

MODEL AV SERIES
ASSEMBLY INSTRUCTIONS
HONDA 200-225 HP V6 4 STROKE 212 CU. IN.

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, dowel pins, and impeller drive key.
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 lower stainless steel water pump plate and dowel pins. DO NOT USE THE GASKET UNDER THE PLATE. A brass shim is used in the water pump impeller bore. Place the drive key on top of the shim and compress the shim and key by tightening a tie wrap as shown in fig. 1. Put a light film of grease in the impeller bore and slide the impeller on 2/3 of the way. Remove the tie wrap and push the impeller down against the plate. Put a light film of grease inside the water pump body and, rotating the driveshaft clockwise, slide the pump body in place. Install four 5/16-18 x 1 3/4 bolts, using the flat washers from the Honda bolts. Grease the threads, and tighten to 10 ft-lbs.
5. Remove the rear stud from the motor mid-section, and install the M12 taper lock stud using blue locktite. Torque lightly as there is very little shoulder on the hex section.
6. File the sharp edge off of the cooling water tube, grease the tube and slide on the brass water tube extension.
7. The 3/4" adapter plate is attached to the mid section using the two Honda dowel pins and six M10 x 34 mm bolts with lock washers. Grease the bolt threads and tighten to 22 ft-lbs.
8. Next, attach the jet drive to the motor using two 6 mm x 16 mm dowel pins. Grease the driveshaft spline. Put a light film of grease on the rear stud taper, the brass water tube extension and water pump connection. Select the lower bolt lengths to suit the different counter bore depths so that all bolts enter the adapter plate the same depth. Lock washers are used on the 3/8-16 bolts. Grease the bolt threads and tighten to 22 ft-lbs.
9. 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.
10. 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, torsion damper 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.

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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.

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. The shift cable from the remote control box and a 6 ft cable, which goes to the neutral switch inside motor cowl, both attach to the reverse gate cam. The shift cable is on the inside of the cable anchor bracket and the 6 ft cable is on the outside. See figs 2 & 3. Attach the anchor bracket offset plate to the jet drive housing, mount both cables to the anchor bracket and then attach the bracket to the offset plate. Slide the bracket all the way forward and lock the bolts. Screw the ball rod ends on the cables as far as they will go and attach them to the shift cam, both on the outside. Lock the 1/4-20 x 1 bolt and lock nut. Screw the Honda cable end onto the 6 ft cable, all the way, and route the cable to the port side of the motor, around the front and connect to the shift linkage.
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.

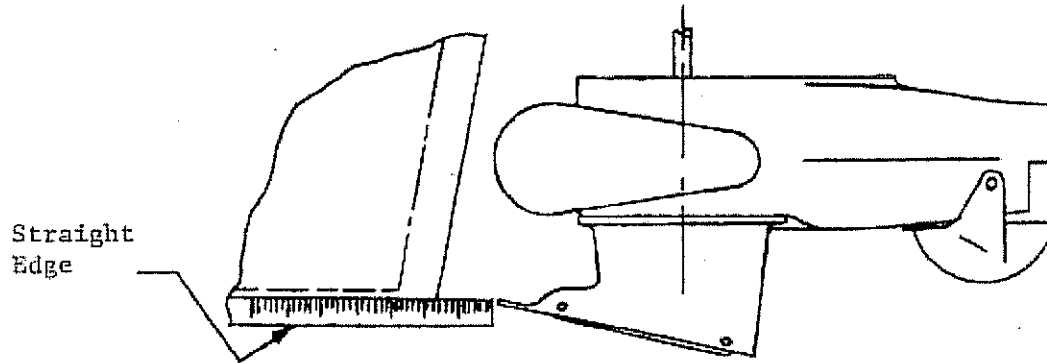
13. When converting to jet drive, your motor will have to be raised to height shown in diagram below, using a straight edge under the boat. Test run the boat and then raise or lower the motor 5/16 inch at a time to obtain the best results.

The motor has three 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 three 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 cavitations.

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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 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 last page.

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.

