

# Specifications - 25 and 40

## General

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Full Throttle Operating Range .....	4500 - 5500 rpm .....	4000 - 5000 rpm
Idle rpm in Forward Gear .....	650 rpm .....	700 rpm
Test Wheel and rpm .....	Part No. 388880 (7" Dia. x 1" wide) 5200 rpm	Part No. 378566 (7" dia. x 1-5/8" wide) 4500 rpm

## Powerhead

Bore and Stroke .....	76,20 x 57,15 mm (3.000" Bore x 2.250" Stroke)	80,90 x 69,85 mm (3.1875" Bore x 2.7500" Stroke)
Piston Displacement .....	521 cm <sup>3</sup> (31.8 cu. in.)	719 cm <sup>3</sup> (43.9 cu. in.)
Width of Ring		
Upper .....	2,286 - 2,273 mm (0.0900" - 0.0895")	2,286 - 2,273 mm (0.0900" - 0.0895")
Lower .....	1,588 - 1,562 mm (0.0625" - 0.0615")	1,588 - 1,562 mm (0.0625" - 0.0615")
Crankshaft Size		
Top Journal .....	31,775 - 31,788 mm (1.2510" - 1.2515")	38,046 - 38,034 mm (1.4979" - 1.4974")
Center Journal .....	30,056 - 30,069 mm (1.1833" - 1.1838")	34,930 - 34,620 mm (1.3752" - 1.3748")
Bottom Journal .....	24,999 - 25,009 mm (0.9842" - 0.9846")	30,017 - 29,997 mm (1.1815" - 1.1810")
Connecting Rod Crankpin .....	30,043 - 30,030 mm (1.1828" - 1.1823")	30,043 - 30,030 mm (1.1828" - 1.1823")
+Standard Bore Size .....	76,21 - 76,19 mm (3.0005" - 2.9995")	80,98 - 80,95 mm (3.1880" - 3.1870")

+To determine correct bore size for oversize pistons, merely add oversize dimension to standard bore size.

## Ignition System

Ignition .....	Flywheel magneto, breakerless C.D. ....	Flywheel magneto, breakerless C.D.
Spark Plug		
Champion .....	L77J4 or QL77J4 .....	L77J4 or QL77J4
Spark Plug Gap .....	1,0 mm (0.040") .....	1,0 mm (0.040")
Ignition Coil .....	Part No. 582106 or 582366 .....	Part No. 582106 or 582366
RPM Limiter Powerpack .....	P/N 582474 (5800 rpm) .....	P/N 582901 (5000 rpm)

## Ignition Coil Test Specifications - Part No. 582366 or 582106

Stevens Model ST-75	Primary Resistance .....	0.1
Reverse Polarity (Switch Setting CD) .....	Secondary Continuity .....	5 approx.
Stevens Tester Model M.A.-75 or M.A.-80	Graham Tester Model 51	
Switch .....	Maximum Secondary .....	400 ohms
A (Use Model CD-1 Adapter - Red test clip to orange/black - Black test clip to orange)	Maximum Primary .....	0.4 ohm
Index Adjustment .....	Primary Continuity, Point Test Scale .....	0.1 ohm max.
20	Coil Index .....	50
Merc-O-Tronic with Capacitor Discharge Adapter Model 55-980	Coil Test Minimum AMPLIFIED .....	26 (With secondary circuit "open") Hi Tension lead disconnected
Operating Amperage .....	Gap Index .....	50 (Coil must fire spark gap on tester at this setting)
1.0		

Ignition Component Tests - 25 and 40						
	Resistance		Ground Test		Output	
	Meter Setting	Reading	Meter Setting	Reading	Meter Setting	Reading
Charge coil	High ohms scale	575 ± 75 Ω	High ohms scale	∞	(-), 500	230
Sensor coil	Low ohms scale	40 ± 10 Ω	Low ohms scale	∞	S, 5	0.3
Power pack	—	—	—	—	(-), 500	180
Ignition coil primary	Low ohms scale	0,1 ± 0,05 Ω				
Secondary	High ohms scale	275 ± 50 Ω				

