IMPORTANT INFORMATION

Section 1A - Specifications

1 A

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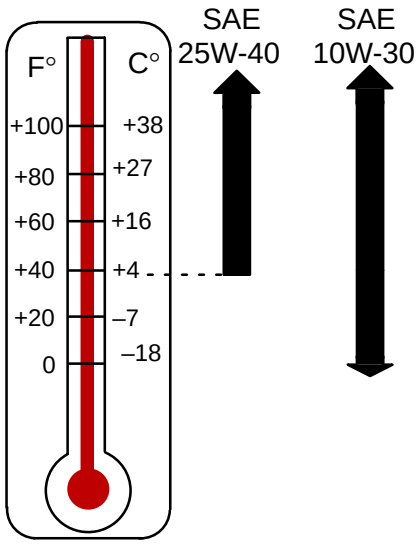
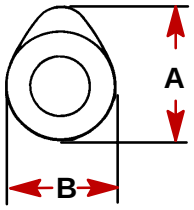
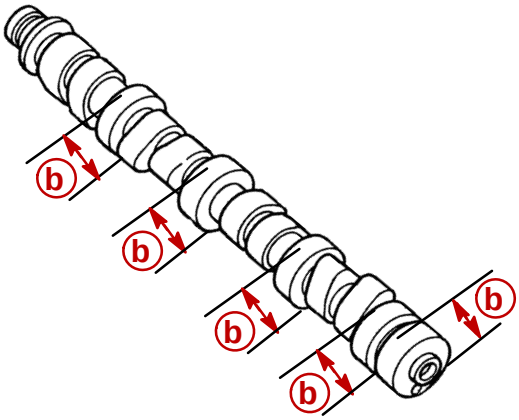
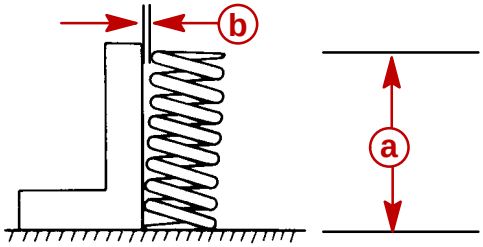
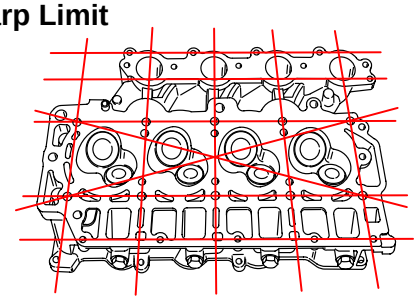
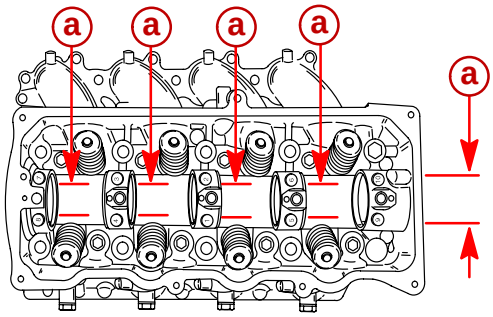
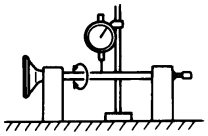
Specifications

Models 40/50/60 EFI (4-Stroke)		
HORSEPOWER (kW)	**Model 40** **Model 50** **Model 60**	40 hp (29.8 Kw) @ 5750 rpm 50 hp (37.7 Kw) @ 5750 rpm 60 hp (44.7 Kw) @ 5750 rpm
OUTBOARD WEIGHT	**Electric** **40/50/60 ELPT** **40/50/60 ELPT BIGFOOT**	 248 lb (112.7 kg) 264 lb (119.9 kg)
FUEL	**RECOMMENDED GASOLINE**	Automotive Unleaded with a Minimum Pump Posted Octane Rating of 87
OIL	**OIL FILTER** **OIL FILTER WRENCH** **ENGINE OIL CAPACITY** **ENGINE OIL** 	p/n 35-822626A2 p/n 91-802653Q1 Either 3 Quarts or 3 Liters SAE 10W-30 viscosity oil is recommended for use in all temperatures. SAE 25W-40 viscosity oil may be used at temperatures above 40° F (4° C). Use Quicksilver 4-Cycle Marine Oil with the proper viscosity for the expected temperature in your area (see range thermometer on left). If not available, use a premium quality 4-cycle engine oil, certified to meet or exceed anyone of the following American Petroleum Institute (API) service classifications SH, SG, SF, CF-4, CE, CD, CDll.

