MODEL BE60 HONDA SERIES 60 HP 2010
ASSEMBLY INSTRUCTIONS
3 CYLINDER, 4 STROKE 60.9 CU. IN.

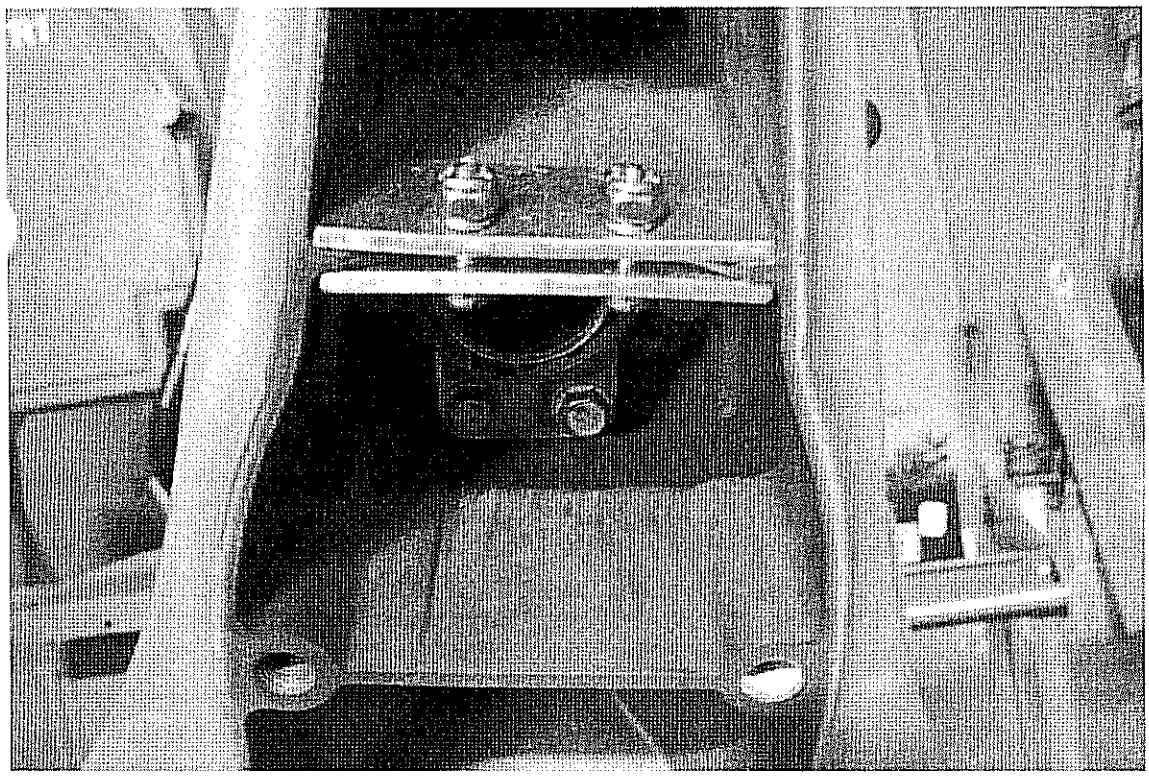
1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Remove the five bolts holding the gearbox to the exhaust housing and remove the gearbox assembly.

2. Remove the water pump assembly from the propeller drive, including the lower stainless steel plate, gasket, and impeller drive key.

3. Install the jet driveshaft assembly into the main 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 on top of the stainless steel plate and gasket, using two 6 x 10mm dowels. Be sure also to install the water pump impeller drive key removed from the propeller drive. Use the four metric bolts from the propeller gear box. Grease the threads.

5. In the mid section of the motor, there is a curved opening in the rib between the exhaust gas and the cooling water. This opening must be blocked to control exhaust noise. See the photograph. Slide the exhaust baffle onto the rib, flush with the mounting face, making sure **the nuts are on the cooling water side**. Do not over tighten the nuts to avoid excessively distorting the plates.



6. Install the M10 taper lock stud at the rear of the motor mid-section. Grease the threads and after tightening, grease the tapered section.

