

MODEL V, R30 SERIES
ASSEMBLY INSTRUCTIONS
MERCURY 18, 25 HP MOTORS, FROM 1980

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Remove the engine cover and prepare to disconnect the gear shift shaft coupling, remove the gearbox and remove the water cooling pump from the gearbox. All of this is explained in detail in the Mercury "Operation and Maintenance" manual which comes with your motor.
2. In place of the gear shift shaft, install the one from the jet drive kit. This is needed to control the tilt lock for reverse operation. Be sure the flat washer is in place, on top of the cross pin, when installing. Grease the lower end of the shaft where it will slide in the jet drive adapter plate.
3. Attach the jet drive adapter plate to the motor exhaust housing using the 4 metric bolts (10mm x 1-3/8) inch). Grease the bolt threads and tighten securely.
4. Next, install the jet driveshaft assembly into the spiral pump housing, locking it in place with two #10-24 x 5/8 fil head screws and lockwashers. Grease the threads.
5. Install the water pump adapter onto the shaft bearing housing using four #10-32 x 1 fillister head screws and lockwashers. Grease the threads.
6. Install the water pump assembly, including the lower stainless face plate, impeller drive key, bolts, all taken from the propeller gearbox. Grease the threads. A gasket under the stainless plate is not necessary. Follow instructions in the Mercury manual.
7. Mount the jet drive to the motor using four 5/16-18 x 2 bolts and lock washers from below and one 3/8-16 x 1-1/4 bolt upper rear. Grease the threads, the driveshaft spline generously and the water tube lightly. As you guide the unit in place, be sure the water cooling tube enters the water pump tighten the five bolts securely.
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 nine shim washers and nut retainer on the shaft, up against the impeller, and bring the nut up snug by hand. Be careful that the retainer does not fall into the thread groove and jam the nut.

Then bump the nut 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.

Motors prior to 1984 used 8mm bolts with 5/16 lockwashers. If your motor uses 8mm bolts, call the factory for 4 – 5/16 lockwashers and spacer sleeves #1251 to use in the adapter plate.\

When, after use in sand and gravel, the blade clearance becomes more than about 1/32 inch between the impeller edge and the water intake casing wall, one or more of the stainless 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 1/4-20 x 3/4 hex head bolts. No lockwashers are used. Grease the threads. See diagram page 3.
10. Attach the shift handle assembly to the motor. Remove the two bolts holding the steering handle and mount the shift handle bracket between the steering handle bracket and motor. Reinstall the two bolts and tighten.

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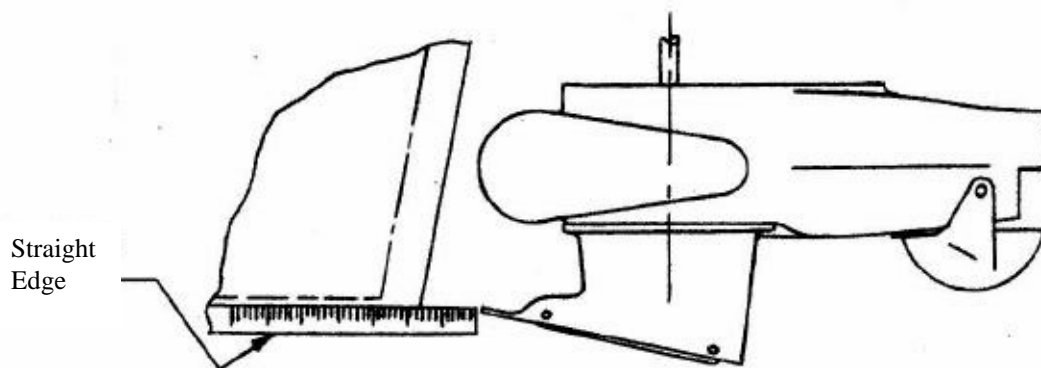
11. Thread the shift rod onto the rod end and adjust the rod length until the reverse gate is held against the rubber pad beneath the main housing when the shift handle is in forward position. Install the flat washer and cotter pin on the flanged side of the nylon bushing. Align the bend in the shift rod parallel to the motor and tighten the two nuts. Check for proper operation and realign if necessary.