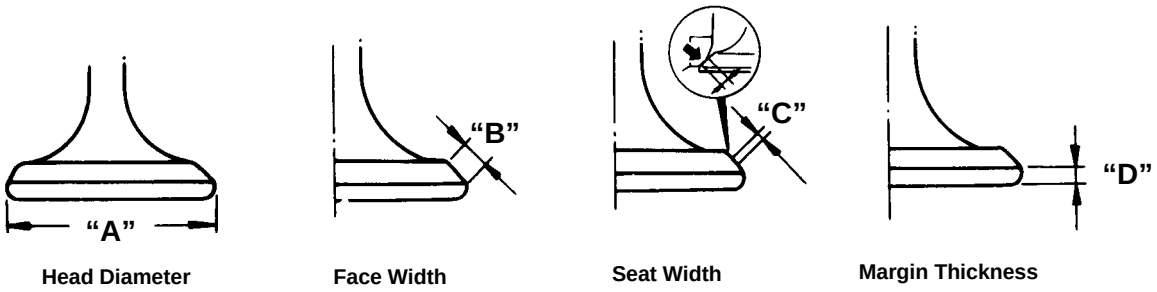
IGNITION SYSTEM **Readings taken @ 68°F (20°C).**	**Type**	Capacitor Discharge Ignition
	Spark Plug:	
	Type	Champion RA8HC
	Gap	0.040 in. (1.0 mm)
	Hex Size	5/8 in. (16 mm)
	Torque	150 lb-in. (17 Nm)
	Hole Size	12 mm
	Firing Order	1-3-4-2
	Ignition Timing:	
	@Idle	Controlled by ECM
	@1500-1800	14° B.T.D.C
	@ WOT (6000 rpm)	28° B.T.D.C
	Stator Resistance	0.20 - 0.30 Ω (YEL-YEL)
	Crank Position Sensor (CPS) Resistance	300 - 350 Ω (RED - WHT)
	Ignition Coil Resistance:	
	Internal Shielding	0 - 10.0 KΩ (Pin A - Mounting Bracket)
	Electronic Spark Trigger (EST)	8.5 - 12KΩ (Pin B - Pin C)
	Secondary	3.0 - 7.0 kΩ (Pin A - Coil Tower)
	High Tension Lead/Boot Resistance	0.600 - 1.100 KΩ
	ECM Engine Speed Limiter	
	Fuel/Spark Cut-out on Cylinders #2 and #3	6225 rpm
	Fuel/Spark Cut-out on All Cylinders	6350 rpm
	ECM Overheat Speed Control	Guardian System is activated. Power limit will vary with level of overheat.
	ECM Low Oil Pressure Speed Control	Guardian System is activated. Engine power is limited to 10% of maximum (Approximately 2000 RPM)
	MAT/ECT Temperature Sensor	See Graph Section 3B - EFI
	Manifold Absolute Pressure (MAP) Sensor Resistance	See Table Section 3B - EFI
	Fuel Injector Resistance	10.0 - 13.5Ω
	Main Power Relay	81-99 Ω (Pin 85 - Pin 86)
	Idle Air Control (IAC)	24-30 Ω (Between Pins)
	Throttle Position Sensor Typical Range	
	Output Voltage @Idle	0.39-1.00 Volts
	Output Voltage @WOT (6000)	3.66-4.80 Volts
CHARGING SYSTEM **Readings taken @ 68°F (20°C).**	**Alternator Type:**	Single Phase (12 Pole)
	20 Amp. Electric Alternator Output	12.6 V-20 Amps. (252 Watts) (Rectified/Regulated)
	Stator Resistance	0.20 - 0.30 Ohms (YEL-YEL)
	Quicksilver Tachometer Setting	“6P” or “4”
STARTING SYSTEM	**Electric Start:**	
	Starter Type	Bendix
	Output	1.1 kW
	Ampere Draw Under:	
	(Load)	174.0 Amps
	(No Load)	23.7 Amps

