

# WEST BEND

THE WEST BEND COMPANY  
HARTFORD DIVISION  
Hartford, Wisconsin

## CONDENSED SERVICE DATA

Series Year produced	5½, 6 hp	7½, 8 hp
1955	160571	160772
1956	160501, 160511	160701, 160711
1957	160521, 160531	160721, 160731
1958	6801, 6802	8801, 8802, 8811, 8812
1959	6901, 6902	8901, 8902, 8911, 8912
1960		7001, 7002, 8001
1961		6101, 7101
1962		6102, 7201
1963		730

NOTE: COMMODORE Outboard Motor Models 73201 and 73202 are similar in design and construction to WEST BEND 7½ and 8 hp motors. Service procedures outlined in this section will also apply to Models 73201 and 73202 COMMODORE Motors.

### TUNE-UP

Engine rpm	4000	4000
Bore—Inches	2	2¼
Stroke—Inches	1½	1½
Number of Cylinders	2	2
Displacement—Cu. In.	10.60	11.97
Compression @ Cranking Speed (average)	55 psi	70 psi
<b>Spark Plug</b>		
Champion	H10J	H8J
AC	45L	M43L
Electrode gap	0.030	0.030
<b>Magneto</b>		
Point gap	0.020	0.020
Timing	See Text	See text
<b>Carburetor</b>		
Make	Tillotson	Tillotson
Model	MD	MD
Adjustment	See Text	See text
Fuel—Oil Ratio	16:1	16:1

### SIZES — CLEARANCES

<b>Piston Rings</b>		
End gap	0.006-0.011	0.006-0.011
Side clearance	0.0015-0.004	0.0015-0.004
<b>Piston to Cylinder</b>		
Clearance	0.002-0.003	0.002-0.003
<b>Piston Pin</b>		
Diameter	0.500	0.500
Clearance (Rod)	Roller Brng.	Roller Brng.
Clearance (Piston)	0.00005-0.0005	0.00005-0.0005

### SIZES—CLEARANCES (Cont'd)

<b>Crankshaft Journal Diameters</b>		
Upper Main	0.8711-0.8715	0.8711-0.8715
Center Main	0.8120-0.8125	0.8120-0.8125
Lower Main	0.7495-0.750	0.7495-0.750
Crankpin	0.7497-0.750	0.7497-0.750
<b>Crankshaft Bearing Clearance</b>		
Upper Main	Roller Brng.	Roller Brng.
Center Main	0.0025-0.0035	0.0025-0.0035
Lower Main	0.0015-0.0025	0.0015-0.0025
Crankpin	Roller Brng.	Roller Brng.
Crankshaft End Play	0.002-0.006	0.002-0.006
Rod Side Clearance	0.015-0.025	0.015-0.025
<b>Lower Unit</b>		
Driveshaft Brng. Clr.	0.0009-0.0023	0.0009-0.0023

### TIGHTENING TORQUES

(All Values in Inch-Pounds)

Connecting rod	75-80	75-80
Flywheel nut	240-300	240-300
Cylinder head	70	70
Spark Plug	264-276	264-276
<b>Standard Screws</b>		
No. 10-24	30	30
No. 10-32	35	35
No. 12-24	45	45
¼-20	70	70
5/16-18	160	160
¾-16	270	270

### LUBRICATION

The power head is lubricated by oil mixed with the fuel. One-half (½) pint of two-cycle engine oil should be mixed with each gallon of gasoline. Marine white or automotive white gasoline is recommended; if not available, use a good grade of regular gasoline. Gasoline and oil should be

thoroughly mixed, using a separate container, before filling fuel tank.

The lower unit gears and bearings are lubricated by oil contained in the gear case. Only West Bend "Customized" Gear Lubricant or other approved outboard gear lubricant should be used. The gear case should be drained and refilled every 100 hours or once each year, and fluid maintained at the level of the upper (vent) plug hole.

To fill the gear case, have the motor in upright position and fill through the lower plug hole in port side of gear case until fluid reaches level of upper vent plug. Have both plugs removed while filling. Reinstall and tighten both plugs securely, using new gaskets if necessary, to assure a water tight seal.