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. For the motor to lock down in reverse, you must twist the throttle grip to neutral, shift to reverse and then apply throttle in the "reverse throttle" direction to maintain the lock down.

The neutral position on the shift control does not give a dead neutral on the reverse gate. When cold starting the motor, leave the lines holding the boat to the dock secure, or beach the bow of the boat so as to not be thrown off balance when the engine starts.

12. When converting to jet drive, your motor will have to be raised to height shown in diagram on page 3, using a straight edge under the boat. Test run the boat and then raise or lower the motor 1/4 inch at time to obtain the 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 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.

PROPER ENGINE HEIGHT



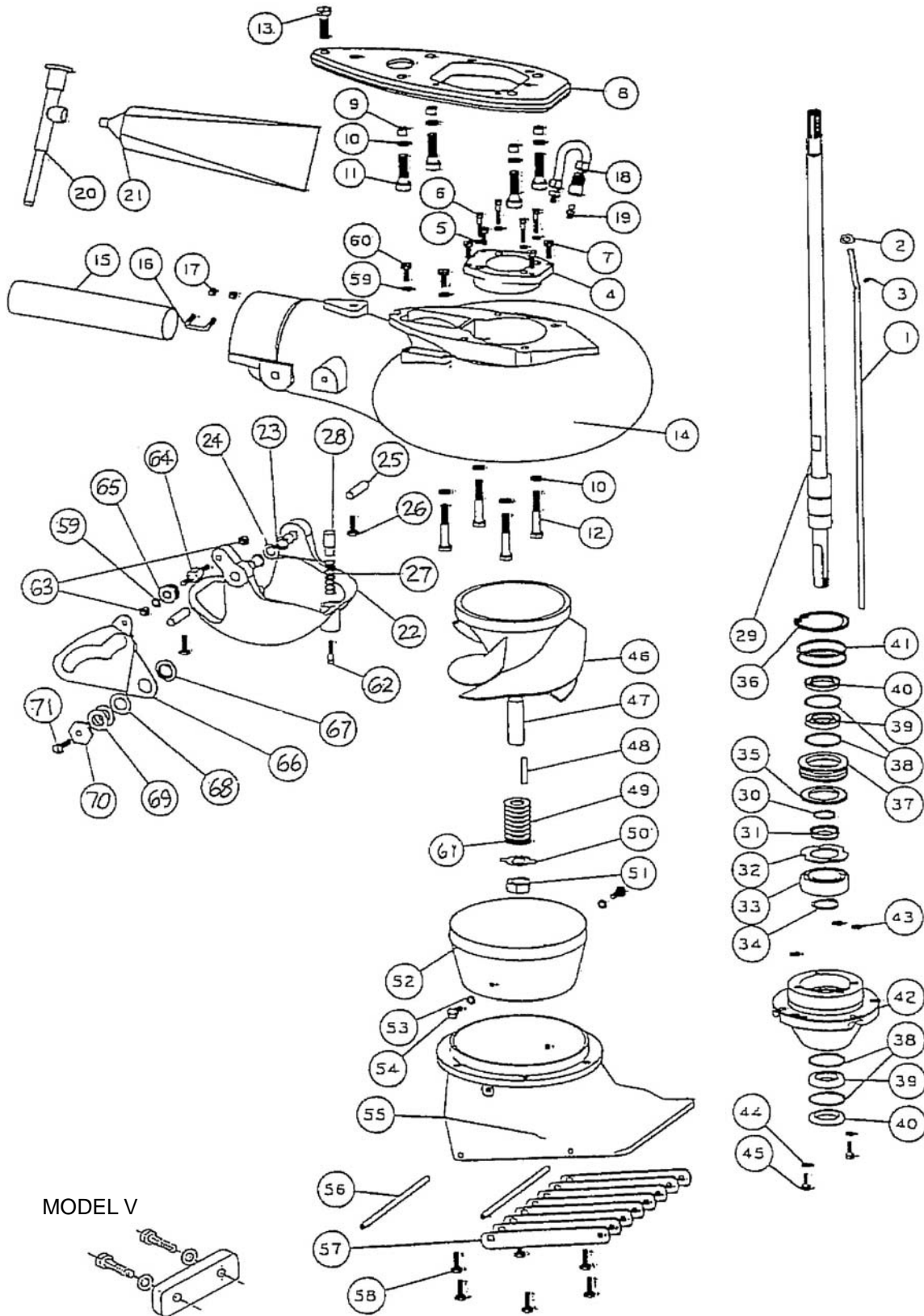
CAUTION

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

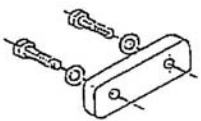
MAINTENANCE AND LUBRICATION

See separate sheet.

