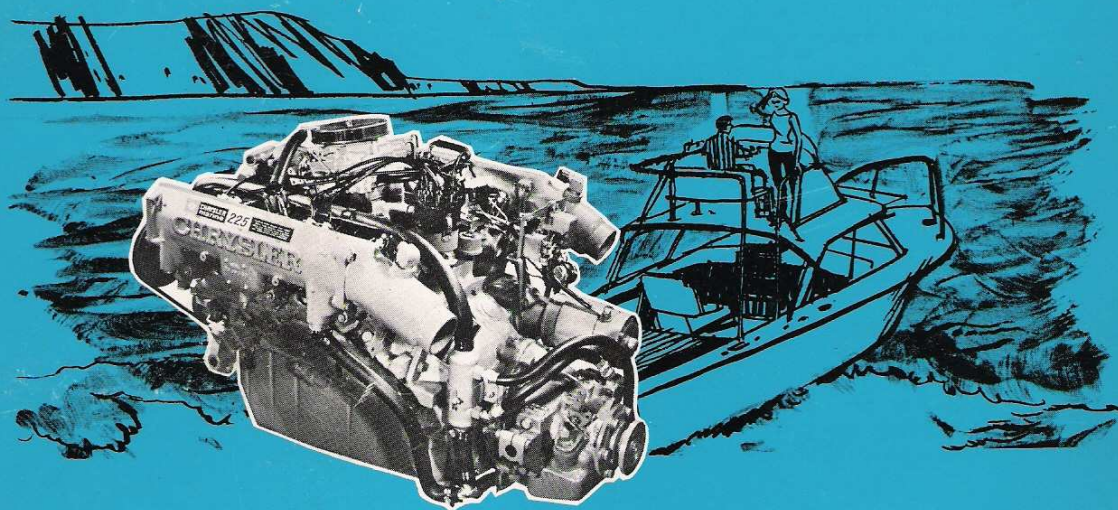


Chrysler Marine Engine



CHRYSLER 225

OPERATING MANUAL

WARRANTY

Marine Division of Chrysler Corporation warrants its new products to be free from defects in material and workmanship under normal use and service during the period specified below for the type of product indicated:

Marine Engines—for one (1) year or three hundred (300) hours, whichever occurs first, after delivery to the first user thereof.

Engine Accessories (such as ignition system, starting devices, batteries, alternators, carburetors or other trade accessories) in finished form and installed on a Marine Engine and purchased new from other manufacturers for that purpose—For (1) ninety (90) days after delivery to the first user, or (2) the period specified by such other manufacturer.

All other new products (not otherwise covered hereby)—for ninety (90) days from the date such products were shipped from Marine Division's factory.

During the warranty periods specified above, Marine Division will make good at its factory any part or parts of such products returned to it (with transportation charges prepaid) which its examination shall disclose to its satisfaction to have been thus defective; provided it receives written notice of any such claimed defect within thirty (30) days from the date of discovery.

This warranty will not apply to any Marine Division engine or product which, in the judgment of Marine Division, has been improperly installed, or which has been subject to misuse, negligence or accident, or which shall have been equipped or repaired with any parts not supplied or approved by Marine Division, or which shall have been altered or repaired outside of one of its authorized service stations in any way so as, in the judgment of Marine Division, to affect the stability or reliability of such engine or product.

This express warranty is the only warranty applicable to the Marine Division products described herein and is expressly in lieu of any warranties otherwise implied by law (including, but not limited to, implied warranties of merchantability or fitness for any particular purpose). The remedies available under this express warranty shall be the only remedies available to the purchaser with respect to defects in materials or workmanship or otherwise. Marine Division neither assumes, nor authorizes anyone to assume for it, any liability in connection with the sale of its products.

IMPORTANT

THE WARRANTY CERTIFICATION CARD INCLUDED WITH EACH ENGINE MUST BE COMPLETED AND MAILED AT THE TIME OF SALE BY THE ORIGINAL RETAIL PURCHASER.

FOREWORD

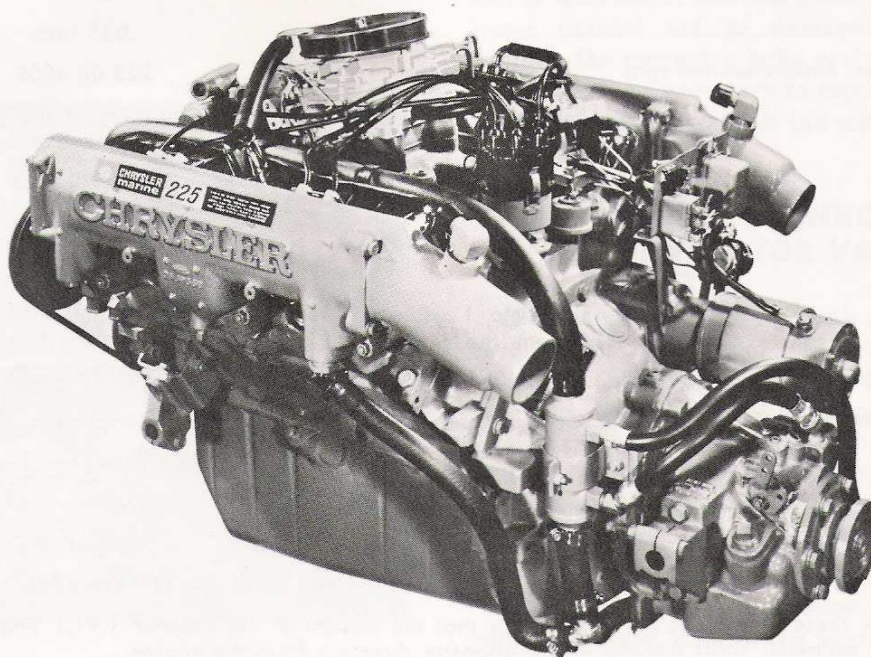
This Operator's Manual is published as a guide and reference to assist the new Owner in obtaining from his eight cylinder Marine Engine many hours of low-cost trouble free service.