## Fuel System

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Carburetion	Single barrel, float feed fixed high speed adjustable low speed, manual primer	Single barrel, float feed, fixed high speed adjustable low speed, manual primer
Float Level Setting	Between steps on gauge Part No. 324891	Between steps on gauge Part No. 324891
Float Drop Setting	28 - 41 mm (1.125" - 1.625")	28 - 41 mm (1.125" - 1.625")

## Clearance Chart

### Powerhead

Piston Ring Gap	0,43 - 0,18 mm (0.017" - 0.007")	0,43 - 0,18 mm (0.017" - 0.007")
Piston Ring Groove Clearance, Lower	0,102 - 0,038 mm (0.0040" - 0.0015")	0,102 - 0,038 mm (0.0040" - 0.0015")
Cylinder and Piston	0,086 - 0,025 mm (0.0034" ± 0.001")	0,127 - 0,076 mm (0.0050" - 0.0030")
Crankshaft End Play	0,635 - 0,000 mm (0.025" - 0.000")	0,028 - 0,076 mm (0.011" - 0.003")

### Gearcase

Propeller Shaft in Front Gear Bushing	0,051 - 0,025 mm (0.0020" - 0.0010")	0,051 - 0,025 mm (0.0020" - 0.0010")
Rear Reverse Gear to Rear Bushing	0,051 - 0,013 mm (0.0020" - 0.0005")	0,051 - 0,013 mm (0.0020" - 0.0005")
Reverse Gear Bushing to Propeller Shaft	0,038 - 0,013 mm (0.0015" - 0.0005")	0,038 - 0,013 mm (0.0015" - 0.0005")
Propeller on Shaft at Drive Pin Hole		0,018 - 0,076 mm (0.007" - 0.003")
Propeller on Shaft-Above the Shoulder		0,17 - 0,086 mm (0.0069" - 0.0034")

## Torque Chart

### Powerhead

Flywheel Nut	135 - 140 N·m (100 - 105 ft. lbs.)	136 - 140 N·m (100 - 105 ft. lbs.)
Connecting Rod Screws	40 - 42 N·m (29 - 31 ft. lbs.)	40 - 42 N·m (29 - 31 ft. lbs.)
Cylinder Head Screws	24 - 27 N·m (18 - 20 ft. lbs.)	19 - 22 N·m (14 - 16 ft. lbs.)
Crankcase to Main Bearing Screws		Upper and lower-16 - 18 N·m (150 - 170 in. lbs.)
Upper, Center, Bottom	19 - 22 N·m (14 - 16 ft. lbs.)	Center-18 - 19 N·m (162 - 168 in. lbs.)
Powerhead to Exhaust Housing Screws	19 - 24 N·m (16 - 18 ft. lbs.)	7 - 9 N·m (5 - 7 ft. lbs.)
Spark Plug	24 - 27 N·m (18 - 21 ft. lbs.)	24 - 27 N·m (18 - 21 ft. lbs.)
Power Pack Mounting Screws	5 - 7 N·m (48 - 60 in. lbs.)	5 - 7 N·m (48 - 60 in. lbs.)+
Ignition Coil Mounting Screws	5 - 7 N·m (48 - 60 in. lbs.)	7 - 9 N·m (60 - 80 in. lbs.)+

### Gearcase

Pilot Shaft to Steering Bracket	14 - 16 N·m (10 - 12 ft. lbs.)	14 - 16 N·m (10 - 12 ft. lbs.)
Gearcase Mounting Screws	14 - 16 N·m (10 - 12 ft. lbs.)	14 - 16 N·m (10 - 12 ft. lbs.)

## General

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Full Throttle Operating Range .....	4500 - 5500
Idle rpm in Forward Gear .....	750 rpm
Test Wheel and rpm .....	Part No. 382861 (10" dia. x 2" wide) 5200 rpm

## Powerhead

Bore and Stroke .....	80,96 - 71,63 mm (3.1875" Bore x 2.820" Stroke)
Piston Displacement .....	737 cm <sup>3</sup> (45 cu. in.)
Width of Ring	
Upper .....	2,286 - 2,273 mm (0.0900" - 0.0895")
Lower .....	1,588 - 1,562 mm (0.0625" - 0.0615")
Crankshaft Size	
Top Journal .....	38,047 - 38,034 mm (1.4979" - 1.4974")
Center Journal .....	34,930 - 34,920 mm (1.3752" - 1.3748")
Bottom Journal .....	30,110 - 29,997 mm (1.1815" - 1.1810")
Connecting Rod Crankpin .....	30,043 - 30,030 mm (1.1828" - 1.1823")
+Standard Bore Size .....	80,98 - 80,95 mm (3.1880" - 3.1870")

+To determine correct bore size for oversize pistons, merely add oversize dimension to standard bore size.