BATTERY	**Battery Rating** **Minimum Requirement** **For operation below 32° F (0° C)** **Ampere-Hours (Ah) Minimum** **For operation above 32° F (0° C)** **For operation below 32° F (0° C)**	 465 Marine Cranking Amps (MCA) or 350 Cold Cranking Amps (CCA) 1000 Marine Cranking Amps (MCA) or 775 Cold Cranking Amps (CCA) 70 105
FUEL SYSTEM	**Fuel Pump Type** **Fuel Pump:** **Pressure** **Fuel Tank Capacity**	Mechanical Water Cooled (Plunger/Diaphragm) 3-6 psi Accessory
FUEL INJECTION	**Fuel Injector System** **Idle rpm (Out Of Gear)** **Idle rpm (In Forward Gear)** **Wide Open Throttle rpm (WOT)** **Range** **Fuel Pump Pressure - Electric**	Batch (1 & 4) - (2 & 3) 725 ± 25 rpm 725 ± 25 rpm 5500–6000 42-44 psi (290-303 kPa)
CYLINDER BLOCK	**Type** **Displacement** **Number of Cylinders**	4 Stroke Cycle – Over Head Camshaft 60.8 cu. in. (995 cc) 4
STROKE	**Length**	2.953 in. (75 mm)
CYLINDER BORE	**Diameter** **Standard** **Oversize-0.010 in. (0.25 mm)** **Oversize-0.020 in. (0.50 mm)** **Taper/Out of Round Maximum** **Bore Type**	 2.5591 in. (65 mm) 2.5689 in. (65.25 mm) 2.5787 in. (65.5 mm) 0.003 in. (0.08 mm) Cast Iron
PISTON	**Piston Type** **O.D. at Skirt** **Standard** **Oversize-0.010 in. (0.25 mm)** **Oversize-0.020 in. (0.50 mm)**	Aluminum 2.5570 - 2.5578 in. (64.950 - 64.965 mm) 2.5669 - 2.5675 in. (65.2 - 65.215 mm) 2.5768 - 2.5774 in. (65.450 - 65.465 mm)
PISTON CLEARANCE	**Piston to Cylinder Clearance**	0.0014 - .0026 in. (0.035 - 0.065 mm)
RINGS	**Ring End Gap (Installed)** **Top** **Middle** **Bottom (Oil Ring)** **Side Clearance:** **Top** **Middle**	 0.006 - 0.012 in. (0.15 - 0.03 mm) 0.012 - 0.020 in. (0.30 - 0.50 mm) 0.008 - 0.028 in. (0.20 - 0.70 mm) 0.0008 - 0.0024 in. (0.02 - 0.06 mm) 0.0008 - 0.0024 in. (0.02 - 0.06 mm)
COMPRESSION RATIO	**Compression Ratio** **Cylinder Compression*** **(Electric Models Only, Cold Engine @ W.O.T.)**	9.7:1 180 - 210 psi (Peak)
PISTON PIN	**Piston Pin Diameter**	0.6285 - 0.6287 in. (15.965 - 15.970 mm)
CONNECTING ROD	**Oil Clearance (Big End)** **Small End Inside Diameter**	0.0008 - 0.0020 in. (0.020 - 0.052 mm) 0.6293 - 0.6298 in. (15.985 - 15.998 mm)