In order to obtain the advantages of these qualities over a long period of time, it is necessary only that the engine be treated with reasonable care which will insure all your demands for performance, power and dependability.

The nation wide organization of Chrysler Distributors & Distributor Dealers are ready to aid you in maintaining your Chrysler Marine Engine in top operating condition. They are equipped with the necessary special tools and employ skilled mechanics and technicians who have been specially trained to work on Chrysler Marine Engines.

The Manual explains the terms of our Warranty as well as providing you with a regular, easy to follow maintenance service plan for your Chrysler Marine Engine.

Many hours of carefree boating are yours, if the above instructions are followed. They will insure dependable operation, performance and complete satisfaction.



MODEL LM318-BW

DATA AND SPECIFICATIONS

Model Name	Chrysler 225
Engine Designation	LM318BW
Type	8 Cylinder O.H.V. 4 Stroke Cycle Gasoline
Piston Displacement	318 Cubic Inch
Bore	3.91"
Stroke	3.31"
Compression Ratio	8.5:1
Compression Pressure @ 150 rpm Cranking Speed— Wide Open Throttle	120 to 150 psi.
Maximum Variations Between Cylinders (any one engine)	25 psi.
Dwell Angle, Degrees	28 to 32
Ignition Timing	2½° B.T.C.
Contact Gap018"
Fuel Grade	Regular Leaded Type (Not Sub-Regular)
Spark Plug Make	Champion
Model	XN-9Y
Gap035 inch
Horsepower @ Max. Recommended rpm	225 @ 4000
Firing Order	Referring to the rotation and reduction design- ation on the engine Serial Number Plate

For R10, R13, R15, R25, R30 and L19**
The Firing Order is: 1-2-7-5-6-3-4-8

For L10, L13, L15, L25, L30 and R19**
The Firing Order is: 1-8-4-3-6-5-7-2

The No. 1 cylinder is the front cylinder on the left side when viewed
from the rear of the engine looking towards the water pump.

Oil Pressure at 2000 rpm (Engine Speed)	45-60 psi.
Oil Crankcase Capacity	*7 Qts. at 7° Angle (Flat Bottom Pan)
Oil Grade	MS Detergent Type
Tappet Clearance Adjustments	None Required
Battery Ground	Negative

*When the oil filter is changed add one quart. **Fill only to the Full Mark. Do Not Over Fill.**

**The reason for these exceptions L19 and R19 is that the Design of the Warner 1.91:1 Reduction gear
results in the propeller shaft turning in the opposite direction from the engine.

IDENTIFICATION

A brass name plate (Fig. 1) is attached to the engine, showing the model symbol, type and serial number of the engine. Reading from the left to the right on the name plate, the first item is the model symbol, LM-318 which indicates that the engine is a Chrysler Marine Model LM-318 8-cylinder engine.

The next two letters code the engine carburetion and final drive. These symbols are followed by a dash and then a letter denoting propeller shaft rotation.

The next number on the nameplate indicates the reduction ratio of the reverse gear, i.e., "10" = 1:1 or straight drive, "15" = 1.5:1, "25" = 2.5:1. When used with outdrives the same procedures are used.

This is followed by a dash and then the engine specification number. The engine serial number is below the model and specification number. In all events this information should be carefully noted and recorded and kept with the ship's papers to identify the engine, and always referred to in servicing the engine.

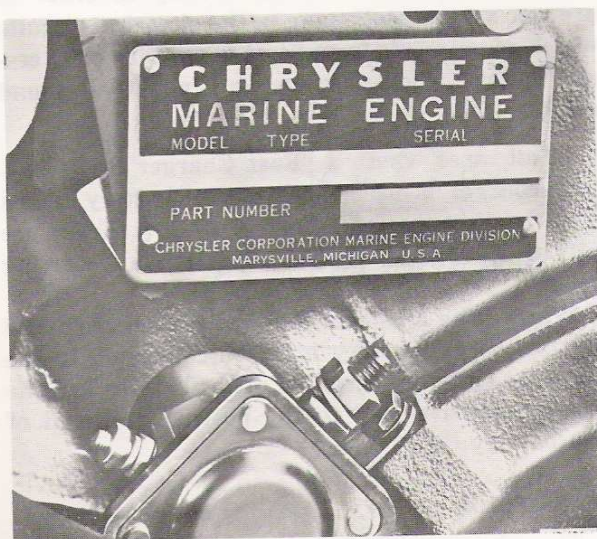


Figure 1—Engine Model and Serial Number Plate

COOLING SYSTEM

The belt driven dual pocket water pump is mounted at the front of the engine. It is of the semi-positive displacement type with flexible rubber impellers. The water pump has permanent type water seals and pre-lubricated and sealed ball bearings and requires no periodic adjustment, lubrication or seasonal servicing, *except in layup*.

ACCESSORY DRIVE

Satisfactory performance of the belt drive accessories depends on the maintenance of the proper belt tension. If the specified tensions are not maintained, belt slippage may cause engine over-heating, reduced alternator charging rates, and greatly reduced belt life. To avoid any such adverse effects, the following service procedures should be followed:

The belt tension can be checked by measuring the deflection of the belt at the mid-point between two pulleys under a five-pound push or pull. A small spring scale can be used to establish the five-pound load. The deflection should be $\frac{1}{4}$ inch.

To adjust the belt, loosen the mounting bolts on the alternator, and use a bar to apply tension, being careful not to damage the alternator. Tighten the mounting bolts and check the deflection. It may be necessary to repeat this procedure several times to establish the correct tension.

ENGINE CRANKCASE VENTILATOR VALVE

All models are equipped with a positive crankcase ventilating system (Fig. 2). The system must be kept clean to maintain good engine performance and durability as deposits will accumulate in the valve, hoses and the carburetor. The system should be inspected every 100 hours and the valve replaced every 250 hours. This service will be required more frequently if the engine is used for short trips or frequent idling.

