

MODEL B-35
ASSEMBLY INSTRUCTIONS

35-40 HP Jet Drive for Outboard Marine Corporation engines, late 1958 to present with thermostated cooling system.

1. Place the engine on the transom of your boat so that it is mounted vertically in the normal fashion. Remove the rear silencing shroud. Open the access plate and disconnect the shift rod coupling at the upper cap screw. Remove the gearbox cap screws and drop the propeller-gearbox assembly.

2. Remove the "O" ring from the top of the drive shaft and the water pump assembly.

3. Next, install the jet pump drive shaft assembly into the spiral pump housing locking it in place with 2 #10-24 fillister head screws and spring lock washers.

4. Install the water pump assembly and "O" ring at the drive shaft spline. Be sure the pump is in good condition and that the rubber impeller fingers are all pointing backwards when turning the drive shaft in a clockwise direction. Locking down from above.

5. In removing the propeller unit, it was necessary to disconnect the shift rod at the exhaust housing access hole. This rod would later rattle from vibrations so a spring is provided to urge the loose end of the rod sideways so a spring is provided to urge the loose end of the rod sideways so that it drags in its guide hole. The brass shift rod coupling is removed and the spring is installed with the round loop in the groove on the shift rod and the square loop over the edge of the access hole. When the cover plate is replaced it rests against the square loop of the spring and holds it in place.

6. Tip the engine up toward the horizontal. Next, install the jet pump housing and shaft assembly onto the engine, using the 4 5/16-18 screws and lock washers and the 3/8-16 screw which held the propeller unit. Be sure, as you guide the unit into position, that the water tubes engage the pump. A little grease helps on these rubber couplings. Start all screws into engagement before tightening any one. The 3/8 screw hole in the engine exhaust housing is die cast not drilled, and there may be slight binding at this hole. You can relieve the hole with a round file if necessary. Tighten the 4 5/16-18 screws to 200 in-lbs. torque (25 lbs. at the end of an 8 inch wrench for example).

7. Tip the engine back to a vertical position. Next install the impeller for blade clearance adjustment. Place in position, in the following order: the fiber impeller sleeve, the impeller, the shear pin keeper, the stack of 6 brass shims and the shaft nut. Turn the nut up snug. Place the intake in position. (The $\frac{1}{2}$ inch thick leading edge faces forward.) Lock with 2 screws only.

Now observe the clearance between the impeller blade and the intake casing wall. This should be approximately 1/32 inch, the thickness of one shim washer for example. It should not be less than 1/64 inch.

If the clearance is greater than $1/32$ inch it should be reduced. This is done by removing shims from the stack of 6 and placing them on the shaft above the impeller. This moves the impeller down into the casing taper and reduces the clearance. 4 shims will change the clearance by $1/64$ inch.

8. Now remove the intake casing and impeller. Grease the shaft and impeller bore and reassemble as follows: If shims are required, place the proper number above the impeller, place the plastic impeller sleeve on the shaft. Put on the impeller, the shear pin, the shear pin cup, the remaining shims from the stack of 6, and the cap nut. Turn the nut up snug and then bump the wrench further until the cotter pin hole lines up. Put in the cotter pin and fold the ends around. If erosion or wear in abrasive conditions opens the blade tip clearance up excessively, there will be a loss of pressure and performance. At this point one or two shims, as required, would be removed from the lower stack and placed on the shaft above the impeller which moves it down into the casing taper, thus reducing the clearance.

9. Place the intake casing in position with the lower end at the rear and tighten the 6 socket head screws.

~~10. Remove the gearshift interlock lever which limits the magneto travel in neutral and reverse. The magneto stop position must be cut off to allow advanced throttle in all gearshift positions. Cut about $1/2$ inch off the top of this lever so that it clears the magneto plate stops and then replace the lever. There is no neutral in the reverse gate position so the engine is started either in full forward or reverse gate position. The throttle is set for about $1/5$ to start the engine. If the throttle is advanced too far, the interlock on the recoil starter will prevent cranking, thus providing the necessary operator protection.~~

11. To attach the gate shift linkage, remove the 2 screws holding the shift lever in place. Using Hex. Head screws and lockwashers, place the triangular sheet steel shift arm in position with the $1/8$ " thick aluminum spacers between the shift lever and the shift arm to fill up the recesses in the shift lever. On some engines the face of this shift lever has a rib or curvature which will not allow the shift arm to seat against the $1/8$ inch spacers. It is necessary to hacksaw or file a flat surface into the lever down to the surface of the spacers to allow mounting the shift arm. This will not seriously weaken the shift lever, but if the rework is too difficult a 1962 Evinrude shift lever, part no. 278282, can be purchased from your dealer for about 90¢. In proper position, the folded back edges of the shift arm will face the engine and the arm will be pointing down. Now replace the rear silencing shroud.

