

MODEL L60, L60L-89, & L60L04 SERIES
ASSEMBLY INSTRUCTIONS
FOR EVINRUDE/JOHNSON 55-70 HP 3 CYLINDER 1968 TO 2000
FOR EVINRUDE 60 HP 2 CYLINDER E-TEC 2004 TO PRESENT

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Remove the bolts holding the gearbox to the exhaust housing and remove the gearbox assembly.
2. Remove the water pump assembly from the propeller drive, including the lower stainless steel plate, and impeller drive key. Remove the two small centering rings surrounding the bolt holes in the gear box.
3. Install the jet driveshaft assembly into the spiral pump housing locking it in place with the four 5/16-18 x 1 bolts with lock washers. Use grease on the threads. Tighten to 15 Ft-Lbs.
4. Install the water pump assembly to the Jet. Be sure also, to install the water pump impeller drive key removed from the propeller drive. Install the two centering rings.
5. Remove the rubber cushion exhaust tube seal from the propeller gearbox and place it in the jet housing. Lightly grease the exhaust tube and rubber seal, for easy entry.
6. Install the 5/16-18 taper lock stud at the rear of the motor mid-section. Grease the threads and after tightening, grease the tapered section. Before mounting the jet, seal the hole in the exhaust housing through which the shift rod passed. Plug the hole with RTV rubber.
7. Next, attach the jet drive to the motor. Four 3/8-16 bolts and lock washers are used. Select the lower bolt lengths to suit the different counter bore depths so that all bolts enter the exhaust housing the same depth. Grease the bolt threads, driveshaft spline generously, and rubber water tube pilot and guide the jet into place. Tighten to 22 Ft-Lbs. Grease the threads and tapered section of the wedge bolt. Install through the 5/16 cross hole at the rear of the jet drive, to capture the taper lock stud. Install the fiber lock nut and tighten to 7 Ft-Lbs.
8. Next, install the impeller. Grease the shaft threads, key and impeller bore. Place the plastic sleeve inside the impeller, hold the key in the nose of the impeller with your forefinger and slide onto the driveshaft. Install the eight shim washers, rubber washer and cup, and nut retainer on the shaft, and bring the nut up snug by hand.

Then bump the nut up snug with a wrench. If the ears of the retainer do not line up with the flats on the nut, spin the nut off, turn the retainer over and tighten the nut again. In one of these two positions you will have alignment and can fold the ears up against the nut to retain it. The flat in the retainer is angled to the ears to allow this.

When, after use in sand and gravel, the blade clearance becomes more than about 1/32" between the impeller edge and the water intake liner, one or more of the shim washers can be transferred from the bottom stack to the top of the impeller, which moves the impeller down into the tapered casing to reduce the clearance.

Shims should not be used above the impeller on new installations where no wear has occurred unless the blade clearance exceeds 1/32 inch. Insufficient blade clearance will do more harm than good from any performance gains it might provide.

9. Place the intake casing in position with the lower end at the rear and tighten the six nuts. No lock washers are used. Grease the threads.

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10. Attach the shift cable and the cable anchor bracket to the jet drive. **2010 and newer, 40-60 hp E-TEC motors require a neutral switch cable, #1547. This cable and the cable from the remote control box straddle the gate shift cam. The neutral cable is routed between the motor mount and mid section to the port side and into the motor cowl. For tiller steering, the neutral cable is not used. Use tiller shift cable #1871 starting in 2006.**
11. With the shift handle in forward and the reverse gate in forward, **with the cam roller at the end of the slot**, adjust the cable and/or cable anchor position to this condition. **Shift to reverse and back to forward. The roller should be at the end of the cam slot such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this.**

If this forward lock condition is not met, readjust the cable positions.

