

MODEL BQ SUZUKI SERIES 20 HP
ASSEMBLY INSTRUCTIONS
2 CYLINDER, 4 STROKE 20.0 CU. IN.

1. Place the motor on the transom of your boat so it is mounted vertically. Disconnect the gearshift rod coupling. Remove the four 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, pump housing and impeller. Open up the four mounting holes in the plastic housing using a 17/64 drill.
3. Install the jet pump driveshaft assembly into the jet drive housing, locking it in place with the two #10-24 fil head screws and spring lock washers. Grease on the threads.
4. Mount the 1 3/4 inch thick aluminum adapter to the bearing housing using two 1/4-20 x 3/4 hex head bolts with lock washers. Install the stainless steel plate and water pump assembly on top of the 1 3/4 inch thick aluminum adapter. Be sure to install the impeller drive key, part #1275. Lock in place with four 1/4-20 x 1 1/2 bolts and flat washers. Grease the threads.
5. Thread the 3/4 long hex shift rod coupling onto the shift rod guide. Lock it tight and thread the jam nut onto the motor shift rod. Thread the hex coupling up tight on the motor shift rod and lock the jam nut. The large adapter plate is attached to the exhaust housing to hold the jet drive. Use four bolts with washers and two dowel pins from the propeller drive. Grease the threads.
6. Next, attach the jet drive to the motor. Four 5/16-18 x 2 bolts and lock washers from below and one 3/8-16 x 1 1/4 bolt with lock washer from above rear, are used. Grease the bolt threads, driveshaft spline generously, and rubber water tube inlet and guide the jet into place. Tighten the five bolts.
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 seven 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.

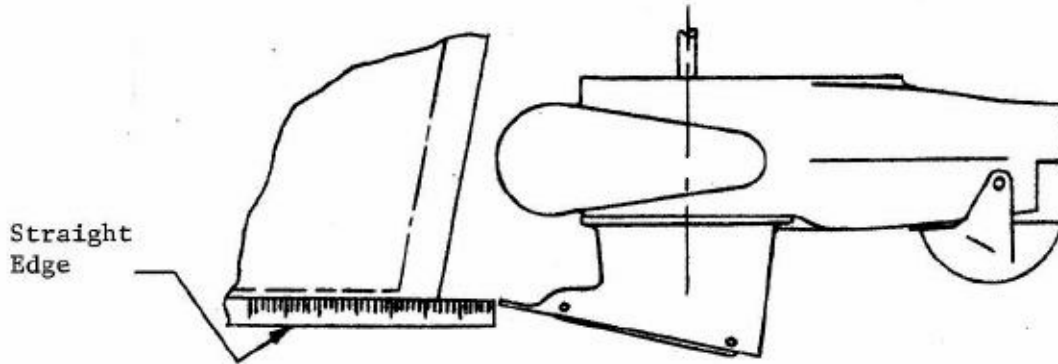
Shims should not be used above the impeller on new installations where no wear has occurred unless the blade clearance exceeds 1/32 inch. Insufficient blade clearance will do more harm than good from any performance gains it might provide.

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.

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8. Place the intake casing in position with the lower end at the rear and tighten the six 1/4-20 x 3/4 bolts. No lock washers are used. Grease the threads.
9. For installation of the reverse gate shift cable assembly, see page 4 and shift cable assembly sheet 2178.
10. 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 CABLE ASSY
SUZUKI DF20 STARTING 2013
2178



ATTACH THE SHIFT CABLE ANCHOR BRACKET

1. Remove the right side cowling from the motor.
2. Cut out the drilling template on page 5.
3. Align the cable anchor drilling template on the cowling and secure with masking tape. Drill the cowling holes with a 3/16 inch drill.
4. Attach the cable anchor using two 10-32 x 5/8 pan head screws and fiber lock nuts. Reattach the cowling to the motor.

ATTACH THE SHIFT HANDLE LEVER

1. Refer to shift cable assembly sheet 2178. Remove the hex head bolt and washer holding the shift handle to the motor.
2. Leaving the wavy washers in place, install bushing 2177, the shift lever 2176, flat washer 633 and hex head bolt 587.5, M6 x 1.0 x 50mm. Tighten the bolt.
3. To drill the hole through the shift lever, rotate the lever clockwise as far as it will go up against the plastic handle. Using a 3/16 drill, it will be necessary to tilt the drill slightly to allow the head of the screw to clear the hub of the handle on the far side. After drilling, it may be necessary to open the hole up to allow easy entry of the screw.
4. Install the #10-32 x 1 1/4 screw and lock nut.

