IMPORTANT INFORMATION

Section 1A - Specifications

1 A

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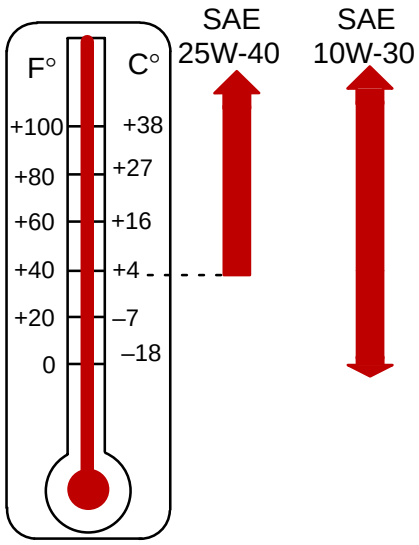
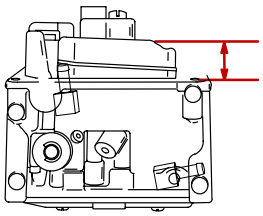
Specifications

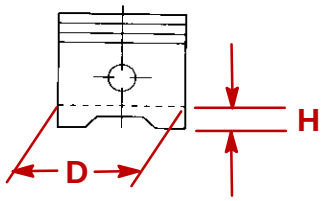
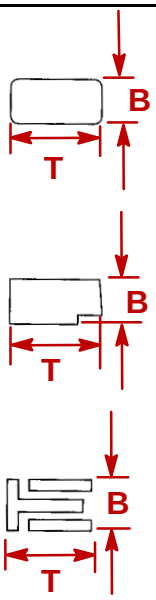
Models 75/90 (4-Stroke)		
PERFORMANCE	**Horsepower:** **Model 75** **Model 90** **Wide Open Throttle (WOT) RPM Range:** **Model 75** **Model 90**	 75 hp (55.9 Kw) @ 5000 rpm 90 hp (67.1 Kw) @ 5500 rpm 4500 - 5500 5000 - 6000
OUTBOARD WEIGHT	**Electric** **75/90 ELPT**	 386 lb (175.1 kg)
FUEL	**Recommended 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 91-802653 Either 5 Quarts or 5 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 any one of the following American Petroleum Institute (API) service classifications SH, SG, SF, CF-4, CE, CD, CDll.