7. Next, attach the Jet Drive to the motor. Install the plastic shift rod guide #1661, in the 5/16 hole, and the dowel pin #616.2 in the rear hole, to align the Jet Drive to the motor. Four M10 bolts and lock washers from below 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 socket, and guide the Jet into place. Tighten the four bolts to 22 Ft-Lbs.

8. 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.

9. 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 seven shim washers, rubber washer and cup, and nut retainer on the shaft, up against the impeller, 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.

10. 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.

11. If a tiller steering handle is used, see instructions for tiller steering cable assembly #2064. If remote controls are used, the shift cable from the remote control box goes over the transom, directly to the reverse gate linkage. The gear shift linkage inside the motor cowl is set to neutral and left there to enable starting the motor.

12. 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.**

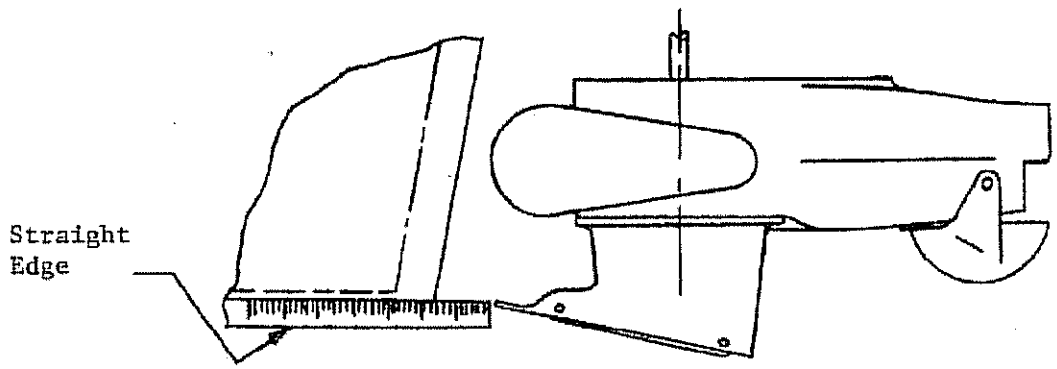
    If this forward lock condition is not met, readjust the cable positions.

13. **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 3/8 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 3/8 inch, you can drill one alternate set of holes 3/8 inch up or down from the pencil marks. By alternating between these two sets of transom holes and the three sets of motor holes, the motor can be moved in 3/8 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 overspeeds 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.

SETTING MOTOR HEIGHT



CAUTION

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

MAINTENANCE AND LUBRICATION

See last page.

CAUTION

V4 and V6 jet drives

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 owner's 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

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.