GOOD BOATING AND HAVE FUN!



MODEL V



ANODE KIT 1693

MODEL V MERCURY/MARINER CAM GATE
2 STROKE 2 CYL 18-25 HP

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	1347	TILT LATCH VS ASSY SIDE SHIFT	47	1	36.1	SHAFT SLEEVE PLASTIC MEDIUM
1	1	1347.1	TILT LATCH VL ASSY SIDE SHIFT	48	1	1705	IMPELLER TEE KEY - 1/2 ROUND
2	1	635	1/4 WASHER AN960C416	48	1	762	IMPELLER TEE KEY - SQUARE
3	1	618.1	ROLL PIN 1/8 X 9/16	49	8	21	SHIM WASHER MEDIUM
4	1	786	PUMP ADAPTER V	50	1	805	NUT KEEPER MED/PKG 2 PER BAG
5	4	837	WASHER SPRING LOCK #10	51	1	22.1	SHAFT NUT 5/8-18 BRASS
6	4	559	FIL HD SLOTTED 10-32 X 1			224.2	INTAKE ASSY 6 WITH GRILL & LINER
7	4	629	BOLT HEX HD M6-1.0 X 16 MM	52	1	855	LINER 6 W/HARDWARE
8	1	784	ADAPTER PLATE V	53	2	638	WASHER SPRING LOCK 1/4
9	4	1251	SLEEVE V ADAPTER PLATE (SEE NOTE)	54	2	572	BOLT HEX HD 1/4-20 X 5/8
10	8	640	WASHER SPRING LOCK 5/16 (SEE NOTE)	55	1	853	INTAKE PAINTED ONLY
11	4	592.1	BOLT SOC HD M10-1.5 X 35MM	56	2	216	GRILL ROD SMALL
12	4	595	BOLT HEX HD 5M6-18 X 2	57	8	215	GRILL BAR SMALL
13	1	606	BOLT HEX HD 3/8-16 X 1 1/4	58	6	573	BOLT HEX 1/4-20 X 3/4
		81401.14	VOLUTE WITH CAM GATE V	59	3	635	1/4 WASHER AN960C416
14	1	814.04	VOLUTE WITH EXHAUST TUBE V	60	2	572	BOLT HEX 1/4-20 X 5/8
15	1	221	EXHAUST TUBE SMALL 1 1/2	61	1	1718	TORSIONAL DAMPER 5/8
16	1	847	CLIP EXHAUST TUBE SMALL 1 1/2	62	1	559.2	FIL HD SLOTTED 10/32 X 1/4 PATCH
17	2	621	NYLOC 10-32	63	2	624	NYLOC 1/4-28
18	1	975	LUBE HOSE ASSY	64	1	1043	SHAFT ROLLER
19	1	539	ZIRC FITTING 1/4-28	65	1	1042	ROLLER ASSY
20	1	550	GREASE GUN	66	1	1035	SHIFT CAM MEDIUM
21	1	552	GREASE 10 OZ TUBE NO. 630-AA	67	1	1037	BUSING CAM
22	1	1355.04	GATE PAINTED SMALL CAM MERCURY	68	1	1038	WASHER CAM
23	2	535	NYLINER 3/8 ID X 11/16	69	2	1039	SHIFT CAM
24	1	1177	SPRING GATE PIVOT 3/8 SMALL	70	1	1036	CAM ECCENTRIC DRILLED
25	2	821	PIN GATE PIVOT 3/8 SMALL	71	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH
26	2	574	BOLT HX HD 1/4-20 X 3/4 PATCH	NOTE: USE 8MM GEARBOX BOLTS ON ENGINES PRIOR TO 1984			
27	1	1170	SPRING GATE BUMPER				
28	1	1169	GATE BUMPER				
		1364	SHAFT ASSY COMPLETE, VSS, 9T				
29	1	1363	SHAFT ONLY, VSS, 9T 23 3/8 LG				
		801	SHAFT ASSY COMPLETE, VL, 9T				
29	1	800	SHAFT ONLY, VL, 9T 28 3/8 LG				
30	1	41	SHAFT BEARING THRUST RING				
31	1	477	COLLAR BACKFIT 7205				
32	1	1536	BACKUP WASHER MED/SMALL				
33	1	504	BEARING 7205B-UA				
34	1	511	TRUARC 510098SPP				
35	1	1535	SPACER 7205				
36	1	512	TRUARC N5002-212ZD				
37	1	433	UPPER SEAL CARRIER W/SEALS & O RINGS				
38	4	517	SPIROLOX RR-150S				
39	2	506	SEAL INNER 0857				
40	2	507	SEAL OUTER 1317 REV B				
41	2	526	O RING 568-135				
42	1	813	BEARING CARRIER SEALS V				
43	3	521	O RING 568-011 1/16X5/16X7/16				
44	2	637	WASHER SPRING LOCK #10				
45	2	561	FIL HD SLOTTED 10-32 X 5/8				
46	1	414	IMPELLER 6-79 W/36.1 SLEEVE				