Every 100 hours of operation, with the engine running at idle, remove the ventilation valve and cap assembly from the rocker cover. If the valve is not plugged, a hissing noise will be heard as air

passes through the valve and a strong vacuum should be felt when a finger is placed over the valve inlet. Replace the ventilator valve assembly and remove the inlet breather cap. With the engine running at idle, loosely hold a piece of stiff paper over the oil fill pipe. It should be sucked against the oil fill pipe with a holding force. A final test should be made to be certain the valve shuttle is free. A clicking noise should be heard when the valve is shaken (engine not running). If the noise is heard, the unit is satisfactory and no further service is necessary. If the valve does not click when shaken or if the paper is not sucked against the fill pipe, the valve should be replaced. Do not attempt to clean the valve.

With a new valve installed, if the vacuum can be felt with the engine idling, the system is satisfactory. If the vacuum cannot be felt with a new valve installed, it will be necessary to clean the hose and the passages in the lower part of the carburetor. Remove the carburetor from the engine and clean crankcase passage as follows. The carburetor passages should be cleaned by hand turning a $\frac{1}{4}$ " drill in the openings to dislodge solid particles. Blow clean with compressed air. If a $\frac{1}{4}$ " drill appears to be too large, use a smaller drill. It is not necessary to disassemble the carburetor for this service.

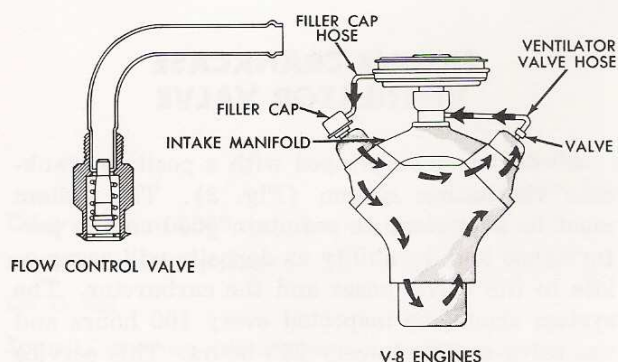


Figure 2—Positive Crankcase Ventilation System

FUEL SYSTEM

It is very important that the gasoline used meets the requirements for your engine. Use of gasoline which does not meet these requirements can result in burned valves and pistons, poor engine performance and shorter engine life.

Regular grade leaded type gasoline is required.

CARBURETOR AND FUEL LINES

It is important that all fuel connections be kept tight and that dirt be kept out of the carburetor. Clean the flame arrestor periodically as operating conditions warrant.

The carburetor is equipped with non-adjustable high speed jets which require no attention. The engine idle speed should be approximately 600 to 650 rpm in gear.

ELECTRICAL SYSTEM

The electrical system includes an alternator, alternator regulator and cutout relay, starting motor, starting motor solenoid, ignition distributor, ignition coil, ballast resistor, spark plugs, together with the necessary cables and connecting wires (Fig. 3).

WARNING: Extreme caution must be exercised when installing a battery, attaching a battery charger or using a booster battery in order to prevent extensive damage to the electrical circuits which could result from reverse polarity or excessive voltage. The entire system is negative ground only.

In all cases where a "Fast Charger" type battery charger is used, both of the battery cables must be disconnected from the battery. Never use a "Fast Charger" as a booster to provide starting voltage.

When using a booster battery, the negative lead of the booster battery must be connected to the negative (ground) terminal of the battery and the booster positive lead to the positive terminal of the battery.

SPARK PLUGS

The plugs supplied are Champion XN-9Y or equivalent. The gap at the electrodes should be .035 inch.

OPERATING INSTRUCTIONS

Always ventilate the vessel and examine the bilge for leaks every day. Make a visual inspection of the fuel system and the cooling system during this inspection. Check the engine oil level indicator. The oil level should be maintained between the marks on the dipstick. Do not over fill.

PREPARATION OF A NEW OR REBUILT ENGINE

Before placing a new or rebuilt engine in service, make a thorough inspection for evidence of damage or loose parts.

Make "Daily Inspection" as outlined in the Maintenance Section.

ENGINE OIL

See that the crankcase contains the correct amount of clean new Engine Oil. After 50 hours of operation the crankcase may be drained and refilled with oil as recommended in the Lubrication Section. Do not over fill.

ENGINE ACCESSORIES

See that all points requiring lubrication are properly supplied. Check the storage battery terminals to see that they are tight and clean. Check the electrolyte in the battery.

ELECTRICAL CONNECTIONS

See that all electrical connections are tight and clean. Check each spark plug and tighten to 30 foot-pounds torque. See "Operator's Adjustments" for servicing the spark plugs.

ATTACHING PARTS

See that all nuts, bolts and screws that attach parts are secure.

PRESTARTING INSTRUCTIONS

When the engine is in daily use, inspect it daily and always before starting after a period of idleness.

ENGINE OIL LEVEL

Inspect the oil level and add oil, if required, in the engine and the reverse gear. Do not over fill.

FUEL

Check the fuel supply.

LEAKS

Inspect the engine and exhaust system in general for evidence of fuel, oil, or water leakage.

DRAIN PLUGS

Make sure all water drain plugs are closed or installed.

STARTING THE ENGINE

1. Place gear control lever in neutral position.
2. Set throttle control approximately one-third open.
3. Turn ignition switch on.
4. Press starter switch until engine starts, but not longer than fifteen seconds at a time.
5. Adjust throttle to produce a tachometer reading of 750-850 rpm.
6. Observe oil pressure gauge. If oil pressure gauge does not register after about 10 seconds, stop the engine and investigate.
7. New engines should not be operated at high speed during the first fifteen to twenty hours. Neither should they operate at idle speed for long periods of time when new.

STOPPING THE ENGINE

Close the throttle gradually and move control gear lever to neutral position. Allow engine to run at idling speed for approximately fifteen to twenty seconds. Then with throttle closed, turn off the ignition.

OIL PRESSURE

With engine turning at 2000 revolutions per minute and water at normal operating temperature, oil pressure should be between 45 and 60 pounds. If a sudden drop in regulated oil pressure should occur, check the oil level in engine crankcase and add oil if necessary. If this does not alleviate the condition, the oil filter may be plugged and should be changed.

