

MODEL AP SERIES

ASSEMBLY INSTRUCTIONS

4 Stroke motors - 60-70 HP, Suzuki (AP-S70), Evinrude (AP-E70)

1. Place the engine on the transom of your boat so that it is mounted vertically, in the normal fashion. Remove the cross pin at the lower end of the shift rod. Remove the bolts holding the gearbox to the exhaust housing. As you lower the gearbox, cut the tie holding the speedometer water pickup rubber tube and slip the tube off of the gearbox fitting. Remove the gearbox assembly.
2. Remove the water pump assembly from the propeller drive, including the lower stainless steel plate, dowel pins, and impeller drive key.

Remove the cross pin at the upper end of the shift rod and remove the shift rod.

3. Install the jet driveshaft assembly into the spiral pump housing locking it in place with the four 5/16-18 x 1 bolts, LOCK WASHERS. Use grease on the threads. 12 FT-LBS
4. Install the 3/4" thick aluminum water pump adapter on the main housing using 2 - 3/16 x 1/2 dowel pins. Using the 2 - 6MM dowel pins, install the water pump assembly on top of the 3/4" thick aluminum adapter and stainless steel plate. Be sure also, to install the water pump impeller drive key removed from the propeller drive. Lock in place using four 5/16-18 x 1-3/4 bolts, 10 FT-LBS. Grease the threads.
5. The large 3/4" adapter plate is attached to the mid section to hold the jet drive. Two 8 x 12MM dowels locate the plate, seven M10 x 35MM bolts with lockwashers secure it, 22 FT-LBS. Grease the threads.
6. Next, attach the jet drive to the motor. Two 3/16 x 1/2 dowel pins center the jet drive on the adapter plate. Four 3/8-16 bolts from below and one 3/8-16 x 1-1/2 bolt from above rear with lockwashers are used. Select the lower bolt lengths to suit the different counter bore depths so that all bolts enter the adapter plate the same depth.

Grease the bolt threads, driveshaft spline generously, and rubber water tube pilot and guide the jet into place. Tighten the five bolts, 22 FT-LBS.

7. 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 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 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.

MODEL AP

When, after use in sand and gravel, the blade clearance becomes more than about 1/32" between the impeller edge and the water intake casing wall, 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". Insufficient blade clearance will do more harm than good from any performance gains it might provide.

8. Place the intake casing in position with the lower end at the rear and tighten the six nuts, 12 FT-LBS. No lockwashers are used. Grease the threads.
9. Attach the shift cable and cable anchor bracket to the jet drive.

CAUTION If your motor is equipped for remote controls, 2 cables will be attached to the cable anchor bracket and roller cam, to provide neutral start protection. The outer cable comes from the remote control box to operate the reverse gate. It does not enter the motor housing. The shorter inner cable enters the motor housing to operate the neutral start safety switch and is driven by the movement of the reverse gate. The neutral start switch prevents starting the motor in forward or reverse.

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 end 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.

Shift to neutral and adjust the cable end in the motor housing so that the neutral start switch is activated. Check adjustment coming from both forward and reverse to compensate free play in cable linkage.

10. 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 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 inches 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.

MODEL AP

CAUTION

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

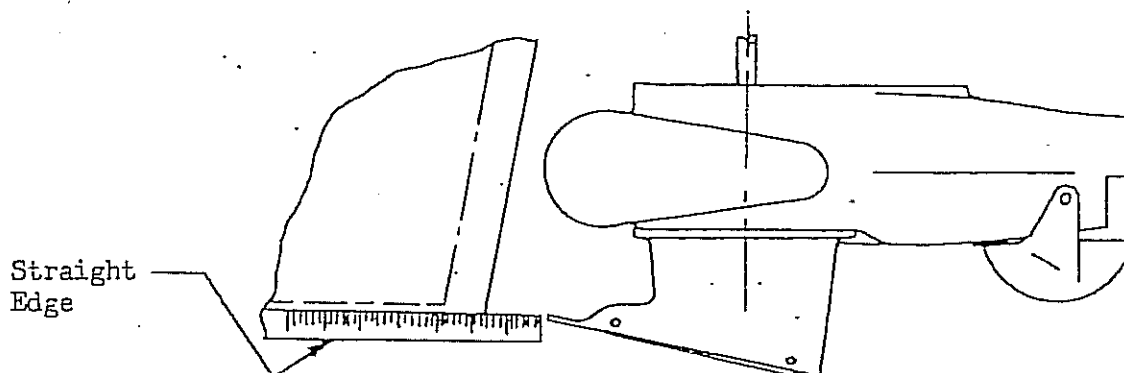
The cooling system can be flushed by removing the slotted screw next to the grease fitting. A hose coupling No. 24789A1 is available from a Mercury dealer. Turn on the water gently, start the motor, set to idle and watch for cooling water at the tell tale. Adjust water pressure if needed. Replace the screw after flushing.

