

MODEL BB FOR 30 HP YAMAHA SERIES
ASSEMBLY INSTRUCTIONS
YAMAHA MODEL 30HMHS, 2 CYLINDER, 2 STROKE, 30.3 CU. IN.

1. Place the motor on the transom of your boat so that it is mounted vertically, in the normal fashion. Shift into reverse and loosen the jam nut on the shift rod. Disconnect the shift rod coupling. Remove the four propeller drive bolts.
2. Remove the water pump assembly from the propeller drive, including the lower stainless steel plate and dowel pins.
3. Install the jet pump driveshaft assembly into the jet drive housing, locking it in place with four 1/4-20 x 3/4 hex head bolts and spring lock washers. Grease the threads.
4. Install the water pump assembly on top of the stainless steel plate using two dowel pins and the impeller drive key. Install and tighten the four M6 x 25 mm hex head bolts and flat washers. Grease the threads.
5. Remove the nut and hex coupling from the gearbox and motor mid section shift rods. Thread the nut and coupling all the way onto the shift rod guide #1902, and tighten the nut against the coupling. Thread the coupling onto the motor shift rod and tighten it against the shift rod.
6. Install the rubber seal plate into the adapter plate using two 10-24 x 3/4 fil head screws and lock washers. Grease the threads. Transfer the rubber exhaust seal from the propeller drive to the slot in the adapter plate. See page 3.
7. File the sharp edges off of the tapered section of the water cooling tube. Grease the tube and the o-ring inside the brass water tube extension. Slide the extension onto the water tube, being careful not to shear the o-ring.
8. Install the 3/4 inch thick adapter plate using two dowel pins and four M10 x 25 mm hex head bolts with lock washers. Grease the threads.
9. Grease the o-rings on the white plastic driveshaft shield and install it in the cooling water pump.
10. Next, attach the jet drive to the motor. Two 5/16-18 x 2 1/2 hex head bolts front and two 5/16-18 x 2 3/4 bolts rear with lock washers plus one 3/8-16 x 1 1/4 hex head bolt from above rear (no lock washer). Grease the bolt threads, driveshaft spline and guide the jet drive into place. Tighten the five bolts.
11. 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, torsional damper and nut retainer on the shaft, and bring the nut up snug by hand.

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

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.

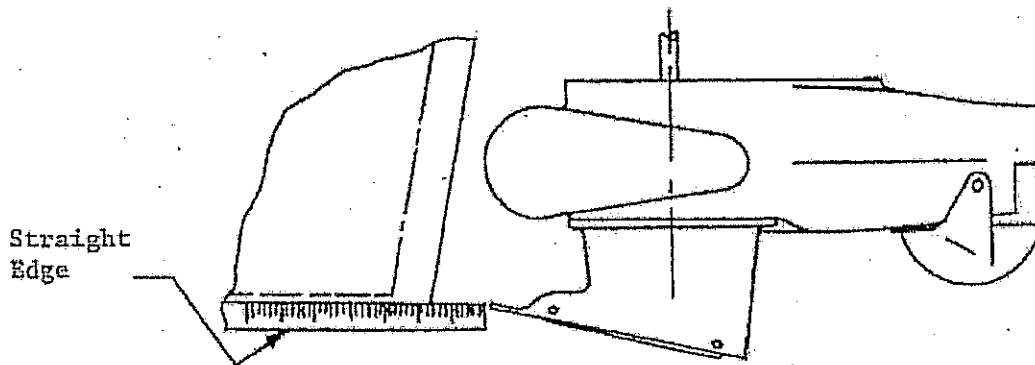
Shims should not be used above the impeller on new installations where no wear has occurred unless the blade clearance exceeds 1/32 inch. Insufficient blade clearance will do more harm than good from any performance gains it might provide.

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When the impeller clearance is satisfactory, bump the nut up tight 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.