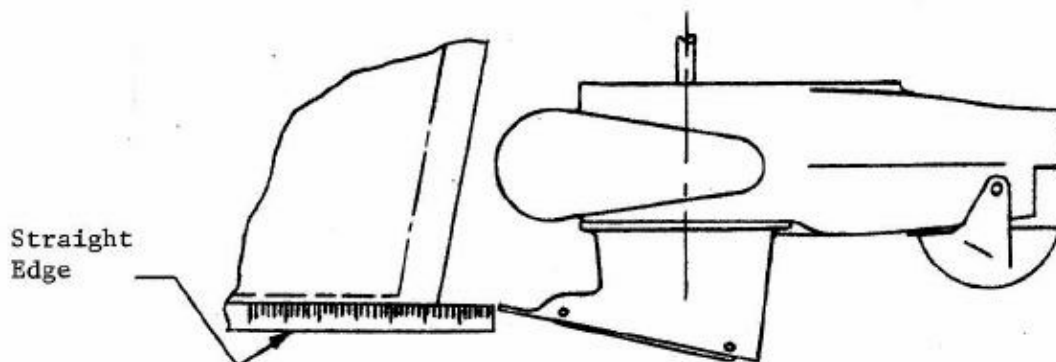
12. **When converting to jet drive, your motor will have to be raised to height shown in diagram below, using a straight edge under the boat.** Test run the boat and then raise or lower the motor 5/16 inch at a time to obtain the best results.

The motor has four sets of upper mounting holes. You will use one set to begin with. Mark pencil lines on the boat transom through the other sets. Then if you wish to go up or down 5/16 inch, you can drill one alternate set of holes 5/16 inch up or down from the pencil marks. By alternating between these two sets of transom holes and the four sets of motor holes, the motor can be moved in 5/16 inch increments over almost one inch. The transom height should be about 26" measured vertically from the boat bottom.

If you raise it too much it will suck air and cavitate either on start up or when banking on turns. When cavitating, the motor over speeds in spurts and shakes considerably in the motor mount. **This is not a normal condition and should be avoided by proper adjustment of motor height on each individual boat.** If you lower it too much you will have excessive drag, therefore mount the motor as high as possible without allowing cavitation.

The cooling system can be flushed by removing the hex bolt next to the grease fitting. A hose coupling, 24789A1, is available from a Mercury dealer. Turn on the water gently, and start the motor set to idle. Watch for cooling water at the tell tale. Adjust the water pressure if needed. **Be sure to replace the bolt after flushing.**

SETTING MOTOR HEIGHT



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CAUTION

When starting the engine for the first time, watch to see that the cooling water comes out of the small hole at the rear side of the engine just below the powerhead. This is to check your assembly of the cooling water pump and its connections.

MAINTENANCE AND LUBRICATION

See last page.

CAUTION

It is important on high HP installations to mount the motor at the correct height and to use the power tilt properly.

Power tilt is convenient for drifting and when operating at low throttle in very shallow areas. When under power however, the engine should not be tilted out in an effort to gain speed as is done with propellers.

The engine driveshaft should be vertical when planing or tilted toward the boat in order to provide a scooping angle on the water intake grill. **Tilting the motor out beyond a vertical position reduces the scoop angle and can cause impeller slippage and cavitation burns on the impeller blades.**

When running in a bay, lake or wide river in windy conditions, particularly when running with the wind, the jet can suck in air when jumping across the wave crests. This will result in over speeding and causes severe strain on the driveshaft when the engine is suddenly brought back to normal speed as the impeller once again grabs solid water.

If your boat is used frequently under these conditions, the engine height should be set lower than normal to minimize over speeding. Running at reduced throttle will help when winds are strong. You can also experiment with a plate extending from the hull bottom to the top of the leading edge of the water intake as shown in paragraph 7 of the owners manual. This tends to reduce air intake as well as to reduce spray.

A water intake fin kit, part #1186 is now available. The purpose of these fins is to ram more water into the intake and to shield the forward sides of the intake from the entrance of air. There is a noticeable reduction of engine over speeding when running with the wind on a heavy chop. To a lesser degree, the fins provide some rudder effect when operating at a low speeds. This is not a cure all for cavitation and it is still necessary to set the engine height and angle properly and to minimize obstructions or imperfections in the hull ahead of the intake.

GOOD BOATING AND HAVE FUN!