MAINTENANCE AND LUBRICATION

See separate sheet.

GOOD BOATING AND HAVE FUN!

PROPER ENGINE HEIGHT



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.

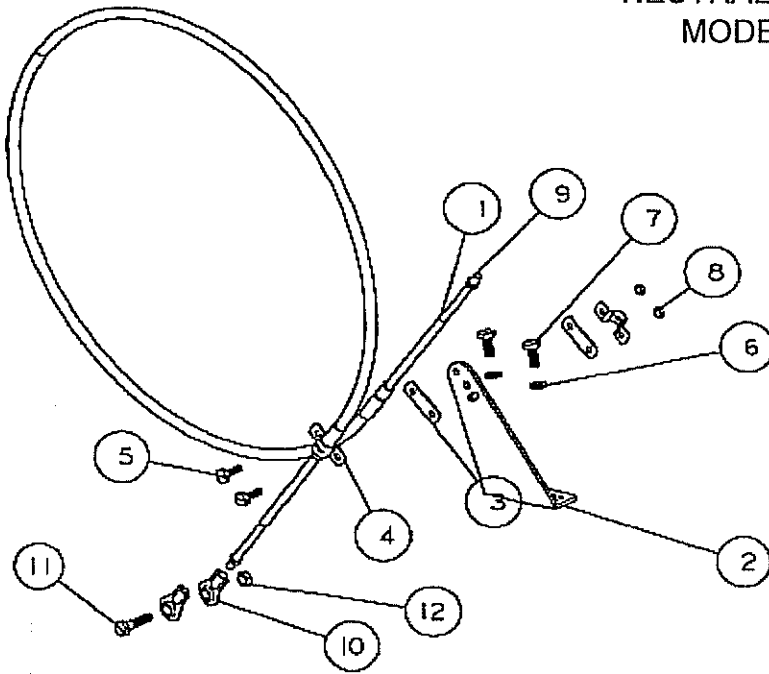
GUARANTEE

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

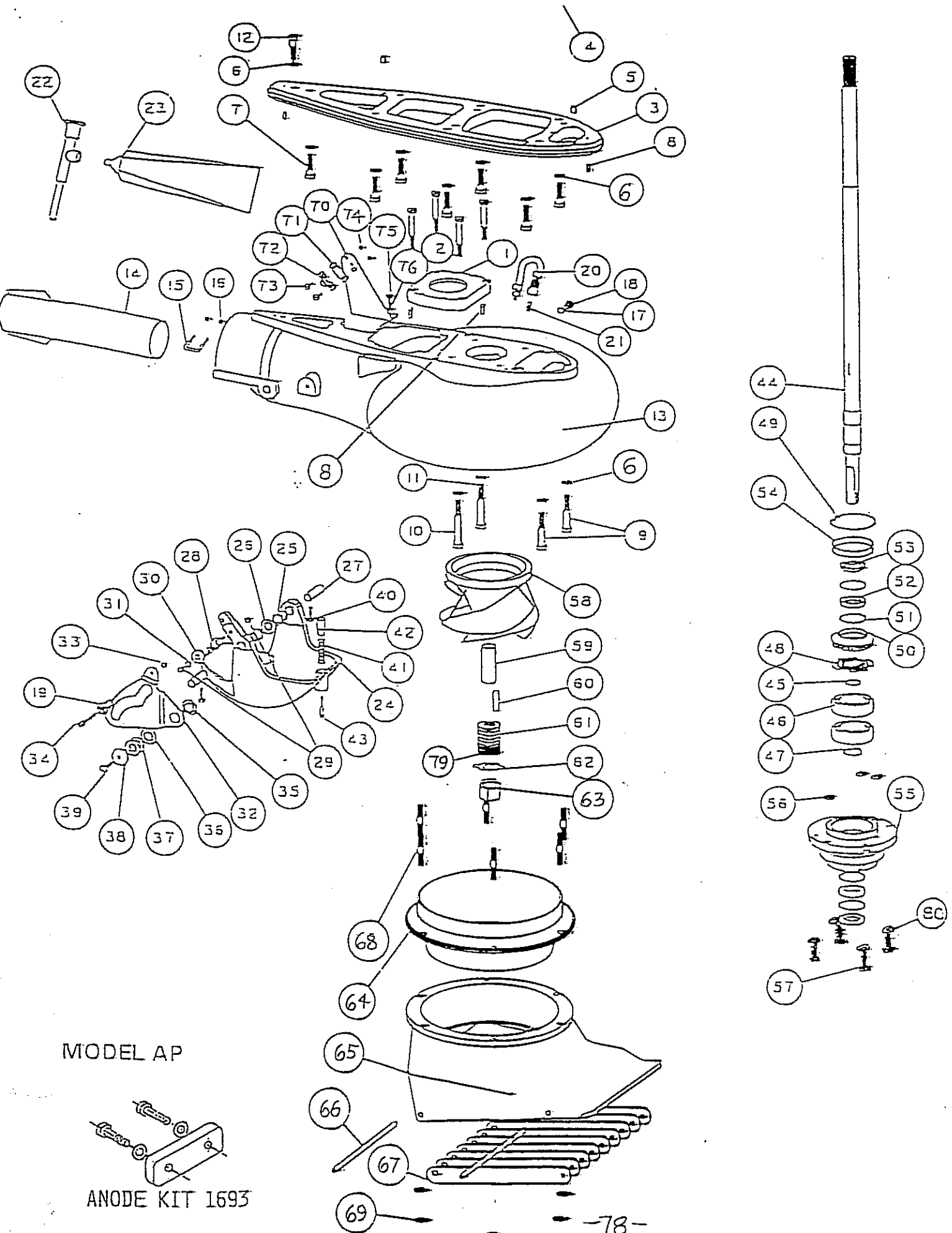
LARGE SERIES

NEUTRAL SWITCH CABLE ASSEMBLY
 MODEL AV, AP90-115, AP140P
 1754



REF	QTY	PART NO.	DESCRIPTION
1	1	547.2	CABLE 5 FT MOR 33C SUPREME
2	1	1499	BRACKET CABLE SUPPORT
3	1	542	SHIM MORSE AO35777
4	1	543	CLAMP CHRYS 154317
5	2	562	PAN HD PHILLIPS 10-32 X 1/2
6	3	635	1/4 WASHER AN960C416
7	2	572	BOLT HEX HD 1/4-20 X 5/8
8	3	621	NYLOC 10-32
9	2	621.1	NUT HEX 10-32
10	1	553.2	BALL END 1/4X10-32 CABLE
11	1	62	NUT HEX JAM 1/4-28
12	2	624	NYLOC 1/4-28
13	1	1199	PIVOT - CABLE END
14	1	562.1	PAN HD PHILLIPS 10-32 X 5/8
15	1	546	CLIP OMC 305736
16	1	1564	OMC CABLE ADAPTER 301729