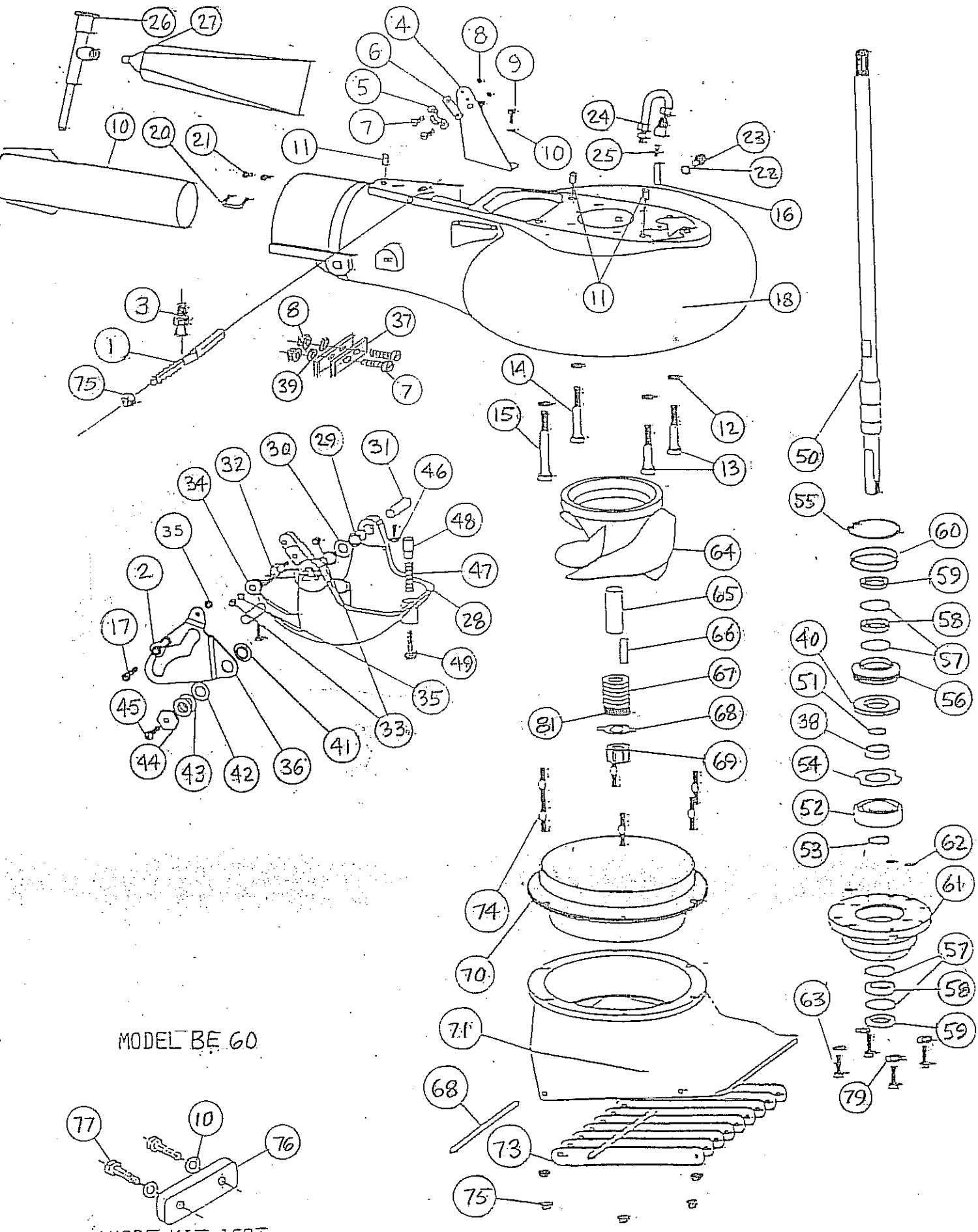
SALT WATER USE

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 BE 60
ANODE KIT 1693

MODEL BE60 HONDA 60 HP 2010

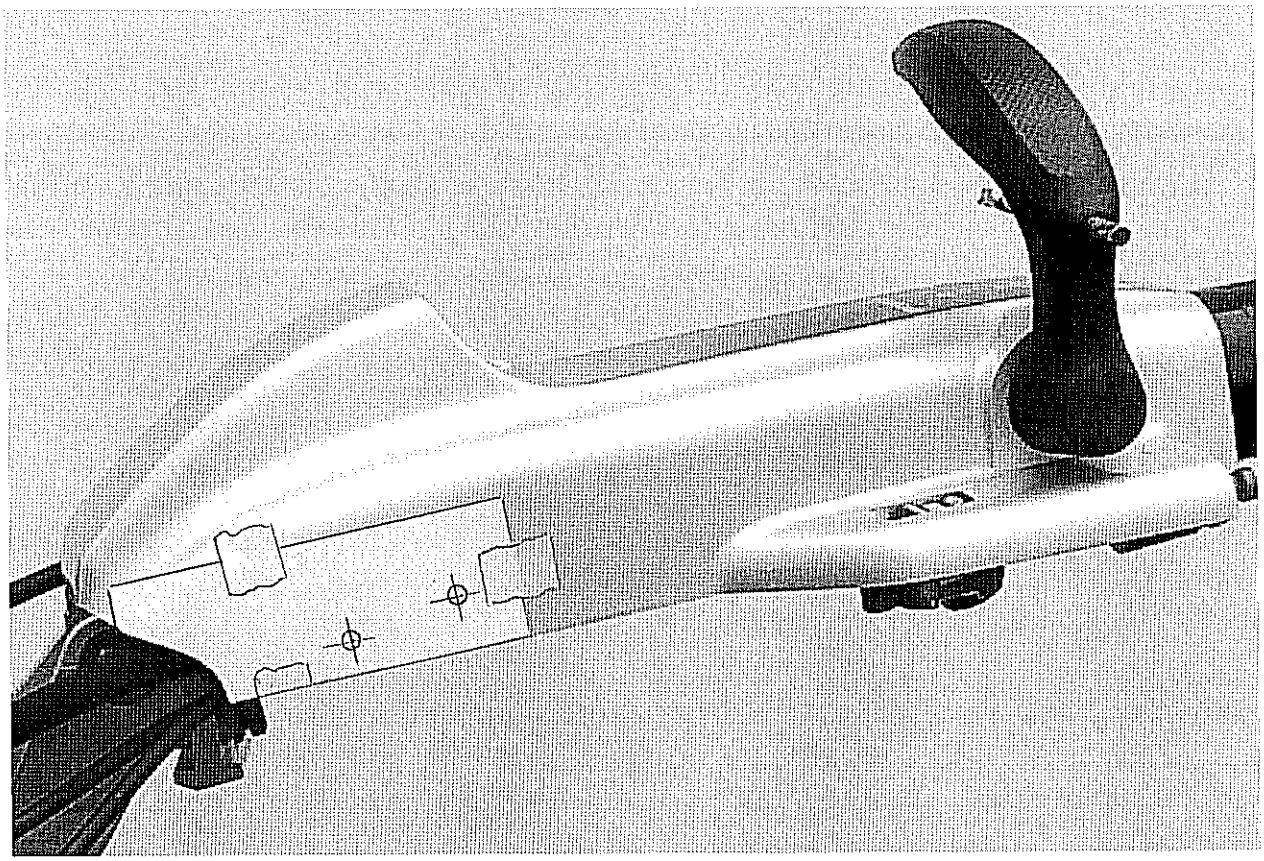
REF	QTY	PART NO.	DESCRIPTION
1	1	1486	WEDGE BOLT AN
2	1	553.2	BALL END 1/4X10-32 CABLE
3	1	1485	WEDGE STUD AN
4	1	156	BRACKET CABLE SUPT OMC, MORSE
5	1	543	CLAMP CHRYS 154317
6	1	542	SHIM MORSE A035777
7	4	561.1	FIL HD SLOTTED 10-24 X 3/4
8	4	619	NYLOC 10-24
9	2	572	BOLT HEX HD 1/4-20 X 5/8
10	5	636	1/4 WASHER AN960C416
11	3	616.2	DOWEL PIN 6 X 10 MM
12	4	636	WASHER SPRING LOCK M10
13	2	592.2	BOLT HEX HD M10-1.25 X 60MM
14	1	592.3	BOLT HEX HD M10-1.25 X 70MM
15	1	592.4	BOLT HEX HD M10-1.25 X 90MM
16	1	1661	SHIFT GUIDE AN, AY-ROD
17	1	573	BOLT HEX HD 1/4-20 X 3/4
		1980.05	VOLUTE WITH GATE BE
18	1	1979.05	VOLUTE WITH EXHAUST TUBE BE
19	1	128	EXHAUST TUBE ASSY LARGE 2 1/2
20	1	847	CLIP EXHAUST TUBE 3/4
21	2	621	NYLOC 10-32
22	1	1023	WASHER FIBER 3/8
23	1	1022	BOLT HEX HD 3/8-16 X 1/2
24	1	976	LUBE HOSE ASSY
25	1	539	ZIRC FITTING 1/4-28
26	1	550	GREASE GUN
27	1	552	GREASE 10 OZ TUBE NO. 630AA
28	1	1172.05	REVERSE GATE LARGE
29	2	636	NYLINER 1/2 ID X 13/16
30	1	1178	SPRING GATE PIVOT 1/2
31	2	823	PIN GATE PIVOT 1/2 LARGE
32	1	1043	SHAFT ROLLER
33	3	624	NYLOC 1/4-28
34	1	1042	ROLLER ASSY.
35	2	623	NYLOC 1/4-20
36	1	1034	SHIFT CAM LARGE
37	2	2058	EXHAUST BAFFLE BE60
38	1	467	COLLAR BACKFIT 7305
39	2	637	WASHER SPRING LOCK #10
