



Presents

# Repair Manuals from **SELOC.**

Contents of this manual:

<b>1</b>	<b>GENERAL INFORMATION, SAFETY AND TOOLS</b>	HOW TO USE THIS MANUAL	1-2
		BOATING SAFETY	1-4
		BOATING EQUIPMENT (NOT REQUIRED BUT RECOMMENDED)	1-10
		SAFETY IN SERVICE	1-13
		TROUBLESHOOTING	1-13
		SHOP EQUIPMENT	1-17
		TOOLS	1-19
		FASTENERS, MEASUREMENT, AND CONVERSIONS	1-27
		SPECIFICATIONS	1-28
		<hr/>	
<b>2</b>	<b>MAINTENANCE AND TUNE-UP</b>	GENERAL INFORMATION	2-2
		LUBRICATION	2-5
		ENGINE MAINTENANCE	2-10
		BOAT MAINTENANCE	2-27
		TUNE-UP	2-30
		TIMING AND SYNCHRONIZATION	2-44
		CLEARING A SUBMERGED MOTOR	2-87
		SPECIFICATIONS	2-88
<hr/>			
<b>3</b>	<b>FUEL SYSTEM</b>	FUEL AND COMBUSTION BASICS	3-2
		FUEL TANK AND LINES	3-6
		CARBURETED FUEL SYSTEM	3-11
		CARBURETOR SERVICE	3-17
		ELECTRONIC FUEL INJECTION SYSTEMS	3-66
		FUEL PUMP (LOW PRESSURE) SERVICE	3-99
		SPECIFICATIONS	3-105
<hr/>			
<b>4</b>	<b>IGNITION AND ELECTRICAL</b>	UNDERSTANDING AND TROUBLESHOOTING	
		ELECTRICAL SYSTEMS	4-2
		IGNITION SYSTEMS	4-8
		CHARGING CIRCUIT	4-38
		CRANKING CIRCUIT	4-43
		ELECTRICAL SWITCH/SOLENOID SERVICE	4-53
		SPECIFICATIONS	4-57
		WIRING DIAGRAMS	4-65
<hr/>			
<b>5</b>	<b>LUBRICATION AND COOLING</b>	PRECISION BLEND OIL INJECTION SYSTEMS	5-2
		OIL INJECTION WARNING SYSTEM	5-20
		COOLING SYSTEM	5-27
		SPECIFICATIONS	5-49

# CONTENTS

POWERHEAD MECHANICAL 6-2  
POWERHEAD REFINISHING 6-67  
POWERHEAD BREAK-IN 6-79  
SPECIFICATIONS 6-80

## POWERHEAD

# 6

LOWER UNIT 7-2  
GEARCASE OVERHAUL 7-10  
JET DRIVE 7-78

## LOWER UNIT

# 7

TRIM & TILT SYSTEMS 8-2  
HYDRO TILT LOCK SYSTEM 8-2  
SINGLE TILT RAM POWER TRIM/TILT SYSTEMS 8-3  
LARGE MOTOR POWER TRIM/TILT SYSTEM 8-13