12. Place the intake casing in position with the lower end at the rear and tighten the six 1/4-20 fiber lock nuts. No lock washers are used. Grease the threads.
13. If your motor uses a steering tiller handle, proceed as instructed in the "Shift Rod Assembly Instructions Sheet" attached, #1904.
14. When converting to jet drive, your motor will have to be raised to the height shown in the diagram below, using a straight edge under the boat. Test run the boat and then raise or lower the motor 1/4 inch at a 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 engine over speeds in spurts and shakes considerably in the engine mount. This is not a normal condition and should be avoided by proper adjustment of the engine height on each individual boat. If you lower it too much, you will have excessive drag, therefore, mount the engine as high as possible without allowing cavitation.

SETTING MOTOR HEIGHT

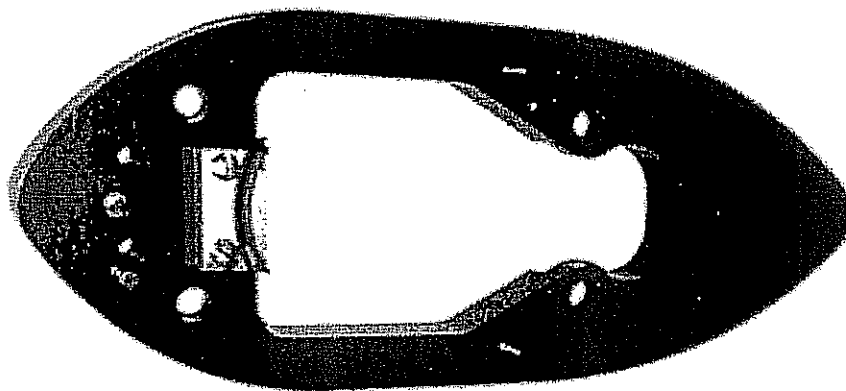
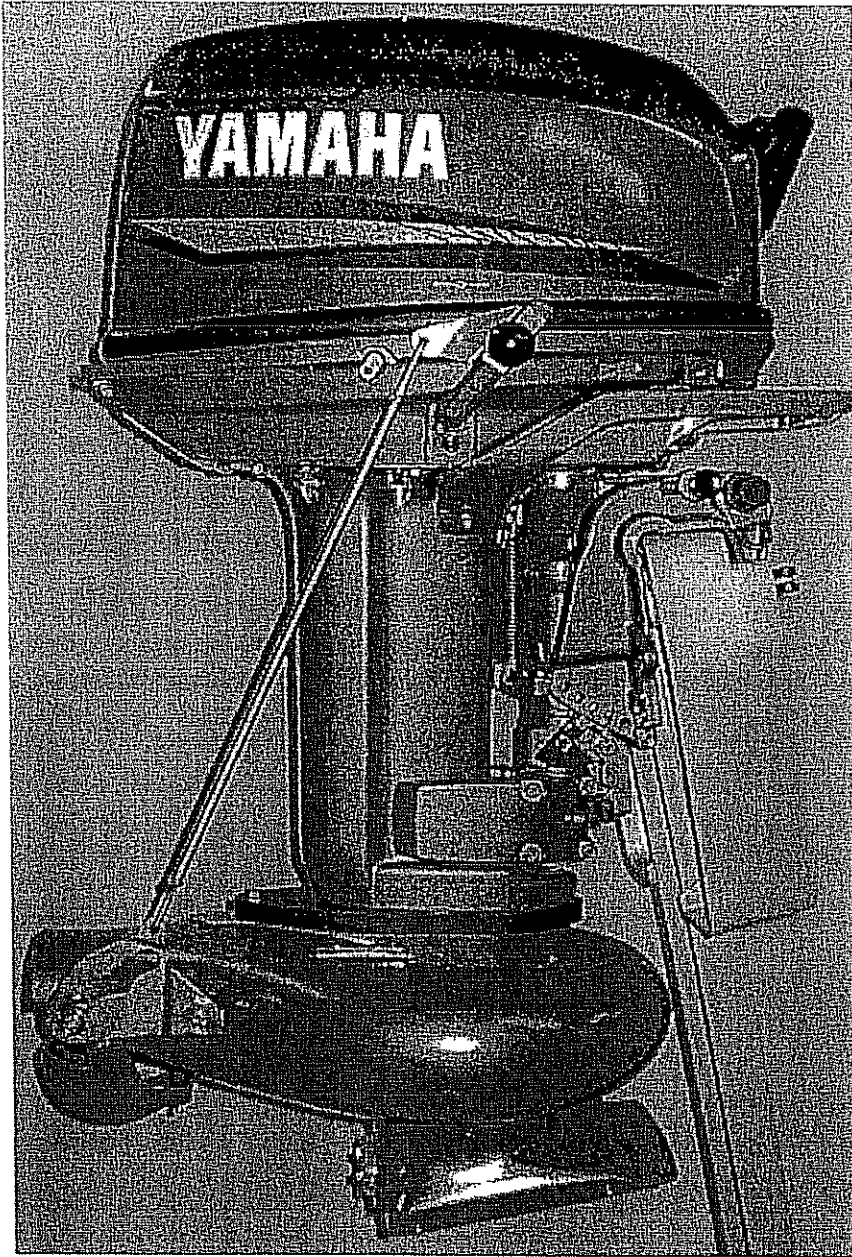