NEUTRAL CABLE ASSY



MODEL AP

ANODE KIT 1693

MODEL AP SUZUKI / EVINRUDE 4 STROKE, 60-70 HP

REF NO.	QTY	PART NO.	DESCRIPTION	REF NO.	QTY	PART NO.	DESCRIPTION
1	1	1542	PUMP ADAPTER AP	49	1	513	TRUARC N5002-250ZD
2	4	597.1	BOLT HEX HD 5/16-18 X 1 3/4	50	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS
2	4	603	BOLT HEX HD 5/16-18 X 2 1/2	51	4	517	SPIROLOX RR-150S
3	1	1537	ADAPTER PLATE AP	52	2	506	SEAL INNER
4	1	1318	NEUTRAL CABLE ASSY AP SUZUKI	53	2	507	SEAL OUTER 6324-S
	1	1547	NEUTRAL CABLE ASSY AP EVINRUDE	54	2	527	O RING 568-141 3/32X2 5/16X2 1/2
5	2	615	DOWEL PIN 8 X 12M	55	1	393.5	BEARING CARRIER W/SEALS & O RINGS 5/16
6	12	636	WASHER SPRING LOCK M10	56	3	521	O RING 568-011 1/16X5/16X7/16
7	7	592	BOLT HEX HD M10-1.25 X 35MM	57	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
8	2	631	DOWEL PIN 3/16 X 1/2	58	1	106.24	IMPELLER 7 3/16 W/136 SLEEVE
9	2	608	BOLT HEX HD 3/8-16 X 2 1/4	59	1	136	SHAFT SLEEVE PLASTIC LARGE
10	1	609	BOLT HEX HD 3/8-16 X 2 3/4	60	1	1706	IMPELLER TEE KEY - 1/2 ROUND
11	1	610	BOLT HEX HD 3/8-16 X 3	60	1	434	IMPELLER TEE KEY - 1/2 SQUARE
12	1	607	BOLT HEX HD 3/8-16 X 1 1/2	61	7	121	SHIM WASHERS
		1541.02	VOLUTE WITH GATE AP	62	1	781	NUT KEEPER LARGE 2 PER BAG
13	1	1540.02	VOLUTE WITH EXHAUST TUBE AP	63	1	122.1	SHAFT NUT 3/4-16 BRASS
14	1	128	EXHAUST TUBE ASSY LARGE 2 1/2			1840.04	INTAKE ASSY 7 3/16 FLANGED W/GRILL & LINER
15	1	845	CLIP EXHAUST TUBE 1 3/8	64	1	1831	LINER 7 3/16 FLANGED
16	2	621	NYLOC 10-32	65	1	1332.04	INTAKE PAINTED ONLY EX-LARGE
17	1	1023	WASHER FIBER 3/8	66	2	14	GRILL ROD
18	1	1022	BOLT HEX HD 3/8-16 X 1/2	67	9	117	GRILL BAR LARGE
19	2	553.2	BALL END 1/4X10-32 CABLE	68	6	1319	STUD - INTAKE LARGE
20	1	975	LUBE HOSE ASSY	69	6	625	NYLOC 5/16-18
21	1	539	ZIRC FITTING 1/4-28	70	1	1499	BRACKET CABLE SUPPORT AP-E
22	1	550	GREASE GUN			1546	CLIP OMC 305736 - EVINRUDE
23	1	552	GREASE 10 OZ TUBE NO. 630-AA			2562	PAN HD PHILLIPS 10-32 X 1/2 - EVINRUDE
24	1	1172	REVERSE GATE LARGE			3621	NYLOC 10-32 - EVINRUDE
25	2	536	NYLINER 1/2 ID X 13/16			1562.1	PAN HD PHILLIPS 10-32 X 5/8 - EVINRUDE
26	1	1178	SPRING GATE PIVOT 1/2			1542	SHIM MORSE A035777 - EVINRUDE
27	2	823	PIN GATE PIVOT 1/2 LARGE			1543	CLAMP CHRYS 154317 - EVINRUDE
28	1	1043	SHAFT ROLLER	70	1	156	BRACKET CABLE SUPPORT AP-S
29	2	624	NYLOC 1/4-28	71	2	542	SHIM MORSE A035777 - SUZUKI
30	1	1042	ROLLER ASSY	72	2	543	CLAMP CHRYS 154317 - SUZUKI
31	3	635	1/4 WASHER AN960C416	73	2	561.1	FL HD SLOTTED 10-24 X 3/4 - SUZUKI
32	1	1034	SHIFT CAM LARGE	74	2	619	NYLOC 10-24 - SUZUKI
33	1	623	NYLOC 1/4-20	75	2	572	BOLT HEX HD 1/4-20 X 5/8
34	1	576	BOLT HEX HD 1/4-20 X 1	76	2	635	1/4 WASHER AN960C416
35	1	1037	BUSHING CAM	79	1	1719	TORSIONAL DAMPER 3/4
36	1	1038	WASHER CAM				
37	2	1039	SHIM - CAM				
38	1	1036	CAM ECCENTRIC DRILLED				
39	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH				
40	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
41	1	1170	SPRING GATE BUMPER				
42	1	1497	GATE BUMPER				
43	1	559.2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH				
44	1	1546	SHAFT ONLY, AP, 20T 29 7/16 LONG				
		1546.1	SHAFT ASSY COMPLETE, AP, 20T 5/16				
45	1	41	SHAFT BEARING THRUST RING				
46	2	502	BEARING 7305B-UA				
47	1	511	TRUARC 5100-98				
48	1	404	BACKUP WASHER				