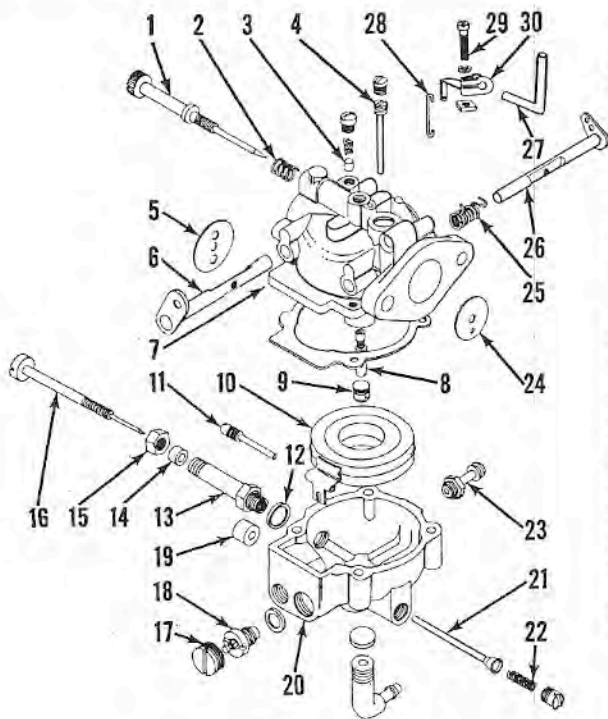


Fig. WB10 — Exploded view of Tillotson MD carburetor.

1. Idle adjustment screw
2. Spring
3. Choke detent
4. Idle tube
5. Choke valve
6. Choke shaft
7. Body
8. Main nozzle
9. Plug
10. Float
11. Float shaft
12. Gasket
13. Packing gland
14. Packing
15. Nut
16. High speed needle
17. Plug
18. Inlet needle & seat
19. Drain valve button
20. Float bowl
21. Drain valve
22. Valve spring
23. Fitting
24. Throttle valve
25. Throttle spring
26. Throttle shaft
27. Cam follower
28. Link
29. Clamp screw
30. Follower arm

**FUEL SYSTEM**

**CARBURETOR.** Tillotson, type MD carburetors are used on all models. Refer to Fig. WB10. Normal initial setting is one turn open from the closed position for both the high speed adjustment needle (16) and the idle mixture adjustment needle (1). Carburetor must be readjusted under load, after motor is warm, for best high speed and low speed performance.

To adjust the float, remove and invert the fuel bowl assembly (20). With bowl inverted and inlet needle valve closed, the lowest point of float at free end should project approximately 1/64-inch below gasket surface of bowl. Adjust by bending the vertical valve fork on float. Float must be removed to renew the inlet needle assembly (18). When installing float, make sure that slot in float lever engages groove in needle.

Tillotson model numbers and parts lists are as follows:

**Model MD-80A**

- Repair kit .....RK-127
- Gasket set .....GS-115
- Inlet needle and seat.....08018
- Float .....07804
- Idle adjustment needle .....09947
- Idle tube .....09006
- Main adjustment needle .....07905
- Main nozzle .....010113

**Model MD-93A**

- Repair kit .....RK-307
- Gasket set .....GS-114
- Inlet needle and seat.....08601
- Float .....07804
- Idle adjustment needle .....010715
- Idle tube .....09006
- Main adjustment needle .....010711
- Main nozzle .....010726
- Drain valve .....010386
- Drain valve spring .....08966

**Model MD-94A**

- Repair kit .....RK-308
- Gasket set .....GS-114
- Inlet needle and seat.....08601
- Float .....07804
- Idle adjustment needle .....010715
- Idle tube .....010713
- Main adjustment needle .....010711
- Main nozzle .....08586
- Drain valve .....010386
- Drain valve spring .....08966

**Model MD-109A**

- Repair kit .....RK-387
- Gasket set .....GS-114
- Inlet needle and seat.....08601
- Float .....07804
- Idle adjustment needle .....011664
- Idle tube .....09006
- Main adjustment needle .....011663
- Main nozzle .....010113

Fig. WB12 — Schematic view of speed control cable showing method of installation. Refer to text.

- A. Front ball slot
- B. Rear ball slot
- S. Clamping screw
- 1. Magneto stator cam
- 2. Control pulley

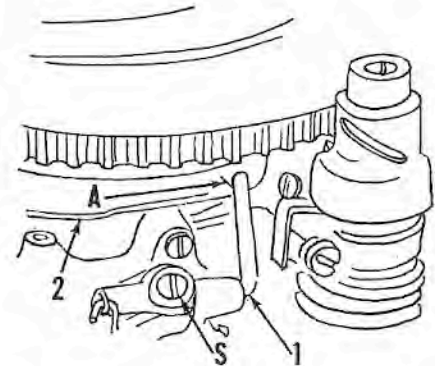
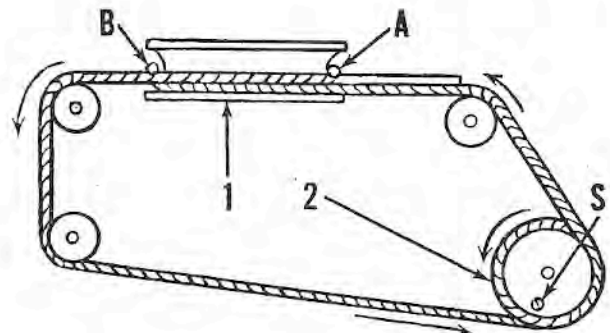


Fig. WB11 — Carburetor throttle linkage showing method of adjustment. Refer to text for details.