CAUTION

When starting the engine for the first time, watch to see that the cooling water comes out of the small hole at the 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

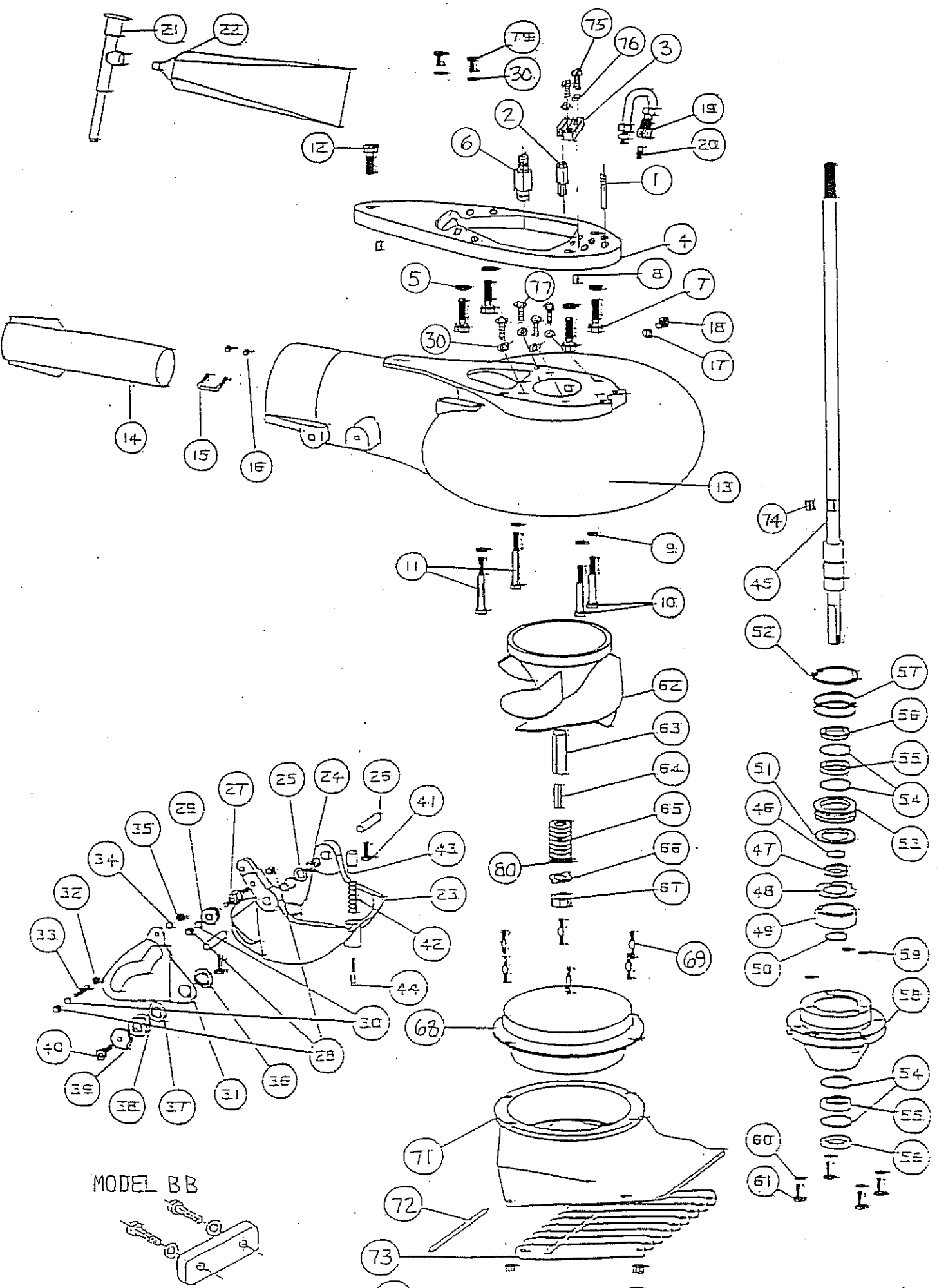
TILLER SHIFT ROD ASSY
YAMAHA MODEL BB 30 HP
1904 SHORT