## TRIM AND TILT

# 8

REMOTE CONTROLS 9-2

## REMOTE CONTROL

# 9

HAND REWIND STARTER 10-2

## HAND REWIND STARTER

# 10

MASTER INDEX 10-22

## MASTER INDEX

ANCHORS .....	1-10	THERMO-SWITCH .....	5-46
ANODES (ZINCS) .....	2-25	TROUBLESHOOTING .....	5-28
INSPECTION .....	2-26	WATER PUMP .....	5-31
SERVICING .....	2-26	<b>CRANKING CIRCUIT</b> .....	<b>4-43</b>
BASIC ELECTRICAL THEORY .....	4-2	DESCRIPTION AND OPERATION .....	4-43
BASIC OPERATING PRINCIPLES .....	1-13	FAULTY SYMPTOMS .....	4-43
BATTERIES .....	2-27	MAINTENANCE .....	4-43
MAINTENANCE .....	2-27	STARTER MOTOR .....	4-46
STORAGE .....	2-29	STARTER MOTOR CIRCUIT .....	4-43
TESTING .....	2-28	STARTER MOTOR RELAY/SOLENOID .....	4-45
BLEED SYSTEM .....	6-69	CRANKSHAFT .....	6-71
<b>BOAT MAINTENANCE</b> .....	<b>2-27</b>	CRANKSHAFT POSITION SENSOR (CPS) .....	4-35
BATTERIES .....	2-27	CRANKSHAFT POSITION SENSOR (CPS)/PULSER COIL .....	3-82
FIBERGLASS HULL .....	2-29	CYLINDER BLOCK .....	6-75
INTERIOR .....	2-30	ELECTRICAL COMPONENTS .....	4-2
<b>BOATING EQUIPMENT (NOT REQUIRED BUT RECOMMENDED)</b> .....	<b>1-10</b>	ELECTRICAL SYSTEM CHECKS .....	2-38
ANCHORS .....	1-10	CHECKING THE BATTERY .....	2-38
BAILING DEVICES .....	1-10	CHECKING THE INTERNAL WIRING HARNESS .....	2-39
COMPASS .....	1-11	CHECKING THE STARTER MOTOR .....	2-39
FIRST AID KIT .....	1-10	ELECTRICAL SYSTEM PRECAUTIONS .....	4-7
OAR/PADDLE (SECOND MEANS OF PROPULSION) .....	1-10	<b>ELECTRICAL SWITCH/SOLENOID SERVICE</b> .....	<b>4-53</b>
TOOLS AND SPARE PARTS .....	1-12	KILL SWITCH .....	4-53
VHF-FM RADIO .....	1-10	MAIN KEYSWITCH .....	4-53
<b>BOATING SAFETY</b> .....	<b>1-4</b>	NEUTRAL SAFETY SWITCH .....	4-55
COURTESY MARINE EXAMINATIONS .....	1-10	START BUTTON .....	4-54
REGULATIONS FOR YOUR BOAT .....	1-4	TETHER .....	4-54
REQUIRED SAFETY EQUIPMENT .....	1-6	WARNING BUZZER/HORN .....	4-56
BOLTS, NUTS AND OTHER THREADED RETAINERS .....	1-27	ELECTRICAL TESTING .....	4-6
BREAK-IN PROCEDURES .....	6-79	<b>ELECTRONIC FUEL INJECTION SYSTEMS</b> .....	<b>3-66</b>
<b>CARBURETED FUEL SYSTEM</b> .....	<b>3-11</b>	CONTROLLED COMBUSTION SYSTEM .....	3-58
DESCRIPTION AND OPERATION .....	3-12	CRANKSHAFT POSITION SENSOR (CPS)/PULSER COIL .....	3-82
TROUBLESHOOTING THE CARBURETED FUEL SYSTEM .....	3-14	ENGINE CONTROL MODULE (ECM/CDI) .....	3-79
CARBURETOR IDENTIFICATION .....	3-17	FUEL INJECTION AND ELECTRONIC COMPONENT LOCATIONS .....	3-89
