

Johnson **OUTBOARDS**

SERVICE MANUAL



175 HP models

175TL78, 175TXL78

200 HP models

200TL78, 200TXL78

235 HP models

235TL78, 235TXL78

INTRODUCTION

**GENERAL
SERVICE
INFORMATION**

**FUEL
SYSTEM**

**IGNITION
SYSTEM**

**POWER
HEAD**

**LOWER
UNIT**

**ELECTRICAL
SYSTEM**

**REMOTE
CONTROL**

**POWER TRIM
AND TILT**

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SPECIFICATIONS

Models 175TL78, 200TL78 &
 235TL78 . . . (Long Shaft) 20" (508 mm) transom
 Models 175TXL78, 200TXL78 &
 235TXL78 . (Extra long shaft) 25" (635 mm) transom
 Powerhead Six cylinder - two stroke cycle
 Bore & stroke. .3.500" x 2.588" (88.90 x 65.74 mm)
 Piston displacement 149.4 cu. in. (2448 cm³)
 *Horsepower 175 B.I.A. Certified brake hp at
 5000 rpm
 200 B.I.A. Certified brake hp at 5250 rpm
 235 B.I.A. Certified brake hp at 5250 rpm
 Full throttle operating
 range 175 hp 4500 to 5500 rpm
 200 hp 4750 to 5750 rpm
 235 hp 4750 to 5750 rpm

NOTE

The upper end of this full power operating range is the recommended engine speed to use in selecting the proper propeller. The rpm should be measured with the expected average load in the boat.

Idle rpm . . . 900 rpm in neutral, 650 rpm in gear
 Tank test with test wheel
 part no. 387388 175 hp - 4750 rpm
 200 hp - 4800 rpm
 235 hp - 4800 rpm

Engine type 90° V-type, 6 cylinder, 2 cycle
 Piston ring sets (2 per set) standard
 0.020" oversize
 0.030" oversize

Diameter of ring . . 3.500" (88.90 mm) (standard)
 Width of ring
 (upper) . . . 0.0895" - 0.0900" (2.273 - 2.286 mm)
 (lower) . . . 0.0615" - 0.0625" (1.562 - 1.588 mm)

Piston less rings
 Standard
 0.020" oversize
 0.030" oversize

Crankshaft size
 Top journal 1.6204" - 1.6199"
 41.158 - 41.145 mm)
 Center journals 2.1875" - 2.1870"
 (55.563 - 55.550 mm)
 Bottom journal. 1.3784" - 1.3779"
 (35.011 - 34.999 mm)
 Connecting rod crank pin. . . . 1.3762" - 1.3757"
 (34.955 - 34.943 mm)

Carburetion 3 carburetors - Float feed with
 fixed high and low-speed jets, Manual
 lever and remote control choke

Float level setting Remove float bowl,
 turn carburetor upside down so weight of
 float closes needle; float should now be
 parallel to gasket surface

Carburetor high speed orifice
 plug 175 hp Part No. 321731
 Hole size 0.058" (1.47 mm)
 200 hp Part No. 320661
 Hole size 0.061" (1.55 mm)
 235 hp Part No. 317183
 Hole size 0.067" (1.70 mm)

Carburetor low speed orifice
 plug 175 hp Part No. 320016
 Hole size 0.032" (0.81 mm)

Carburetor low speed orifice
 plug (cont) 200 hp Part No. 318823
 Hole size 0.031" (0.79 mm)
 235 hp #1-Part No. 317473
 Hole size 0.030" (0.76 mm)
 #2 & 3-Part No. 320015
 Hole size 0.033" (0.84 mm)
 #4-Part No. 320016
 Hole size 0.032" (0.81 mm)
 #5 & 6-Part No. 318823
 Hole size 0.031" (0.79 mm)

Inlet needle seat 0.0745" - 0.0715" (1.892 -
 1.816 mm) Use a #50 drill as gage

Cooling system . . . Pressure and thermostatically
 controlled recirculating system

Propeller gear ratio 14:26
 Gearcase lubricant
 capacity 44.0 ozs. (1300 mL)