- 1. Cam follower
- 2. Throttle cam
- A. Scribe line
- S. Clamp screw

**Model MD-111A**

- Repair kit .....RK-466
- Gasket set .....GS-114
- Inlet needle and seat.....08601
- Float .....07804
- Idle adjustment needle .....012013
- Idle tube .....010713
- Main adjustment needle .....012015
- Main nozzle .....08586

**SPEED CONTROL LINKAGE.** The speed control lever or grip is connected to the magneto stator plate to advance or retard the ignition timing. Throttle linkage is synchronized to open the throttle as magneto timing is advanced. It is very important that the throttle linkage be properly synchronized for best performance.

To synchronize the linkage, refer to Fig. WB11. With the engine not running, loosen the clamping screw (S) in throttle control bellcrank. Move the speed control grip or lever until the scribe mark (A) on throttle cam (2) is aligned with cam follower (1). Move cam follower until it just contacts cam at the scribe mark; then tighten screw (S). As speed control grip or lever is moved further to the "Fast" position, the throttle valve should start to open. Throttle link

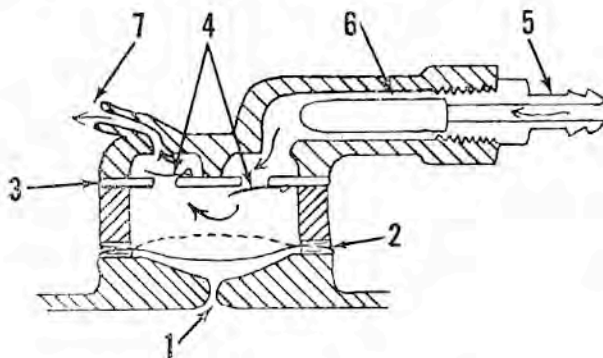


Fig. WB13 — Schematic view of the diaphragm type fuel pump used on all models. Check valves are of the reed type.

1. Pressure port
2. Diaphragm
3. Reed plate
4. Check valves
5. Inlet fitting
6. Filter
7. Outlet

(28—Fig. WB10) should be hooked in at attaching hole nearest the axis of throttle shaft (26).

On cable controlled models, install the cable as shown in Fig. WB12. Attach cable to cam pulley (1) in ball slot (A). Run cable over rear idler pulleys, then enter control pulley (2) at bottom as shown. Wrap cable around control pulley 1½ turns, with last wrap in outside of cable groove, AWAY from center of motor. Pass cable over front of idler and below the previously installed cable on cam pulley to ball slot (B).

To adjust the cable, loosen clamping screw (S). Fully advance stator plate (counter-clockwise). Turn speed control grip toward "Fast" position (clockwise) as far as it will go; then retighten screw (S). Speed control grip may be repositioned by loosening the clamping screw which attaches the pinion to speed control grip shaft.

**REED VALVES.** The inlet reed valves are located on reed plate between inlet manifold and crankcase. The reed valve assembly should be checked every time the carburetor is removed for service. Reed petals should seat very lightly against the reed plate throughout their entire length, with the least possible tension. Check seating visually. Reed stop setting should be  $\frac{3}{16}$ -inch when measured from free end of reed stop to seating surface on reed plate. Renew reeds if petals are broken, cracked, warped, rusted or bent. Never attempt to bend a reed petal or to straighten a damaged reed. Broken reed petals are sometimes caused by a bent or damaged reed stop. Seating surface of reed plate should be smooth and flat.

**FUEL PUMP.** A diaphragm type fuel pump is attached to the transfer port cover for the upper crankcase. Pressure and vacuum pulsations from the crankcase are directed through the port (1—Fig. WB13) to the rear of diaphragm (2). When the powerhead piston moves upward in its cylinder, vacuum in the crankcase draws the diaphragm inward and fuel enters the fuel chamber through filter (6) and the inlet reed valve (4) in reed plate (3). As powerhead piston moves downward, pressure forces

the diaphragm outward into fuel chamber and fuel passes through the outlet reed valve to carburetor line (7).

Defective or questionable parts should be renewed. Reeds (4) should seat lightly and squarely on reed plate (3). Diaphragm should be renewed if air leaks or cracks are found, or if deterioration is evident.

**IGNITION**

Breaker point gap should be 0.020 for each set of points, and can be adjusted after the flywheel is removed. Both sets of points should be adjusted exactly alike. NOTE: High point of breaker cam coincides with location of flywheel key. Align key with rub block when adjusting each set of points.