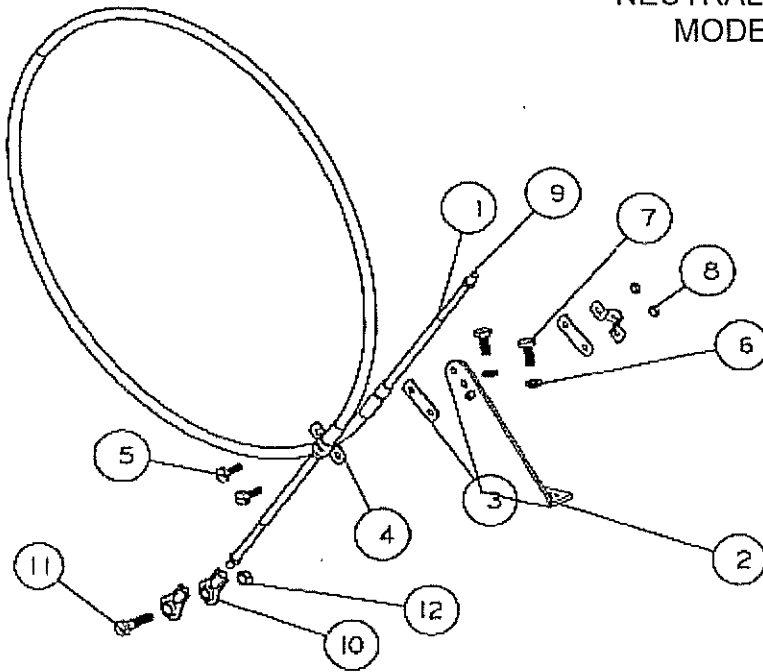
GUARANTEE

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.

