MODEL AH FOR TOHATSU / NISSAN SERIES
ASSEMBLY INSTRUCTIONS
40-50 HP, 3 CYLINDER, STARTING IN 1991

1. Place the engine on the transom of your boat so that it is mounted vertically. Disconnect the gearshift rod by driving out the upper split pin in the coupling near the gearbox. Remove the 6 bolts and lower the gearbox assembly.

2. Remove the water pump assembly including the lower stainless steel plate. Remove the rubber impeller from the pump.

3. Next, install the jet pump driveshaft assembly into the spiral pump housing, locking it in place with two #10-32 fil head screws and spring lockwashers. Grease the threads.

4. Install the water pump impeller on top of the 1-1/4 inch thick aluminum adapter and stainless steel plate being sure the brass drive key is in place. No gaskets are used over or under the aluminum adapter. Slide the pump housing over the impeller while rotating the shaft. A light film of grease inside the pump chamber helps. Lock in place using 4 5/16-18 x 2-3/4 bolts and the flat washers from the gearbox water pump bolts. Grease the threads.

5. Slide the sponge rubber sleeve over the lower end of the shift rod and partially into the tube, to prevent the rod from rattling.

6. Attach the large 3/4 inch adapter plate to the exhaust housing using 6 – M8 x 30MM hex hd bolts and lockwashers. Grease the threads.

7. 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 5/16-18 x 2-3/4 bolts and lockwashers from below and one 3/8-16 x 1-1/4 bolt from above rear, are used. Grease the bolt threads, driveshaft spline generously, rubber water tube sleeve and guide the jet into place. Tighten the 5 bolts.

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. <u>Be careful that the retainer does not fall into the thread groove and jam the nut.</u>

9. Place the water intake in position and secure with 2 bolts. Observe the clearance between the impeller blade edge and the intake liner. Then remove the intake.

   When, after you use in sand and gravel, the blade clearance becomes more than about 1/32 inch between the impeller edge and the water intake liner, 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.

   <u>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.</u>

   When the impeller clearance is satisfactory, 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.

10. Place the intake casing in position with the lower end at the rear and tighten the six 1/40-20 x 3/4 hex head bolts. No lockwashers are used. Grease the threads. See diagram page 3.

11. If your jet drive was ordered for use with a steering tiller handle, see attached page 4, "Shift Rod and Handle Assembly Instructions."

12. If your motor is equipped for remote controls, proceed as follows:

    Attach the shift cable and cable anchor bracket to the jet drive, using two 1/4-20 x 5/8 bolts and flat washers. Attach the cable.

    Using a light finger pressure on the gate, move the gate toward reverse until the cam roller is nested in the neutral notch when the shift handle is in neutral. Tighten hardware.

    Shift to forward. The roller should be well onto the flat section of the cam 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, giving less importance to the roller position in neutral.

13. 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 21 inches measured vertically from the boat bottom for short shaft motors and 26 inches for long shaft.

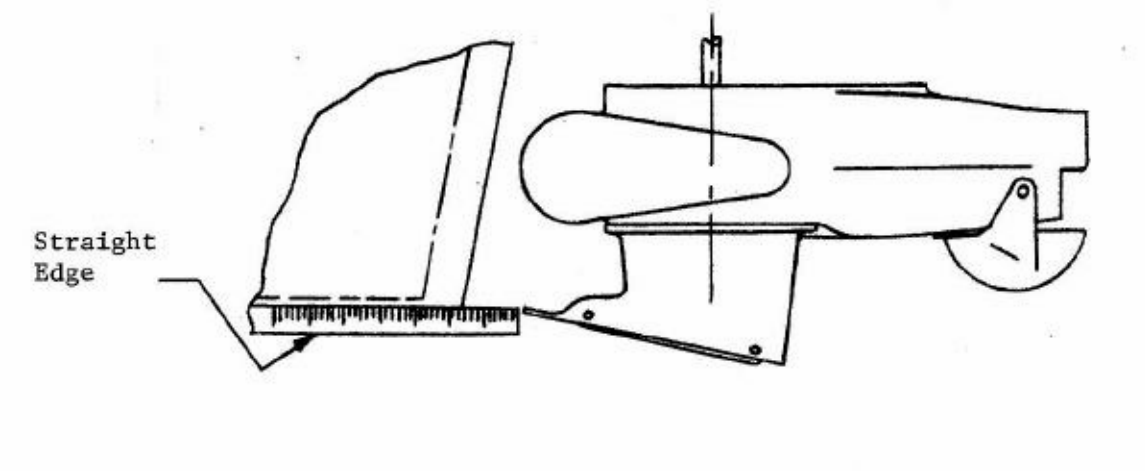
    If you raise it too much it will suck air and cavitate, either on start up or when banking on turns. When cavitating, the motor overspeeds in spurts and shakes considerably in the motor mount. This is not a normal condition and should be avoided by proper adjustment of motor height on each individual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

    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.