12. Next, attach the shift rod. The spring clip is used at the upper end and the flat washer with cotter pins used at both ends. Adjustment should be made on the length of this rod so that with the shift lever in "forward," the gate is forced solidly against the rubber pad beneath the pump housing so that there is no rattle in the system. Further refinements in adjustment should be made at the screws in the shift lever such that in "forward" the triangular shift arm comes on center in line with the shift rod. This provides an "on center" locking toggle to prevent the gate from being pushed into reverse by water motion. Next, lock all screws. Do not be concerned if, in the reverse

position, the gate is not entirely closed. The pivot positions on the gate are designed so that water pressure holds the gate in reverse. In fact, you will not be able to shift to forward from reverse if the engine is running above a fast idle due to this water pressure. You can, however, shift to reverse at any forward speed and this can be dangerous since the engine will kick up just as though you had hit a log with a propeller unit. Use caution here or tie your engine down if you want to experiment with getting wet.

13. Lubricate the shaft bearing as explained in separate sheet, MAINTENANCE AND LUBRICATION.

14. The jet conversion requires about a 20" transom. Refined height adjustment can be made by placing up to a 1 inch wood shim between the engine mount and the boat transom. Start with a 20 3/4 inch height. From there you can experiment for best results. If you raise it too much, it will suck air and cavitate, either on start up or when banking on turns. When cavitating, the engine overspeeds in spurts and shakes considerably in the engine mount. This is not a normal condition and should be avoided by proper adjustment of engine height on each individual boat. If you lower it too much, you will have excessive drag, therefore mount the engine as high as possible without allowing cavitation. Good boating and have fun!

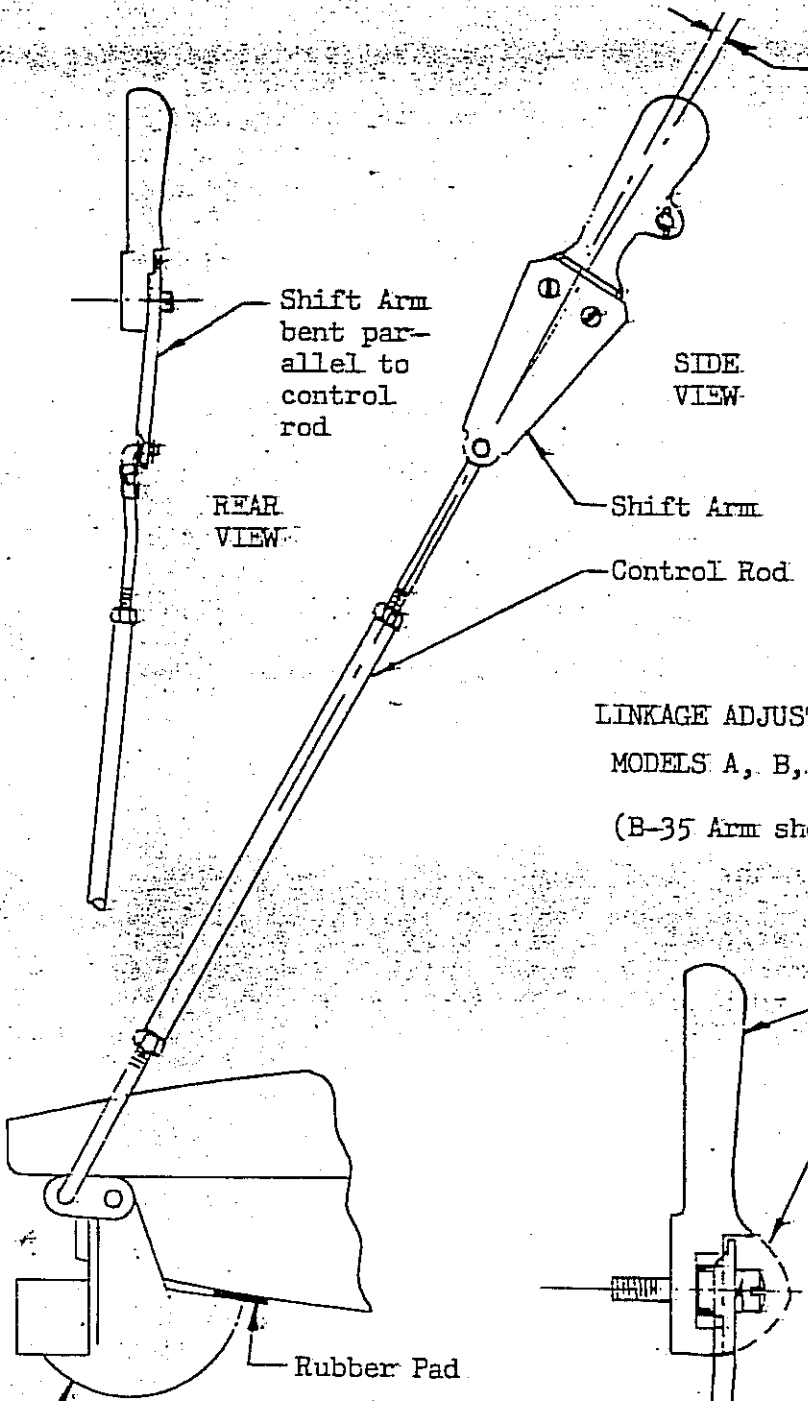
CAUTION!