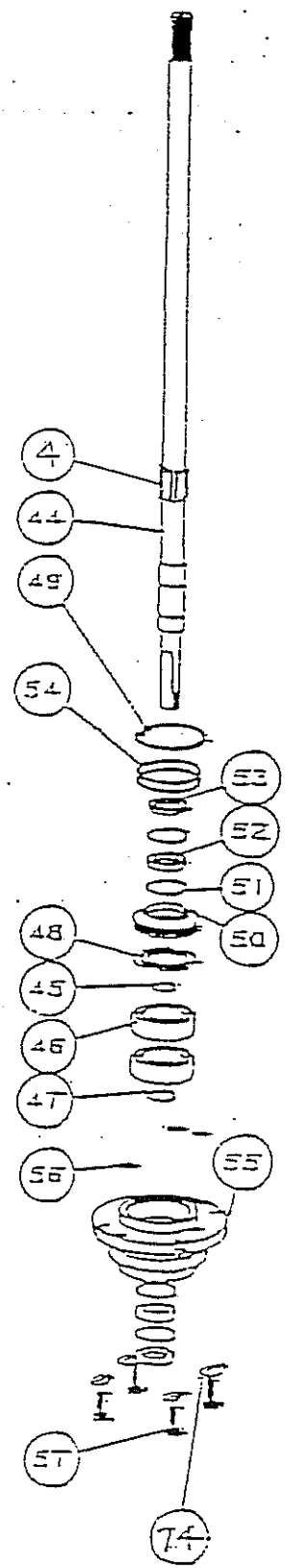
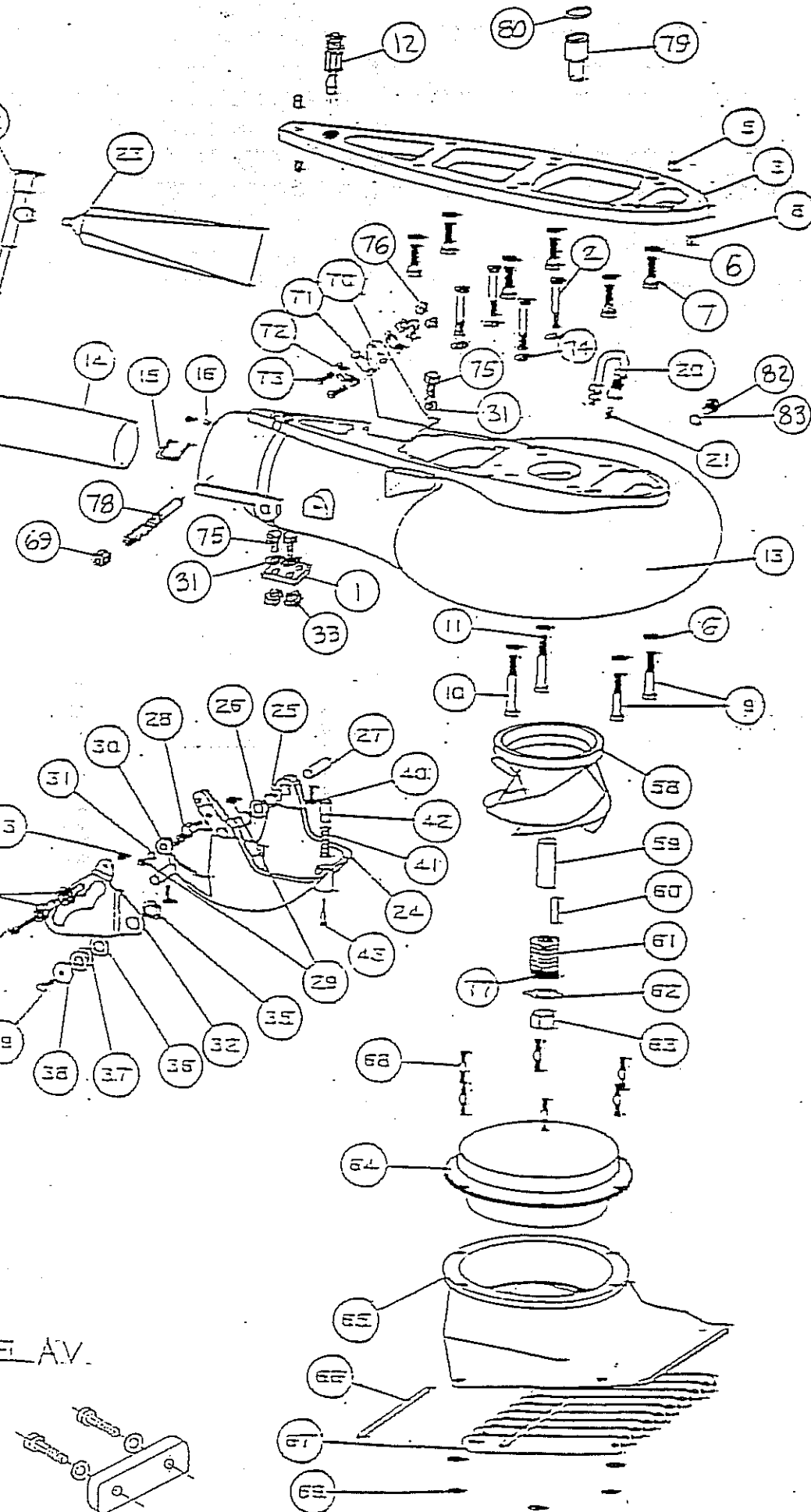
Specialty Manufacturing Company
Outboard Jets
2035 Edison Avenue
San Leandro, CA 94577

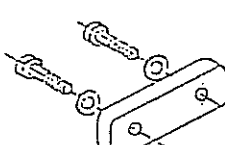
LARGE SERIES

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



REF	QTY	PART NO.	DESCRIPTION
1	1	556	CABLE 6 FT MOR 33C SUPREME
2	1	156	BRACKET CABLE SUPPORT
3	2	542	SHIM MORSE AO35777
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	HEX NUT 10-32 JAM
10	2	553.2	BALL END 1/4 X 10-32 CABLE
11	1	585	BOLT HEX HD 1/4-20 X 1 1/4
12	1	623	NYLOC 1/4-20



AV.