PROPER ENGINE HEIGHT



CAUTION

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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.

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MODEL AH FOR TOHATSU / NISSAN SERIES
ASSEMBLY INSTRUCTIONS
40-50 HP, 3 CYLINDER, STARTING IN 1991

MODEL AH
Shift Rod and Handle Assembly Instructions
Short Shaft #1295

1. Place the pressed steel shift handle on the motor shift handle and clamp in place, spaced 3/8 inch as shown in the diagram. Using a 3/16 inch drill, drill through the shift handle for the #10-32 fil head screws. Install the screws and fiber lock nuts.

2. Attach the shift spring inside the motor cover to urge the shift handle into the forward position. The forward hook secures inside the threaded hole. The rear hook is held by a cotter pin through the hole in the shift arm. Place the shift handle in neutral.

3. Using a light finger pressure on the reverse gate, move the gate toward reverse until the cam roller is nested in the neutral notch of the cam. Adjust the length of the shift rod until it engages the cam and shift arm with this neutral setting. Temporarily install a cotter pin in each rod end.

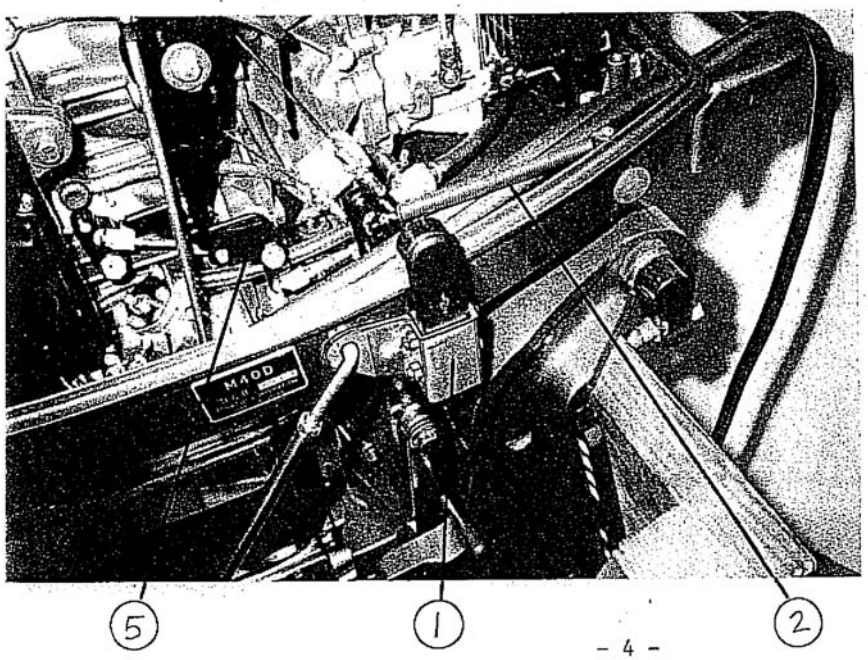
4. Shift to forward. The roller should be at the end of the cam slot such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this.

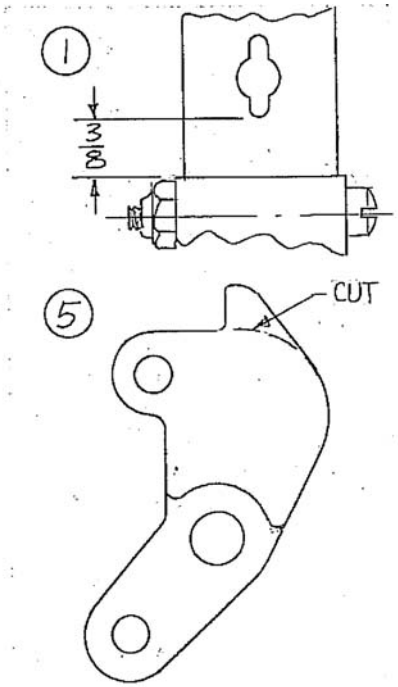
   If this forward lock condition is not met, readjust the rod length giving less importance to the roller position in neutral. When the adjustment is correct, tighten the rod end nuts, and install the coil springs, flat washers and cotter pins in the rod ends.