WATER TEMPERATURE

The thermostat will automatically maintain the water temperature of the cooling system between 140 to 165 degrees on a raw water system and 160 to 200 degrees on a fresh water system. If the water temperature exceeds maximum, stop the engine and investigate the water circulation system. Temperature may exceed the recommended maximum when started up after a hard run.

GENERAL PRECAUTIONS

Always be sure that the engine compartment is ventilated adequately. Air is just as important as gasoline in the operation of an internal combustion engine.

Never cast off until the engine is running smoothly.

After a hard run, let the engine idle for 15 seconds before turning off the ignition. This will prevent the engine from kicking back and drawing in vapors from the exhaust.

Keep the fuel tank as full as possible at all times. This prevents the entry of moisture-laden air and helps to keep condensation out of the fuel system.

Make frequent checks on the instruments and gauges while operating the engine. Trouble is usually indicated beforehand by unusual readings. In most instances, proper interpretation of the gauges, together with prompt action in making some slight adjustment will forestall difficulty. It is not advisable to wait until something happens to the engine before taking the necessary steps to correct the situation.

EXHAUST SYSTEM

The exhaust manifolds require no maintenance or adjustment other than inspection occasionally to determine if any leaks at the fittings may have developed as a result of vibration.

LUBRICATION

SELECTION OF LUBRICANT

The type of service for which an engine oil is intended is usually designated by the letters MS, MM, ML on the container. These symbols are service classifications established by the API (American Petroleum Institute). This system does not replace the SAE (Society of Automotive Engineers) grade number of the oil which indicates the viscosity of the oil.

For the best performance and engine protec-

tion, the factory recommends that the operator select:

1. An oil which conforms to the requirements of API Classification "For Service MS".

2. An oil of proper SAE number in accordance with the recommendations for the anticipated temperature:

"SAE 30" should be used when the anticipated atmospheric temperature will be above 32°F., SAE 20W in temperatures below 32°F. SAE 10W-30 oils may be used to ambient temperatures as low as +10°F.

Chrysler Corporation does not recommend the use of any lubricant which does not have both an "SAE" designation and an "MS" service classification on the container.

The oil added to the engine at the factory should be retained for the first 50 hours of operation. If it becomes necessary to add oil during this initial period, an oil "For Service MS" of the proper grade for the anticipated temperature should be used. Periodic oil changes, thereafter, using the proper grade for the anticipated temperature range and designated "For Service MS" should be made every 50 hours or two months, whichever occurs first.

Between oil changes, check the oil level daily. The level indicator is of the bayonet type, with two marks, "Full" and "Add Oil". After the engine has been standing, the oil level should be at the "Full" mark. After the engine has started, this level will drop somewhat, due to the filling of oil passages and the oil filter. A quart of oil should be added when the level is at or slightly below the "Add Oil" mark with the oil hot and sufficient time allowed for the oil to drain back into the pan. Do not run the engine with the oil level below the "Add Oil" mark, or above the "Full" mark.

Oil can be removed from the engine, either by draining or by suction, and should be changed when the engine is at normal operating temperature.

The full flow oil filter will trap non-fluid particles which are in suspension in the oil. Since it is not possible to determine how fast this material is accumulating, the oil filter should be replaced every 100 hours or 4 months of operation. The filter has a safety valve which permits oil to bypass the filter if it becomes clogged with foreign matter.

DISTRIBUTOR

Every 25 hours add 5 drops of SAE 10W oil to the oiler on the outside of the distributor base. Lubricate the felt wick under the rotor in the top of the distributor cam with 2 or 3 drops of SAE 10W engine oil. Wipe the old grease from the surface of the breaker cam. Apply a light film of new distributor cam lubricant MOPAR Part number 1473595. Do not over-lubricate. Keep the oil and grease away from the contact points.

MAINTENANCE SCHEDULE**DAILY**

While the hull is opened for ventilation and before starting the engine:

1. Examine the bilge for evidence of leaks. Remove any accumulation.
2. Examine fuel tank and lines for leaks or loose connections. Note any fuel requirements.
3. Examine all water connections for leaks.
4. Check the level of the oil in the engine. Bring up to level if necessary.
5. Start the engine and examine the fuel lines from the fuel pump to the carburetors for leaks resulting from pressure. Also, examine the cooling system for pressure leaks.

AFTER 25 HOURS OF OPERATION OR TWICE A MONTH

In addition to performing the daily maintenance, also perform the following:

1. Add 5 drops of SAE 10W engine oil to the distributor oil cup. Remove the rotor every 250 hours and place two or three drops of light engine oil on felt wick in top of cam.

CAUTION: Be sure no oil or grease is on the breaker points.

2. Lubricate each joint of all linkages to the throttle, choke, reverse gear and steering as necessary for easy operation from the helmsman's position.

AFTER 50 HOURS OF OPERATION OR ONCE EACH MONTH

In addition to performing the Daily and 25 Hour items, also perform the following:

1. Change the engine oil.

2. Change the engine oil filter. (Every 100 hours of operation.)

3. Check the condition of the battery. Check gravity and temperature of the electrolyte. If the temperature-corrected gravity reading is below 1.220, the battery should be recharged. If the gravity reading is over 1.260, the voltage regulator should be adjusted by a Chrysler Marine Distributor-Dealer. Also, clean the battery terminal connections if necessary. Check hold-down brackets for tightness.

4. Remove, and clean flame arrestor. Flame arrestor must be dry when reassembled and installed. (Every 100 hours.)

In addition to the above schedules, certain operations which cannot be scheduled, should be analyzed by the Chrysler Marine Distributor-Dealer after a maximum of 250 hours of operation or at the Lay Up and Fitting Out Time.