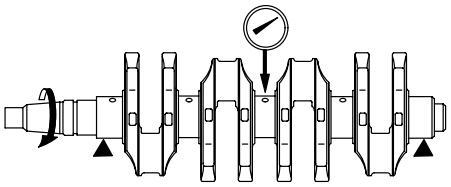
IGNITION SYSTEM **Readings taken @ 68°F (20°C).**	**Type**	Microcomputer-Controlled CDI
	Spark Plug:	
	Type	NGK LFR5A-11
	Gap	0.043 in. (1.1 mm)
	Hex Size	5/8 in. (16 mm)
	Torque	18 lb-ft (25 Nm)
	Firing Order	1-3-4-2
	Ignition Timing:	
	@ Idle (850 rpm)	5° A.T.D.C
	@ WOT (6000 rpm)	18° B.T.D.C
	Stator Output - Peak Voltage:	
	@ 400 rpm (Cranking)	6 - 9 V (WHT – WHT)
	@ 1500 rpm	12 - 18 V (WHT - WHT)
	@ 3500 rpm	14 - 25 V (WHT - WHT)
	Stator Coil Resistance	0.32 - 0.48 Ω (WHT - WHT)
	Crank Position Sensor Output - Peak Voltage:	
	(WHT/BLK - BLK) for Cylinders 1 & 4	
	(WHT/RED - BLK) for Cylinders 2 & 3	
	@ 400 rpm (Cranking)	2.8 - 3.4 V
	@ 1500 rpm	6.5 - 7.8 V
	@ 3500 rpm	10.5 - 12.0 V
	Crank Position Sensor Resistance	
	(WHT/BLK - BLK) for Cylinders 1 & 4	445 - 545 Ω
	(WHT/RED - BLK) for Cylinders 2 & 3	445 - 545 Ω
	CDI Unit Output - Peak Voltage:	
	(BLK/ORG - BLK) for Cylinders 1 & 4	
	(BLK/WHT - BLK) for Cylinders 2 & 3	
	@ 400 rpm (Cranking)	165 - 190 V
	@ 1500 rpm	175 - 200 V
	@ 3500 rpm	175 - 200 V
	Ignition Coil Resistance:	
	Primary	0.078 - 0.106 Ω (BLK - BLK/WHT)
	Secondary (Without Boots)	3.5 - 4.7 kΩ (Between Towers)
	High Tension Lead Resistance:	
	Cylinder #1	4.5 - 10.7 kΩ
	Cylinder #2	3.3 - 8.0 kΩ
	Cylinder #3	3.7 - 8.9 kΩ
	Cylinder #4	4.3 - 10.2 kΩ
	Engine Protection Controls:	
	Engine Speed Limiter Spark Cut-Out to Cylinders	
	#1 or #4	6200 rpm
	#1 and #4	6250 rpm
	#1, #4, and #2 or #3	6300 rpm
	#1, #2, #3, and #4	6350 rpm
	Overheat/Low Oil Pressure Engine Speed Control (Spark Cut-Out to Cylinders #1 and #4)	Gradually Lowers to 3000 rpm
	Water Temperature Sensor:	
	2000 Engine S/N OT178499 and Below	
	Warning Horn/rpm Reduction	140°F (60°C)
	Reset Temperature	118°F (48°C)
	(Throttle Closed/Key off)	
	2001 Engine S/N OT178500 and Above	
	Warning Horn/rpm Reduction	194°F (90°F)
	Reset Temperature	167°F (75°C)
	(Throttle Closed/Key Off)	

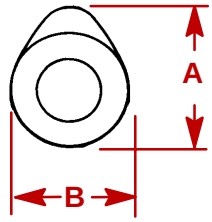
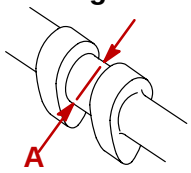
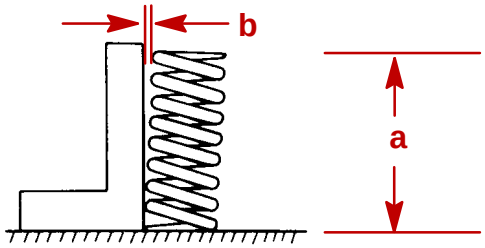
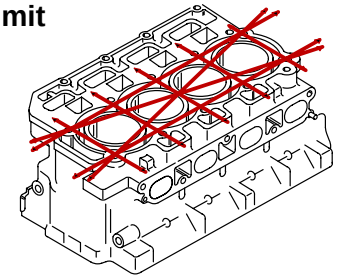
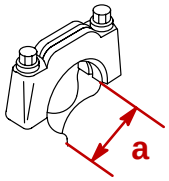
IGNITION SYSTEM **Readings taken @ 68°F (20°C).**	**2000 Engine Oil Pressure Switch:** **S/N OT178499 and Below** **Warning Horn/rpm Reduction Reset Pressure** **ECM reset@ Closed Throttle/Key Off** **2001 Engine Oil Pressure Switch:** **S/N OT178500 and Above** **Warning Horn/rpm Reduction Reset Pressure** **ECM reset@ Closed Throttle/Key Off** **Engine Water Temperature Sensor Resistance:** **@ -4°F (-20°C)** **@ 32°F (0°C)** **@ 68°F (20°C)** **@ 104°F (40°C)** **Throttle Position Sensor (TPS):** **Input Voltage @ Idle (850 rpm)** **Output Voltage@ Idle (850 rpm)**	 Stamped P.15 Continuity Below 2.2 psi (15 kPa) No Continuity Above 2.2 psi (15 kPa) Stamped 1.5 Continuity Below 21.78 psi (150 kPa) No Continuity Above 21.78 psi (150 kPa) 15.5 kΩ 5.79 kΩ 2.45 kΩ 1.50 kΩ 5.0 ± 0.25 V (RED - ORG) 0.68 - 0.82 V (PNK - ORG)
CHARGING SYSTEM **Readings taken @ 68°F (20°C).**	**Alternator Type:** **Alternator Output** **Stator Coil Output - Peak Voltage:** **@ 400 rpm (Cranking)** **@ 1500 rpm** **@ 3500 rpm** **Stator Coil Resistance** **Rectifier/Regulator Output - Peak Voltage:** **@ 1000 rpm** **@ 1500 rpm** **@ 3500 rpm** **@ 6000 rpm** **Quicksilver Tachometer Setting**	Three Phase Stator Coil (12 Pole) 12.0 V; 20 Amps. (240 Watts) (Rectified/Regulated) 6 - 9 V (WHT – WHT) 12 - 18 V (WHT - WHT) 14 - 25 V (WHT - WHT) 0.32 - 0.48 Ω (WHT - WHT) 18 - 22 V (RED - BLK) 19 - 24 V (RED - BLK) 19 - 24 V (RED - BLK) 19 - 24 V (RED - BLK) “6P” or “4”
STARTING SYSTEM	**Electric Start:** **Starter Type** **Model/Manufacturer** **Weight** **Output** **Rating** **Reduction Gear Ratio** **Brush:** **Length** **Minimum Length** **Commutator:** **Diameter** **Minimum Diameter** **Undercut** **Undercut Limit** **Ampere Draw Under:** **(Load)** **(No Load)**	 Sliding Gear S114-828/Hitachi 7 lb, 11 oz (3.5 kg) 1.4 kW - 12 V 30 Seconds 7.85 (102:13) 0.610 in. (15.5 mm) 0.374 in. (9.5 mm) 1.113 in. (29.0 mm) 1.100 in. (28.0 mm) 0.020 in. (0.5 mm) 0.008 in. (0.2 mm) 165 Amps 80 Amps