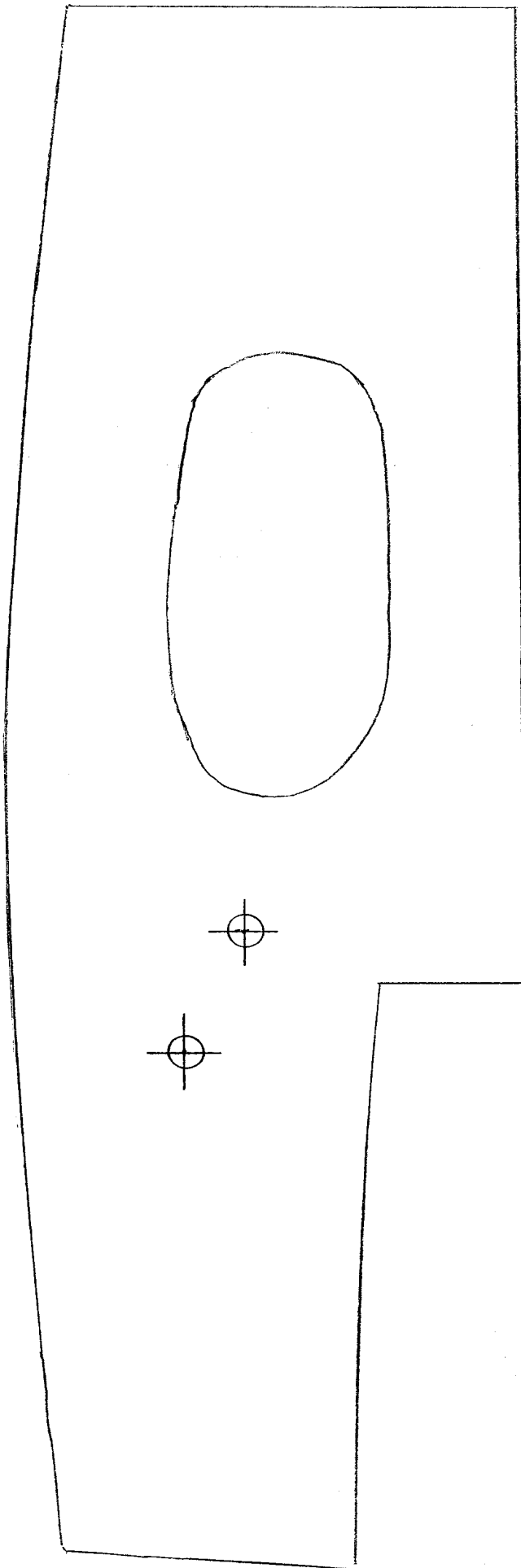
ATTACH THE SHIFT CABLE

1. Route the cable as shown in the photos. The lower cable anchor bracket has one hole slotted to allow rotating the bracket before tightening to give good cable alignment.
2. Place the reverse gate in forward with the cam roller at the end of the slot in the cam. Attach the upper end of the cable to the anchor bracket and adjust the ball end threads to reach the shift lever. The lower cable anchor bracket, which is slotted, can also be moved to assist in this adjustment. Lock the ball end on the shift lever with the 1/4-20 nyloc nut.
3. Shift to reverse and back to forward. The cam roller should be at the end of the slot in the cam such that the gate cannot be forcibly rotated toward reverse. Pull on the gate by hand to verify this. Make adjustments if necessary to satisfy this condition. Lock the jam nuts.
4. Do not be concerned about the neutral and reverse positions of the gate. Water pressure will take care of these.