## Ignition System

Ignition .....	Flywheel magneto breakerless C.D.
Spark Plug	
Champion .....	L77J4 or QL77J4
Spark Plug Gap .....	1,0 mm (0.040")
Ignition Coil .....	Part No. 582366 or 582106
RPM Limiter Powerpack .....	Part No. 582474 (5800 rpm)

## Igniton Coil Test Specifications - Part No. 582366 or 582106

Stevens Model ST-75	Primary Resistance .....	0.1
Reverse Polarity (Switch Setting CD) .....	Secondary Continuity .....	5 approx.
Stevens Tester Model M.A.-75 or M.A.-80	Graham Tester Model 51	
Switch .....	Maximum Secondary .....	400 ohms
A (Use Model CD-1 Adapter - Red test clip to orange/black - Black test clip to orange)	Maximum Primary .....	0.4 ohm
Index Adjustment .....	Primary Continuity, Point Test Scale .....	0.1 ohm max.
20	Coil Index .....	50
Merc-O-Tronic with Capacitor Discharge Adapter Model 55-980	Coil Test Minimum AMPLIFIED .....	26
Operating Amperage .....	(With secondary circuit "open")	
1.0	Hi tension lead disconnected	
	Gap Index .....	50 (Coil must fire spark gap on tester at this setting)

## Ignition Component Tests - 55

	Resistance		Ground Test		Output (Cranking)	
	Meter Setting	Reading	Meter Setting	Reading	Meter Setting	Reading
Charge coil	High ohms scale	575 ± 75 Ω	High ohms scale	∞	(-), 500	230
Sensor coil	Low ohms scale	45 ± 10 Ω	Low ohms scale	∞	S, 5	0,3
Power Pack					(-), 500	180
Ignition coil primary	Low ohms scale	0,1 ± 0,05 Ω				
Secondary	High ohms scale	275 ± 50 Ω				

## Fuel System

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Carburetion .....	Single barrel, float feed, fixed low and high speed jets, manual primer
Float Level Setting .....	Between steps on gauge Part No. 324891
Float Drop Setting .....	28 - 41 mm (1.125" - 1.625")

## Clearance Chart

Piston Ring Gap .....	0,43 - 0,18 mm (0.017" - 0.007")
Piston Ring Groove Clearance - Lower .....	0,102 - 0,038 mm (0.0040" - 0.0015")
Cylinder and Piston .....	0,125 - 0,048 mm (0.0049" - 0.0018") at major dia.
Forward Gear Bushing to Propeller Shaft .....	0,05 - 0,03 mm (0.002" - 0.001")

## Torque Chart

Flywheel Nut .....	110 - 115 N·m (80 - 85 ft. lbs.)
Connecting Rod Screws .....	40 - 42 N·m (29 - 31 ft. lbs.)
Cylinder Head Screws .....	24 - 27 N·m (18 - 20 ft. lbs.)
Crankcase to Cylinder Main Bearing Screws and Nuts Upper, Center, Bottom .....	24 - 27 N·m (18 - 20 ft. lbs.)
Spark Plugs .....	24 - 27 N·m (18 - 21 ft. lbs.)
Stator Screws .....	7 - 9 N·m (60 - 80 in. lbs.)
Lower Journal Bearing Head Screws .....	11 - 14 N·m (96 - 120 in. lbs.)
Driveshaft Pinion Nut .....	54 - 60 N·m (40 - 45 ft. lbs.)
Power Pack Mounting Screws .....	5 - 7 N·m (48 - 60 in. lbs.)
Ignition Coil Mounting Screws .....	5 - 7 N·m (48 - 60 in. lbs.)
Pivot Shaft Nut (Long Shaft) .....	180 - 200 N·m (130 - 150 ft. lbs.)
Gearcase Mounting Screws .....	24 - 27 N·m (18 - 20 ft. lbs.)
Exhaust Housing to Powerhead Screws .....	24 - 27 N·m (18 - 20 ft. lbs.)