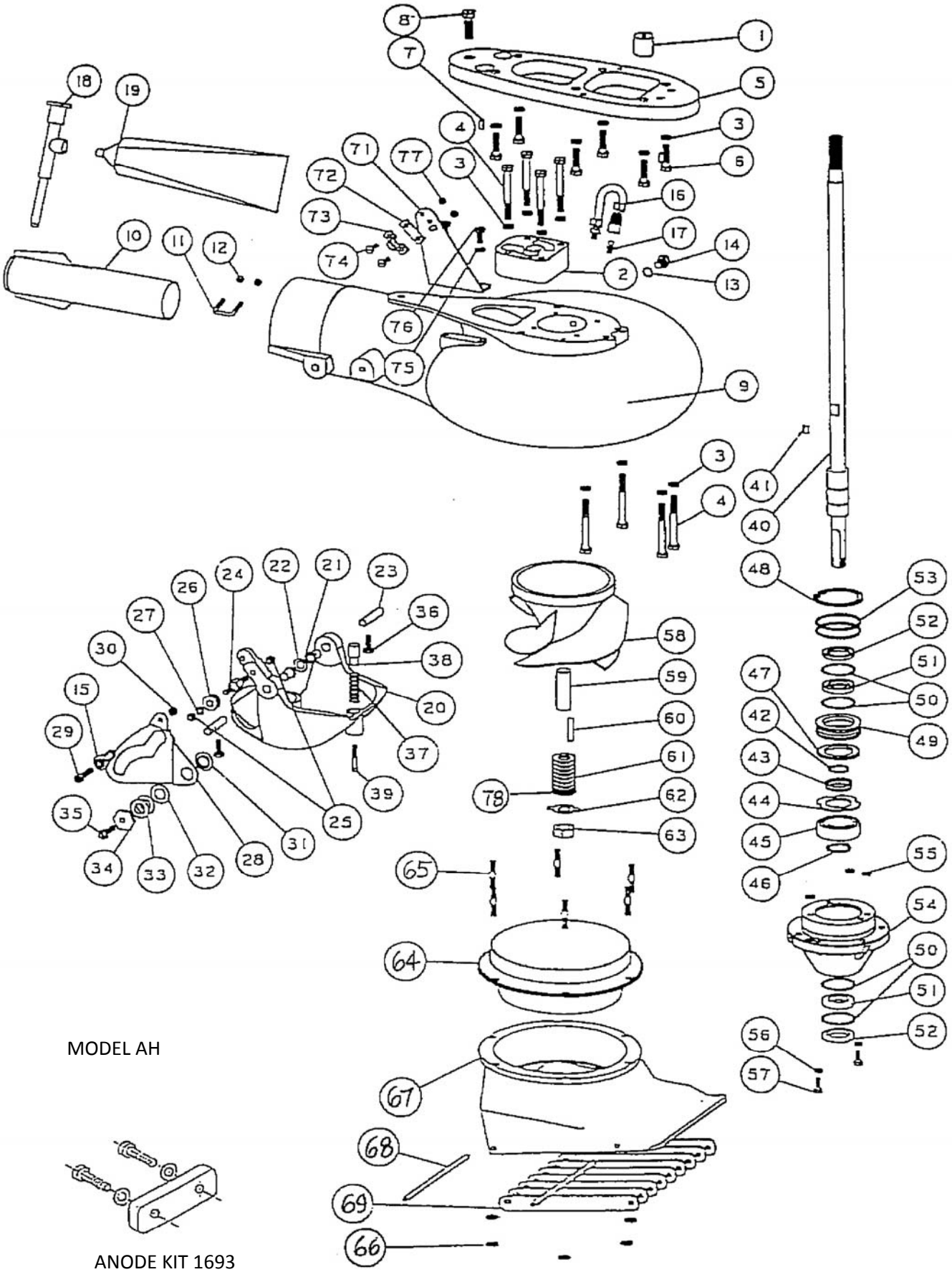
5. CAUTION! Remove the reverse throttle limiting cam and cut the stop off as shown. If this is not done, shifting to reverse can cause the throttle to advance without warning.