 ANODE KIT 1693

**MODEL AV HONDA 200-225 HP
V6 4 STROKE 212 CU. IN.**

REF NO.	QTY	PART NO.	DESCRIPTION	REF NO.	QTY	PART NO.	DESCRIPTION
1	1	1666	OFFSET PLATE	53	2	507	SEAL OUTER 6324-S
2	4	597.1	BOLT HEX HD 5/16-18 X 1 3/4	54	2	527	O RING 568-141 3/32 X 2 5/16X 2 1/2
3	1	1745	ADAPTER PLATE AV	55	1	393.5	BEARING CARRIER W/SEALS & O RINGS 5/16
4	1	1751	SHAFT SHIM	56	3	521	O RING 568-011 1/16X5/16X7/16
5	2	HONDA	DOWEL PIN	57	4	602.1	BOLT HEX HD 5/16-18 X 1 PATCH
6	10	636	WASHER SPRING LOCK M10	58	1	1721	IMPELLER 7 5/8 STAINLESS
7	6	592	BOLT HEX HD M10-1.25 X 35MM	59	1	136	SHAFT SLEEVE PLASTIC LARGE
8	2	616	DOWEL PIN 6 X 16 MM	60	1	1706	IMPELLER TEE KEY - 1/2 ROUND
9	2	608	BOLT HEX HD 3/8-16 X 2 1/4	61	7	121	SHIM WASHERS
10	1	609	BOLT HEX HD 3/8-16 X 2 3/4	62	1	1781	NUT KEEPER LARGE 2 PER BAG
11	1	610	BOLT HEX HD 3/8-16 X 3	63	1	122.1	SHAFT NUT 3/4-16 BRASS
12	1	1753	TAPER LOCK STUD			1603.05	INTAKE ASSY FLANGED WITH GRILL BAR & LINER
		1744.05	VOLUTE WITH GATE AV	64	1	1605	LINER FLANGED 7 5/8
13	1	1743.05	VOLUTE WITH EXHAUST TUBE AV	65	1	1602.05	INTAKE PAINTED ONLY 7 5/8
14	1	128	EXHAUST TUBE ASSY LARGE 2 1/2	66	2	1667	GRILL ROD
15	1	845	CLIP EXHAUST TUBE 1 3/8	67	10	1622	GRILL BAR X-LARGE
16	2	621	NYLOC 10-32	68	6	1319	STUD - INTAKE LARGE
19	2	553.2	BALL END 1/4X10-32 CABLE	69	7	625	NYLOC 5/16-18
20	1	975	LUBE HOSE ASSY	70	1	156	BRACKET CABLE SUPPORT
21	1	539	ZIRC FITTING 1/4-28	71	2	542	SHIM MORSE A035777
22	1	550	GREASE GUN	72	2	543	CLAMP CHRYS 154317
23	1	552	GREASE 10 OZ TUBE NO. 630-AA	73	2	561.1	FL HD SLOTTED 10-24 X 3/4
24	1	1172.05	REVERSE GATE LARGE	74	4	640	WASHER SPRING LOCK 5/16
25	2	536	NYLINER 1/2 ID X 13/16	75	4	572	BOLT HEX HD 1/4-20 X 5/8
26	1	1178	SPRING GATE PIVOT 1/2	76	2	619	NYLOC 10-24
27	2	823	PIN GATE PIVOT 1/2 LARGE	77	1	1719	TORSIONAL DAMPER 3/4
28	1	1043	SHAFT ROLLER	78	1	1752	WEDGE BOLT
29	2	624	NYLOC 1/4-28	79	1	1750	WATER TUBE EXTENSION
30	1	1042	ROLLER ASSY	80	1	532.1	O RING - 020 1/16 X 7/8 X 1
31	5	635	1/4 WASHER AN960C416	81	1	556	6 FT. MORSE 33C CABLE
32	1	1034	SHIFT CAM LARGE	82	1	1022	BOLT HEX HD 3/8-16 X 1/2
33	3	623	NYLOC 1/4-20	83	1	1023	WASHER FIBER 3/8
34	1	576	BOLT HEX HD 1/4-20 X 1				
35	1	1037	BUSHING CAM				
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	1748	SHAFT ONLY, AV 19T 30 9/16 LG				
		1749.1	SHAFT ASSY COMPLETE, AV 19T 5/16				
		1766	SHAFT ONLY, AVX 19T 35 9/16 LG				
		1767.1	SHAFT ASSY COMPLETE, AVX 19T 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				
49	1	513	TRUARC N5002-250ZD				
50	1	432	UPPER SEAL CARRIER W/SEALS & O RINGS				
51	4	517	SPIROLOX RR-150S				
52	2	506	SEAL INNER				