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

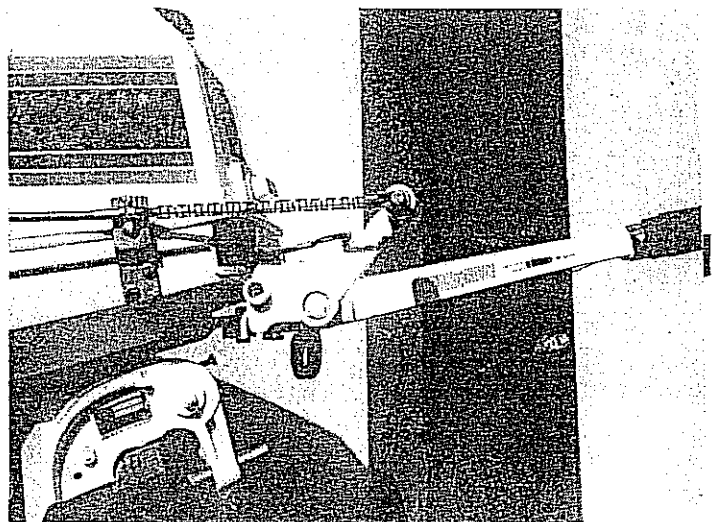
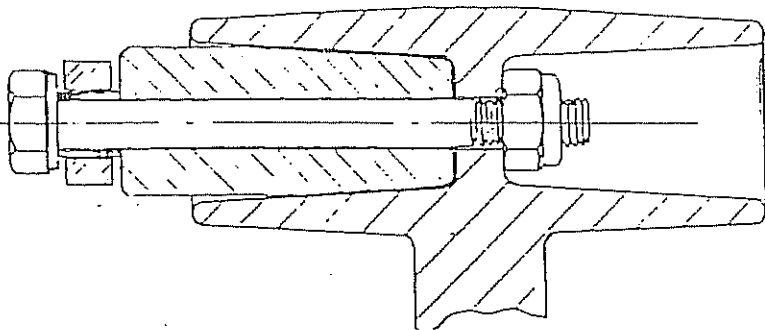
MODELS AFC, ABC, L60CL-89 TILLER HANDLE STEERING MOTORS

Shift Cable Assembly - Cam Gate

Kit No. 778 for Short Shaft Motors

Kit No. 779 for Long Shaft Motors

1. Place the tapered end of the aluminum plug into the outer bore of the shift handle grip. Insert a 1/4 inch drill into the plug hole, and drill through the center web of the handle grip. Do not attach the cable end yet. See diagram below.
2. Attach the triangle shaped lower cable support to the jet drive, using two 1/4-20 x 5/8 bolts and plain washers. Slide the support as far forward as it will go and lock the bolts.
3. Attach the lower cable end, using the thin wall bushing, plain washer and locknut. The nut and washer go on the outside and lock firmly against the bushing. The red cable end should be threaded onto the cable as far as it will go.
4. The upper red cable end should be threaded on the cable at a mid position to allow about 3/16 inch adjustment in either direction on the thread.
5. Place the motor shift handle in neutral position and lock the cable end to the handle as shown in step 1.
6. Using a light finger pressure on the gate, move the gate toward reverse until the cam roller is nested in the neutral notch of the cam. Hold in this position while performing step 7. Be sure shift handle is in neutral position.
7. Hold the 1/8 inch thick upper cable bracket against the lower motor cover rim, as shown below. Drill two 1/4 inch mounting holes through the cover. Secure the bracket with two 1/4-20 x 5/8 bolts with lockwashers and plain nuts inside.
8. Shift to forward. The cam roller should be at the end of the slot in the cam such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this. Readjust red cable end if necessary to favor gate being locked in forward position. Neutral position is less important.



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.