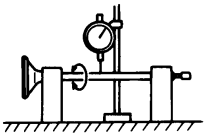
BATTERY	**Battery Rating** **Minimum Requirement** **For operation below 32° F (0° C)** **Ampere-Hours (Ah)**	 465 Marine Cranking Amps (MCA) or 350 Cold Cranking Amps (CCA) 1000 Marine Cranking Amps (MCA) or 775 Cold Cranking Amps (CCA) 70 - 100
ENRICHMENT CONTROL SYSTEM **Readings taken @ 68°F (20°C).**	**Auto Enrichener Resistance**	15 - 25 Ohms (BLU - BLK)
FUEL SYSTEM	**Fuel Pump Type** **Fuel Pump:** **Discharge (@ 3000 rpm)** **Pressure (Maximum)** **Plunger Stroke** **Fuel Tank Capacity**	External (Plunger/Diaphragm) 17 gph (65 L/h) 7 psi (49 kPa) 0.23 - 0.36 in. (5.85 - 9.05 mm) Accessory
CARBURETOR	**Number of Carburetors** **ID Mark** **75** **90** **Venturi Size** **75** **90** **Idle rpm (Neutral) Warm Engine** **Idle rpm (Forward Gear) Warm Engine** **Wide Open Throttle rpm (WOT)** **Range:** **Model 75** **Model 90** **Main Jet** **75** **90** **Main Air Jet** **75** **90** **Pilot Jet** **75** **90** **Pilot Air Jet** **75** **90** **Mid Range Jet** **75** **90** **Pilot Screw** **75** **90** **Float Height**	4 67G 67F 0.945 in. (24 mm) 1.181 in. (30 mm) 850 ± 25 rpm 775 - 800 rpm 4500-5500 5000–6000 #112 #128 #115 #75 #45 #42 #85 #85 None #40 2-1/2 ± 1/2 2 ± 1/2 0.51 - 0.59 in. (13.0-15.0 mm)
CYLINDER BLOCK	**Type** **Displacement** **Number of Cylinders**	In–Line, 4 Stroke – DOHC, 16 Valves 97.4 cid (1,596 cc) 4



