Rotation V8 Gen+ / LH Bore x Stroke 4.00 in. x 3.48 in. (101.6 mm x 88.4 mm) **Compression Ratio** 9.4:1 **Compression Pressure** Minimum 100 psi (690 kPa) Oil Pressure @ 2000 RPM Minimum 30 psi (207 kPa) Oil Pressure @ idle RPM Minimum 4 psi (30 kPa) Valve Adjustment/Lifter 1 Turn Down From '0' Lash / Roller Thermostat 160° F (71° C) Ignition Type of Ignition System Thunderbolt V Firing Order 1-8-4-3-6-5-7-2 Spark Plug Type Original: AC-MR43LTS Others: NGK BPR6EFS, Champion RS12YC Spark Plug Gap .045 in. (1.1 mm) Initial Ignition Timing 10° BTDC at Idle RPM Electrical Alternator 55 amps **Battery Required** Minimum 375 cca or 475 mca (90 Ah), 12v Negative (-) Ground Fuel Type of Fuel System MerCarb 2 bbl Carburetor with Electric Fuel Pump Fuel Required Minimum 87 Octane [R+M/2] / (90 RON) **Fuel Pressure** 3-7 psi (21-48 kPa) RPM Idle RPM 650 RPM in Neutral Gear Alpha, Bravo, Ski: 4400-4800 RPM, Inboard: 4200-4600 RPM Full Throttle RPM Carburetor Preliminary Idle Mixture 1-1/4 Turns Float Level 11/32 in. (9 mm) Float Drop 15/16 in. (24 mm) Choke Unloader/Pull-Off 5/64 in. [.080 in.] (2 mm) **Choke Setting** 2 Marks Clockwise Capacities Oil Change with Filter Approx. 5-1/2 US Qts. (5.2L) Closed Cooling System 14-1/2 US Qts. (13.7L) Sterndrive Gear Lube Same as Before **MIE Transmission** Same as Before MCM BlackTrac N/A Torques Exhaust Manifold or Elbow 25 lb. ft. (34 N·m) Intake Manifold 132 lb. in. (15 N·m) Cylinder Head See Service Manual #17 75 lb. ft. (100 N·m) Flvwheel Flywheel Coupler/Driveplate 35 lb. ft. (48 N·m)

Models: 1998 MCM 350 Mag MPI Alpha and Bravo, MIE 350 Mag MPI Ski, MIE 350 Mag MPI Inboard.

Engine Propshaft Power Displacement Engine Type / Rotation Bore x Stroke Compression Ratio Compression Pressure Oil Pressure @ 2000 RPM Oil Pressure @ idle RPM Valve Adjustment/Lifter Thermostat	300 hp (224 Kw) 350 cid (5.7L) V8 Gen+ / LH 4.00 in. x 3.48 in. (101.6 mm x 88.4 mm) 9.4:1 Minimum 100 psi (690 kPa) Minimum 30 psi (207 kPa) Minimum 4 psi (30 kPa) 1 Turn Down From '0' Lash / Roller 160° F (71° C)
<u>Ignition</u> Type of Ignition System Firing Order Spark Plug Type Spark Plug Gap Initial Ignition Timing	Delco EST 1-8-4-3-6-5-7-2 Original: AC-MR43LTS Others: NGK BPR6EFS, Champion RS12YC .045 in. (1.1 mm) 8° BTDC at Idle RPM
<u>Electrical</u> Alternator Battery Required	65 amps Minimum 550 cca or 700 mca (120 Ah), 12v Negative (-) Ground
<u>Fuel</u> Type of Fuel System Fuel Required Fuel Pressure	Multi Port Fuel Injection with Electric Fuel Pump Minimum 87 Octane [R+M/2] / (90 RON) 30 psi (207 kPa)
<u>RPM</u> Idle RPM Full Throttle RPM	600 RPM Alpha, Bravo, Ski: 4600-5000 RPM, Inboard: 4400-4800 RPM
<u>Carburetor</u> Preliminary Idle Mixture Float Level Float Drop Choke Unloader/Pull-Off Choke Setting	N/A N/A N/A N/A
<u>Capacities</u> Oil Change with Filter Closed Cooling System Sterndrive Gear Lube MIE Transmission MCM BlackTrac	Approx. 5-1/2 US Qts. (5.2L) 14-1/2 US Qts. (13.7L) Same as Before Same as Before Approx. 2 US Qts. (1.9L)
<u>Torques</u> Exhaust Manifold or Elbow Intake Manifold Cylinder Head Flywheel Flywheel Coupler/Driveplate	25 lb. ft. (34 N·m) 132 lb. in. (15 N·m) See Service Manual #17 75 lb. ft. (100 N·m) 35 lb. ft. (48 N·m)

Models: 1998 MCM 7.4L MPI Bravo, MIE 7.4L MPI Inboard.