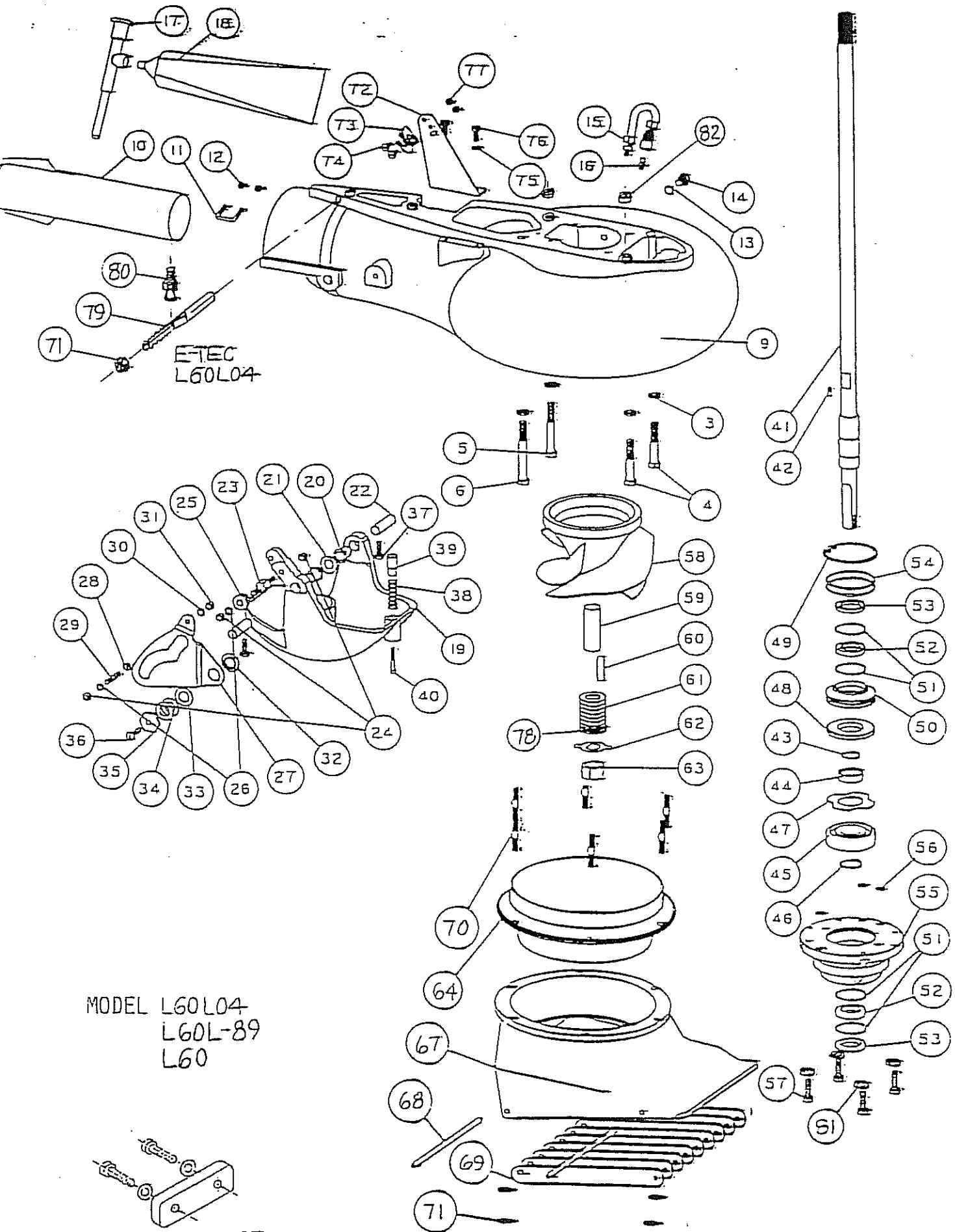
SALT WATER USE

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



ETEC
L60L04

MODEL L60L04
L60L-89
L60

ANODE KIT 1693

**MODEL L60, L60L-89 JOHNSON / EVINRUDE 3 CYL. 1968-2000
MODEL L60L04 EVINRUDE E-TEC 2 CYL. 2004 TO PRESENT**

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
3	4	636	WASHER SPRING LOCK M10	51	4	517	SPIROLOX RR-150S
4	2	608	BOLT HEX HD 3/8-16 X 2 1/4	52	2	506	SEAL INNER
5	1	609	BOLT HEX HD 3/8-16 X 2 3/4	53	2	507	SEAL OUTER 6324-S
6	1	611	BOLT HEX HD 3/8-16 X 3 1/4	54	2	527	O RING 568-141 3/32X2 5/16X2 1/2
		19000	VOLUTE WITH GATE L	55	1	108.5	BEARING CARRIER W/SEALS & O RINGS 5/16
9	1	190	VOLUTE WITH EXHAUST TUBE L	55	3	521	O RING 568-011 1/16X5/16X7/16
10	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	57	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
11	1	846	CLIP EXHAUST TUBE 1	58	1	106.23	IMPELLER 6 7/8 60HP
12	2	621	NYLOC 10-32	59	1	136	SHAFT SLEEVE PLASTIC LARGE
13	1	1023	WASHER FIBER 3/8	60	1	1706	IMPELLER TEE KEY - 1/2 ROUND
14	1	1022	BOLT HEX HD 3/8-16 X 1/2	61	8	121	SHIM WASHER LARGE
15	1	975	LUBE HOSE ASSY	62	1	781	NUTKEEPER LARGE/PKG 2 PER BAG
16	1	539	ZIRC FITTING 1/4-28	63	1	122.1	SHAFT NUT 3/14-16 BRASS
17	1	560	GREASE GUN			1855.04	INTAKE ASSY 6 7/8 FLANGED WGRILL & LINER
18	1	562	GREASE 10 OZ TUBE NO 630-AA	64	1	1833	LINER 6 7/8 FLANGED
19	1	1172	REVERSE GATE, LARGE	67	1	1332.04	INTAKE PAINTED ONLY EX-LARGE
20	2	536	NYLINER 1/2 1D X 13/16	68	2	14	GRILL ROD
21	1	1178	SPRING GATE PIVOT 1/2	69	9	117	GRILL BAR LARGE
22	2	823	PIN GATE PIVOT 1/2 LARGE	70	6	1319	STUD - INTAKE LARGE
23	1	1043	SHAFT ROLLER	71	7	625	NYLOC 5/16-18