40	1	1634	SPACER 7305
41	1	1037	BUSHING CAM
42	1	1038	WASHER CAM
43	2	1039	SHIM - CAM
44	1	1036	CAM ECCENTRIC DRILLED
45	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH
46	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH
47	1	1170	SPRING GATE BUMPER
48	1	1497	GATE BUMPER
49	1	559.2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH
	1	2061.1	SHAFT ASSY COMPLETE BE60 19T
50	1	2060	SHAFT ONLY, BE60 19T 30 5/32 LG
51	1	41	SHAFT BEARING THRUST RING
52	2	502	BEARING 7305B-UA
53	1	511	TRUARC 5100-98
54	1	404	BACKUP WASHER
55	1	513	TRUARC N5002-250ZD
56	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS
57	4	517	SPIROLOX RR-150S
58	2	506	SEAL INNER
59	2	507	SEAL OUTER 6324-S
60	2	527	O RING 568-141 3/32X2 5/16X2 1/2
61	1	108.5	BEARING CARRIER W/SEALS & O RING 5/16
62	3	521	O RING 568-011 1/16X5/16X7/16
63	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
64	1	106.23	IMPELLER 6 7/8 60 HP
65	1	136	SHAFT SLEEVE PLASTIC LARGE
66	1	1706	IMPELLER TEE KEY - 1/2 ROUND
67	7	121	SHIM WASHER LARGE
68	1	781	NUT KEEPER LARGE/PKG 2 PER BAG
69	1	122.1	SHAFT NUT 3/4-16 BRASS
		1855.05	INTAKE ASSY 6 7/8 FLANGED W/ GRILL & LINER
70	1	1833	LINER 6 7/8 FLANGED
71	1	1332.05	INTAKE PAINTED ONLY
72	2	14	GRILL ROD
73	9	117	GRILL BAR LARGE
74	6	1319	STUD - INTAKE LARGE
75	7	625	NYLOC 5/16-18
76	1	1635	ANODE PAD - SMALL, MED, LRG
77	2	587.3	BOLT HEX HD M6-1.0 X 25MM
79	4	640	WASHER SPRING LOCK 5/16
81	1	1719	TORSIONAL DAMPER 3/4