TABULATION OF POINTS TO BE LUBRICATED OR CHECKED

	25	50	100
	Daily	Hrs.	Hrs.
Alternator			C
Cooling System	I		
Distributor Bushings		EO	
Distributor Wick			EO
Engine Oil	I		
Engine Oil (Drain)			EO
Engine Oil Filter			
(Full Flow)			R
Fuel Filter			R
Flame Arrestors			C
Fuel and Oil Lines	I		
Fuel Tank	I-F		
Engine Crankcase			
Vent Valve			I-R
Reverse Gear			
Control Linkage		EO	
Shaft Bearings	I		
Reverse Gears and			
Reduction Gears	I-A		D-A
Water, Battery	I		
Water, Bilge	I		

KEY

A—Automatic Transmission Fluid Type "A"	
Suffix "A"	EO—Engine Oil
C—Clean	F—Fuel
D—Drain	I—Inspect
	R—Replace

SPARE PARTS KIT

Accessory drive belt(s)	Distributor rotor
Spark plugs	Fuel filter
Ignition points	Cooling system hoses
Ignition condenser	Basic tools
Ignition cable	

TROUBLE SHOOTING

A good rule to follow when trouble shooting is to make only one adjustment at a time. Locate the cause of failure or irregular operation by the process of elimination.

CAUTION: Before making any electrical tests, air out the engine compartment thoroughly to remove all inflammable fumes.

STARTER WILL NOT TURN ENGINE

Loose or Corroded Battery Terminals—Clean terminals and clamps, replace if necessary. Tighten clamps securely. Apply a light film of vaseline to the battery terminals to retard oxidation.

Battery Not Full Charged—Test the electrolyte in the battery. Check battery specific gravity. Check for dead cell. Replace or recharge battery, as required.

Attempt to turn engine with a suitable tool to make sure the engine is free; the engine itself may be seized.

Starter Switch Defective—Replace switch.

Open Circuit in Wiring—Inspect and test all wiring.

Inoperative Starter—Inspect the starting motor for loose brush holders, worn or corroded brushes or corrosion on the commutator. To test the starting motor, disconnect the battery cable at the solenoid switch and touch it firmly to the solenoid starter terminal. If the starting motor operates, the trouble is not in the starting motor. If the starting motor fails to operate and a heavy arc occurs when the cable touches the solenoid starter terminal, a mechanical lock-up of the motor or pinion, or a grounded condition in the motor may be the cause. Failure of the starting motor to operate and no arc in the preceding test indicates poor brush contact or an open circuit in the motor winding. Repair or replace the starting motor as required.

STARTER TURNS BUT DRIVE PINION DOES NOT ENGAGE

Starter Drive Slipping—Replace drive.

Broken Teeth on Flywheel Drive Gear—Replace flywheel ring gear (see your Chrysler Distributor-Dealer).

Broken Teeth on Starter Drive Pinion—Replace drive.

Armature Shaft Rusted, Dirty or Dry, Due to Lack of Lubrication—Clean, test and lubricate.

STARTER OPERATES BUT WILL NOT DISENGAGE WHEN STARTER SWITCH IS RELEASED

Defective Drive—Replace drive.

STARTER PINION JAMS OR BINDS

Starter Mounting Loose or Misaligned—Check to see that the nuts that hold the starter on the housing studs are tight. Loose attaching parts will cause misalignment of the starter pinion with the flywheel.

Broken or Chipped Teeth on Flywheel Ring Gear—(See your Chrysler Distributor-Dealer).

STARTER WILL TURN ENGINE BUT ENGINE WILL NOT START

Dirt and Moisture on Ignition Wires and Distributor Cap—Be sure that the distributor cap and coil are clean, especially in and around the towers. Dirt and grease can soak up moisture and can easily cause a short. Check for a cracked cap, arcing at the distributor cap contacts, burned rotor. If any cable terminals are corroded be sure to clean or replace them. Be sure that the spark plug and coil cable terminals are fully seated and that the nipples fit tightly on the cap towers and around the cables. Replace any cracked or shorted cables.

Dirty or Corroded Distributor Contact Points—Clean points and check for excessive pitting and worn surfaces. If blue oxide is present on contacts, the contacts should be replaced. Remove rotor and wipe all the old grease from surface of breaker cam. Apply a light film of new distributor cam grease number 1473595 on breaker cam only. Do not over-lubricate, keep oil and grease away from the breaker points. The contact gap for Chrysler built distributors should be .017 to 0.23.

Fouled Spark Plugs—Caused by an over-rich carburetor adjustment or excessive oil consumption—oil entering cylinders due to worn rings or worn valve guides. Improper gap adjustment. Clean and dry plugs and set gap at .035 inch. Adjust carburetor.

Condenser Failure—Replace if necessary.

Improper Timing—Refer to "Distributor Timing."

Dirt or Water in the Fuel Line or Carburetor.
Carburetor Flooded.

Incorrect Float Level Setting.

Faulty Fuel Pump.

Ignition Coil Failure—Replace coil and inspect condition of distributor contacts, coil case or tower cracked or leak at coil towers; replace coil. Coil tower may have a carbon track from tower to primary terminal; wipe tower clean and test coil.

ENGINE STOPS

1. No fuel reaches engine.
2. Broken connections or corroded contacts in ignition circuit.
3. Propeller fouled.
4. Engine seized from overheating due to lack of oil or coolant.

CONTINUOUS MISFIRING

1. Fouled spark plug.
2. Cracked distributor cap, broken or loose ignition wiring.
3. Water in fuel.
4. Low compression. (See your Chrysler Distributor-Dealer.)
5. Over full of oil.
6. Incorrect timing.

INTERMITTENT MISFIRING

1. Loose connections in ignition system.
2. Intermittent fuel flow, water in system, worn fuel pump.
3. Low compression.
4. Over full of oil.

ENGINE BACKFIRES

1. Spark plug cables improperly installed.
2. Intermittent fuel supply, dirt or water in system.
3. Stuck intake valve.
4. Ignition timing faulty.
5. Over full of oil.

ENGINE KNOCKS OR PINGS

(Most noticeable on quick acceleration or at full throttle)

1. Low octane fuel.
2. Excessive deposits in combustion chambers.
3. Overheated engine.
4. Incorrect spark plugs.
5. Ignition timing advanced too far.

POUNDING-VIBRATING

1. Loose engine mounts.
2. Engine overheated.
3. Worn engine bearings.
4. Bent propeller or shaft.
5. Loose flywheel.

FUEL SYSTEM DIFFICULTIES

Fuel Does Not Reach Carburetor

1. Out of fuel; tank empty.
2. Vent pipe in fuel tank clogged.
3. Shut off valve closed.
4. Fuel lines restricted.

Fuel Pump Not Operating

1. Inspect for Diaphragm Failure—With engine running, a leaking diaphragm will result in gasoline leakage at the air vent.