24	3	624	NYLOC 1/4-28			170	BRACKET ASSY OMC W/CLIP & HARDWARE
25	1	1042	ROLLER ASSY	72	1	166	BRACKET CABLE SUPPORT
26	2	635	1/4 WASHER AN960C416	73	1	546	CLIP OMC 305736
27	1	1034	SHIFT CAM LARGE	74	2	562	PAN HD SLOTTED 10-32 X 1/2
28	1	62	NUT HEX JAM 1/4-28	75	2	635	1/4 WASHER AN960C416
29	1	1199	PIVOT - CABLE END	76	2	572	BOLT HEX HD 1/4-20 X 5/8
30	1	638	WASHER SPRING LOCK 1/4	77	2	621	NYLOC 10-32
31	1	622	NUT HEX 1/4-28	78	1	1719	TORSIONAL DAMPER 3/4
32	1	1037	BUSHING CAM	79	1	1762	WEDGE BOLT
33	1	1038	WASHER CAM	80	1	1835	WEDGE STUD
34	2	1039	SHIM - CAM	81	4	640	WASHER SPRING LOCK 5/16
35	1	1036	CAM ECCENTRIC DRILLED	82	2	1858	PIN, DOWEL ETEC
36	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH				
37	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
38	1	1170	SPRING GATE BUMPER				
39	1	1497	GATE BUMPER				
40	1	559.2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH				
		196.1	SHAFT ASSY COMPLETE, L60S, 4T 5/16				
41	1	178	SHAFT ONLY, L60S, 4T 24 3/16 LG				
		197.1	SHAFT ASSY COMPLETE, L60L, 4T 5/16				
41	1	195	SHAFT ONLY, L60L, 4T 29 3/16 LG				
		1121.1	SHAFT ASSY COMPLETE, L60L-89, 17T 5/16				
41	1	1120	SHAFT ONLY, L60L-89, 17T 29 3/8 LG				
		1838	SHAFT ASSY COMPLETE, L60L04, 17T 5/16				
41	1	1837	SHAFT ONLY, L60L04, 17T 29 9/16 LG				
42	1	631	DOWEL PIN 3/16 X 1/2 WHERE USED				
43	1	41	SHAFT BEARING THRUST RING				
44	1	467	COLLAR BACKFIT 7305				
45	1	502	BEARING 7305B-UA				
46	1	511	TRUARC 5100-98				
47	1	830	THRUST WASHER				
48	1	831	SPACER				
49	1	513	TRUARC N5002-250ZD				
60	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS				

TILLER STEERING

SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	15 FT-LBS
3/8-16 (M10)	22 FT-LBS