For a quick test of magneto condition, remove the spark plugs and hold spark plug wire about ¼-inch away from cylinder head. Have someone spin the motor and note the condition of spark. Although spark may not be visible in bright daylight, a distinct snap will be noted as spark jumps

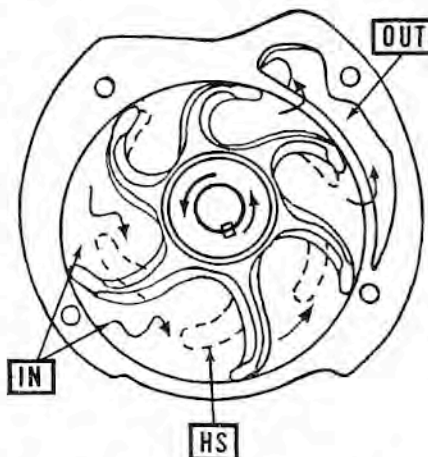


Fig. WB14—Schematic view of rubber impeller type water pump showing method of operation. The offset housing and flexing impeller blades causes pump to operate by positive displacement at slow speeds. At high speeds impeller blades remain curved (HS) and pump operates by centrifugal action

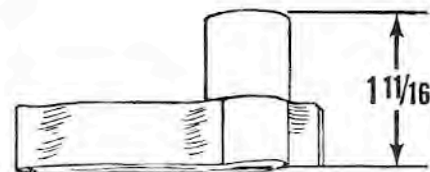


Fig. WB15—When installing water pump housing seal, press retaining ferrule on housing until total height is 1 11/16-inch as shown.

the gap. If spark is weak or erratic, adjust the points as outlined above. Be sure to note point condition. If spark is weak, although points are in good condition and properly adjusted, examine the point, condenser and coil wiring, and the insulation on the magneto coils. Look for broken or worn insulation or broken wires. Also check for loose or corroded connections. Renew any parts which are damaged or in poor condition.

**COOLING SYSTEM**

**WATER PUMP.** All motors are equipped with a rubber impeller water pump of the general type shown in Fig. WB14. The water pump is mounted in the lower unit drive shaft housing (upper gearcase).

When cooling system problems are encountered, first check the water inlet for plugging or partial stoppage, then if not corrected, remove the lower unit gearcase and check the condition of water pump, water passages and sealing surfaces.

One pump housing kit is being used to service all models from 5½ to 40 horsepower. This kit contains two water line seals and a retaining ferrule. When renewing the pump housing, install the seal with the smallest inside diameter; then press the ferrule in place over seal until upper edge of ferrule is 1 11/16 inches from bottom of housing as shown in Fig. WB15.

**POWER HEAD**

**R&R AND DISASSEMBLE.** To overhaul the power head, clamp the motor on a stand or support; and remove the engine cover (shroud), intake silencer and control panel. Remove flywheel, starter, magneto and carburetor. Remove all interfering wiring and linkage, and as many screws as possible retaining inlet manifold, exhaust covers, transfer port covers, cylinder head, etc., before detaching power head from lower unit.

Remove the screws which secure the power head assembly to lower unit, and lift off the power head assembly. Refer to Fig. WB16.

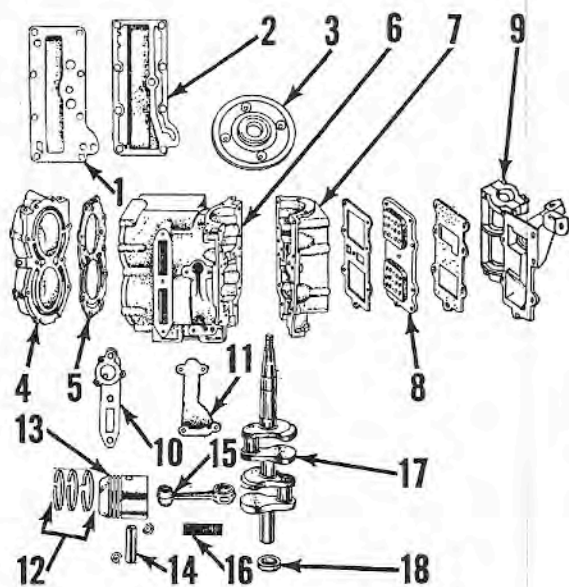


Fig. WB16 — Exploded view of power head and associated parts.

1. Exhaust cover
2. Exhaust cover
3. Upper bearing cage
4. Cylinder head
5. Gasket
6. Cylinder half
7. Crankcase half
8. Inlet reed plate
9. Inlet manifold
10. Transfer port cover
11. Cylinder drain cover
12. Piston rings
13. Piston
14. Piston pin
15. Connecting rod
16. Needle rollers
17. Crankshaft
18. Crankshaft seal

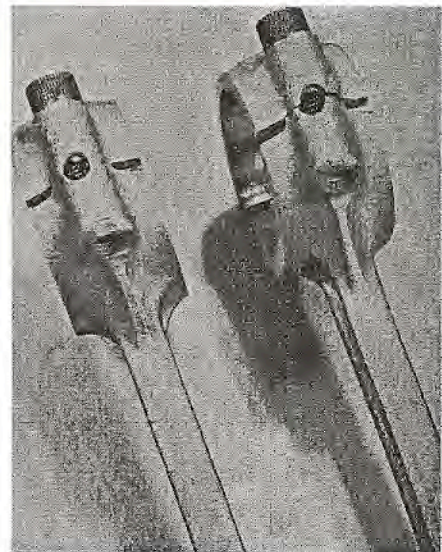


Fig. WB17—Assembled views of fractured connecting rod showing correct and incorrect cap installation.