TILLER STEERING CABLE 1717 SEE PAGE 26.3

BEARING, SEAL, SNAP & "O" RING KIT
2 BRG 462.2

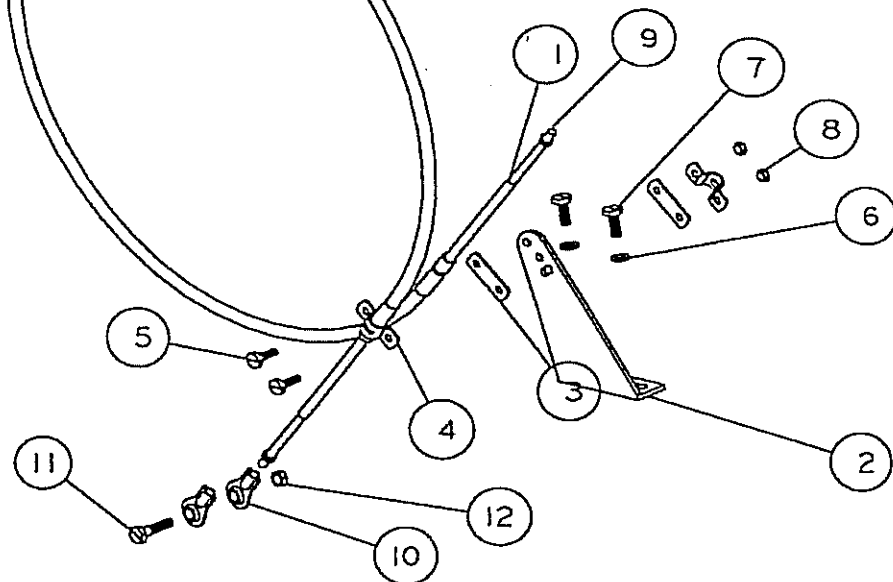
NEUTRAL CABLE NEEDED FOR REMOTE CONTROL
SUZUKI 1318 SEE PG. 25

JOHNSON / EVINRUDE 1547 SEE PG. 26

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

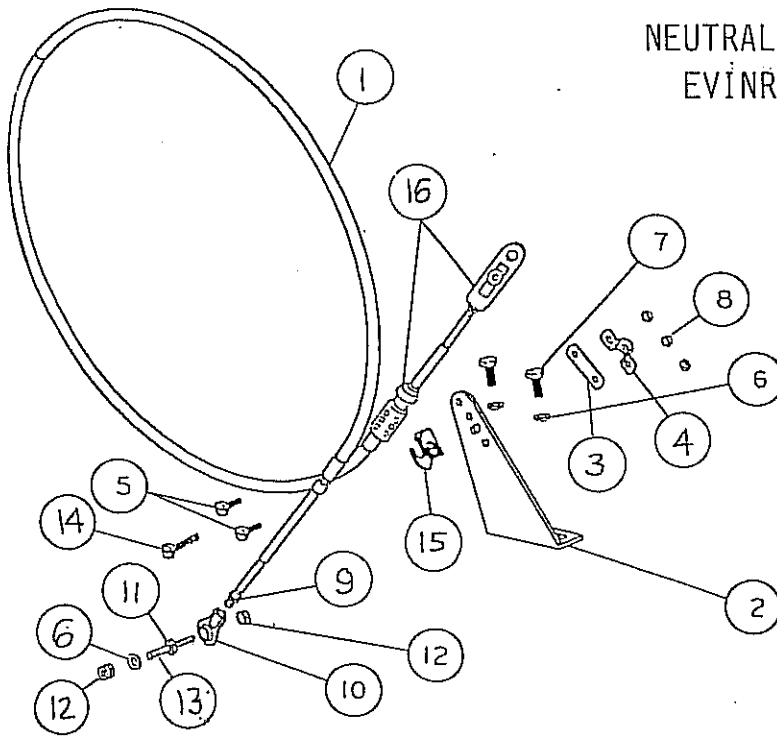
LARGE SERIES

NEUTRAL CABLE ASSEMBLY
 MODEL AIR, AN, AP, U4-4 SUZUKI
 1318



REF	QTY	PART NO.	DESCRIPTION
1	1	547.2	CABLE 5 FT MOR 33C SUPREME
2	1	156	BRACKET CABLE SUPT OMC, MORSE
3	2	542	SHIM MORSE A035777
4	2	543	CLAMP CHRYS 154317
5	2	561.1	FIL HD SLOTTED 10-24 X 3/4
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	621.1	NUT HEX 10-32
10	2	553.2	BALL END 1/4X10-32 CABLE
11	1	585	BOLT HEX HD 1/4-20 X 1 1/4
12	1	623	NYLOC 1/4-20