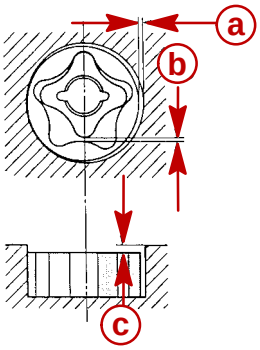
CRANKSHAFT	**Main Bearing Clearance** **Crankshaft Run-out**	0.0005 - 0.0017 in. (0.012 - 0.044 mm) 0.0018 in. (0.046 mm)
CAMSHAFT	**Camshaft Dimensions** **Intake "A"** **Exhaust "A"** **Intake "B"** **Exhaust "B"**  **Run-out Limit** **Camshaft Bearing Diameter "b"** 	 1.214 - 1.222 in. (30.83 - 31.03 mm) 1.214 - 1.222 in. (30.83 - 31.03 mm) 1.020 - 1.028 in. (25.90 - 26.10 mm) 1.020 - 1.028 in. (25.90 - 26.10 mm) 0.0039 in. (0.1 mm) 1.4541 - 1.4549 in. (36.935 - 36.955 mm)
VALVE SPRING	**Free Length "a"** **Tilt Limit "b"**  **Compressed Pressure (Installed)** **Intake** **Exhaust** **Tilt Limit (Intake & Exhaust)** **Dir. of Winding (Intake & Exhaust)**	1.491-1.569 in. (37.85-39.85 mm) Less than 0.060 in. (1.7 mm) 19.8 - 22.0 lbs. (9.0 - 10.0 kg) 19.8 - 22.0 lbs. (9.0 - 10.0 kg) 0.043 in. (1.1 mm) Left Hand

CYLINDER HEAD	**Warp Limit**  *** Lines indicate straight edge measurement** **Camshaft Bore Inside Diameter “a”** 	0.004 in. (0.1 mm) 1.4567 - 1.4577 in. (37.000 - 37.025 mm)
VALVES	**Valve/Valve Seat/Valve Guides:** **Valve Clearance (cold)** **Intake** **Exhaust** **Valve Dimensions:** **“A” Head Diameter** **Intake** **Exhaust** **“B” Face Width** **Intake** **Exhaust** **“C” Seat Width** **Intake** **Exhaust** **“D” Margin Thickness** **Intake** **Exhaust** **Stem Outside Diameter** **Intake** **Exhaust** **Guide Inside Diameter** **Intake** **Exhaust** **Stem To Guide Clearance** **Intake** **Exhaust** **Stem Run-out Limit (max.)** 	 0.006 - 0.010 in. (0.15 - 0.25 mm) 0.010 - 0.014 in. (0.25 - 0.35 mm) 1.256 - 1.264 in. (31.9 - 32.1 mm) 1.020 - 1.028 in. (25.9 - 26.1 mm) 0.079 - 0.124 in. (2.00 - 3.14 mm) 0.079 - 0.124 in. (2.00 - 3.14 mm) 0.035 - 0.043 in. (0.9 - 1.1 mm) 0.035 - 0.043 in. (0.9 - 1.1 mm) 0.020 - 0.035 in. (0.5 - 0.9 mm) 0.020 - 0.035 in. (0.5 - 0.9 mm) 0.2156 - 0.2161 in. (5.475 - 5.490 mm) 0.2150 - 0.2156 in. (5.460 - 5.475 mm) 0.2165 - 0.2170 in. (5.500 - 5.512 mm) 0.2165 - 0.2170 in. (5.500 - 5.512 mm) 0.0004 - 0.0015 in. (0.010 - 0.037 mm) 0.0010 - 0.0020 in. (0.025 - 0.052 mm) 0.0006 in. (0.016 mm)