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

TILLER STEERING
SHIFT CABLE ASSY 2064 SEE PAGE 25.6

BEARING, SEAL, SNAP & "O" RING KIT
1 BRG 462.1

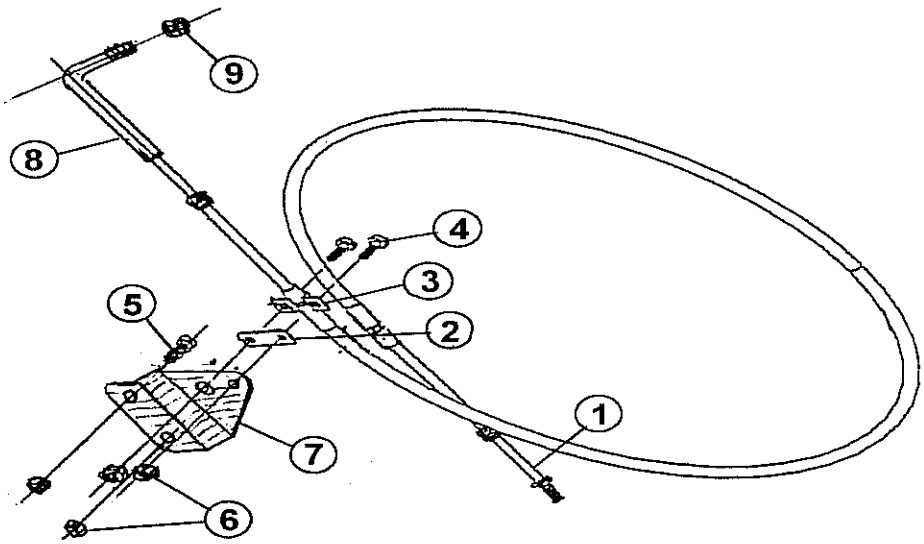
BE TILLER SHIFT CABLE ASSY STARTING 2010
HONDA 60 HP
2064