When starting the engine for the first time, watch to see that cooling water comes out of the cooling water outlet at the rear of the engine just below the powerhead. It will only be a wet mist at first since the thermostat recycles the water until the engine gets up to temperature. This is to check your assembly of the cooling water pump and its connections.

MAINTENANCE AND LUBRICATION

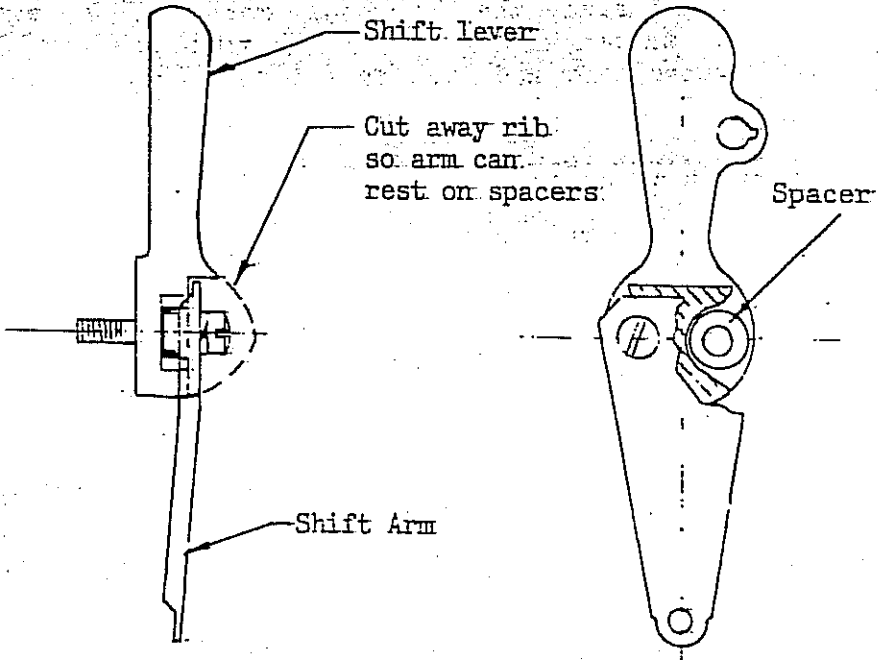
See separate sheet.

Outboard Jets
2035 Edison Avenue
San Leandro, Calif. 94577



In the forward position the control rod centerline should be slightly to the rear of the shift arm centerline. This provides an "over center" toggle locking effect which prevents the gate from being forced into reverse. Slot the screw holes in the shift arm if necessary to allow reaching this position. Adjust the length of the control rod so that the gate is forced solidly against the rubber pad in forward position.

LINKAGE ADJUSTMENT
 MODELS A, B, H, Q
 (B-35 Arm shown)



Modification to shift lever to receive B-35 Shift Arm and Spacers. Evinrude shift lever Part No. 278282 can be used without modification.