Crankshaft and pistons can be removed after removing upper bearing cage (3); then removing crankcase front half (7), Exhaust covers (1 & 2), cylinder head (4), transfer port cover (10) and cylinder drain cover (11) should be removed for cleaning and inspection if major repairs are to be performed. Pry lugs are provided adjacent to the retaining dowels, for removing the crankcase front half.

Engine components are now accessible for removal and overhaul as outlined in the appropriate following paragraphs. Assemble as outlined in the ASSEMBLY paragraph.

**ASSEMBLY.** When reassembling, make sure all joint and gasket surfaces are clean, free from nicks and burrs and hardened cement or carbon. Because of the two-cycle design, crankcase and inlet manifold must be completely sealed against both vacuum and pressure. Exhaust manifold and cylinder head must be sealed against water leakage and pressure. Mating surfaces of water intake, and exhaust areas between power head and lower unit must form a tight seal.

Whenever power head is disassembled, it is recommended that all gasket surfaces, and mating surfaces without gaskets, be carefully checked for nicks and burrs and warped surfaces which might interfere with a tight seal. The cylinder head, head end of cylinder block, and some mating surfaces of manifolds and crankcase may be checked, and lapped if necessary, to provide a smooth surface. Use a regular lapping block or a sufficiently large piece of smooth plate glass. Lay a sheet of No. 00 emery paper on the lapping block, then place the surface to be lapped on the emery paper. Apply very light pressure and use a figure-eight motion, checking frequently to determine progress. Do not remove any more metal than is necessary. Finish lap using lapping compound or worn emery paper. Thoroughly

clean the parts with new oil on a clean, soft rag then wash with soapsuds and clean rags.

Mating surfaces of crankcase may be checked on the lapping block, and high spots or nicks removed, but the surface must not be lowered. If extreme care is used, a slightly damaged crankcase may be salvaged in this manner.

A heavy, non-fibrous grease should be used to hold loose needle bearings in position during assembly. All friction surfaces should be lubricated with new engine oil. Check frequently as power head is being assembled, for binding of the working parts. If binding or locking is encountered, remove the cause before proceeding with the assembly.

Gasket and sealing surfaces should be lightly and carefully coated with a non-hardening gasket cement. Make sure entire surface is coated, but avoid letting excess cement squeeze out into crankcase, bearings or other passages. When installing the crankcase screws, tighten those next to the main bearings and dowels first. Refer to CONDENSED SERVICE DATA table for clearances and tightening torques.

#### PISTONS, PINS, RINGS AND CYLINDERS.

Piston is fitted with three rings which should be installed with the beveled inner edge toward closed end of piston. Recommended ring end gap is 0.006-0.011, with a maximum wear limit of 0.016. Piston rings should have 0.0015-0.004 side clearance in piston grooves, with a wear limit of 0.005.

Piston skirt clearance should be 0.002-0.003 when measured at widest part of skirt at right angles to piston pin. Renew the piston if skirt clearance exceeds 0.005.

When installing piston in cylinder, the long, tapering side of baffle on piston head should be installed on port side of engine, toward the exhaust ports. See Fig. WB18. All friction surfaces should be lubricated with new engine oil when assembling.

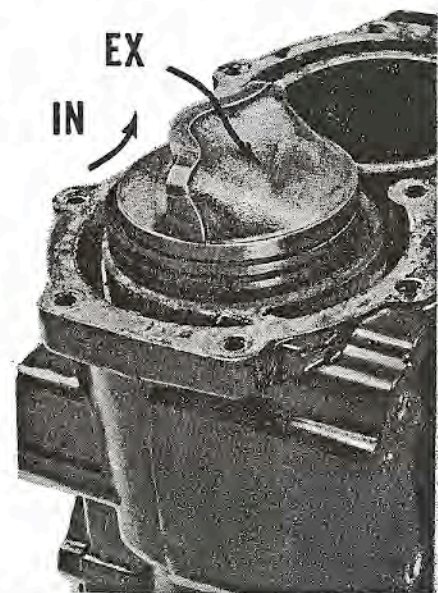


Fig. WB18—Piston correctly installed in cylinder, showing relation of piston baffle to inlet and exhaust ports.

**CONNECTING RODS, BEARINGS AND CRANKSHAFT.** Before detaching connecting rods from crankshaft, make certain that rod and cap are properly marked for correct assembly to each other and in the correct cylinder. The loose needle bearings at crankpin end of connecting rod should be kept with each assembly and not intermixed if reused.