TILT LATCH ASSY 1347, 1347.1 SEE PAGE 16.2
SHIFT ROD ASSY 1348, 1348.1 SEE PAGE 16.1
BEARING, SEAL, SNAP "O" RING KIT 803.1

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

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.

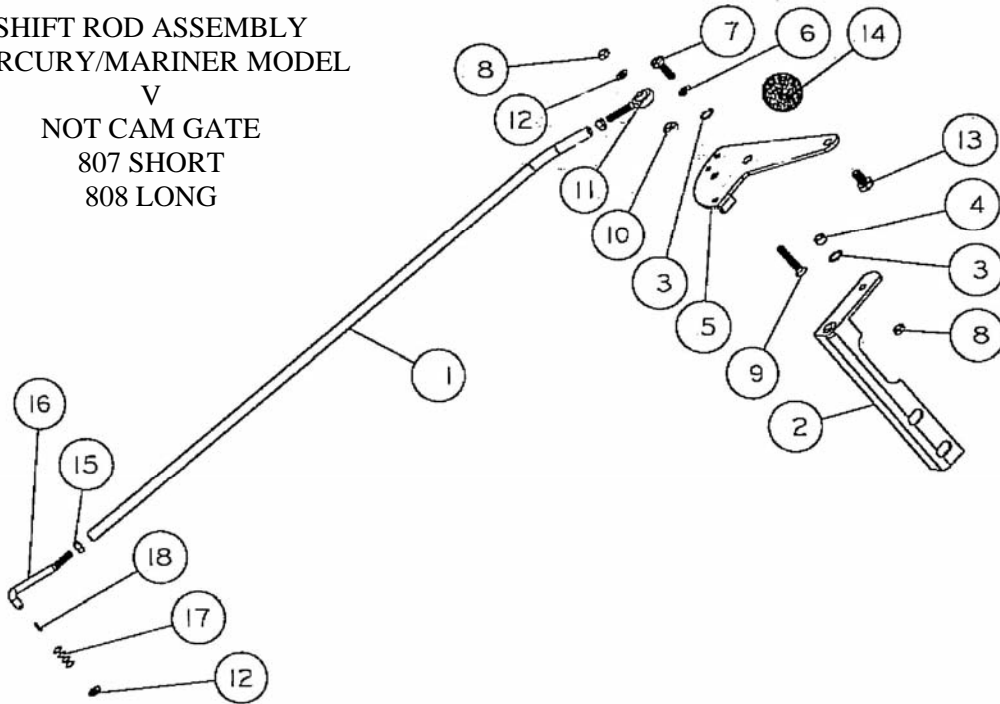
GUARANTEE

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

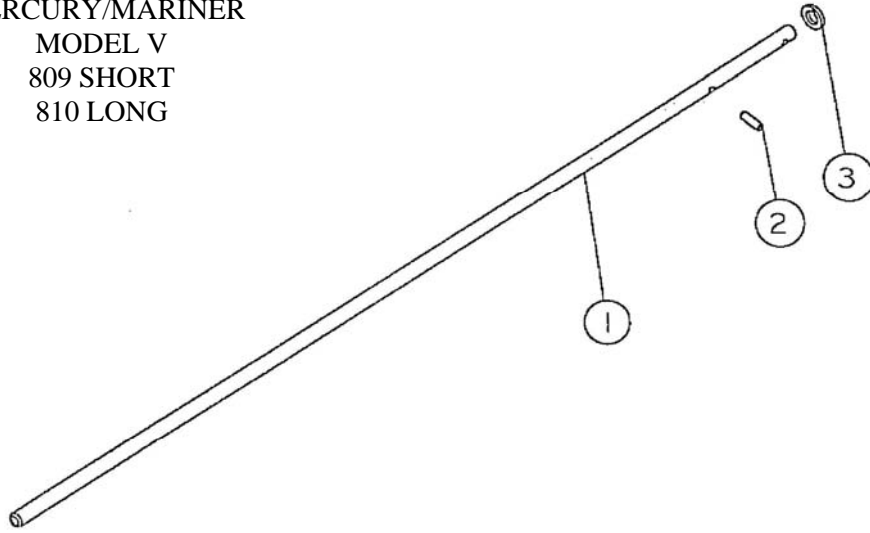
SHIFT ROD ASSEMBLY
MERCURY/MARINER MODEL

V
NOT CAM GATE
807 SHORT
808 LONG



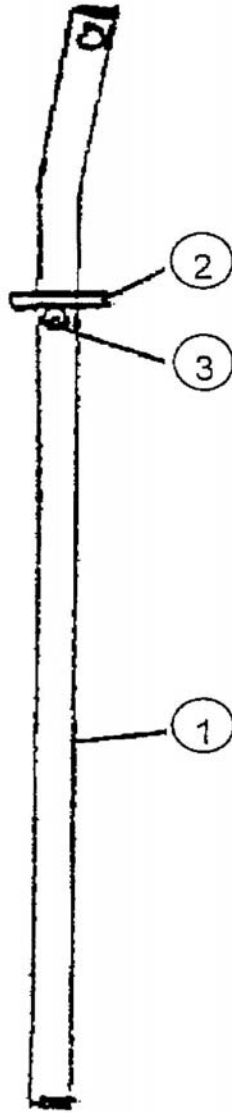
REF	QTY	PART NO.	DESCRIPTION
1	1	807.1	SHIFT ROD VS BENT SHORT
1	1	808.1	SHIFT ROD VL BENT LONG
2	1	973	SHIFT LEVER MOUNT
3	2	1023	WASHER FIBER 3/8
4	1	789	BUSHING LEVER V
5	1	787	LEVER V
6	1	633	WASHER 1/4 X 1 1/8
7	1	573	BOLT HEX HD 1/4-20 X 3/4
8	2	623	NYLOC 1/4-20
9	1	587	FLAT HD 1/4-20 X 1 1/4 SLOTTED
10	1	790	SPACER ROD END V
11	1	553	ROD END SPM-4
12	2	635	1/4 WASHER AN960C416
13	1	594	BOLT HEX HD 5/16-18 X 1/2
14	1	551	KNOB 1 3/8
15	2	622	NUT HEX 1/4-28
16	1	24	ROD END FORMED
17	1	1164	SPRING-ROD END
18	1	645	COTTER PIN 1/16 X 1/2