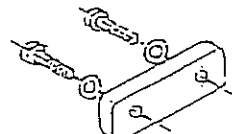
1. To install the shift rod assembly, remove the shift handle and increase the size of the notched hole slightly with a file or drill to receive the 5/16-18 x 1 3/8 hex head bolt. Slide the bolt in place and reattach the handle to the motor.
2. Install the pressed steel shift lever and the 5/16-18 hex nut. Use blue loctite and tighten the nut on the bolt. Install and tighten the black knob using blue loctite.
3. Shift to forward and place the reverse gate in forward with the roller all the way to the bottom of the cam slot.
4. Adjust the threaded rod ends on the shift rod to match this position. Before locking the cotter pins, shift out of forward to reverse and back to forward. If the roller is at the bottom of the cam slot, then you can install the springs, flat washers and bend over the cotter pins. Tighten the jam nuts against the rod.
5. In forward, the gate should be locked so that you can pull on the gate by hand and it will stay in forward.
6. Do not be concerned if the gate does not close completely in reverse. Water pressure will close it. Neutral position is set at the factory.

CAUTION

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



MODEL BB



ANODE KIT 1695

MODEL BB YAMAHA
2 STROKE, 2 CYL, 30.3 CU. IN.

REF	QTY	PART NO.	DESCRIPTION	REF	QTY	PART NO.	DESCRIPTION
1	1	1902	SHIFT ROD GUIDE BB	48	1	832	THRUST WASHER
2	1	1899	WATER TUBE EXT BB W/ O-RING	49	1	504	BEARING 7205B-UA
3	1	1901	PLATE-RUBBER SEAL	50	1	511	TRUARC 5100-98
4	1	1889	ADAPTER PLATE BB	51	1	833	SPACER
5	4	636	WASHER SPRING LOCK M10	52	1	512	TRUARC N5002-212ZD
6	1	1900	SHAFT SHIELD BB	53	1	433	UPPER SEAL CARRIER W/ SEALS & O RINGS
7	4	592.6	BOLT HEX HD M10-1.25 X 25MM	54	4	517	SPIROLOX RR-150S
8	2	631	DOWEL PIN 3/16 X 1/2	55	2	506	SEAL INNER
9	4	640	WASHER SPRING LOCK 5/16	56	2	507	SEAL OUTER 6324-S
10	2	603	BOLT HEX HD 5/16-18 X 2 1/2	57	2	526	O RING 568-135 3/32X1 15/16X2 1/8
11	2	599	BOLT HEX HD 5/16-18 X 2 3/4	58	1	1895	BEARING CARRIER W/SEALS & O RINGS BB