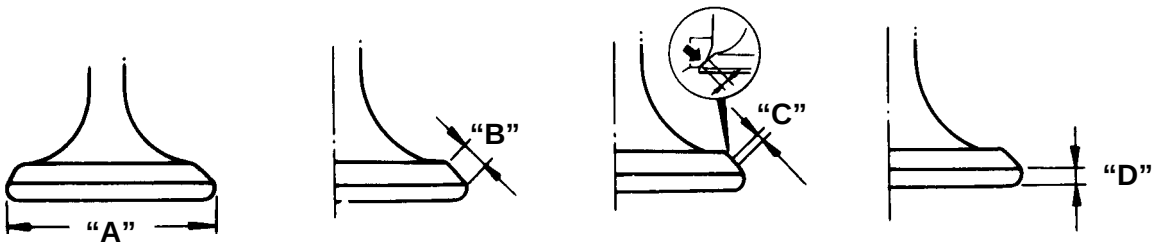
STROKE	**Length**	3.205 in. (81.4 mm)
CYLINDER BORE	**Diameter** **Standard** **Oversize-0.010 in. (0.25 mm)** **Taper/Out of Round Maximum** **Bore Type**	 3.110 - 3.111 in. (79.000 - 79.020 mm) 3.120 - 3.121 in. (79.250 - 79.270 mm) 0.003 in. (0.08 mm) Cast Iron
PISTON	**Piston Type** **Measure Point (H)** **O.D. at Skirt (H)** **Standard (D)** **Oversize-0.010 in. (0.25 mm)** **Pin Boss Inside Diameter** 	Aluminum 0.51 in. (13 mm) 3.1073 - 3.1082 in. (78.928 - 78.949 mm) 3.1174 - 3.1182 in. (79.178 - 79.199 mm) 0.7090 - 0.7093 in. (18.008 - 18.015 mm)
PISTON CLEARANCE	**Piston to Cylinder Clearance**	0.0028 - .0031 in. (0.070 - 0.080 mm)
RINGS	**Top Ring** **Dimension “B”** **Dimension “T”** **End Gap (Installed)** **Side Clearance** **Middle Ring** **Dimension “B”** **Dimension “T”** **End Gap (Installed)** **Side Clearance** **Bottom (Oil Ring)** **Dimension “B”** **Dimension “T”** **End Gap (Installed)** **Side Clearance** 	 0.046 - 0.047 in. (1.17 - 1.19 mm) 0.114 - 0.115 in. (2.89 - 2.91 mm) 0.006 - 0.012 in. (0.15 - 0.30 mm) 0.001 - 0.003 in. (0.02 - 0.08 mm) 0.058 - 0.059 in. (1.47 - 1.49 mm) 0.118 - 0.126 in. (3.00 - 3.20 mm) 0.028 - 0.035 in. (0.70 - 0.90 mm) 0.001 - 0.003 in. (0.03 - 0.07 mm) 0.094 - 0.098 in. (2.38 - 2.48 mm) 0.094 in. (2.40 mm) 0.008 - 0.028 in. (0.20 - 0.70 mm) 0.001 - 0.006 in. (0.03 - 0.15 mm)
COMPRESSION RATIO	**Compression Ratio** **Cylinder Compression (Minimum)**	9.6:1 138 psi (950 kPa)
PISTON PIN	**Piston Pin Outside Diameter**	0.7083 - 0.7087 in. (17.997 - 18.000 mm)
CONNECTING ROD	**Small End Inside Diameter** **Big End Inside Diameter** **Oil Clearance (Big End)** **Big End Bearing Thickness** **Yellow** **Green** **Blue** **Red**	0.7073 - 0.7081 in. (17.965 - 17.985 mm) 1.8514 - 1.8518 in. (47.025 - 47.035 mm) 0.0009 - 0.0014 in. (0.023 - 0.035 mm) 0.0590 - 0.0593 in. (1.499 -1.506 mm) 0.0593 - 0.0596 in. (1.506 - 1.513 mm) 0.0596 - 0.0598 in. (1.513 - 1.520 mm) 0.0598 - 0.0601 in. (1.520 - 1.527 mm)