TILT LATCH ROD
MERCURY/MARINER
MODEL V
809 SHORT
810 LONG



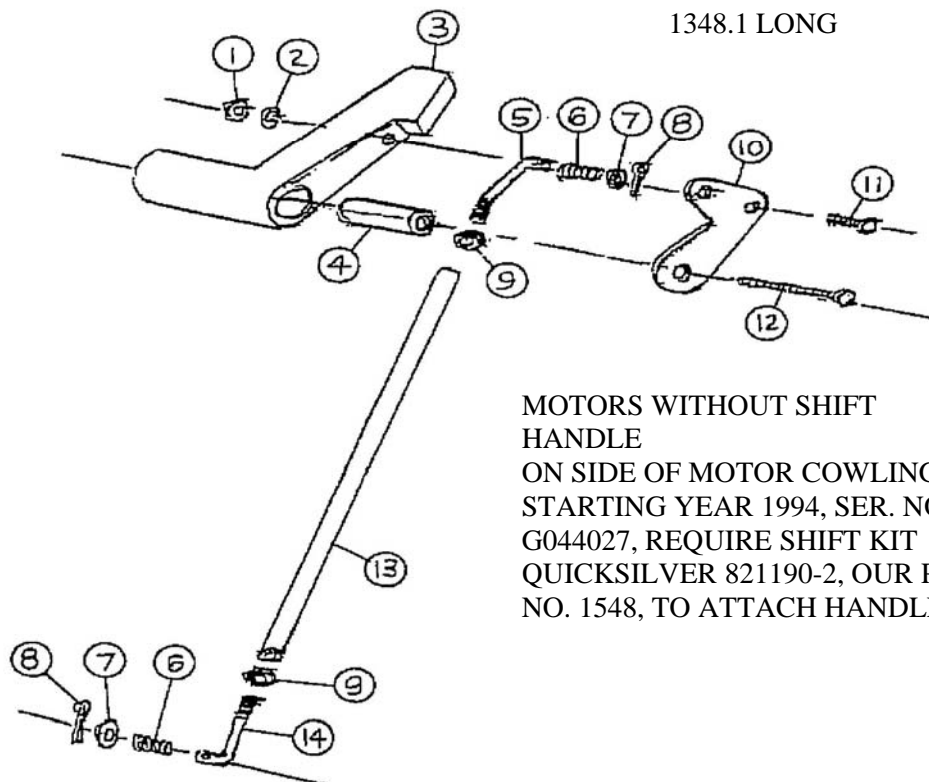
REF	QTY	PART NO.	DESCRIPTION
1	1	219	SHIFT ROD H 14 5/16
2	1	618	ROLL PIN 1/8 X 3/4 SS
3	1	635	1/4 WASHER AN960C416

TILT LATCH ROD ASSY
 MERCURY/MARINER
 MODEL V CAM GATE
 TILLER STEERING
 1347 SHORT
 1347.1 LONG



REF	QTY	PART NO.	DESCRIPTION
1	1	1347	TILT LATCH ASSY V SIDE SHIFT SHORT
1	1	1347.1	TILT LATCH ASSY V SIDE SHIFT LONG
2	1	635	1/4 WASHER AN960C416
3	1	618.1	ROLL PIN 1/8 X 9/16 SS

SHIFT ROD ASSEMBLY
 MERCURY/MARINER
 MODEL V CAM GATE
 TILLER STEERING
 1348 SHORT
 1348.1 LONG



MOTORS WITHOUT SHIFT
 HANDLE
 ON SIDE OF MOTOR COWLING,
 STARTING YEAR 1994, SER. NO.
 G044027, REQUIRE SHIFT KIT
 QUICKSILVER 821190-2, OUR PART
 NO. 1548, TO ATTACH HANDLE

REF	QTY	PART NO.	DESCRIPTION
1	1	621.1	NUT HEX #10-32
2	1	2842 M5	#10 STAR LOCK WASHER
3	1	1372	MERCURY HANDLE MODIFIED (823952-1)
4	1	1337	SPACER-V SIDE SHIFT
5	1	1371	ROD END-BENT
6	2	1164	SPRING-ROD END
7	2	635	1/4 WASHER AN960C416
8	2	645	COTTER PIN 1/16 X 1/2
9	2	622	NUT HEX 1/4-28
10	1	1336	SHIFT LEVER V
11	1	558.4	PAN HD PHILLIPS 10-32 X 3/4
12	1	558.5	PAN HD PHILLIPS 10-32 X 2 1/2
13	1	1349	SHIFT ROD VSS 17 5/8 SHORT
13	1	1349.1	SHIFT ROD VSS 21 3/4 LONG
14	1	24	ROD END FORMED