12	1	606	BOLT HEX HD 3/8-16 X 1 1/4	59	3	521	O RING 568-011 1/16X5/16X7/16
		1893	VOLUTE WITH GATE BB	60	4	638	WASHER SPRING LOCK 1/4
13	1	1892	VOLUTE WITH EXHAUST TUBE BB	61	4	573	BOLT HEX HD 1/4-20 X 3/4
14	1	80	EXHAUST TUBE ASSY MEDIUM 2	62	1	8.21	IMPELLER 5 7/8, ALUM/ ZINC, W/36.1 SLEEVE
15	1	846	CLIP EXHAUST TUBE 1	63	1	36.1	SHAFT SLEEVE PLASTIC MED.
16	2	621	NYLOC 10-32	64	1	1705	IMPELLER TEE KEY - 1/2 ROUND
17	1	1025	WASHER FIBER M8	65	8	21	SHIM WASHER MEDIUM
18	1	1024	BOLT HEX HD M8-1.25 X 12	66	1	805	NUT KEEPER MED/PKG 2 PER BAG
19	1	975	LUBE HOSE ASSY.	67	1	22.1	SHAFT NUT 5/8-18 BRASS
20	1	539	ZIRC FITTING 1/4-28			1448	INTAKE ASSY 5 7/8 FLANGED W/ GRILL & LINER
21	1	550	GREASE GUN	68	1	1678	LINER 5 7/8 FLANGED
22	1	552	GREASE 10 OZ TUBE NO. 630-AA	69	6	1300	STUD - INTAKE MEDIUM
23	1	1175	REVERSE GATE, MEDIUM	70	6	623	NYLOC 1/4-20
24	2	535	NYLINER 3/8 ID X 1 1/16	71	1	1326	INTAKE PAINTED ONLY MED FLANGED
25	1	1177	SPRING GATE PIVOT 3/8	72	2	14	GILL ROD
26	2	822	PIN GATE PIVOT 3/8 MEDIUM	73	9	16	GILL BAR MEDIUM
27	1	1043	SHAFT ROLLER	74	1	1275	KEY, TEE WATER PUMP
28	3	624	NYLOC 1/4-28	75	2	561.1	FIL HD SLOTTED 10-24 X 3/4
29	1	1042	ROLLER ASSY	76	2	637	WASHER SPRING LOCK #10
30	6	635	1/4 WASHER AN960C416	77	1	587.3	BOLT HEX HD M6-1.0 X 25MM
31	1	1035	SHIFT CAM MEDIUM	78	2	635	1/4 WASHER AN960C416
32	1	62	NUT HEX JAM 1/4-28	79	2	572	BOLT HEX HD 1/4-20 X 5/8
33	1	1199	PIVOT - CABLE END	80	1	1718	TORSIONAL DAMPER 5/8
34	1	638	WASHER SPRING LOCK 1/4				
35	1	622	NUT HEX 1/4-28				
36	1	1037	BUSHING CAM				
37	1	1038	WASHER CAM				
38	2	1039	SHIM-CAM				
39	1	1036	CAM ECCENTRIC DRILLED				
40	1	574.1	BOLT HEX HD 1/4-20 X 1 PATCH				
41	2	574	BOLT HEX HD 1/4-20 X 3/4 PATCH				
42	1	1170	SPRING GATE BUMPER				
43	1	1169	GATE BUMPER				
44	1	559.2	FIL HD SLOTTED 10-32 X 1 1/4 PATCH				
45	1	1897	SHAFT ONLY, BB, 14T 24 1/2 LG				
		1898	SHAFT ASSY COMPLETE, BB, 14T W/1275 KEY				
46	1	41	SHAFT BEARING THRUST RING				
47	1	477	COLLAR BACKFIT 7205				