The forged steel connecting rods contain 28 loose needle rollers at crankpin end of rod and a caged needle bearing at piston

## OUTBOARD MOTORS

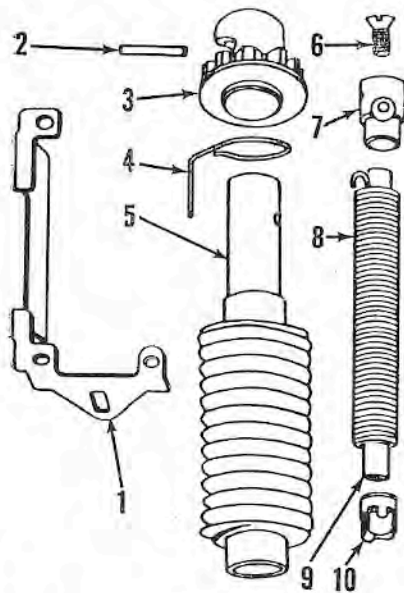


Fig. WB19—Exploded view of recoil starter of the type used.

- |                  |                  |
|------------------|------------------|
| 1. Rope guide    | 6. Locking screw |
| 2. Drive pin     | 7. Spring drive  |
| 3. Drive pinion  | 8. Recoil spring |
| 4. Pinion spring | 9. Guide post    |
| 5. Starter spool | 10. Retainer     |

end. Parting faces of rod and cap are not machined, but are fractured, as shown in Fig. WB17, to provide positive location. When installing cap, make sure the correlation marks are aligned; then shift cap back and forth slightly while tightening, until fractured sections are in perfect mesh. When properly installed, the parting line is practically invisible as shown in the left hand view. Rod side play on crankpin should be 0.015-0.025, with a wear limit of 0.035.

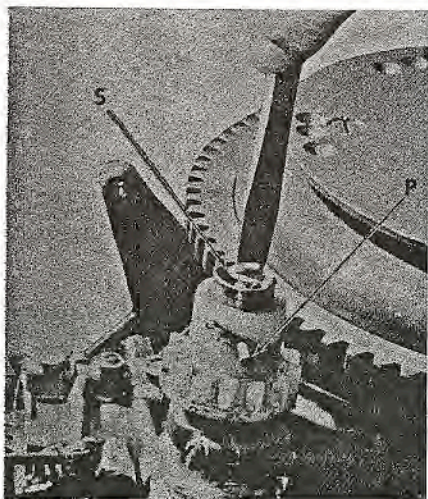


Fig. WB20—To disassemble the starter, first remove lock screw (S) and install the special tool before attempting to remove drive pin (P). Refer to text.

- |                        |                     |
|------------------------|---------------------|
| 1. Shift rod           | 14. Thrust washer   |
| 2. Water pump housing  | 15. Roll pin        |
| 3. Top plate           | 16. Clutch dog      |
| 4. Impeller            | 17. Shift plunger   |
| 5. Back plate          | 18. Spring          |
| 6. Oil seal            | 19. Propeller shaft |
| 7. Drive shaft housing | 20. Thrust washer   |
| 8. Inlet water tube    | 21. Reverse gear    |
| 9. Inlet screen        | 22. Bearing         |
| 10. Drive pinion       | 23. Bearing cage    |
| 11. Shift cam          | 24. "O" ring        |
| 12. Gearcase housing   | 25. Seal            |
| 13. Forward gear       | 26. Snap ring       |

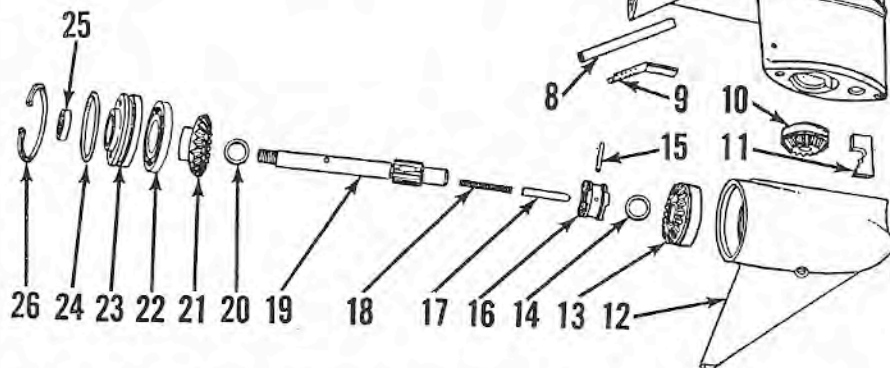


Fig. WB21—Exploded view of lower unit gearcase, drive shaft housing and associated parts.

The crankshaft upper main bearing is a part of bearing cap (3—Fig. WB16). Center and lower main bearings consist of bronze bushings cast into the crankcase housing; then align reamed. Recommended diametral clearance is 0.0025-0.0035 for the center bearing; and 0.0015-0.0025 for the lower. Renew crankshaft and/or crankcase if clearance exceeds 0.004 for the center bearing or 0.0035 for the lower. Recommended crankshaft end play is 0.002-0.006, with a wear limit of 0.011. Oversize and under-size parts are not available.