2. Inspect Valves—This requires disassembly of the pump. (See your Chrysler Distributor-Dealer.)

3. Test Fuel Delivery Rate—Disconnect fuel line at carburetor and while cranking the engine with ignition off, discharge the fuel into a suitable container. The amount of gasoline discharged for five pulsations of the pump should be approximately $\frac{1}{5}$ pint.

Fuel Reaches Carburetor But Does Not Reach Cylinders

Remove spark plugs and see if they are moist. If there is no trace of gasoline in the cylinders:

1. The carburetor may be out of adjustment.
2. The float level may be too low or float valve stuck on the seat.
3. Carburetor fuel jets or passages clogged with dirt or gum.

Engine Flooded

If the spark plugs are wet, this indicates the engine is flooded. Open the choke, open the throttle fully and crank the engine.

ELECTRICAL—DISTRIBUTOR CONTACT**Installing, Aligning, and Adjustment**

Remove the terminal screw nut and disconnect the primary lead, condenser lead, and movable contact lead.

Remove the stationary contact lock screw and remove the contact set. Install the new contact set.

Connect the condenser and primary leads.

Align the contacts, to provide center contact by bending the stationary contact bracket only.

NEVER BEND the movable contact arm to obtain alignment.

After aligning the contacts, adjust contact clearance as follows:

- a. Crank the engine until rubbing block of movable contact rests on the highest point of a distributor cam lobe.
- b. Loosen the contact support lock screw just enough to permit the stationary bracket to be moved.
- c. Open or close the contact gap as required to obtain .018 gap.
- d. Tighten the lock screw after each adjustment and measure the contact point gap. Regap if necessary.
- e. Apply a light film of Chrysler distributor cam lubricant, Part No. 1473595, to the distributor cam. Do not over-lubricate, keep oil and grease away from the contact points.

Be sure that the spark plug, coil, and cap cable terminals are fully seated. The nipples must fit tightly on the cap towers and around the cables. If any cable terminals or cap tower inserts are corroded be sure to clean or replace them. Check for a physically cracked cap or an electrically conductive path burned into the cap material by improper sparking. Be sure that the distributor cap is clean inside and out and that the coil cap is clean particularly around and inside the tower. Do not wipe with oily rag.

Inspection and Cleaning

To insure peak engine performance, spark plugs should be removed, cleaned, tested and regapped every 250 hours of operation. Worn and dirty plugs may give satisfactory operation at idling speed but may fail under operation conditions.

IGNITION TIMING—Timing Light Method

To obtain maximum engine performance, the distributor must be correctly positioned to give proper ignition timing.

1. Connect the secondary lead of the power timing light to No. 1 spark plug, red primary lead to positive terminal of the battery and the black primary lead to negative battery terminal.
2. Start engine and set idle at 550 rpm.
3. Loosen the distributor clamp screw and rotate the distributor housing so that the specified timing mark and pointer are in alignment as per specifications.
4. Tighten distributor clamp screw after timing has been set and recheck timing adjustment with timing light.

CARBURETOR IDLE ADJUSTMENTS

1. Set idle speed screw for desired idle speed (550 to 600 rpm in gear recommended) with engine fully warmed up with idle mixture screw one turn open (do not damage seat by over tightening).
2. Set idle mixture screw for maximum intake manifold vacuum.
3. Re-set idle speed to desired rpm.

REVERSE AND REDUCTION GEAR

The reverse gear is a hydraulically operated multiple disc clutch and planetary reverse gear train. The reverse gear is self-contained and is independent of the engine oil pressure system.

OIL LEVEL

Using the dipstick, check the oil periodically in the reverse gear, as the oil must be maintained at the proper level for the reverse gear to function properly.

OIL CHANGE

The oil changes vary with the operating conditions; however, under normal conditions, the oil should be changed every 100 hours, or seasonal. After draining the oil from the reverse gear the removable oil screen should be thoroughly cleaned.

OIL TYPE

Refill the reverse gear with automatic transmission fluid. Type labeled Dexron Automatic Transmission Fluid or Chrysler Automatic Transmission Fluid, AQ-ATF-2848A should be used. If the Dexron type fluids are not available, type "A" Suffix "A" may be used. The reverse gear should be filled to the "Full Mark" on the dipstick. Start the engine at low speed for a short time in order to fill all circuits, including the cooler and the cooler piping. Shut off the engine and add oil to bring the reverse gear level up to the full mark again. The above refill will be necessary on all reverse gears regardless of the ratio, and also to include any varying angle of the engine installed in the boat.

LAYING UP AND FITTING OUT

LAYING UP

During the running season, many owners make use of the engine room log at the back of this book. The engine room log can be used to determine what maintenance schedule change may be necessary to adopt the schedule to suit a local condition, one particular vessel or a certain operating situation.

Prior to lay-up, some owners have a thorough inspection made at their Chrysler Marine Distributor or Dealer. Such an inspection will determine the amount of maintenance which should be completed before going into commission again. A good compression test and a few over-all electrical test will usually disclose the normal requirements. You can then tailor and schedule all items to arrive at a reasonable commissioning date.

Chrysler Engine Oil Supplement when used in the engine oil for a short time before lay-up, neutralizes acid conditions, breaks up gum and sludge formations as it cleans the engine interior. The foreign matter then is removed when the oil is changed on the day the vessel is removed from the water.

ENGINE PROTECTION

1. It is advisable to lay-up the engine assembly in the cleanest possible condition.

2. Change the oil and oil filter element. Fill the crankcase with the correct viscosity of oil which should be used when the anticipated atmospheric temperature will be above or below 32°F. Included in the initial fill add one pint Crankcase Detergent and Rust Inhibitor, Chrysler Part No. 1643271 to the crankcase, to obtain the best corrosion protection.