MAINTENANCE AND LUBRICATION OUTBOARD JET DRIVE

BEARING LUBRICATION

A grease gun and tube of grease is supplied with your jet drive. We recommend greasing the bearing every 10 hours. Make greasing a part of your cleanup after the days use. Pump in just enough grease to fill the lube hose. Then reconnect the lube hose coupling to the zerk grease fitting.

Every 30-40 hours, pump in extra grease so as to purge any moisture. The texture of the grease coming out gives an indication of conditions inside the bearing housing. A gradual increase in moisture content indicates seal wear. If the grease begins to turn dark, dirty gray, the bearing and seals should be inspected and replaced if necessary. Some discoloration of the grease is normal during the break in period on new sets of seals.

We have selected a water resistant grease of the proper consistency for this application. If you use a substitute grease, be sure it is water resistant and of the same consistency.

IMPELLER

Your jet drive is equipped with a key to protect the unit in the event of a rock jam. This can be reached by removing the water intake, and then the driveshaft nut, similar to a propeller drive. After replacing the key, pull the shaft nut up tight to remove any play between the impeller and shaft. Note the position of the impeller shim washers, and replace them in the same order.

REVERSE GATE MECHANISM

Occasionally check adjustment of the gate shifting linkage. In "forward" the gate should be firmly locked in position. Pull on the gate by hand to verify this. This will prevent wave action from accidentally shifting the gate into reverse as the boat is violently maneuvered

GENERAL

Check all mounting bolts, intake screws, linkage connections, etc., occasionally to be sure they are tight.