When assembling, follow the procedures outlined in the ASSEMBLY paragraph. Tightening torques are listed in the CONDENSED SERVICE DATA table.

### MANUAL STARTER

Fig. WB19 shows an exploded view of the recoil starter assembly. Starter pinion (3) engages a starter ring gear on the fly-wheel (See Fig. WB20).

To disassemble the starter assembly, first remove the engine cover, then remove screw (S—Fig. WB20). NOTE: This screw locks pin (P) in place in starter shaft. Thread the special "T" handle tool (West Bend, T3139) in threaded hole from which screw (S) was removed. Tighten the tool until it bottoms. Turn tool handle slightly counter-clockwise to relieve spring tension; then carefully push the pin (P) out of pinion and starter spool. Allow the tool and starter drive (7—Fig. WB19) to turn clockwise until recoil spring (8) is unwound; then use the

West Bend

tool to withdraw the recoil spring (8) and drive (7) from center of starter spool (5). Guide post (9) and spring retainer (10) can be lifted out after recoil spring is removed.

Recoil spring, pinion (3) or associated parts can be renewed at this time. To renew the starter rope, remove the clamps retaining spool (5) to inlet manifold bracket and remove the spool. Thread the new rope through hole in lower end of spool (5) and install the hooked retainer link by pushing pointed end through rope approximately 1/2-inch from end. Pull secured end of rope into spool, then fully wind rope in spool grooves and install the spool. Install the recoil spring assembly, making sure that lug of lower spring retainer (10) engages slot in rope guide (1). With recoil spring assembly and drive pinion (3) reinstalled, use the "T" handle tool to wind the recoil spring counter-clockwise eight (8) turns. Align the holes in pinion (3), spool (5) and spring drive (7); then insert the drive pin (2). Remove the tool and reinstall the locking screw (6). Recoil spring cavity of starter spool (5) should be filled with lubriplate or a similar grease when reassembling.

### LOWER UNIT

**PROPELLER AND DRIVE PIN.** Shear pin protection is carefully engineered for each unit. Protection depends on shear pin material as well as size. Although, in an emergency, the shear pin may be replaced by one of any available material, the correct shear pin should be installed as soon as

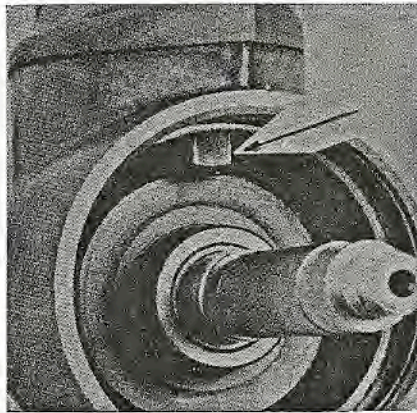


Fig. WB22—Lower unit gearcase with propeller shaft bearing cage removed, showing location of rear stud nut.

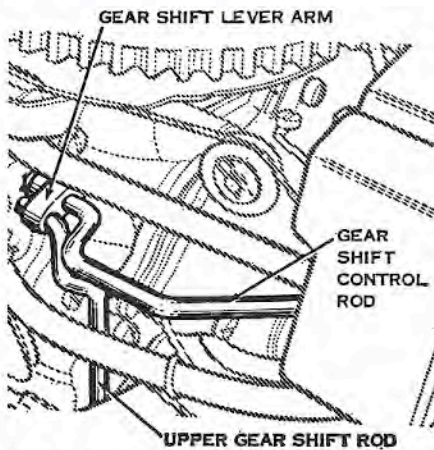


Fig. WB23—Adjust the gear shift rod coupling until the gear shift control rod is horizontal in the neutral position.



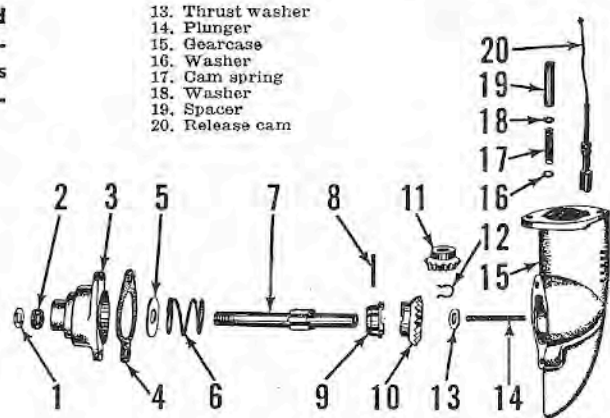
Fig. WB24—Disconnecting the neutral clutch cable clamp on 360° pivot models.

possible to insure maximum performance and protection. Spare shear pins should always be carried.