Valve Dimensions



Head Diameter | Face Width | Seat Width | Margin Thickness

ROCKER SHAFT	**Outside Diameter**	0.6288 - 0.6296 in. (15.971 - 15.991 mm)
ROCKER ARM	**Inside Diameter of Bore**	0.6299 - 0.6306 in. (16.000 - 16.018 mm)
THERMOSTAT	**Valve Opening Temperature** **Full Open Temperature**	118° F - 123° F (48° C - 51° C) 145° F (63° C)
LUBRICATION SYSTEM	**Pump Type** **Engine Oil Pressure (Warm Engine) @ 3000 rpm** **Engine Oil Pan Capacity** **Oil Pump:** **Outer Rotor to Housing "a"** **Inner Rotor to Outer Rotor "b"** **Rotor to Housing "c"** 	Trochoid 30-40 psi (207-278 kPa) Either 3 Qts. **or** 3 Liters 0.0045 - 0.009 in. (0.11 - 0.23 mm) 0.005 in. (0.12 mm) 0.0015 - 0.003 in. (0.04 - 0.08 mm)
MID-SECTION	**Transom Height:** **Long Shaft** **Steering Pivot Range:** **Tiller** **Remote** **Full Tilt Up Angle** **Allowable Transom Thickness**	 20 in. (51 cm) 90° 60° 71° 2-3/4 in. (69.8 mm)

GEAR HOUSING (1.83:1)	**Gear Ratio** **Gearcase Capacity** **Lubricant Type** **Forward Gear** **Number of Teeth** **Pinion Gear** **Number of Teeth** **Pinion Height** **Forward Gear Backlash** **Water Pressure (Warm Engine)** **@ 800 rpm** **@ 6000 rpm (WOT)** **Leak Test Pressure**	1.83:1 11.5 fl oz (340 mL) Quicksilver Gear Lube-Premium Blend 22 Spiral/Bevel 12 Spiral/Bevel 0.025 in. (0.64 mm) Pinion Gear Locating Tool (91-817008A2) 0.011-0.017 in. (0.28-0.43 mm) Backlash Indicator Tool (91-19660--1) MARK #4 or 0.366 in. (9.3 mm) 1–3 psi (7-21 kPa) 12–25 psi (83-172 kPa) 10-12 psi (68-83 kPa) for 5 Minutes
GEAR HOUSING BIGFOOT (2.3:1)	**Gear Ratio** **Gearcase Capacity** **Lubricant Type** **Forward Gear** **Number of Teeth** **Pinion Gear** **Number of Teeth** **Pinion Height** **Pinion Gear Locating Tool** **Flat Number** **Disc Number** **Forward Gear Backlash** **Backlash Indicating Tool** **Mark Number** **Water Pressure** **@ 800 rpm (Idle)** **@ 6000 rpm (WOT)** **Leak Test Pressure**	2.31:1 24 fl oz (710 mL) Quicksilver Gear Lube-Premium Blend 30 Spiral/Bevel 13 Spiral/Bevel 0.025 in. (0.64 mm) 91-12349A2 #8 #3 0.012-0.019 in. (0.30-0.48 mm) 91-78473 #4 2-6 psi (14-41 kPa) 12-25 psi (83-172 kPa) 10-12 psi (69-83 kPa) for 5 Minutes

Propeller Information Charts

Mercury/Mariner 40 EFI (4-Stroke) 1.83:1 Non-Bigfoot

Wide Open Throttle RPM : 5500-6000
Recommended Transom Heights : 20”, 22.5”
Right Hand Rotation Standard
Gear Reduction : 1.83:1