CRANKSHAFT	**Crankshaft Journal Diameter** **Minimum Diameter** **Crankshaft Pin Diameter** **Minimum Diameter** **Crankshaft Run-out** 	1.8892 - 1.8898 in. (47.985 - 48.000 mm) 1.8887 in. (47.972 mm) 1.7316 - 1.7323 in. (43.982 - 44.000 mm) 1.7311 in. (43.971 mm) 0.001 in. (0.03 mm)
CRANKCASE	**Crankcase Main Journal Inside Diameter** **Crankshaft Journal Oil Clearance** **Upper Crankcase Main Journal Bearing Thickness** **Green** **Blue** **Red** **Lower Crankcase Main Journal Bearing Thickness** **Yellow** **Green** **Blue** **Red** **No. 3 Main Journal Bearing Thickness** **Green** **Blue** **Red**	2.1269 - 2.1276 in. (54.023 - 54.042 mm) 0.0009 - 0.0017 in. (0.024 - 0.044 mm) 0.1178 - 0.1181 in. (2.992 - 2.999 mm) 0.1181 - 0.1183 in. (2.999 - 3.006 mm) 0.1183 - 0.1186 in. (3.006 - 3.013 mm) 0.1185 -0.1188 in. (3.010 - 3.017 mm) 0.1188 - 0.1191 in. (3.017- 3.024 mm) 0.1191 - 0.1193 in. (3.024 - 3.031 mm) 0.1193 - 0.1196 in. (3.031 - 3.038 mm) 0.1178 - 0.1181 in. (2.992 - 2.999 mm) 0.1181 - 0.1183 in. (2.999 - 3.006 mm) 0.1183 - 0.1186 in. (3.006 - 3.013 mm)

CAMSHAFT	**Camshaft Dimensions** **Intake "A"** **Exhaust "A"** **Intake "B"** **Exhaust "B"** **Valve Lift** **Intake** **Exhaust** **Run-out Limit** **Camshaft Bearing Diameter "a"** **Camshaft Bearing Oil Clearance**  	1.465 - 1.472 in. (37.22 - 37.38 mm) 1.453 - 1.459 in. (36.90 - 37.06 mm) 1.178 - 1.184 in. (29.92 - 30.08 mm) 1.178 - 1.184 in. (29.92 - 30.08 mm) 0.273 in. (6.94 mm) 0.259 in. (6.58 mm) 0.0039 in. (0.1 mm) 0.9827 - 0.9835 in. (24.96 - 24.98 mm) 0.0008-0.0024 in.(0.020-0.061 mm)
VALVE SPRING	**Free Length "a"** **Minimum Free Length** **Tilt Limit "b"** 	2.094 in. (53.20 mm) 2.057 in. (52.25 mm) Less than 0.10 in. (2.6 mm)
CYLINDER HEAD	**Warp Limit**  **Camshaft Bearing Inside Diameter**  **Valve Lifter Bore Inside Diameter**	0.004 in. (0.1 mm) 0.984 - 0.985 in. (25.000 - 25.021 mm) 1.102 - 1.103 in. (28.000 - 28.021 mm)