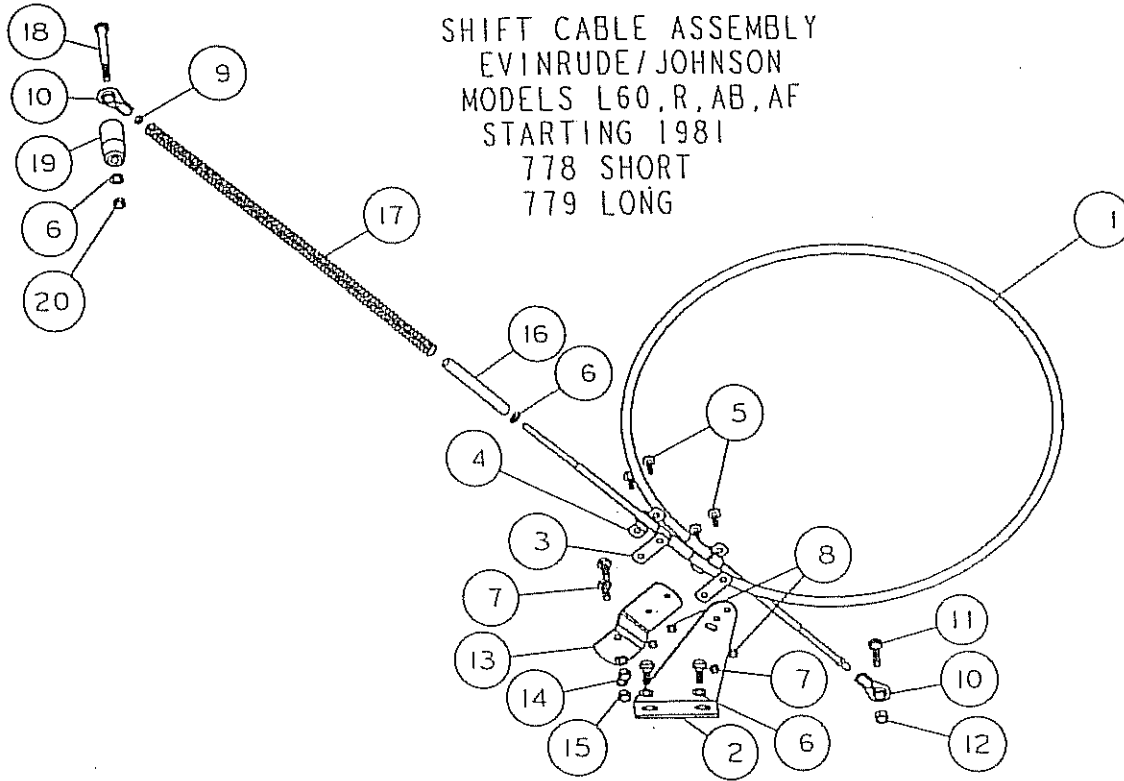
FOR MODELS L60 & L60L89
SHIFT CABLE ASSY 778, 779 SEE PG. 22