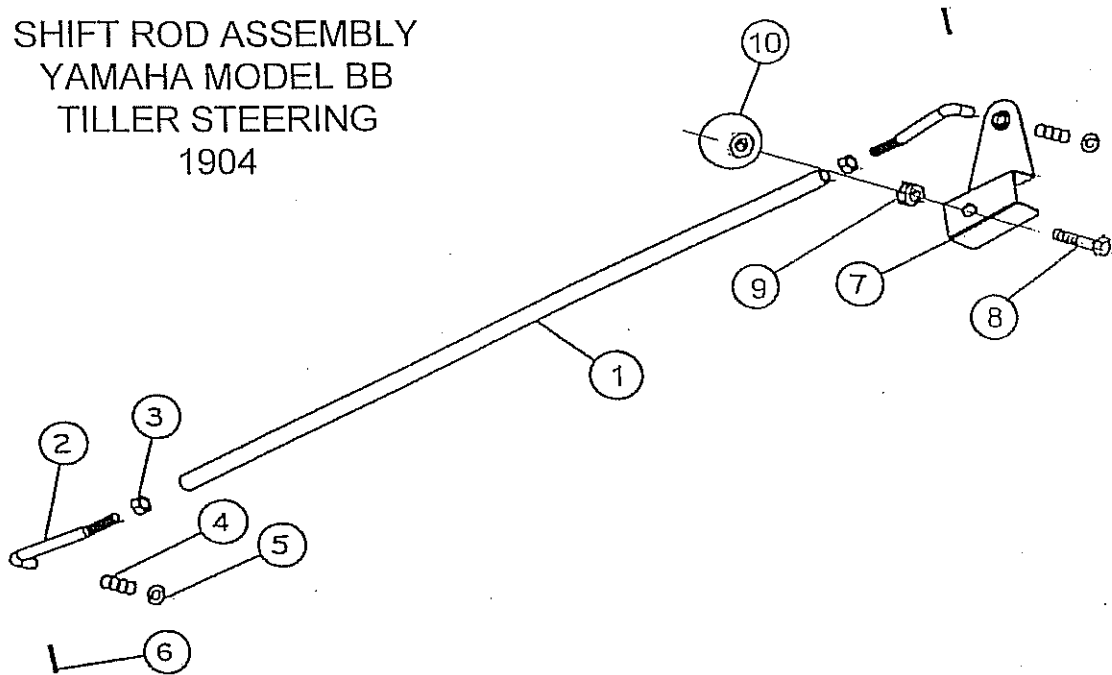
SIZE	TORQUE
1/4-20 (M6)	8-9 FT-LBS
5/16-18 (M8)	12 FT-LBS
3/8-16 (M10)	22 FT-LBS

TILLER STEERING:

SHIFT ROD ASSY 1904

BEARING, SEAL, SNAP & "O" RING KIT 803.1

SHIFT ROD ASSEMBLY
YAMAHA MODEL BB
TILLER STEERING
1904



REF	QTY	PART NO.	DESCRIPTION
1	1	1234	SHIFT ROD Q SHORT CAM 16 1/8 LG
2	2	24	ROD END FORMED
3	2	622	NUT HEX 1/4-28
4	2	1164	SPRING-ROD END
5	2	635	1/4 WASHER AN960C416
6	2	645	COTTER PIN 1/16 X 1/2
7	1	1903	SHIFT LEVER BB
8	1	601	BOLT HEX HD 5/16-18 X 1 3/8
9	1	625.1	NUT HEX 5/16-18
10	1	551	KNOB 1 3/8