**Propeller 175 hp †3 blade 14-1/2" dia. by
 19" pitch
 200 & 235 hp †3 blade 14-1/4" dia. by 21" pitch
 Optional aluminum propellers 3 blade
 (see propeller 15-3/4" dia. by 13" pitch
 selection chart supplied in 3 blade 15-1/2"
 owner's kit) dia. by 15" pitch
 †3 blade 15" dia. by 17" pitch
 3 blade 14-1/2" dia. by 23" pitch
 †3 blade SSTR high performance 14-1/2" dia. by
 24" pitch
 †3 blade SSTR high performance 14-1/2" dia.
 by 26" pitch
 †3 blade SSTR high performance 15" dia. by 28"
 pitch

Propeller nut socket
 wrench size 1-1/4"

Speed control Remote control -
 synchronized throttle and spark

Gear shift control Forward, neutral,
 reverse - remote control

Weight (without fuel tank)
 175 & 200 hp Long shaft 20" (508 mm)
 transom 385 lbs. (174.6 kg)
 235 hp Long shaft 406 lbs. (184.2 kg)
 175 & 200 hp Extra long shaft 25" (635 mm)
 transom 391 lbs. (177.4 kg)
 235 hp Extra long shaft 411 lbs. (186.4 kg)

Fuel tank
 weight 10 lbs. net (4.5 kg)

Fuel tank supplied with
 motor capacity 6 gallons (22.7 litres)

Starter Electric and emergency rope
 Starter amp draw

when cranking 200 amps maximum
 Starter rpm 200 rpm for ignition

Generator system Flywheel alternator
 Fuse Littlefuse 1 A.G. - 20 amp or
 Buss A.G. 20 amp (located on port side of
 motor in wire terminal area)

Ignition (magneto breakerless
 C.D.) Two Power Packs

Timing 28° @ 4300-4600 rpm in gear
 4-6° @ pickup point

Spark plug Champion UL-77V
 Spark plug torque 17-1/2" - 20-1/2" foot-
 pounds (24 - 27 N.m)

LUBRICATION POINTS CONT'D

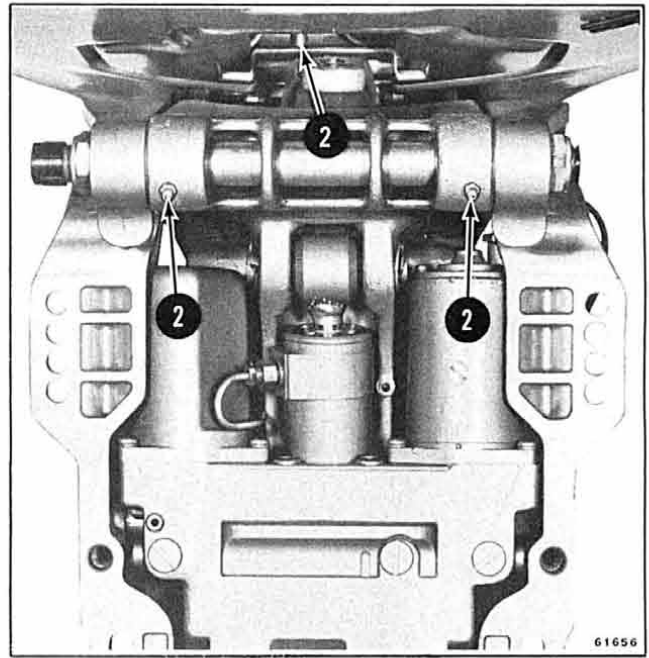
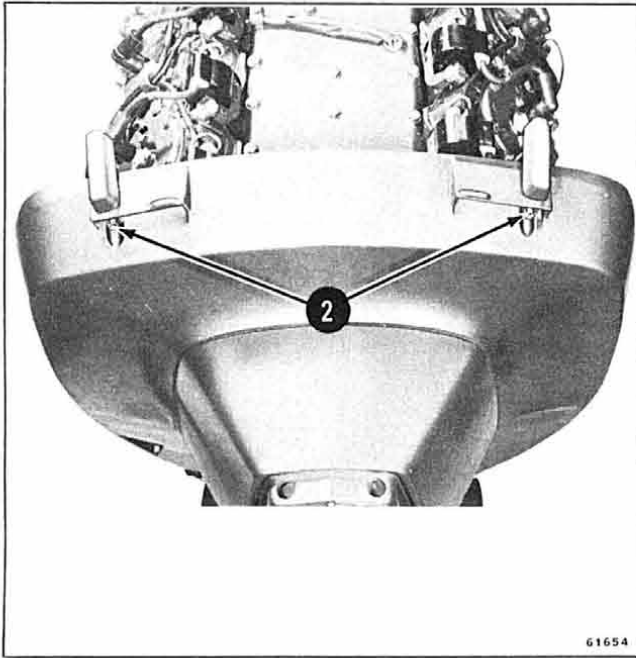