FOR MODEL L60L04 E-TEC
SHIFT CABLE ASSY 1871, SEE PG. 25.3

BEARING, SEAL, SNAP & "O" RING KIT

1 BRG 462.1

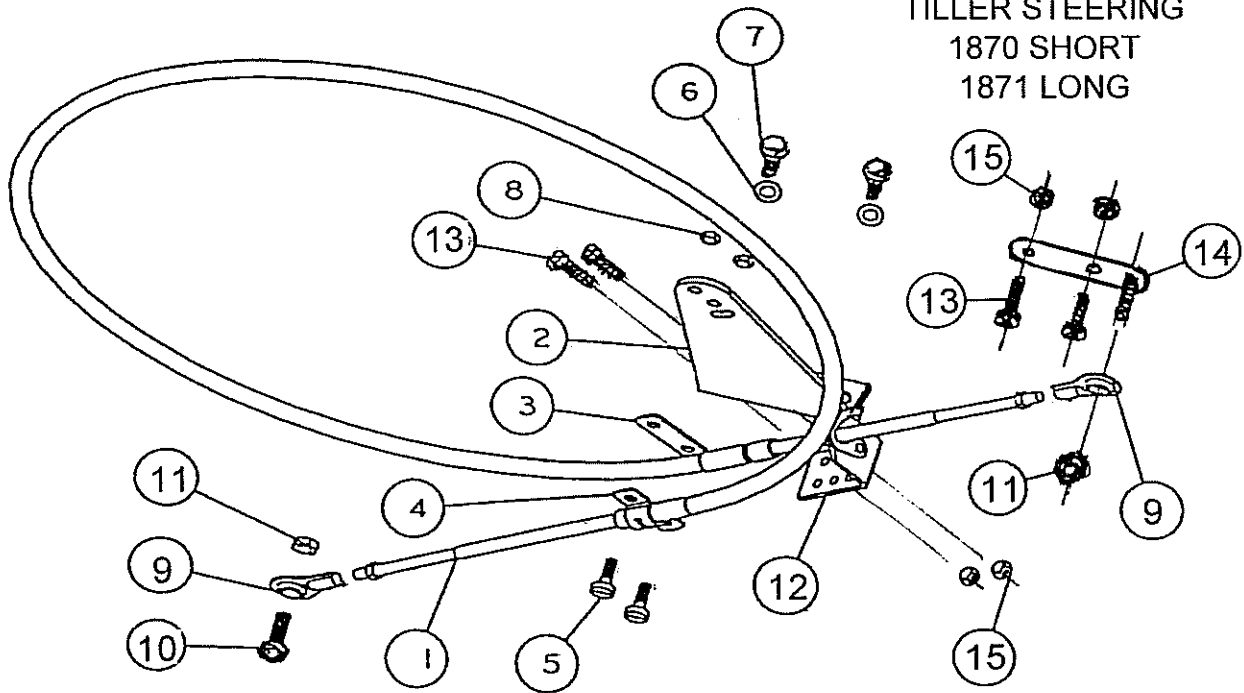
SHIFT CABLE ASSEMBLY
 EVINRUDE/JOHNSON
 MODELS L60, R, AB, AF
 STARTING 1981
 778 SHORT
 779 LONG



REF	QTY	PART NO	DESCRIPTION
1	1	549	CABLE 3 1/2 FT MOR 33C SUPREME SHORT
1	1	547	CABLE 4 FT MOR 33C SUPREME LONG
2	1	156	BRACKET CABLE SUPPORT
3	2	542	SHIM MORSE A035777
4	2	543	CLAMP CHRYS 154317
5	4	561	FIL HD SLOTTED 10-24 X 5/8
6	4	635	1/4 WASHER AN960C416
7	4	572	BOLT HEX HD 1/4-20 X 5/8
8	4	619	NYLOC 10-24
9	2	621.1	HEX NUT 10-32 JAM
10	2	553.2	BALL END 1/4X10-32 CABLE
11	1	583	BOLT HEX HD 1/4-28 X 1
12	1	624	NYLOC 1/4-28
13	1	775	BRACKET CABLE L50C
14	2	638	WASHER SPRING LOCK 1/4
15	2	628	NUT HEX 1/4-20
16	1	1285	GUIDE-T BAR HANDLE
17	1	1284	SPRING, T BAR HANDLE
18	1	581	BOLT HEX HD 1/4-20 X 2 3/4
19	1	776	PLUG HANDLE L50C
20	1	623	NYLOC 1/4-20

6. AUG. 97

SHIFT CABLE ASSEMBLY
BRP STARTING 2006
TILLER STEERING
1870 SHORT
1871 LONG



REF	QTY	PART NO.	DESCRIPTION
1	1	547	CABLE 4 FT MOR 33C SUPREME
1	1	547.1	CABLE 4 1/2 FT MOR 33C SUPREME
2	1	156	BRACKET CABLE SUPT OMC, MORSE
3	1	542	SHIM MORSE A035777
4	1	543	CLAMP CHRYS 154317
5	2	561	FIL HD SLOTTED 10-24 X 5/8
6	2	635	1/4 WASHER AN960C416
7	2	572	BOLT HEX HD 1/4-20 X 5/8
8	2	619	NYLOC 10-24
9	2	553.2	BALL END 1/4X10-32 CABLE
10	1	573	BOLT HEX HD 1/4-20 X 3/4
11	2	623	NYLOC 1/4-20
12	1	1869	CABLE ANCHOR MORSE FORMED
13	4	558.4	PAN HD PHILLIPS 10-32 X 3/4
14	1	1868	STUD PLATE BRP TILLER
15	4	621	NYLOC 10-32