CARBURETOR SERVICE .....	3-17	FUEL INJECTION BASICS .....	3-55
CARBURETOR IDENTIFICATION .....	3-17	FUEL PRESSURE REGULATOR .....	3-79
2 HP MODELS .....	3-17	FUEL RAIL AND INJECTORS (EFI) .....	3-74
3 HP MODELS .....	3-22	HIGH-PRESSURE (MECHANICAL) FUEL PUMP, FUEL RAILS AND INJECTORS (HPDI) .....	3-72
4/5 HP (83CC AND 103CC) MODELS .....	3-24	KNOCK SENSOR (3.1L EFI OX66 MOTORS) .....	3-86
6/8 HP AND 9.9/15 HP MODELS .....	3-28	HPDI DRIVE BELT AND SPROCKETS .....	3-68
20-48 HP (2-CYLINDER) MODELS .....	3-35	HPDI INJECTOR DRIVER .....	3-70
3-CYLINDER POWERHEADS .....	3-40	NEUTRAL OR SHIFT POSITION SWITCHES .....	3-89
V4 & V6 POWERHEADS .....	3-49	OXYGEN SENSOR (EFI OX66 AND SOME HPDI) .....	3-87
CDI/TCI SYSTEMS .....	4-8	PRESSURE SENSORS (APS AND FPS) .....	3-85
CDI/TCI UNIT AND IGNITION COILS .....	4-30	SELF DIAGNOSTIC SYSTEM .....	3-60
CDI UNIT TEST CHARTS .....	4-18	SENSOR AND CIRCUIT RESISTANCE/OUTPUT TESTS .....	3-61
<b>CHARGING CIRCUIT</b> .....	<b>4-38</b>	TEMPERATURE SENSORS (AIR AND WATER/ENGINE) .....	3-83
BATTERY .....	4-40	THROTTLE BODY AND INTAKE ASSEMBLY .....	3-62
YAMAHA CHARGING SYSTEMS .....	4-38	THROTTLE POSITION SENSOR (TPS) .....	3-82
CHOKE SWITCH .....	9-2	TROUBLESHOOTING ELECTRONIC FUEL INJECTION .....	3-59
<b>CLEARING A SUBMERGED MOTOR</b> .....	<b>2-87</b>	YAMAHA EFI OX66 INJECTION .....	3-56
COMBUSTION .....	3-6	YAMAHA HIGH PRESSURE DIRECT INJECTION (HPDI) .....	3-57
COMPRESSION TESTING .....	2-32	VAPOR SEPARATOR TANK AND HIGH-PRESSURE FUEL PUMP .....	3-64
COMPRESSION CHECK .....	2-32	WATER DETECTION SENSOR (HPDI) .....	3-88
LOW COMPRESSION .....	2-33	ELECTRONIC IGNITION SYSTEMS .....	2-38
CONNECTING RODS .....	6-73	ELECTRONIC TOOLS .....	1-23
CONTROL BOX ASSEMBLY .....	9-4	ENGINE CONTROL MODULE (ECM/CDI) .....	3-79
ASSEMBLY & INSTALLATION .....	9-6	ENGINE COVERS .....	2-10
CLEANING & INSPECTION .....	9-6	ENGINE IDENTIFICATION .....	2-2
REMOVAL & DISASSEMBLY .....	9-4	ENGINE MODEL & SERIAL NUMBERS .....	2-3
CONTROLLED COMBUSTION SYSTEM .....	3-58	<b>ENGINE MAINTENANCE</b> .....	<b>2-10</b>
COOLING SYSTEM .....	5-27	ANODES (ZINCS) .....	2-25
DESCRIPTION AND OPERATION .....	5-27	COOLING SYSTEM .....	2-11
FLUSHING JET DRIVES .....	2-13	ENGINE COVERS .....	2-10
FLUSHING THE COOLING SYSTEM .....	2-11	ENGINE OIL .....	2-13
THERMOSTAT .....	5-41	FUEL FILTER .....	2-15