All models except 1961 six horsepower, and 1960-61, 7½ horsepower motors use a ½ x ¾-inch, stainless steel shear pin, manufacturer's part number 16044. Six horsepower, 1961 models; and 7½ horsepower 1960 and 1961 models use a ⅝ x 1¼-inch stainless steel shear pin, part number 16138. Two blade propellers are used on all

Fig. WB25 — Exploded view of lower unit gearcase and associated parts used on models with neutral clutch.

1. Retainer
2. Shaft seal
3. Bearing cage
4. Gasket
5. Retaining washer
6. Clutch spring
7. Propeller shaft
8. Cross pin
9. Clutch dog
10. Driven gear
11. Drive pinton
12. Lock ring



13. Thrust washer
14. Plunger
15. Gearcase
16. Washer
17. Cam spring
18. Washer
19. Spacer
20. Release cam

models. All 5½ and 6 horsepower models except 1961 use a 7½-inch diameter 7-inch pitch propeller, 1955 model, 7½ horsepower motors use a 7½-inch diameter, 8-inch pitch propeller. All other models use an 8-inch diameter, 8-inch pitch propeller. Direction of rotation is clockwise on gearshift models and counter-clockwise on models with neutral clutch.

**R&R AND OVERHAUL.** Two types of lower unit drives are used; the full gear shift type; and the 360° pivot drive unit with neutral clutch. Refer to the appropriate following paragraphs for disassembly and overhaul procedures.

**Full Gear Shift Models:** Refer to Fig. WB21. Loosen the locknut on the shift rod coupling, located behind swivel bracket below the power head. Remove the shift rod coupling turnbuckle to disconnect the shift rod; then unbolt and remove drive-shaft housing (upper gearcase) and gearcase from motor leg. Turn shift rod (1) counter-clockwise to clear the water pump housing; then disassemble and remove the water pump assembly (2 through 5).

Remove the propeller and shear pin. Remove any burrs or rust from exposed end of propeller shaft. Remove snap ring (26), thread two screws in threaded holes of propeller shaft bearing cage (23); and remove the cage, using a puller.

To detach lower gearcase (12) from drive shaft housing (7), unscrew and remove shift rod (1). Housings are secured by a socket head cap screw at the front and the stud nut **INSIDE** the case shown by arrow, Fig. WB22.

Propeller shaft, gears, bearings and shift mechanism can be removed after housings are separated. Front gear and bearing (13—Fig. WB21) can usually be dislodged from housing by jarring open end of housing on a block of wood. If trouble is encountered, heat gearcase slightly with a torch to loosen bearing. When installing front gear in housing, assemble bearing cage (23), without the "O" ring (24) over rear of propeller shaft; install thrust washer (14) and gear assembly (13) on front of shaft; and use the shaft as a piloted driver. Backlash and mesh position of the gears are not adjustable.

Assemble by reversing the disassembly procedure. Adjust the gear shift rod coupling until gear shift control rod (Fig. WB23)

is horizontal in the neutral position, and forward and reverse gears engage fully.

**Neutral Clutch Type:** To remove the gearcase housing, remove the motor leg clip and loosen the cable clamp screws as shown in Fig. WB24. Disconnect the lower cable (20—Fig. WB25) from clamp, then unbolt and remove the lower gearcase housing (15).

Remove the propeller and shear pin; and dress exposed end of propeller shaft to remove any burrs or rust. Unbolt and remove the propeller shaft bearing cage (3). Component parts can then be cleaned.

Assemble by reversing the disassembly procedure, making sure that plunger (14) is installed with rounded end protruding from propeller shaft. Plunger must fit in slotted notch of clutch release cam (20). Before installing gearcase to lower motor leg, depress the spacer (19) and insert a cotter pin or nail in next to lowest water inlet port as shown in Fig. WB26, to prevent interference during assembly.

To adjust the neutral clutch cable, loosen the cable clamps as shown in Fig. WB24, and pull the slack from upper cable, with shift lever in "Forward" position. Tighten the cable clamp screws slightly; then move the shift lever to "Neutral" position, while allowing upper cable to slip through clamp. Tighten the clamp screws with all slack removed, then check for proper operation of clutch.

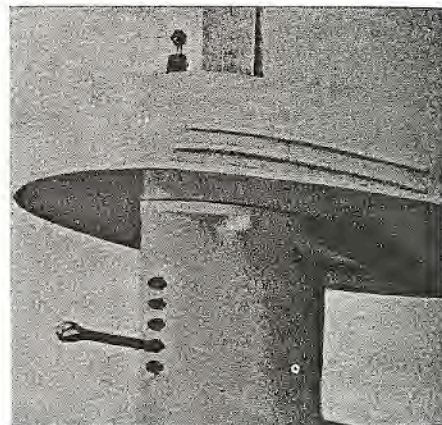


Fig. WB26—Compress and hold the cam spring as shown, when assembling the lower unit.