Engine Propshaft Power Displacement Engine Type / Rotation Bore x Stroke Compression Ratio Compression Pressure Oil Pressure @ 2000 RPM Oil Pressure @ idle RPM Valve Adjustment/Lifter Thermostat	310 hp (231 Kw) 454 cid (7.4L) V8 L29 / LH 4.25 in. x 4.00 in. (108 mm x 101.6 mm) 8.0:1 Minimum 100 psi (690 kPa) Minimum 30 psi (207 kPa) Minimum 4 psi (28 kPa) Not Adjustable, Torque to 45 lb. ft. (61 N·m) / Roller 160° F (71° C)
<u>Ignition</u> Type of Ignition System Firing Order Spark Plug Type Spark Plug Gap Initial Ignition Timing	Delco EST 1-8-4-3-6-5-7-2 Original: AC-MR43LTS Others: NGK BPR6EFS, Champion RS12YC .045 in. (1.1 mm) 8° BTDC at Idle RPM
<u>Electrical</u> Alternator Battery Required	65 amps Minimum 650 cca or 825 mca (150 Ah), 12v Negative (-) Ground
<u>Fuel</u> Type of Fuel System Fuel Required Fuel Pressure	Multi Port Fuel Injection with Electric Fuel Pump Minimum 87 Octane [R+M/2] / (90 RON) 36 psi (248 kPa)
<u>RPM</u> Idle RPM Full Throttle RPM	600 RPM Bravo 4200-4600 RPM, Inboard: 4000-4400 RPM
<u>Carburetor</u> Preliminary Idle Mixture Float Level Float Drop Choke Unloader/Pull-Off Choke Setting	N/A N/A N/A N/A
<u>Capacities</u> Oil Change with Filter Closed Cooling System Sterndrive Gear Lube MIE Transmission MCM BlackTrac	Approx. 7 US Qts. (6.6L) 18 US Qts. (17L) Same as Before Same as Before Approx. 2 US Qts. (1.9L)
<u>Torques</u> Exhaust Manifold or Elbow Intake Manifold Cylinder Head Flywheel Flywheel Coupler/Driveplate	25 lb. ft. (34 N·m) Lower Bolts: 30 lb. ft. (40 N·m) Upper Bolts: 124 lb. in. (14 N·m) 85 lb. ft. (115 N·m) 65 lb. ft. (90 N·m) 35 lb. ft. (48 N·m)

Model: 1998 MIE 454 Mag MPI Horizon Inboard.

Engine Propshaft Power Displacement Engine Type / Rotation Bore x Stroke Compression Ratio Compression Pressure Oil Pressure @ 2000 RPM Oil Pressure @ idle RPM Valve Adjustment/Lifter Thermostat	380 hp (283 Kw) 454 cid (7.4L) V8 Gen VI / LH 4.25 in. x 4.00 in. (108 mm x 101.6 mm) 8.6:1 Minimum 100 psi (690 kPa) Minimum 30 psi (207 kPa) Minimum 4 psi (28 kPa) Non Adjustable, Torque to 45 lb. ft. (61 N·m) / Roller 160° F (71° C)
<u>Ignition</u> Type of Ignition System Firing Order Spark Plug Type Spark Plug Gap Initial Ignition Timing	Delco EST 1-8-4-3-6-5-7-2 Original: NGK BR6FVX Platinum Others: AC-MR43T, NGK BP6FS NGK: .035 in. (0.9 mm) AC: .040 in. (1 mm) 8° BTDC at Idle RPM
<u>Electrical</u> Alternator Battery Required	65 amps Minimum 650 cca or 825 mca (150 Ah), 12v Negative (-) Ground
<u>Fuel</u> Type of Fuel System Fuel Required Fuel Pressure	Multi Port Fuel Injection with Electric Fuel Pump Minimum 87 Octane [R+M/2] / (90 RON) 36 psi (248 kPa)
<u>RPM</u> Idle RPM Full Throttle RPM	600 RPM 4400-4800 RPM
<u>Carburetor</u> Preliminary Idle Mixture Float Level Float Drop Choke Unloader/Pull-Off Choke Setting	N/A N/A N/A N/A
<u>Capacities</u> Oil Change with Filter Closed Cooling System Sterndrive Gear Lube MIE Transmission MCM BlackTrac	Approx. 7 US Qts. (6.6L) 18 US Qts. (17L) N/A Same as Before N/A
<u>Torques</u> Exhaust Manifold or Elbow Intake Manifold Cylinder Head Flywheel Flywheel Coupler/Driveplate	25 lb. ft. (34 N·m) 30 lb. ft. (41 N·m) 85 lb. ft. (115 N·m) 70 lb. ft. (95 N·m) 35 lb. ft. (48 N·m)