# 10-20 MASTER INDEX

JET DRIVE IMPELLER .....	2-24	GEARCASE (LOWER UNIT) OIL .....	2-7
PROPELLER .....	2-18	CHECKING LEVEL & CONDITION .....	2-7
ENGINE OIL .....	2-13	DRAINING AND FILLING .....	2-8
CHECKING .....	2-15	OIL RECOMMENDATIONS .....	2-7
FILLING .....	2-14	<b>GEARCASE OVERHAUL .....</b>	<b>7-10</b>
RECOMMENDATIONS .....	2-13	OVERHAUL TIPS .....	7-10
EXHAUST COVER .....	6-69	2 AND 3 HP (1-CYLINDER) MODELS .....	7-11
EXHAUST GASES .....	7-3	4-40 HP 1-, 2- AND 3-CYLINDER MODELS	
<b>FASTENERS, MEASUREMENTS AND CONVERSIONS .....</b>	<b>1-27</b>	(EXCEPT 40/50 HP/698CC) .....	7-19
BOLTS, NUTS AND OTHER THREADED RETAINERS .....	1-27	48 HP 2-CYLINDER, 40/50 HP AND LARGER 3-CYLINDER	
STANDARD AND METRIC MEASUREMENTS .....	1-27	& ALL V4/V6 MODELS .....	7-43
TORQUE .....	1-27	<b>GENERAL INFORMATION .....</b>	<b>2-2</b>
FIBERGLASS HULL .....	2-29	BEFORE/AFTER EACH USE .....	2-4
FIRST AID KIT .....	1-10	ENGINE IDENTIFICATION .....	2-2
FLYWHEEL AND STATOR PLATE .....	4-23	MAINTENANCE COVERAGE IN THIS MANUAL .....	2-2
FUEL .....	3-2	MAINTENANCE EQUALS SAFETY .....	2-2
ALCOHOL-BLENDED FUELS .....	3-3	OUTBOARDS ON SAIL BOATS .....	2-2
CHECKING FOR STALE/CONTAMINATED FUEL .....	3-3	<b>HAND REWIND STARTER .....</b>	<b>10-2</b>
HIGH ALTITUDE OPERATION .....	3-3	2 Hp (43 and 50cc) and 3 Hp Models .....	10-2
OCTANE RATING .....	3-3	4-50 Hp Models (Except 9.9/15 hp and 48 Hp Motors) .....	10-6
THE BOTTOM LINE WITH FUELS .....	3-3	9.9/15 Hp Models .....	10-11
VAPOR PRESSURE .....	3-3	48 Hp and Larger Models .....	10-13
<b>FUEL AND COMBUSTION BASICS .....</b>	<b>3-2</b>	HAND TOOLS .....	1-19
COMBUSTION .....	3-6	HIGH-PRESSURE (MECHANICAL) FUEL PUMP	
FUEL SYSTEM SERVICE CAUTIONS .....	3-2	FUEL RAILS AND INJECTORS (HPDI) .....	3-72
FUEL .....	3-2	<b>HOW TO USE THIS MANUAL .....</b>	<b>1-2</b>
FUEL SYSTEM PRESSURIZATION .....	3-4	AVOIDING THE MOST COMMON MISTAKES .....	1-3
FUEL SYSTEM SERVICE CAUTIONS .....	3-2	AVOIDING TROUBLE .....	1-2
FUEL FILTER .....	2-15	CAN YOU DO IT? .....	1-2
FUEL INJECTION AND ELECTRONIC COMPONENT LOCATIONS .....	3-89	DIRECTIONS AND LOCATIONS .....	1-2
2.6L EFI OX66 .....	3-89	MAINTENANCE OR REPAIR? .....	1-2
2.6L HPDI .....	3-92	PROFESSIONAL HELP .....	1-3
3.1L EFI OX66 .....	3-94	PURCHASING PARTS .....	1-3