Figure 2-3

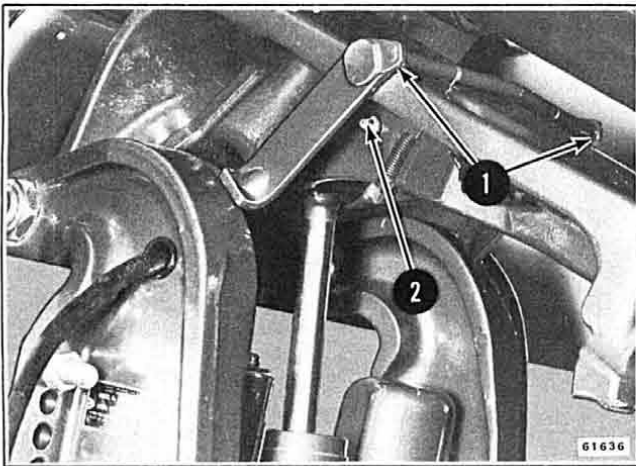


Figure 2-4

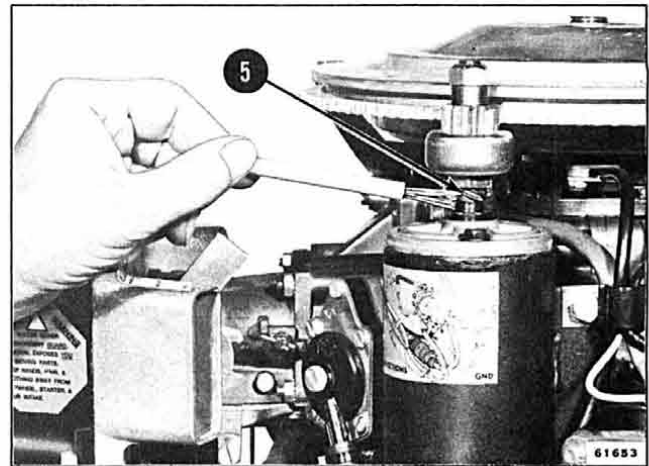


Figure 2-5

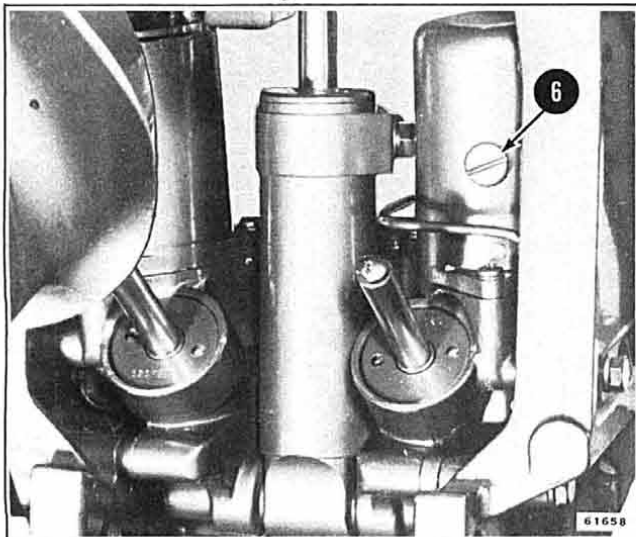


Figure 2-6

1. Grease tube
2. Grease gun
5. Anderol 766
6. OMC Power Trim/Tilt Fluid

POWER TRIM AND TILT RESERVOIR

Place motor in full tilt position and engage trail lock. See Figure 2-6. Remove filler plug and check fluid level. If necessary, add OMC Power Trim/Tilt Fluid to bring fluid level even with bottom of fill hole. Disengage trail lock and operate unit through several tilt cycles. Recheck fluid level and add fluid if necessary.

*Trade Mark