VALVES	**Valve/Valve Seat/Valve Guides:**	
	Valve Clearance (cold)	
	Intake	0.007 - 0.009 in. (0.17 - 0.23 mm)
	Exhaust	0.011 - 0.014 in. (0.31 - 0.34 mm)
	Valve Face Angle	
	Intake	120°, 91°, 110°
	Exhaust	140°, 91°, 110°
	Valve Dimensions:	
	"A" Head Diameter	
	Intake	1.142 - 1.150 in. (29.0 - 29.2 mm)
	Exhaust	0.945 - 0.953 in. (24.0 - 24.20 mm)
	"B" Face Width	
	Intake	0.079 - 0.096 in. (2.00 - 2.43 mm)
	Exhaust	0.090 - 0.107 in. (2.28 - 2.71 mm)
	"C" Seat Width	
	Intake	0.014 - 0.022 in. (0.35 - 0.55 mm)
	Exhaust	0.014 - 0.022 in. (0.35 - 0.55 mm)
	"D" Margin Thickness	
	Intake	0.018 - 0.026 in. (0.45 - 0.65 mm)
	Exhaust	0.026 - 0.033 in. (0.65 - 0.85 mm)
	Stem Outside Diameter	
	Intake	0.2352 - 0.2358 in. (5.975 - 5.990 mm)
	Exhaust	0.2346 - 0.2352 in. (5.960 - 5.975 mm)
	Guide Inside Diameter	
	Intake	0.2364 - 0.2369 in. (6.005 - 6.018 mm)
	Exhaust	0.2364 - 0.2369 in. (6.005 - 6.018 mm)
	Stem To Guide Clearance	
	Intake	0.0006 - 0.0017 in. (0.015 - 0.043 mm)
	Exhaust	0.0012 - 0.0023 in. (0.030 - 0.058 mm)
	Stem Run-out Limit (max.)	0.001 in. (0.03 mm)
		

Valve Dimensions



Head Diameter **Face Width** **Seat Width** **Margin Thickness**

VALVE LIFTERS	**Valve Lifter Outside diameter**	1.1010 - 1.1016 in. (27.965 - 27.980 mm)
	Valve Lifter to Lifter Bore Clearance	0.0008 - 0.0022 in. (0.020 -0.056 mm)
VALVE SHIM	**Valve shim Thickness (in 0.025 mm increments)**	0.0787 - 0.1299 in. (2.000 - 3.300 mm)
THERMOSTAT	**Valve Opening Temperature**	140° F (60° C)
	Full Open Temperature	158° F (70° C)
	Valve Lift (Minimum)	0.12 in. (3 mm)

LUBRICATION SYSTEM	**Pump Type**	Trochoid with Relief Valve
	Oil Pump Drive	Drive shaft Spline
	Discharge at 212°F (100°C) with 10W-30 Oil at 1000 rpm	1.56 gph (5.9 L/h)
	Engine Oil Pressure (Warm Engine)	
	@ 850 rpm	46.5 psi (320 kPa)
	Engine Oil Pan Capacity	Either 5 Qts. **or** 5 Liters
	Relief Valve Opening Pressure	71 psi (490 kPa)
	Oil Pump:	
	Non-Serviceable	
MID-SECTION	**Recommended Transom Height:**	
	Short Shaft	20 in. (51 cm)
	Long Shaft	25 in. (64 cm)
	Steering Pivot Range	60°
	Full Tilt Up Angle	71°
	Allowable Transom Thickness (Max)	3 in. (76.2 mm)
GEAR HOUSING BIGFOOT (2.07:1)	**Gear Ratio**	2.07:1
	Gearcase Capacity	22.5 fl oz (665 mL)
	Lubricant Type	Quicksilver Gear Lube-Premium Blend
	Forward Gear	
	Number of Teeth	29 Spiral/Bevel
	Pinion Gear	
	Number of Teeth	14 Spiral/Bevel
	Pinion Height	0.025 in. (0.64 mm)
	Pinion Gear Locating Tool	91-12349A2
	Flat Number	#2
	Disc Number	#3
	Forward Gear Backlash	0.015-0.022 in. (0.38-0.55 mm)
	Backlash Indicating Tool	91-19660--1
	Mark Number	#1
	Water Pressure	
	@ 1000 rpm	5 psi (34.5 kPa)
	@ 6000 rpm (WOT)	20.5 psi (141.5 kPa)