CAUTION

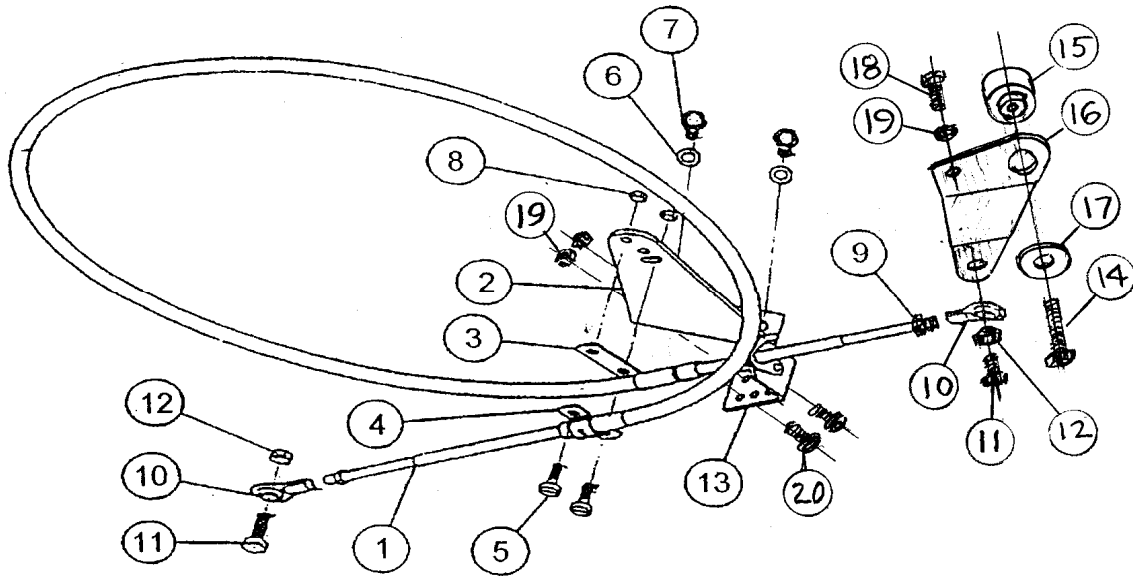
**YOU MUST RETURN THE THROTTLE
TO IDLE BEFORE SHIFTING.**

Drilling Template

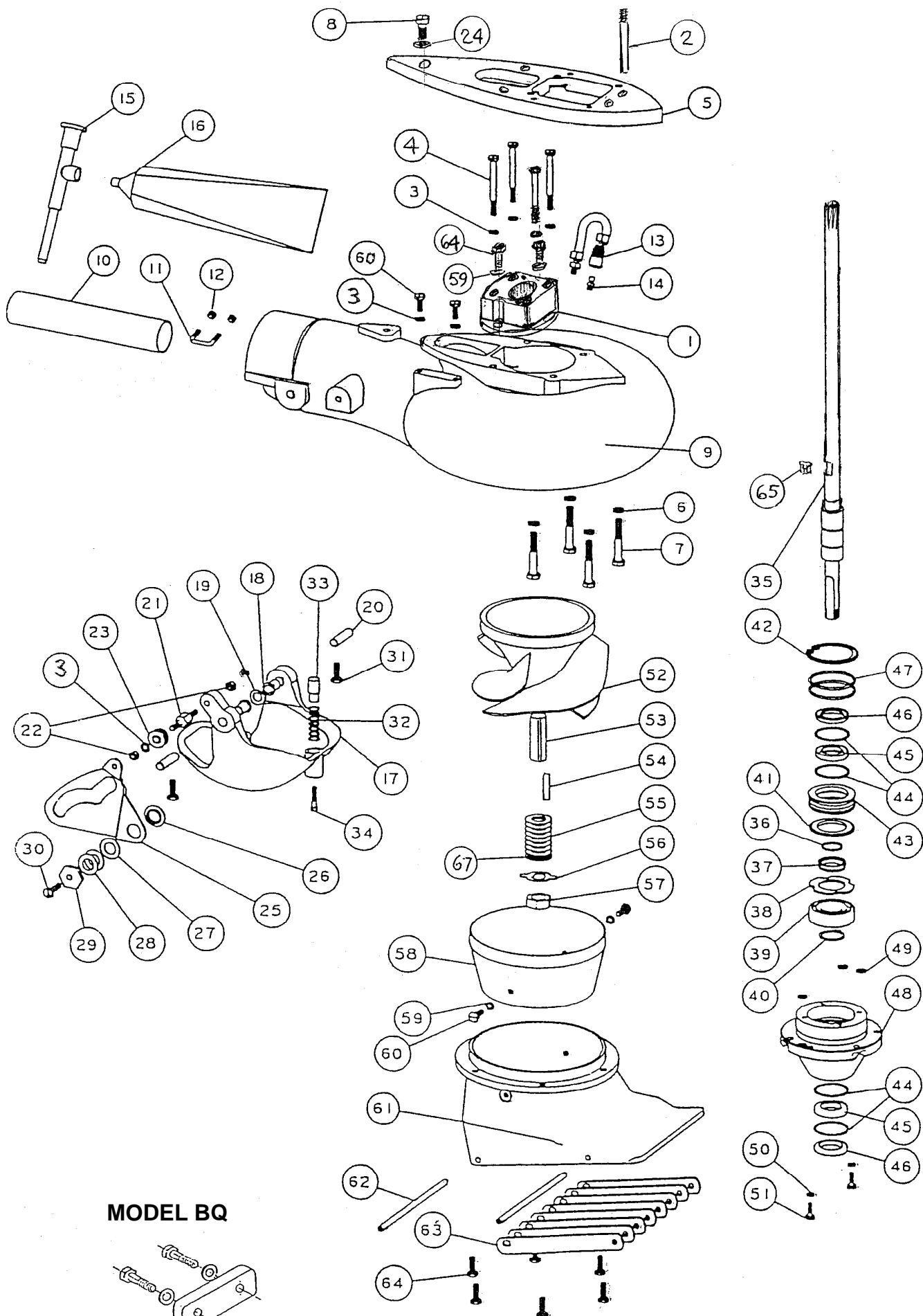


SMALL SERIES

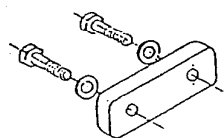
SHIFT CABLE ASSEMBLY
SUZUKI MODEL BQ 20 HP
TILLER STEERING
2178



| REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------------|
| 1 | 1 | 556 | CABLE 6 FT MOR 33C SUPREME |
| 2 | 1 | 156 | BRACKET CABLE SUPPORT |
| 3 | 1 | 542 | SHIM MORSE AO35777 |
| 4 | 1 | 543 | CLAMP CHRYS 154317 |
| 5 | 2 | 561 | 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 | 2 | 573 | BOLT HEX HD 1/4-20 X 3/4 |
| 12 | 2 | 623 | NYLOC 1/4-20 |
| 13 | 1 | 543.1 | CABLE ANCHOR MORSE 36174 |
| 14 | 1 | 587.5 | BOLT HEX HD M6-1.0 X 50MM |
| 15 | 1 | 2177 | BUSHING |
| 16 | 1 | 2176 | SHIFT LEVER |
| 17 | 1 | 633 | WASHER 1/4 X 1 |
| 18 | 1 | 559.2 | FIL HD SLOT 10-32X 1 1/4 PATCH |
| 19 | 3 | 621 | NYLOC 10-32 |
| 20 | 2 | 562.1 | PAN HD PHILLIPS 10-32 X 5/8 |