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
10”	17”	3	Alum	Up to 800	Up to 15’	43-50	48-73144A40
10”	16”	3	Steel	800-1000	Up to 15’	39-46	48-91818A5
10”	16”	3	Alum	800-1000	Up to 15’	39-46	48-73142A40
10-1/8”	15”	3	Steel	900-1200	13-15’	36-43	48-855862A5
10-1/8”	15”	3	Alum	900-1200	13-15’	36-43	48-73140A40
10-1/4”	14”	3	Steel	1000-1200	14-16’	33-39	48-855860A5
10-1/4”	14”	3	Alum	1000-1200	14-16’	33-39	48-73138A40
10-3/8”	13”	3	Steel	1100-1400	14-17’	30-35	48-855858A5
10-3/8”	13”	3	Alum	1100-1400	14-17’	30-35	48-73136A40
10-5/8”	12”	3	Steel	1300-1600	15-17’	27-32	48-855856A5
10-5/8”	12”	3	Alum	1300-1600	15-17’	27-32	48-73134A40
11-5/8”	10.5”	3	Steel	1500-1900	16-18’	24-29	48-823478A5
10-7/8”	11”	3	Alum	1500-1900	16-18’	24-29	48-85632A40
11-5/8”	10-1/2”	3	Alum	1600-2000	16’ +	21-25	48-827312A10
11-1/4”	10”	3	Alum	1700-2200	17’ +	19-24	48-73132A40
12-1/4”	9”	3	Steel	2000+	pontoon	17-21	48-97868A10
12-1/4”	9”	3	Alum	2000+	pontoon	17-21	48-87818A10
12-1/2”	8”	3	Alum	2500+	Pontoon/ houseboat	1-18	48-42738A10
12-1/2”	8” Cup	3	Alum		pontoon		48-42738A12

Mercury/Mariner 50 EFI (4-Stroke) 1.83:1 Non-Bigfoot

Wide Open Throttle RPM : 5500-6000
Recommended Transom Heights : 20”, 22.5”
Right Hand Rotation Standard
Gear Reduction : 1.83:1

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
10”	19”	3	Alum	Up to 800	Up to 14’	49-58	48-73146A40
10”	17”	3	Alum	Up to 900	Up to 15’	43-50	48-73144A40
10”	16”	3	Steel	900-1300	Up to 15’	39-46	48-91818A5
10”	16”	3	Alum	900-1300	Up to 15’	39-46	48-73142A40
10-1/8”	15”	3	Steel	1000-1400	13-15’	36-43	48-855862A5
10-1/8”	15”	3	Alum	1000-1400	13-15’	36-43	48-73140A40
10-1/4”	14”	3	Steel	1100-1600	14-16’	33-39	48-855860A5
10-1/4”	14”	3	Alum	1100-1600	14-16’	33-39	48-73138A40
10-3/8”	13”	3	Steel	1300-1800	14-17’	30-35	48-855858A5
10-3/8”	13”	3	Alum	1300-1800	14-17’	30-35	48-73136A40
10-5/8”	12”	3	Steel	1400-2000	15-17’	27-32	48-855856A5
10-5/8”	12”	3	Alum	1400-2000	15-17’	27-32	48-73134A40
11-5/8”	11”	3	Steel	1700-2400	16-18’	24-29	48-823478A5
10-7/8”	11”	3	Alum	1700-2400	16-18’	24-29	48-85632A40
11-5/8”	10-1/2”	3	Alum	1900-2700	16’ +	21-25	48-827312A10
11-1/4”	10”	3	Alum	2100-3000	17’ +	19-24	48-73132A40
12-1/4”	9”	3	Steel	2500+	pontoon	17-21	48-97868A10
12-1/4”	9”	3	Alum	2500+	pontoon	17-21	48-87818A10
12-1/2”	8”	3	Alum	3000+	Pontoon/ houseboat	1-18	48-42738A10
12-1/2”	8” Cup	3	Alum		pontoon		48-42738A12

Mercury/Mariner 60 EFI (4-Stroke) 1.83:1 Non-Bigfoot

Wide Open Throttle RPM : 5500-6000
Recommended Transom Heights : 20”, 22.5”
Right Hand Rotation Standard
Gear Reduction : 1.83:1