Propeller Information Charts

Mercury/Mariner 75 (4-Stroke) 2.07:1

Wide Open Throttle RPM : 4500-5500
Recommended Transom Heights : 20”
Right Hand Rotation Standard
Gear Reduction : 2.07:1

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
13-1/2”	26”	3	Steel	Up to 1400	Up to 16’	47-64	48-16996A45
13-1/2”	24”	3	Steel	Up to 1600	Up to 16’	42-58	48-16994A45
12-1/2”	23”	3	Alum	1200-1700	15-17’	40-55	48-77350A45
13-1/2”	22”	3	Steel	1300-1900	15-17’	38-52	48-16992A45
12-3/4”	21”	3	Alum	1400-2000	15-17’	35-49	48-77348A45
13-1/4”	20”	3	Steel	1500-2200	16-18’	33-46	48-16990A45
13”	19”	3	Alum	1600-2400	16-18’	31-43	48-77346A45
13”	18”	3	Steel	1800-2600	16-18’	29-40	48-16988A45
13-1/4”	17”	3	Alum	1900-2900	17-19’	27-37	48-77344A45
13-1/8”	16”	3	Steel	2100-3200	17-19’	24-34	48-16986A45
13-1/4”	16”	3	Alum	2100-3200	17-19’	24-34	48-854360A45
13-3/4”	15”	3	Alum	2300-3600	17-20’	22-32	48-77342A45
13-3/8”	14”	3	Steel	2600-4100	19-21’	20-29	48-17314A45
14”	13”	3	Alum	2900-4600	19-22’	18-26	48-77340A45
14”	12”	3	Steel	3700+	pontoon	16-23	48-17312A45
14”	11”	3	Alum	4500+	pontoon/work	15-21	48-77338A45
14”	10”	3	Steel	5500+	houseboat/ work	1-18	48-17310A45
14”	10”	3	Alum	5500+	houseboat/ work	1-18	48-854342A45

Mercury/Mariner 90 (4-Stroke) 2.07:1

Wide Open Throttle RPM : 5000-6000
Recommended Transom Heights : 20”
Right Hand Rotation Standard
Gear Reduction : 2.07:1

Diameter	Pitch	No. of Blades	Material	Approx. Gross Boat Wgt. (lbs)	Approx. Boat Length	Speed Range (mph)	Propeller Part Number
13-1/2”	26”	3	Steel	Up to 1500	Up to 16’	51-67	48-16996A45
13-1/2”	24”	3	Steel	Up to 1800	Up to 17’	45-60	48-16994A45
12-1/2”	23”	3	Alum	1300-1900	15-17’	43-57	48-77350A45
13-1/2”	22”	3	Steel	1400-2100	15-17’	40-54	48-16992A45
12-3/4”	21”	3	Alum	1600-2200	15-18’	38-51	48-77348A45
13-1/4”	20”	3	Steel	1700-2400	16-18’	36-48	48-16990A45
13”	19”	3	Alum	1800-2700	16-18’	33-45	48-77346A45
13”	18”	3	Steel	2000-2900	17-19’	31-42	48-16988A45
13-1/4”	17”	3	Alum	2200-3200	18-20’	29-39	48-77344A45
13-1/8”	16”	3	Steel	2400-3600	19-21’	26-36	48-16986A45
13-1/4”	16”	3	Alum	2400-3600	19-21’	26-36	48-854360A45
13-3/4”	15”	3	Alum	2700-4000	19-22’	24-33	48-77342A45
13-3/8”	14”	3	Steel	3000-4000	20-23’	22-30	48-17314A45
14”	13”	3	Alum	3300-5100	21-24’	20-28	48-77340A45
14”	12”	3	Steel	4000+	pontoon	17-24	48-17312A45
14”	11”	3	Alum	5000+	pontoon/work	15-21	48-77338A45
14”	10”	3	Steel	6500+	houseboat/ work	1-19	48-17310A45
14”	10”	3	Alum	6500+	houseboat/ work	1-19	48-854342A45