3.3L HPDI .....	3-97	WHERE TO BEGIN .....	1-2
FUEL LINES AND FITTINGS .....	3-8	HPDI DRIVE BELT AND SPROCKETS .....	3-68
SERVICE .....	3-10	REMOVAL & INSTALLATION .....	3-68
TESTING .....	3-8	HPDI INJECTOR DRIVER .....	3-70
FUEL PRESSURE REGULATOR .....	3-79	REMOVAL & INSTALLATION .....	3-71
REMOVAL & INSTALLATION .....	3-79	TESTING .....	3-70
TESTING .....	3-79	<b>HYDRO TILT LOCK SYSTEM .....</b>	<b>8-2</b>
<b>FUEL PUMP (LOW-PRESSURE) SERVICE .....</b>	<b>3-99</b>	DESCRIPTION & OPERATION .....	8-2
FUEL PUMPS .....	3-99	SERVICING THE HYDRO TILT SYSTEM .....	8-3
DESCRIPTION & OPERATION .....	3-99	IDLE SPEED ADJUSTMENT .....	2-43
GENERAL INFORMATION .....	3-100	IGNITION AND CHARGING SYSTEM TROUBLESHOOTING .....	4-12
OVERHAUL .....	3-103	<b>IGNITION SYSTEMS .....</b>	<b>4-8</b>
REMOVAL & INSTALLATION .....	3-102	CDI UNIT TEST CHARTS .....	4-18
TESTING .....	3-100	CDI/TCI SYSTEMS .....	4-8
FUEL RAIL AND INJECTORS (EFI) .....	3-74	CDI/TCI UNIT AND IGNITION COILS .....	4-30
REMOVAL & INSTALLATION .....	3-78	CRANKSHAFT POSITION SENSOR (CPS) .....	4-35
TESTING .....	3-74	FLYWHEEL AND STATOR PLATE .....	4-23
FUEL SYSTEM CHECKS .....	2-39	IGNITION AND CHARGING SYSTEM TROUBLESHOOTING .....	4-12
FUEL SYSTEM PRESSURIZATION .....	3-4	THERMO-SENSOR & THERMO-SWITCH .....	4-36
PRESSURIZING THE FUEL SYSTEM (CHECKING FOR LEAKS) .....	3-5	YAMAHA MICROCOMPUTER IGNITION SYSTEMS (YMIS) .....	4-33
RELIEVING FUEL SYSTEM PRESSURE (EFI & HPDI MOTORS) .....	3-5	INTERIOR .....	2-30
FUEL SYSTEM SERVICE CAUTIONS .....	3-2	<b>JET DRIVE .....</b>	<b>7-78</b>
FUEL TANK .....	3-6	DESCRIPTION & OPERATION .....	7-78
<b>FUEL TANK AND LINES .....</b>	<b>3-6</b>	JET DRIVE ADJUSTMENTS .....	7-88
FUEL LINES AND FITTINGS .....	3-8	JET DRIVE ASSEMBLY .....	7-79
FUEL TANK .....	3-6	MODEL IDENTIFICATION & SERIAL NUMBERS .....	7-78
GEARCASE (LOWER UNIT) .....	7-4	JET DRIVE ADJUSTMENTS .....	7-88
REMOVAL & INSTALLATION .....	7-4	GATE LINKAGE ADJUSTMENTS .....	7-88
2 AND 3 HP (1-CYLINDER) MODELS .....	7-4	TRIM ADJUSTMENT .....	7-92
4-40 HP 1-, 2- AND 3-CYLINDER MODELS (EXCEPT		JET DRIVE ASSEMBLY .....	7-79
40/50 HP/698CC) .....	7-6	ASSEMBLY .....	7-85
48 HP (2-CYLINDER), 40/50 HP (3-CYLINDER) & ALL		CLEANING & INSPECTION .....	7-80
V4/V6 MODELS .....	7-8	REMOVAL & DISASSEMBLY .....	7-79