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
10”	19”	3	Alum	Up to 1000	Up to 14’	49-58	48-73146A40
10”	17”	3	Alum	Up to 1200	Up to 15’	43-50	48-73144A40
10”	16”	3	Steel	1200-1600	Up to 16’	39-46	48-91818A5
10”	16”	3	Alum	1200-1600	Up to 16’	39-42	48-73142A40
10-1/8”	15”	3	Steel	1300-1700	14-16’	36-43	48-855862A5
10-1/8”	15”	3	Alum	1300-1700	14-16’	36-43	48-73140A40
10-1/4”	14”	3	Steel	1400-2000	15-17’	33-39	48-855860A5
10-1/4”	14”	3	Alum	1400-2000	15-17’	33-39	48-73138A40
10-3/8”	13”	3	Steel	1600-2200	15-18’	30-35	48-855858A5
10-3/8”	13”	3	Alum	1600-2200	15-18’	30-35	48-73136A40
10-5/8”	12”	3	Steel	1800-2500	16-18’	27-32	48-855856A5
10-5/8”	12”	3	Alum	1800-2500	16-18’	27-32	48-73134A40
11-5/8”	11”	3	Steel	2300-3000	17-19’	24-29	48-823478A5
10-7/8”	11”	3	Alum	2300-3000	17-19’	24-29	48-85632A40
11-5/8”	10-1/2”	3	Alum	2500-3300	17’ +	21-25	48-827312A10
11-1/4”	10”	3	Alum	2800-3600	18’ +	19-24	48-73132A40
12-1/4”	9”	3	Steel	3300+	pontoon	17-21	48-97868A10
12-1/4”	9”	3	Alum	3300+	pontoon	17-21	48-87818A10
12-1/2”	8”	3	Alum	4000+	Pontoon/ houseboat	1-18	48-42738A10
12-1/2”	8” Cup	3	Alum		pontoon		48-42738A12

Mercury/Mariner 40 EFI (4-Stroke) 2.3:1 Bigfoot

Special soft rubber hub propellers designed to reduce clutch rattle

Wide Open Throttle rpm: 5500-6000
Recommended Transom Heights : 20", 25"
Right Hand Rotation Standard
Gear Reduction : 2.31:1

IMPORTANT: These specially designed rubber hub propellers are rated for 60 horsepower MAXIMUM.

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
13-3/4"	15"	3	Alum	1200-1500	14-16'	27-32	48-77342A33
14"	13"	3	Alum	1500-2000	16-18'	22-27	48-77340A33
14"	11"	3	Alum	2000-3000	pontoon	17-21	48-77338A33
14"	10"	3	Alum	2500+	pontoon/work	14-19	48-854342A33
14"	9"	3	Alum	3500+	houseboat/ work	1-15	48-854340A33

Mercury/Mariner 50 EFI (4-Stroke) 2.3:1 Bigfoot

Special soft rubber hub propellers designed to reduce clutch rattle

Wide Open Throttle rpm: 5500-6000
Recommended Transom Heights : 20", 25"
Right Hand Rotation Standard
Gear Reduction : 2.31:1

IMPORTANT: These specially designed rubber hub propellers are rated for 60 horsepower MAXIMUM.

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
13-3/4"	15"	3	Alum	1500-2000	14-16'	25-32	48-77342A33
14"	13"	3	Alum	1800-2600	16-18'	23-27	48-77340A33
14"	11"	3	Alum	2800-4000	pontoon	17-21	48-77338A33
14"	10"	3	Alum	3000+	pontoon/work	14-19	48-854342A33
14"	9"	3	Alum	5000+	houseboat/ work	1-16	48-854340A33

Mercury/Mariner 60 EFI (4-Stroke) 2.3:1 Bigfoot

Special soft rubber hub propellers designed to reduce clutch rattle

Wide Open Throttle rpm: 5500-6000
Recommended Transom Heights : 20”, 25”
Right Hand Rotation Standard
Gear Reduction : 2.31:1

IMPORTANT: These specially designed rubber hub propellers are rated for 60 horse-power MAXIMUM.

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
13-3/4”	15”	3	Alum	2000-2500	16-18’	25-32	48-77342A33
14”	13”	3	Alum	2300-3200	17-20’	23-27	48-77340A33
14”	11”	3	Alum	3000-4300	pontoon	17-21	48-77338A33
14”	10”	3	Alum	3500+	pontoon/work	14-19	48-854342A33
14”	9”	3	Alum	5500+	houseboat/ work	1-16	48-854340A33