3. Shut off the fuel valves at the gas tank. Disconnect the line between the valve and the fuel pump. Insert the end of the fuel line which is still connected to the fuel pump into a six ounce can of Chrysler Fuel Detergent and Valve Lubricant, Part No. 1643272. This removes varnish and will keep varnish from forming in carburetor bowl, etc.

4. Start the engine and run at fast idle approximately 1200 rpm. Make sure that the fuel pump picks up all of the Detergent through the fuel lines during this operation. While engine is running, squirt 1643271 (reduced 8 to 1 with engine oil) down through the carburetor. Run until the engine stalls from the lack of fuel.

5. Remove the spark plugs and disconnect the ignition coil wire. Using an oil squirt can, spray approximately one ounce of Crankcase Detergent and Rust Inhibitor, Chrysler Part No. 1643271 (cut 8 to 1 with engine oil) into each cylinder.

CAUTION: Do not put more than specified amount of Detergent into each cylinder, otherwise an hydraulic lock may occur resulting in bent connecting rods and piston damage.

Rotate the engine several revolutions with the starter to distribute the oil on the cylinder walls. Replace the spark plugs and reconnect the ignition coil wire.

COOLING SYSTEM PROTECTION

Raw Water Cooling System

1. Flush the cooling system with fresh water. (Flushing the cooling system prior to draining is desirable particularly on engines in boats operating in sea water in order to flush out sediment before it dries.

2. Drain the water pump. Drain by loosening the pump at the middle.

3. Remove the impellers from the water pump.

NOTE: All water pumps have rubber impellers. If the rubber impellers are allowed to stay in the pump during the lay-up period they will become set and will not function properly in further use. It is recommended that the impellers be removed from the pump.

4. Drain the cylinder block by removing the drain plugs from the lower sides of the block.

5. Drain the exhaust manifold where drain plugs are used. If there are no drain plugs the hose at the bottom rear of the manifold must be disconnected.

6. Loosen the belt tension on all belts.

Fresh Water Cooling System

Each fall, to assure maximum efficiency of the fresh water cooling system, the following procedures should be observed:

Drain, flush and refill cooling system. If the system contains a considerable amount of sediment, clean and flush with a reliable cooling system cleaner. Follow with a thorough rinsing to remove all deposits.

Drain system by removing plugs from sides of engine and bottom of manifolds. Also remove hose from bottom of heat exchanger.

Refill system with a solution of 60% water and 40% high quality, permanent type non oil base anti-freeze for anti-freeze, antirust and water pump lubrication protection.

Coolant level should be about 1¼" below filler neck and should be checked daily.

FUEL SYSTEM PROTECTION

Siphon or pump fuel from tank into safety containers located outside the boat or fill the tanks to avoid condensation.

ELECTRICAL SYSTEM PROTECTION

Remove the battery for storage ashore where it will receive attention at frequent intervals.

When units such as the distributor, alternator, or starter are removed for storage ashore, the mounting openings should be sealed against the entrance of air, dust and moisture.

Electrical wiring, switches, fuse block and the grounding device should be examined.

All engine control linkages should be inspected for wear, proper adjustment and protection from rust and corrosion.

FITTING OUT

In the foregoing lay-up procedure, the engine was equipped with fresh engine oil and a new filter cartridge and sealed against the entrance of dust and other foreign matter. A visual inspection will determine the effectiveness of the

seals as they are removed for installation of the various units. The mounting surfaces for the distributor, alternator and starter should be flat, smooth and clean.

The battery posts and cable connectors should be clean and bright. After tightening the connections, a light film of grease will delay corrosion.

The cooling system drain plugs and the water pump cover and impellers should be installed and tightened.

The spark plugs should be removed and the engine cranked (without ignition) to expel the oil (which was poured into the combustion chambers during lay-up), and install new spark plugs.

Inspect fuel tank and fuel lines before placing fuel in tank. Inspect, clean and install flame arrestor.

Start the engine, observe all gauge instruments for normal readings. Notice exhaust outlet for water discharge in a normal length of time. While engine is warming up, check fuel and cooling system for leaks.

Engine to propeller shaft alignment should be checked after the boat has been in the water for several days. Clean the mating surfaces of both flanges. Hold a .002 inch feeler gauge against the reverse gear flange, in a perpendicular position corresponding to the hand on a clock at 12 o'clock. Pull the propeller shaft assembly into contact with the gauge sufficiently to produce a slight drag when withdrawing the gauge. Hold the shaft in this position and try the gauge at the three, six and nine o'clock position. When the drag is equal at all four positions, the alignment is proper. A difference in feel at six and twelve o'clock positions indicates that the fore and aft height of the engine needs adjustment. A difference in feel at the three and nine o'clock positions indicates that the engine should be shifted to the right or left. This shaft alignment should be checked periodically.

ENGINE ROOM LOG

Date	Engine Started	Engine Stopped	Total Hours Accumulated			Fuel Tank	Maintenance and Other Data
			Trip Total	On Engine	On Oil		
			Hrs. Min.	Hrs. Min.	Hrs. Min.		
Forwarded from Previous Page				100 —	— 10		Oil Change
10-1-68	5:00 A.M.	10:00 A.M.	5 00	110 00	10 10	20	Drift Fishing Pleasure Trip—Daily OK
	11:00 A.M.	4:00 P.M.	5 00				
10-1-68	6:30 A.M.	11:00 A.M.	4 30	119 30	19 40	15	Deep Sea Fishing Wind Calm—Trolling
	12:30 P.M.	5:30 P.M.	5 00				
10-1-68	8:00 A.M.	11:30 A.M.	3 30	129 40	29 50	20	25 Hr. Operation Water Skiing
	12:30 P.M.	6:30 P.M.	6 00				
Carry Forward				129 40	29 50		

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Points to be Lubricated	8
Reverse and Reduction Gear	11
Specifications	2
Trouble Shooting	9
Warranty	Inside of Front Cover