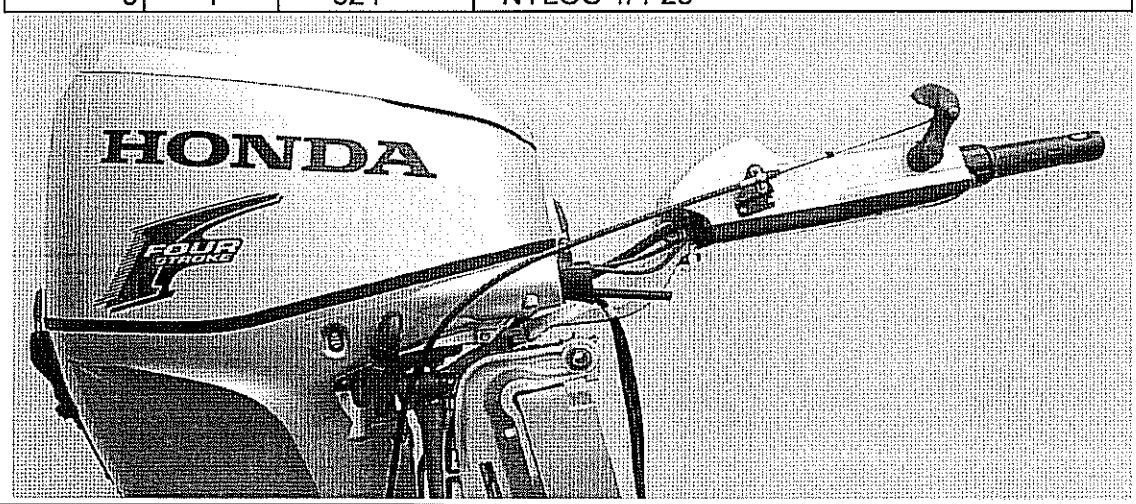
1. Remove the lower cover from the handle.
2. **Carefully** cut out and align the drilling template, holding it in place with masking tape. Center punch at hole locations. **Before drilling**, as shown in the photograph, obtain a piece of wood of the proper height such that the 7/32" drill protrudes only 3/8 of an inch. This will prevent the drill from contacting wires when it breaks through. Drill the two holes
3. Attach the cable anchor bracket #2062 using two #10-24 x 3/4 screws and nyloc nuts. Replace the lower cover.
4. A 17/64" hole must be drilled in the shift handle to receive the cable rod end #2063. File a flat on the handle at the position shown in the photographs for a center punch to enable starting the drill. Drill in about 1/4 of an inch using a 1/8" drill, then follow with a 17/64" drill. Be careful to align the drill horizontally (so that it does not point up or down) and square with the handle, when looking from above (so that it does not point left or right).
5. Screw the rod end onto the cable so that the end of the rod end reaches 1/8 inch onto the unthreaded section of the cable. Insert the threaded end into the shift handle and install the 1/4-28 nyloc nut.
6. Attach the cable to the cable anchor on the handle and attach the lower end of the cable to the reverse gate mechanism. Both cable anchors are slotted to allow cable alignment for free operation.
7. Put the shift handle in forward. Adjust the lower rod end and cable anchor such that the cam roller is **all the way** to the bottom of the cam slot. Shift to reverse and back to forward to verify this roller position. Pull on the reverse gate to verify that it is locked in forward.