JET DRIVE BEARING .....	2-9	PBS DIAGRAMS .....	5-10
JET DRIVE IMPELLER .....	2-24	POWERHEAD MOUNTED OIL TANK .....	5-16
KILL SWITCH .....	9-4	REMOTE OIL TANK .....	5-17
KILL SWITCH .....	4-53	OIL PUMP ASSEMBLY .....	5-18
KNOCK SENSOR (3.1L EFI OX66 MOTORS) .....	3-86	PRESSURE SENSORS (APS AND FPS) .....	3-85
<b>LARGE MOTOR POWER TRIM/TILT SYSTEM</b> .....	<b>8-13</b>	PREPPING THE MOTOR .....	2-44
DESCRIPTION & OPERATION .....	8-13	PROPELLER .....	2-18
MAINTENANCE .....	8-15	GENERAL INFORMATION .....	2-18
POWER TRIM/TILT SWITCH .....	8-19	INSPECTION .....	2-21
PTT ASSEMBLY (DUAL TRIM RAM) .....	8-21	REMOVAL & INSTALLATION .....	2-21
TRIM SENSOR .....	8-20	RE-COMMISSIONING .....	2-86
TRIM/TILT MOTOR .....	8-20	REED BLOCK .....	6-69
TRIM/TILT RELAY .....	8-18	INSPECTION .....	6-69
TROUBLESHOOTING .....	8-15	<b>REED VALVES</b> .....	<b>3-104</b>
<b>LOWER UNIT</b> .....	<b>7-2</b>	REED VALVE BLOCK .....	3-104
EXHAUST GASES .....	7-3	REGULATIONS FOR YOUR BOAT .....	1-4
GEARCASE (LOWER UNIT) .....	7-4	REMOTE CONTROL BOX .....	9-2
GENERAL INFORMATION .....	7-2	<b>REMOTE CONTROLS</b> .....	<b>9-2</b>
SHIFTING PRINCIPLES .....	7-2	CHOKE SWITCH .....	9-2
TROUBLESHOOTING .....	7-4	CONTROL BOX ASSEMBLY .....	9-4
LUBRICANTS .....	2-6	KILL SWITCH .....	9-4
<b>LUBRICATION</b> .....	<b>2-5</b>	NEUTRAL SAFETY SWITCH .....	9-3
GEARCASE (LOWER UNIT) OIL .....	2-7	REMOTE CONTROL BOX .....	9-2
JET DRIVE BEARING .....	2-9	START BUTTON .....	9-3
LUBRICANTS .....	2-6	WARNING BUZZER/HORN .....	9-2
LUBRICATING THE MOTOR .....	2-6	REMOTE OIL TANK .....	5-17
LUBRICATION INSIDE THE BOAT .....	2-7	REQUIRED SAFETY EQUIPMENT .....	1-6
POWER TRIM/TILT RESERVOIR .....	2-9	<b>SAFETY IN SERVICE</b> .....	<b>1-13</b>
MAIN KEYSWITCH .....	4-53	SAFETY TOOLS .....	1-17
MEASURING TOOLS .....	1-25	SELF DIAGNOSTIC SYSTEM .....	3-60
NEUTRAL OR SHIFT POSITION SWITCHES .....	3-89	READING .....	3-60
NEUTRAL SAFETY SWITCH .....	4-55	TROUBLE CODES .....	3-62
NEUTRAL SAFETY SWITCH .....	9-3	SENSOR AND CIRCUIT RESISTANCE/OUTPUT .....	3-61
<b>OIL INJECTION WARNING SYSTEM</b> .....	<b>5-20</b>	SHIFTING PRINCIPLES .....	7-2