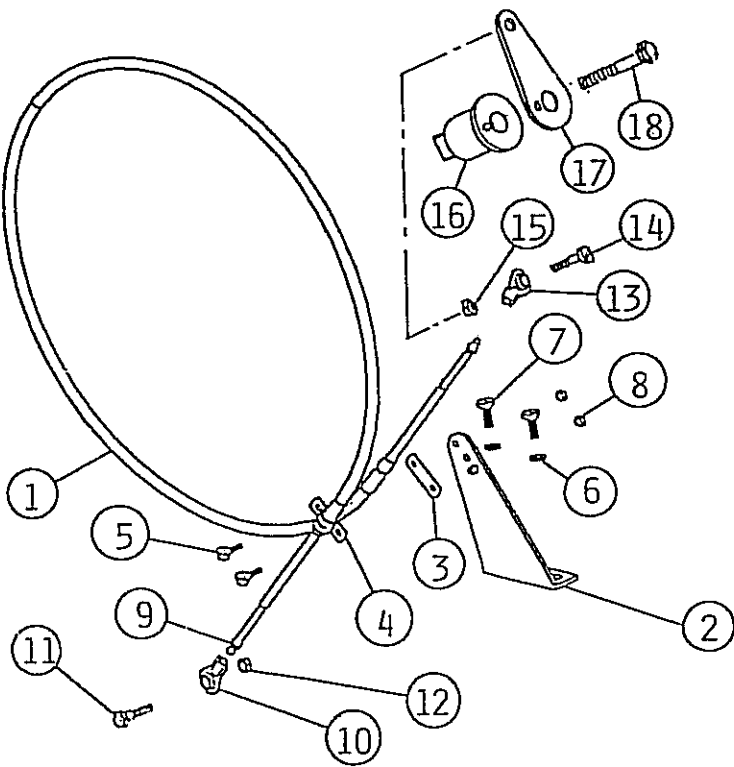
NEUTRAL CABLE ASSEMBLY
 EVINRUDE MODEL AP-E
 1547



REF	QTY	PART NO.	DESCRIPTION
1	1	547.2	CABLE 5 FT MOR 33C SUPREME
2	1	1499	BRACKET CABLE SUPPORT
3	1	542	SHIM MORSE A035777
4	1	543	CLAMP CHRYS 154317
5	2	562	PAN HD SLOTTED 10-32 X 1/2
6	2	635	1/4 WASHER AN960C416
7	2	572	BOLT HEX HD 1/4-20 X 5/8
8	3	621	NYLOC 10-32
9	2	621.1	HEX NUT 10-32 JAM
10	2	553.2	BALL END 1/4 X 10-32 CABLE
11	1	62	1/4-28 HEX JAM NUT
12	2	624	NYLOC 1/4-28
13	1	1199	PIVOT-CABLE END, REV D
14	1	562.1	PAN HD SLOTTED 10-32 X 5/8
15	1	546	CLIP OMC 305736
16	1	1564	OMC CABLE ADAPTER

LARGE SERIES

TILLER CABLE ASSEMBLY
SUZUKI MODEL AP-S70
1717



REF	QTY	PART NO.	DESCRIPTION
1	1	547.1	CABLE 4 1/2 FT MOR 33C SUPREME
2	1	156	BRACKET CABLE SUPPORT
3	2	542	SHIM MORSE A035777
4	2	543	CLAMP CHRYS 154317
5	2	561	FIL HD SLOTTED 10-24 X 5/8
6	2	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	1	553.2	BALL END 1/4 X 10-32 CABLE
11	1	573	BOLT HEX HD 1/4-20 X 3/4
12	1	623	NYLOCK 1/4-20
13	1	553.1	BALL END #10 X 10-32 CABLE
14	1	558.4	PAN HD PHILLIPS 10-32 X 3/4
15	1	621	NYLOC 10-32
16	1	1594	LEVER MOUNT
17	1	1591	SHIFT LEVER
18	1	591.1	BOLT HEX HD M8 X 1.25 X 60MM