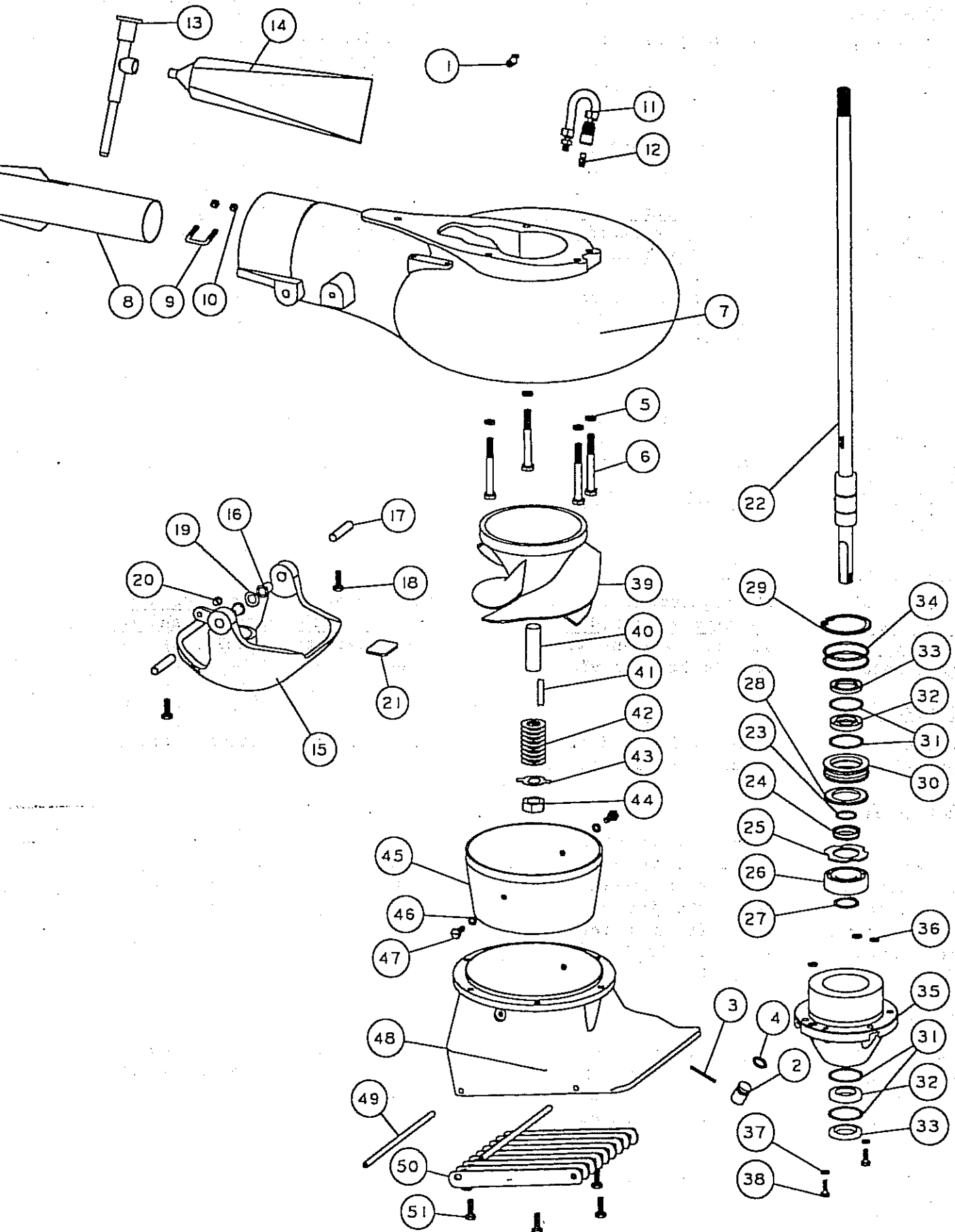
SALT WATER USE

Aluminum and stainless steel have been used in the construction of your jet drive. These materials have either been treated or are inherently resistant to corrosion. It is recommended, however, that when not in use the motor be tipped up so that the jet unit is out of the water. When used in salt water more than in fresh water, remove mounting hardware, grease, and reassemble once a year. Failure to do this may result in hardware that is difficult if not impossible to remove at a later date.

GUARANTEE

Due to inflexible government regulation, we do not have a written warranty. We have, however, a good reputation for fairness with our customers which we intend to maintain. If you think you have a warranty situation, regarding material, workmanship, call us before making repairs.

Specialty Manufacturing Company
Outboard Jets
2035 Edison Avenue
San Leandro, CA 94577