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

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

NEUTRAL SWITCH CABLE ASSY 1754 SEE
PAGE 26.4

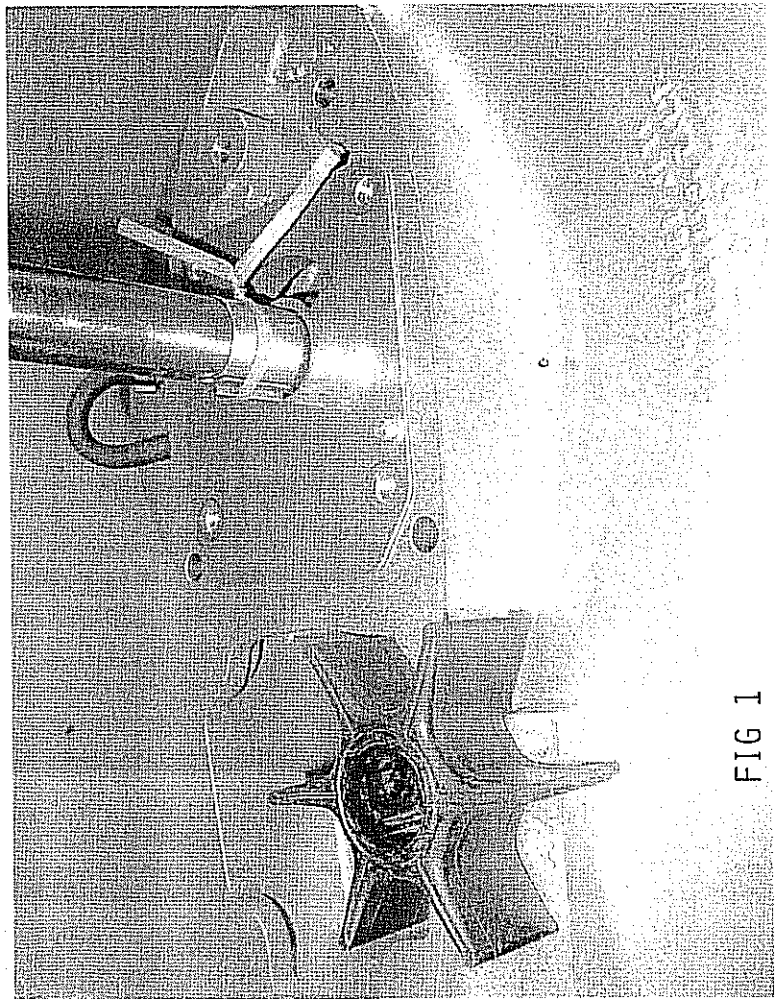


FIG 1

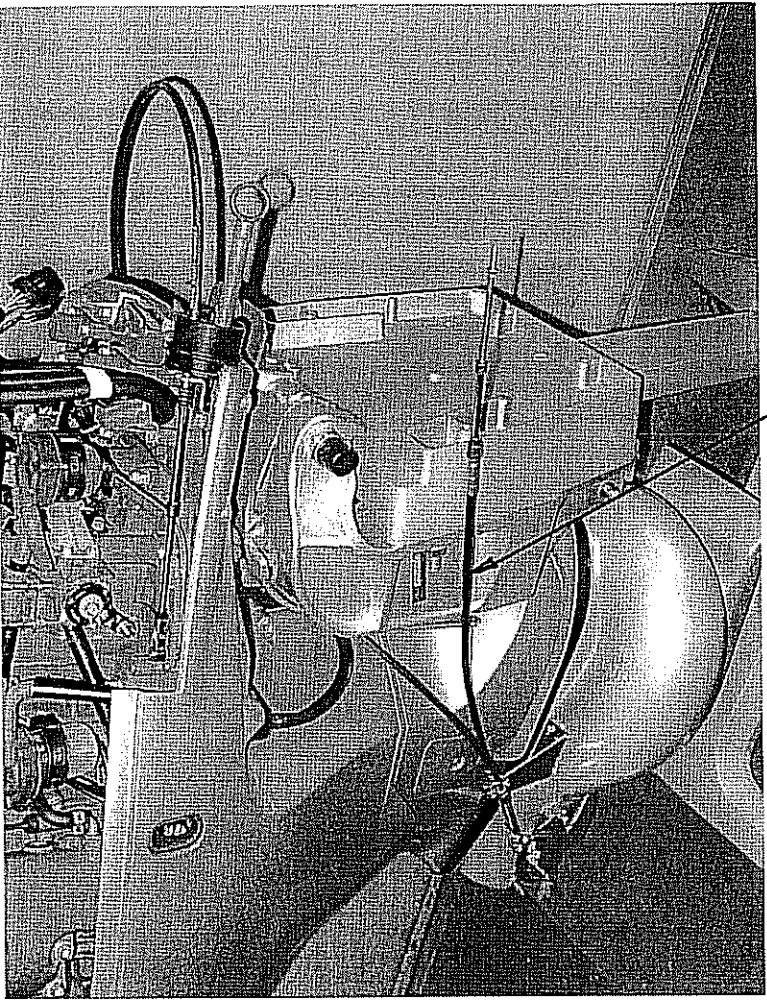


FIG 2

CABLE TO REMOTE CONTROL; LENGTH AS REQUIRED.

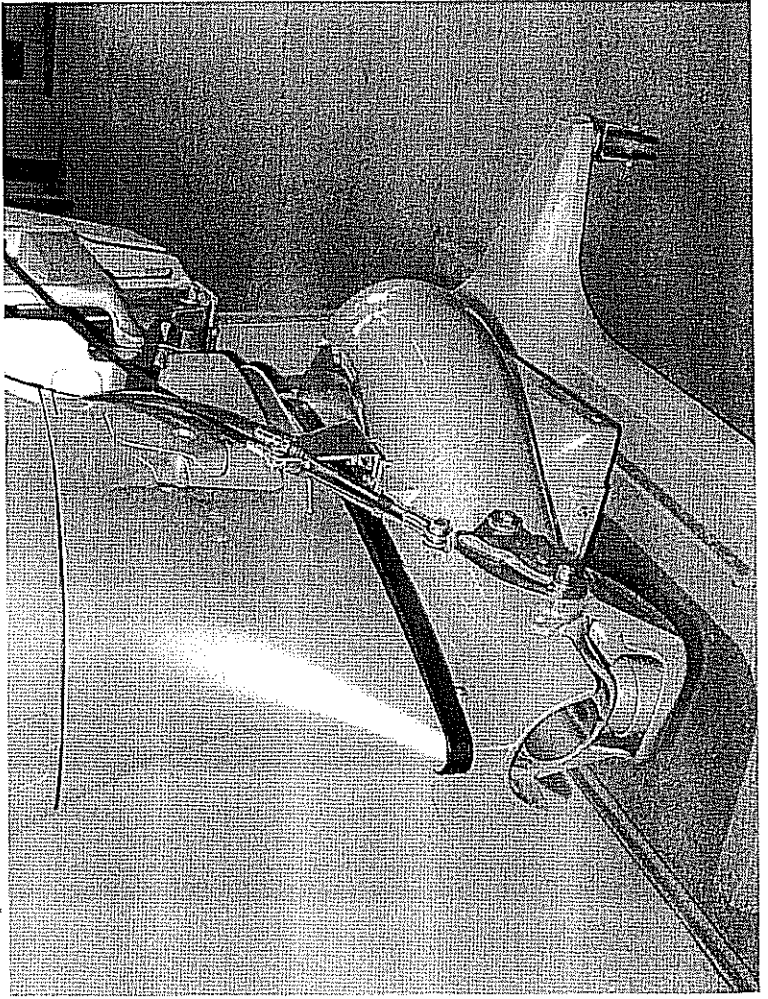


FIG 3