CAUTION **YOU MUST RETURN THE THROTTLE TO IDLE BEFORE SHIFTING.**

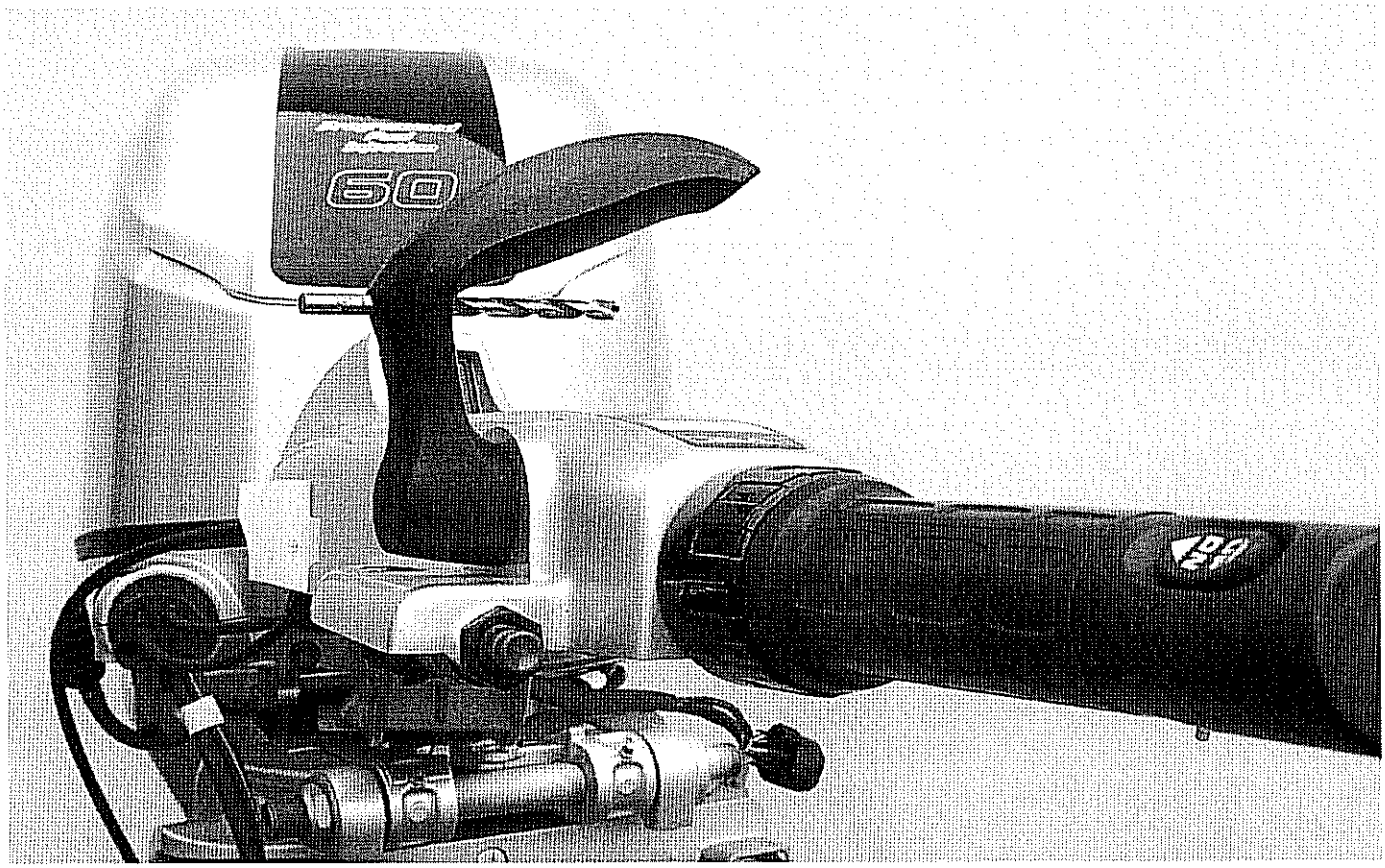
SHIFT CABLE ASSEMBLY
HONDA MODEL BE60 STARTING 2010
TILLER STEERING
2064 LONG



REF	QTY	PART NO.	DESCRIPTION
1	1	547.1	CABLE 4 1/2 FT MOR 33C SUPREME
2	1	542	SHIM MORSE A035777
3	1	543	CLAMP CHRYS 154317
4	2	561	FIL HD SLOTTED 10-24 X 5/8
5	2	561.1	FIL HD SLOTTED 10-24 X 3/4
6	4	619	NYLOC 10-24
7	1	2062	CABLE ANCHOR BE60
8	1	2063	ROD END
9	1	624	NYLOC 1/4-28



BE60 TILLER SHIFT CABLE ASSY STARTING 2010
HONDA 60 HP
2064



BE60 TILLER SHIFT CABLE ASSY STARTING 2010
HONDA 60 HP
2064