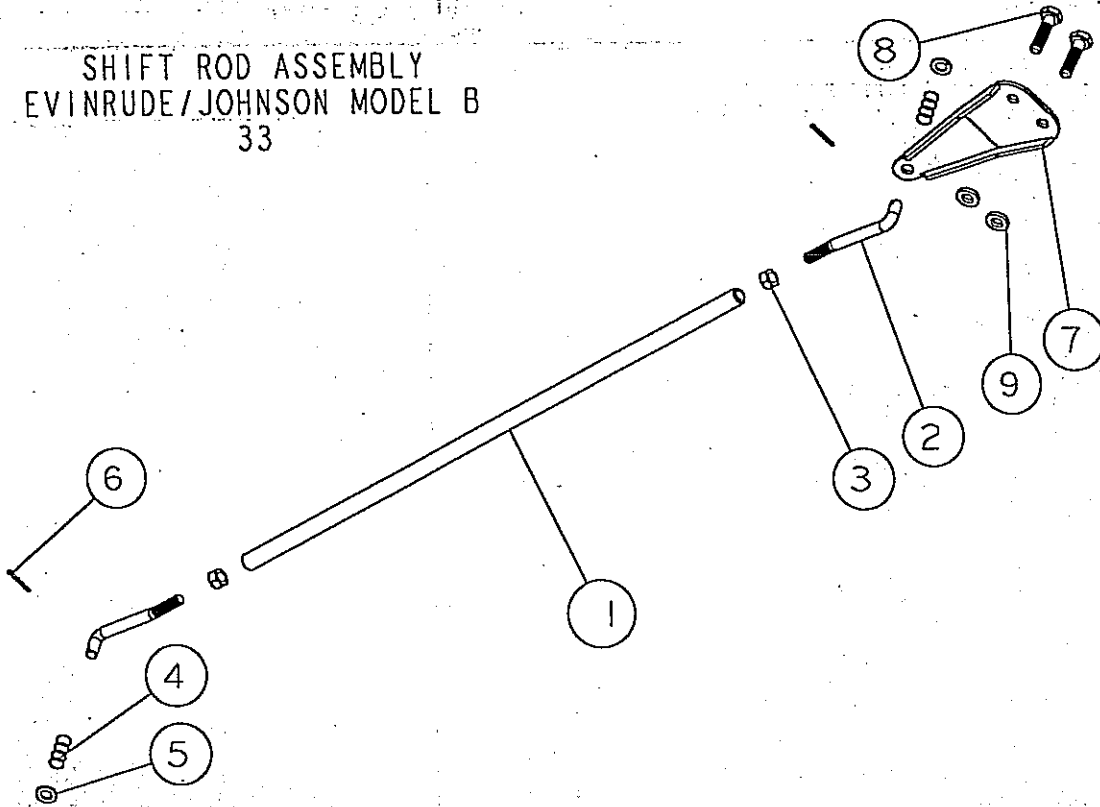
MODEL B EVINRUDE/JOHNSON

REF	QTY	PART NO	DESCRIPTION	REF	QTY	PART NO	DESCRIPTION
1	1	29	SHIFT SPRING A H O				
2	1	48	PLUG WATER PUMP B (1968 & LATER)				
3	1	646	COTTER PIN 3/32X1 1/4 (1968 & LATER)				
4	1	528	O-RING 568-112 3/32X1/2X11/16 (1968 & LATER)				
5	4	640	WASHER SPRING LOCK 5/16				
6	4	599	BOLT HEX HD 5/16-18 X 2 3/4				
		4942	VOLUTE WITH GATE A				
7	1	49.42	VOLUTE WITH EXHAUST TUBE A				
8	1	80	EXHAUST TUBE ASSY MEDIUM 2				
9	1	846	CLIP EXHAUST TUBE 1				
10	2	621	NYLOC 10-32				
11	1	975	LUBE HOSE ASSY				
12	1	539	ZIRC FITTING 1/4-28				
13	1	550	GREASE GUN				
14	1	552	GREASE 10 OZ TUBE NO.630-AA				
15	1	826	GATE PAINTED ABQU 3/8				
16	2	535	NYLINER 3/8 ID X 11/16				
17	2	822	PIN GATE PIVOT 3/8 MEDIUM				
18	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
19	1	1177	SPRING GATE PIVOT 3/8				
20	1	533	NYLINER 1/4 ID X 1/4				
21	1	82	GATE CUSHION				
		46.42	SHAFT ASSY COMPLETE, B, 14T				
22	1	17.32	SHAFT ONLY, B, 14T 24 3/4 LG				
23	1	41	SHAFT BEARING THRUST RING				
24	1	477	COLLAR BACKFIT 7205				
25	1	832	THRUST WASHER				
26	1	504	BEARING 7205B-UA				
27	1	511	TRUARC 5100-98				
28	1	833	SPACER				
29	1	512	TRUARC N5002-2122D				
30	1	433	UPPER SEAL CARRIER W/SEALS & O RINGS				
31	4	517	SPIROLOX RR-150S				
32	2	506	SEAL INNER				
33	2	507	SEAL OUTER 6324-S				
34	2	526	O RING 568-135 3/32X1 15/16X2 1/8				
35	1	9.42	BEARING CARRIER W/SEALS & O RINGS B				
36	3	521	O RING 568-011 1/16X5/16X7/16				
37	2	637	WASHER SPRING LOCK #10				
38	2	561	FIL HD SLOTTED 10-24 X 5/8				
39	1	8.22	IMPELLER 6 1/8 W/36 SLEEVE				
40	1	36	SHAFT SLEEVE PLASTIC MEDIUM				
41	1	782	IMPELLER TEE KEY				
42	9	21	SHIM WASHER MEDIUM				
43	1	805	NUT KEEPER MED/PKG 2 PER BAG				
44	1	22.1	SHAFT NUT 5/8-18 BRASS				
		31.2	INTAKE ASSY 6 1/8 WITH GRILL & LINER				
45	1	93.22	LINER 6 1/8 W/HARDWARE				
46	2	638	WASHER SPRING LOCK 1/4				
47	2	572	BOLT HEX HD 1/4-20 X 5/8				
48	1	7	INTAKE PAINTED ONLY				
49	2	14	GRILL ROD				
50	9	16	GRILL BAR MEDIUM				
51	6	573	BOLT HEX HD 1/4-20 X 3/4				

31. JUL. 97

SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	12
3/8-16 (M10)	22

SHIFT ROD ASSEMBLY
 EVINRUDE/JOHNSON MODEL B
 33



REF	QTY	PART NO	DESCRIPTION
1	1	23	SHIFT ROD A,B 14 5/16
2	2	24	ROD END FORMED
3	2	622	NUT HEX 1/4-28
4	2	1164	SPRING-ROD END
5	2	635	1/4 WASHER AN960C416
6	2	645	COTTER PIN 1/16 X 1/2
7	1	26	SHIFT LEVER B
8	2	27	SHIFT LEVER SPACER B
9	2	576	BOLT HEX HD 1/4-20 X 1