MODEL BQ



ANODE KIT 1693

MODEL BQ SUZUKI 20 HP

4 STROKE 2 CYL 20.0 CU. IN.

| REF | QTY | PART NO. | DESCRIPTION | REF | QTY | PART NO. | DESCRIPTION |
|-----|-----|----------|--------------------------------------|-----|------|--|-------------------------------------|
| 1 | 1 | 2179 | PUMP ADAPTER BQ | 52 | 1 | 2118 | IMPELLER 6-79 CB W/36.1 SLEEVE |
| 2 | 1 | 2175 | SHIFT ROD GUIDE BQ | 53 | 1 | 36.1 | SHAFT SLEEVE PLASTIC MEDIUM |
| 3 | 6 | 635 | 1/4 WASHER AN960C416 | 54 | 1 | 1705 | IMPELLER TEE KEY - 1/2 ROUND |
| 4 | 4 | 577 | BOLT HEX HD 1/4-20 X 1 1/2 | 55 | 7 | 21 | SHIM WASHER MEDIUM |
| 5 | 1 | 2106 | ADAPTER PLATE BM | 56 | 1 | 805 | NUTKEEPER MED/PKG 2 PER BAG |
| 6 | 4 | 640 | WASHER SPRING LOCK 5/16 | 57 | 1 | 22.1 | SHAFT NUT 5/8-18 BRASS |
| 7 | 4 | 595 | BOLT HEX HD 5/16-18 X 2 | 1 | 2120 | INTAKE ASSY 6 REDUCED WITH GRILL & LINER | |
| 8 | 1 | 606 | BOLT HEX HD 3/8-16 X 1 1/4 | 58 | 1 | 2119 | LINER 6 W/HARDWARE REDUCED 5/8 INCH |
| | | 2171 | VOLUTE WITH GATE BQ | 59 | 4 | 638 | WASHER SPRING LOCK 1/4 |
| 9 | 1 | 2170 | VOLUTE WITH EXHAUST TUBE BQ | 60 | 4 | 572 | BOLT HEX HD 1/4-20 X 5/8 |
| 10 | 1 | 221 | EXHAUST TUBE SMALL 1 1/2 | 61 | 1 | 853 | INTAKE PAINTED ONLY |
| 11 | 1 | 847 | CLIP EXHAUST TUBE 3/4 | 62 | 2 | 216 | GRILL ROD SMALL |
| 12 | 2 | 621 | NYLOC 10-32 | 63 | 8 | 215 | GRILL BAR SMALL |
| 13 | 1 | 975 | LUBE HOSE ASSY | 64 | 8 | 573 | BOLT HEX HD 1/4-20 X 3/4 |
| 14 | 1 | 539 | ZIRC FITTING 1/4-28 | 65 | 1 | 1275 | KEY, TEE WATER PUMP |
| 15 | 1 | 550 | GREASE GUN | 67 | 1 | 1718 | TORSIONAL DAMPER 5/8 |
| 16 | 1 | 552 | GREASE 10 OZ TUBE 630-AA | | | | |
| 17 | 1 | 1355 | REVERSE GATE SMALL | | | | |
| 18 | 2 | 535 | NYLINER 3/8 ID X 11/16 | | | | |
| 19 | 1 | 1177 | SPRING GATE PIVOT 3/8 | | | | |
| 20 | 2 | 821 | PIN GATE PIVOT 3/8 SMALL | | | | |
| 21 | 1 | 1043 | SHAFT ROLLER | | | | |
| 22 | 2 | 624 | NYLOC 1/4-28 | | | | |
| 23 | 1 | 1042 | ROLLER ASSY | | | | |
| 24 | 1 | 636 | WASHER SPRING LOCK M10 | | | | |
| 25 | 1 | 1035 | SHIFT CAM MEDIUM | | | | |
| 26 | 1 | 1037 | BUSHING CAM | | | | |
| 27 | 1 | 1038 | WASHER CAM | | | | |
| 28 | 2 | 1039 | SHIM-CAM | | | | |
| 29 | 1 | 1036 | CAM ECCENTRIC DRILLED | | | | |
| 30 | 1 | 574.1 | BOLT HEX HD 1/4-20 X 1 PATCH | | | | |
| 31 | 2 | 574 | BOLT HEX HD 1/4-20 X 3/4 PATCH | | | | |
| 32 | 1 | 1170 | SPRING GATE BUMPER | | | | |
| 33 | 1 | 1169 | GATE BUMPER | | | | |
| 34 | 1 | 559.2 | FIL HD SLOTTED 10-32 X 1 1/4 PATCH | | | | |
| 35 | 1 | 2174 | SHAFT ASSY COMPLETE, BQ, 11T | | | | |
| | 1 | 2173 | SHAFT ONLY, BQ, 11T, 23 1/8 LG | | | | |
| 36 | 1 | 41 | SHAFT BEARING THRUST RING | | | | |
| 37 | 1 | 477 | COLLAR BACKFIT 7205 | | | | |
| 38 | 1 | 1536 | THRUST WASHER | | | | |
| 39 | 1 | 504 | BEARING 7205B-UA | | | | |
| 40 | 1 | 511 | TRUARC 5100-98 | | | | |
| 41 | 1 | 1535 | SPACER | | | | |
| 42 | 1 | 512 | TRUARC N5002-212ZD | | | | |
| 43 | 1 | 433 | UPPER SEAL CARRIER W/SEALS & O RINGS | | | | |
| 44 | 4 | 517 | SPIROLOX RR-150S | | | | |
| 45 | 2 | 506 | SEAL INNER | | | | |
| 46 | 2 | 507 | SEAL OUTER 6324-S | | | | |
| 47 | 2 | 526 | O RING 568-135 3/32X1 15/16X2 1/8 | | | | |
| 48 | 1 | 2167 | BEARING CARRIER W/SEALS & O RINGS BQ | | | | |
| 49 | 3 | 521 | O RING 568-011 1/16X5/16X7/16 | | | | |
| 50 | 2 | 637 | WASHER SPRING LOCK #10 | | | | |
| 51 | 2 | 561 | FIL HD SLOTTED 10-24 X 5/8 | | | | |

| 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 2178 PAGE 17.3

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





SUZUKI M20A
NUMBER 311006
SUZUKI MOTOR CO., LTD.

1234567890



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Electronic Fuel Injection

LEAN BURN





SUZUKI

FOUR STROKE

SUZUKI
SUZUKI OUTBOARD MOTOR CO., LTD.
MADE IN JAPAN

MADE IN JAPAN
SUZUKI OUTBOARD MOTOR CO., LTD.