GENERAL INFORMATION .....	5-20	COUNTER-ROTATING UNIT .....	7-3
OPERATIONAL CHECK .....	5-23	STANDARD ROTATING UNIT .....	7-2
TROUBLESHOOTING .....	5-22	<b>SHOP EQUIPMENT</b> .....	<b>1-17</b>
OIL PUMP ASSEMBLY .....	5-18	<b>SINGLE TILT RAM POWER TRIM/TILT SYSTEMS</b> .....	<b>8-3</b>
OXYGEN SENSOR (EFI OX66 AND SOME HPDI) .....	3-87	DESCRIPTION & OPERATION .....	8-3
PBS DIAGRAMS .....	5-10	MAINTENANCE .....	8-4
PISTONS .....	6-74	PTT ASSEMBLY .....	8-9
POWER TRIM/TILT RESERVOIR .....	2-9	TILT MOTOR .....	8-8
FLUID LEVEL/CONDITION .....	2-9	TILT RELAY .....	8-6
RECOMMENDED LUBRICANT .....	2-9	TILT SWITCH .....	8-7
<b>POWERHEAD BREAK-IN</b> .....	<b>6-79</b>	TRIM SENSOR .....	8-9
BREAK-IN PROCEDURES .....	6-79	TROUBLESHOOTING .....	8-6
<b>POWERHEAD MECHANICAL</b> .....	<b>6-2</b>	SPARK PLUG WIRES .....	2-38
GENERAL INFORMATION .....	6-2	SPARK PLUGS .....	2-33
2 HP (43 AND 50CC) AND 3 HP MODELS .....	6-4	SPECIAL TOOLS .....	1-23
4/5 HP (83 AND 103CC) MODELS .....	6-10	<b>SPECIFICATIONS</b> .....	<b>1-28</b>
6-48 HP (2-CYLINDER) POWERHEADS .....	6-15	CAPACITIES .....	2-96
25-90 HP (3-CYLINDER) POWERHEADS .....	6-25	CARBURETOR SET-UP .....	3-105
V4 AND V6 POWERHEADS .....	6-36	CHARGING SYSTEM .....	4-62
POWERHEAD MOUNTED OIL TANK .....	5-16	CONVERSION FACTORS .....	1-28
REMOVAL & INSTALLATION .....	5-16	COOLING SYSTEM .....	5-49
<b>POWERHEAD REFINISHING</b> .....	<b>6-67</b>	ENGINE .....	2-91
BLEED SYSTEM .....	6-69	GENERAL ENGINE - 1-CYLINDER MOTORS .....	6-80
CONNECTING RODS .....	6-73	GENERAL ENGINE - 2-CYLINDER MOTORS .....	6-83
CRANKSHAFT .....	6-71	GENERAL ENGINE - 3-CYLINDER MOTORS .....	6-89
CYLINDER BLOCK .....	6-75	GENERAL ENGINE - V4 MOTORS .....	6-93
EXHAUST COVER .....	6-69	GENERAL ENGINE - V6 MOTORS .....	6-94
GENERAL INFORMATION .....	6-67	IGNITION SYSTEM .....	4-57
PISTONS .....	6-74	LUBRICATION .....	2-95
REED BLOCK .....	6-69	MAINTENANCE INTERVALS .....	2-90
<b>PRECISION BLEND OIL INJECTION SYSTEMS</b> .....	<b>5-2</b>	METRIC BOLTS - TYPICAL TORQUE VALUES .....	1-28
GENERAL INFORMATION AND TROUBLESHOOTING .....	5-2	TUNE-UP .....	2-88