5M-7-70

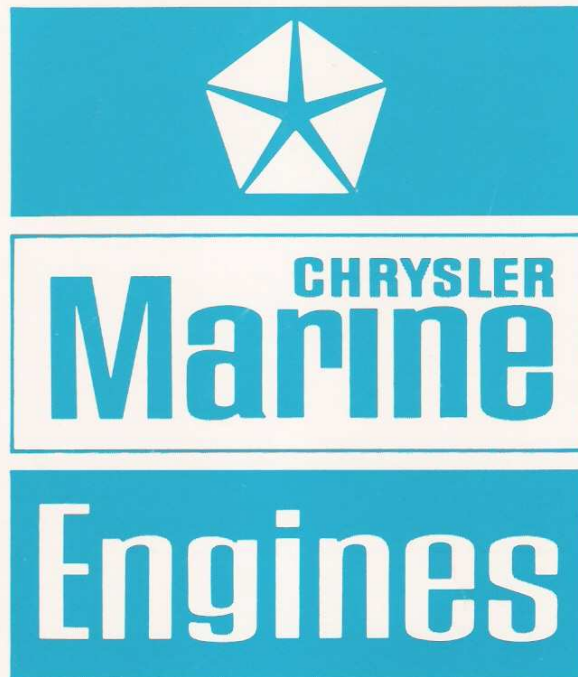

 Litho in U.S.A.
81-770-9551

NOTE:

If you do not know your nearest Chrysler Marine Engine Distributor, a card addressed to the Chrysler Corporation, Marine Engine Division, P.O. Box 1, Marysville, Michigan 48040, will bring you his name and address promptly.

CHRYSLER 225

This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.



Marine Division, Chrysler Corporation • P.O. Box 1, Marysville, Michigan 48040

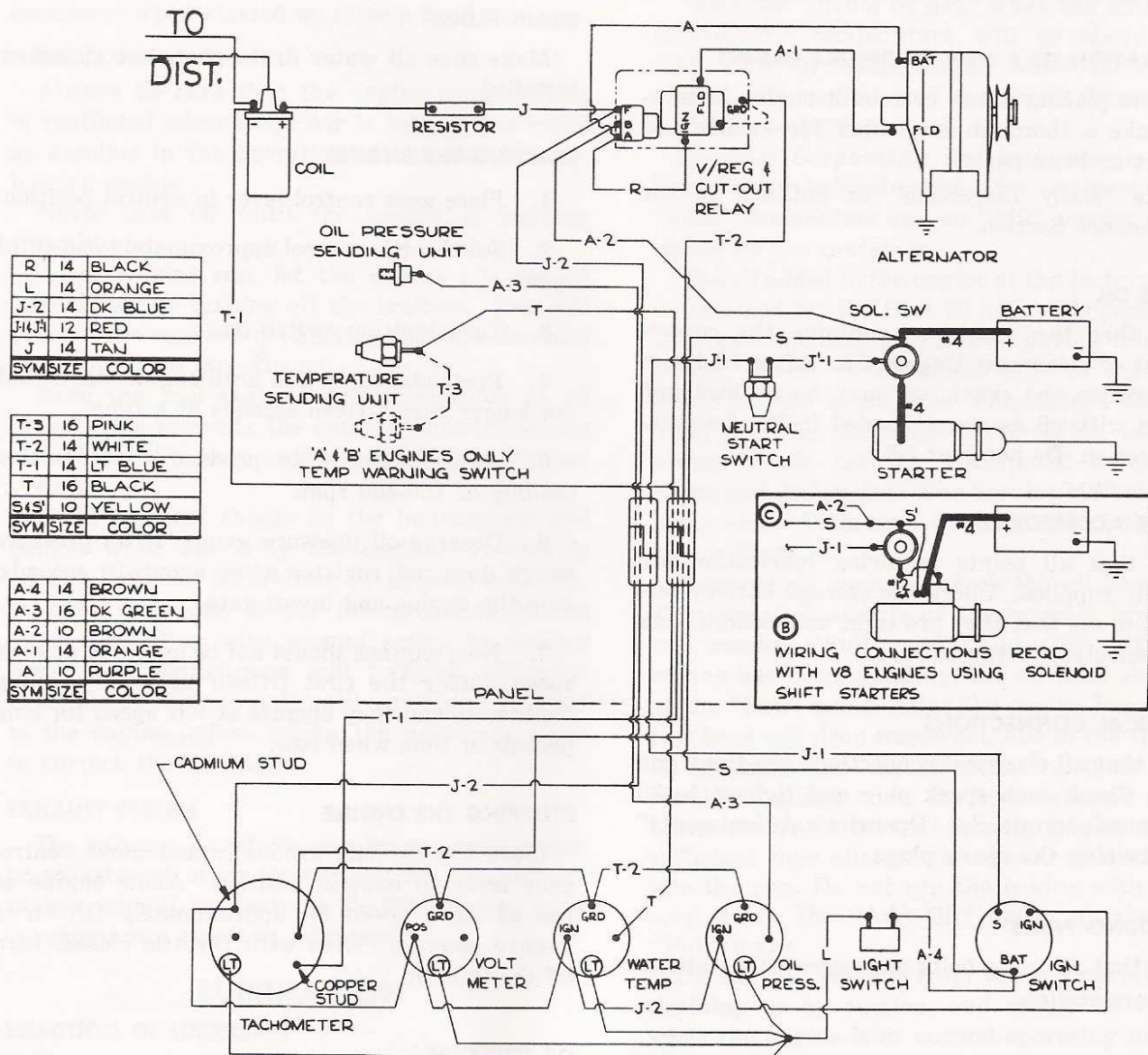


Figure 3—Wiring Diagram 12 Volt System (Negative Ground)

OIL TYPE

Refill the reverse gear with automatic transmission fluid. Type labeled Dexron Automatic Transmission Fluid or Chrysler Automatic Transmission Fluid, AQ-ATF-2848A should be used. If the Dexron type fluids are not available, type "A" Suffix "A" may be used. The reverse gear should be filled to the "Full Mark" on the dipstick. Start the engine at low speed for a short time in order to fill all circuits, including the cooler and the cooler piping. Shut off the engine and add oil to bring the reverse gear level up to the full mark again. The above refill will be necessary on all reverse gears regardless of the ratio, and also to include any varying angle of the engine installed in the boat.

LAYING UP AND FITTING OUT

LAYING UP

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