6. Seal the 2 holes in the main housing, where the remote control cable normally mounts, with 2 – ¼-20 x ½ hex hd bolts.

7. Return to paragraph 13 and proceed with setting motor height.







MODEL AH

ANODE KIT 1693

MODEL AH TOHATSU / NISSAN

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	928	SPONGE COLLAR Z SHIFT GUIDE	41	1	1275	KEY, TEE WATER PUMP
2	1	1291	PUMP ADAPTER AH TOHATSU	42	1	41	SHAFT BEARING THRUST RING
3	14	640	WASHER SPRING LOCK 5/16	43	1	477	COLLAR BACKFIT 7205
4	8	599	BOLT HEX HD 5/16-18 X 2 3/4	44	1	832	THRUST WASHER
5	1	1290	ADAPTER PLATE AH	45	1	504	BEARING 7205B-UA
6	6	591	BOLT HEX HD M8-1.25 X 30MM	46	1	511	TRUARC 5100-98
7	2	631	DOWEL PIN 3/16 X 1/2	47	1	833	SPACER
8	1	606	BOLT HEX HD 3/8-16 X 1 1/4	48	1	512	TRUARC N5002-212ZD
		1299	VOLUTE WITH GATE AH	49	1	433	UPPER SEAL CARRIER W/SEALS & O RINGS
9	1	1298	VOLUTE WITH EXHAUST TUBE AH	50	4	517	SPIROLOX RR-150S
10	1	80	EXAHUST TUBE ASSY MEDIUM 2	51	2	506	SEAL INNER
11	1	846	CLIP EXHAUST TUBE 1	52	2	507	SEAL OUTER 6324-S
12	2	621	NYLOC 10-32	53	2	526	O RING 568-135 3/32X1 15/16X2 1/8
13	1	1023	WASHER FIBER 3/8	54	1	1313	BEARING CARRIER W/SEALS & O RINGS AH
14	1	1022	BOLT HEX HD 3/8-16 X 1/2	55	3	521	O RING 568-011 1/16 X 5/16X 7/16
15	1	553.2	BALL END 1/4X10-32 CABLE	56	2	637	WASHER SPRING LOCK NO. 10
16	1	975	LUBE HOSE ASSY	57	2	561	FIL HD SLOTTED 10-24 X 5/8
17	1	539	ZIRC FITTING 1/4-28	58	1	8.23	IMPELLER 6 1/8, ALUM/ZINC, W/36 SLEEVE
18	1	550	GREASE GUN	58	1	1737	IMPELLER 6 1/8, STAINLESS STEEL, W/36 SLEEVE
19	1	552	GREASE 10 OZ TUBE NO 630-AA	59	1	36	SHAFT SLEEVE, PLASTIC MEDIUM
20	1	1175	REVERSE GATE, MEDIUM	60	1	782	IMPELLER TEE KEY- SQUARE
21	2	535	NYLINER 3/8 ID X 11/16	60	1	1705	IMPELLER TEE KEY - 1/2 ROUND
22	1	1177	SPRING GATE PIVOT 3/8	61	8	21	SHIM WASHER MEDIUM
23	2	822	PIN GATE PIVOT 3/8 MEDIUM	62	1	805	NUT KEEPER MED/PKG 2 PER BAG
24	1	1043	SHAFT ROLLER	63	1	22.1	SHAFT NUT 5/8-18 BRASS
25	2	624	NYLOC 1/4-28			31.2	INTAKE ASSY 6 1/8 WITH GRILL & LINER
26	1	1042	ROLLER ASSY	64	1	93.22	LINER 6 1/8 W/HARDWARE
27	1	635	1/4 WASHER AN960C416	65	2	638	WASHER SPRING LOCK 1/4
28	1	1035	SHIFT CAM MEDIUM	66	2	572	BOLT HEX HD 1/4-20 X 5/8
29	1	573	BOLT HEX HEAD 1/4-20 X 3/4	67	1	7	INTAKE PAINTED ONLY
30	1	623	NYLOC 1/4-20	68	2	14	GRILL ROD
31	1	1037	BUSHING CAM	69	9	16	GRILL BAR MEDIUM
32	1	1038	WASHER CAM	70	6	573	BOLT HEX HD 1/4-20 X 3/4
33	2	1039	SHIM - CAM			171	BRACKET ASSY MORSE W/CLAMP & HARDWARE
34	1	1036	CAM ECCENTRIC DRILLED	71	1	156	BRACKET CABLE SUPPORT
35	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH	72	1	542	SHIM MORSE AO35777
36	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH	73	1	543	CLAMP CHRYS 154317
37	1	1170	SPRING GATE BUMPER	74	2	561	FIL HD SLOTTED 10-24 X 5/8
38	1	1169	GATE BUMPER	75	2	635	1/4 WASHER AN960C416
39	1	559.2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH	76	2	572	BOLT HEX HD 1/4-20 X 5/8
		1289	SHAFT ASSY COMPLETE, AHS, 14T W/1275 KEY	77	2	619	NYLOC 10-24
40	1	1288	SHAFT ONLY, AHS, 14T W/1275 KEY 24 LG	78	1	1718	TORSIONAL DAMPER 5/8
		1346	SHAFT ASSY COMPLETE, AHL, 14T W/1275 KEY				
40	1	1345	SHAFT ONLY, AHL, 14T W/1275 KEY 29 LG				

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 1945 STARTING 2006
SEE PAGE 34.5

SHIFT ROD ASSY 1295, 1353 BEFORE 2006
SEE PAGE 25

BEARING, SEAL, SNAP AND “O” RING KIT 803.1