# 10-22 MASTER INDEX

U.S. STANDARD BOLTS - TYPICAL TORQUE VALUES	1-28	LARGE MOTOR POWER TRIM/TILT SYSTEM	8-13
START BUTTON	4-54	SINGLE TILT RAM POWER TRIM/TILT SYSTEMS	8-3
STARTER MOTOR	9-3	<b>TROUBLESHOOTING</b>	<b>1-13</b>
STARTER MOTOR CIRCUIT	4-46	BASIC OPERATING PRINCIPLES	1-13
STARTER MOTOR RELAY/SOLENOID	4-43	CARBURETED FUEL SYSTEM	3-14
<b>STORAGE</b>	<b>2-84</b>	ELECTRICAL SYSTEMS	4-6
RE-COMMISSIONING	2-86	ELECTRONIC FUEL INJECTION	3-59
WINTERIZATION	2-84	LOWER UNIT	7-4
SYNCHRONIZATION	2-44	<b>TUNE-UP</b>	<b>2-30</b>
TEMPERATURE SENSORS (AIR AND WATER/ENGINE)	3-83	COMPRESSION TESTING	2-32
TEST EQUIPMENT	4-4	ELECTRICAL SYSTEM CHECKS	2-38
TETHER	4-54	ELECTRONIC IGNITION SYSTEMS	2-38
THERMOSTAT	5-41	FUEL SYSTEM CHECKS	2-39
EXPLODED VIEWS	5-43	IDLE SPEED ADJUSTMENT	2-43
REMOVAL & INSTALLATION	5-41	INTRODUCTION TO TUNE-UPS	2-30
THERMO-SENSOR & THERMO-SWITCH	4-36	SPARK PLUG WIRES	2-38
THERMO-SWITCH	5-46	SPARK PLUGS	2-33
THROTTLE BODY AND INTAKE ASSEMBLY	3-62	TUNE-UP SEQUENCE	2-31
THROTTLE POSITION SENSOR (TPS)	3-82	TUNE-UP SEQUENCE	2-31
TIMING	2-44	<b>UNDERSTANDING AND TROUBLESHOOTING</b>	
<b>TIMING AND SYNCHRONIZATION</b>	<b>2-44</b>	<b>ELECTRICAL SYSTEMS</b>	<b>4-2</b>
GENERAL INFORMATION	2-44	BASIC ELECTRICAL THEORY	4-2
PREPPING THE MOTOR	2-44	ELECTRICAL COMPONENTS	4-2
SYNCHRONIZATION	2-44	ELECTRICAL SYSTEM PRECAUTIONS	4-7
TIMING	2-44	ELECTRICAL TESTING	4-6
2 HP MODEL	2-45	TEST EQUIPMENT	4-4
3 HP MODEL	2-45	TROUBLESHOOTING ELECTRICAL SYSTEMS	4-6
4/5 HP (83 AND 103CC) MODELS	2-46	WIRE AND CONNECTOR REPAIR	4-7
6/8 HP MODELS	2-47	VAPOR SEPARATOR TANK AND HIGH-PRESSURE FUEL PUMP	3-64
9.9/15 HP MODELS	2-49	WARNING BUZZER/HORN	4-56
20/25 HP (395CC) MODELS	2-51	WARNING BUZZER/HORN	9-2
20/25 HP (430CC) MODELS	2-53	WATER DETECTION SENSOR (HPDI)	3-88
25/30 HP (496CC 2-CYLINDER) MODELS	2-54	WATER PUMP	5-31
40 HP (2-CYLINDER) MODEL	2-54	EXPLODED VIEWS	5-35
48 HP (2-CYLINDER) MODELS	2-57	INSPECTION & OVERHAUL	5-33
25/30 HP (496CC 3-CYLINDER) MODELS	2-61	REMOVAL & INSTALLATION	5-31
28J-50 HP (698CC) MODELS	2-66	WINTERIZATION	2-84
50-70 HP (849CC) AND 65J-90 HP (1140CC) MODELS	2-68	PREPPING FOR STORAGE	2-84
E60 (849CC) AND E75, E75A, 85A, E60J (1140CC) MOTORS	2-70	WIRE AND CONNECTOR REPAIR	4-7
V4 AND V6 CARBURETED MOTORS	2-74	<b>WIRING DIAGRAMS</b>	<b>4-65</b>
V6 EFI (OX66) AND HPDI MOTORS	2-79	INDEX	4-65
<b>TOOLS</b>	<b>1-19</b>	1-CYLINDER MOTORS	4-66
ELECTRONIC TOOLS	1-23	2-CYLINDER MOTORS	4-67
HAND TOOLS	1-19	3-CYLINDER MOTORS	4-74
MEASURING TOOLS	1-25	V4 MOTORS	4-88
OTHER COMMON TOOLS	1-22	V6 MOTORS	4-94
SPECIAL TOOLS	1-23	YAMAHA CHARGING SYSTEMS	4-38
TOOLS AND SPARE PARTS	1-12	YAMAHA EFI OX66 INJECTION	3-56
<b>TRIM &amp; TILT SYSTEMS</b>	<b>8-2</b>	YAMAHA HIGH PRESSURE DIRECT INJECTION (HPDI)	3-57
HYDRO TILT LOCK SYSTEM	8-2	YAMAHA MICROCOMPUTER IGNITION SYSTEMS (YMIS)	4-33
INTRODUCTION	8-2	YMIS SELF-DIAGNOSIS	4-33
		TROUBLESHOOTING	4-35