

TABLE OF CONTENTS

1- DESCRIPTION AND OPERATION		FUEL PUMPS	3-7
BRIEF HISTORY	1-1	Remote Fuel Pump	3-7
PRINCIPLES OF OPERATION	1-2	Integral Fuel Pump	3-7
ENGINE AND JET DRIVE	1-3	CRANKING MOTOR	3-8
Cooling System	1-4	JET PUMP	3-8
Bilge Breather	1-5	Gate Position	3-8
IMPELLERS	1-6	Impeller	3-8
REPLACEMENT PARTS	1-6	4- MAINTENANCE	
DEBRIS REMOVAL AND		INTRODUCTION	4-1
ENGINE OVERHEATING	1-6	INITIAL TASKS	4-1
REVERSE CAPABILITY	1-7	After Use Tasks	4-2
SPECIAL FEATURES	1-8	Cooling	4-2
RPM Limiter	1-8	Cooling System Flushing	4-3
Other Warning Systems	1-8	Controlling Corrosion	4-3
Self-Circling Mode	1-8	Pump Impeller	4-3
2- SAFETY		SERIAL NUMBERS	4-4
INTRODUCTION	2-1	LUBRICATION -- COMPLETE UNIT	4-4
Craft Classification	2-1	Throttle & Choke Cable	4-5
Information	2-1	Steering Cable	4-5
MINIMUM LEGAL		Lubrication Table	4-6
REQUIREMENTS FOR EQUIP.	2-2	"Break-in" Lubrication	4-7
Personal Flotation Devices	2-2	Jet Pump	4-7
Bells, Horns and Whistles	2-3	INSPECTION AND SERVICE	4-7
Fire Extinguisher	2-4	Fuel Tank Check Valve	4-7
Visual Distress Signals	2-4	Air Inlet Check Valve	4-7
MINIMUM LEGAL		Fuel/Water Separator	4-8
REQUIREMENTS FOR CRAFT	2-5	Fuel Filter	4-8
SAFETY PRACTICES	2-5	Oil Filter	4-8
BOATING ACCIDENT REPORTS	2-8	Drain Plug	4-8
SECURITY	2-8	FLUSHING -- COOLING AND	
3- TUNING		BILGE SYSTEMS	4-9
INTRODUCTION	3-1	IMPELLER-TO-PUMP	
TUNE-UP SEQUENCE	3-1	CASE CLEARANCE	4-9
COMPRESSION CHECK	3-2	PRE-SEASON PREPARATION	4-10
SPARK PLUG INSPECTION	3-3	SEALANTS, ADHESIVES, LUBRI-	
ELECTRICAL POWER SUPPLY	3-4	CANTS, & FUEL STABILIZERS	4-13
CARBURETOR ADJUSTMENT	3-5	FIBERGLASS HULLS	4-14
		SUBMERGED ENGINE SERVICE	4-14
		Salt Water Submersion	4-14
		Fresh Water Submersion	4-15

4-MAINTENANCE (Continued)

WINTER STORAGE	4-16
PRE-SEASON CHECK	4-17

5- TROUBLESHOOTING

INTRODUCTION	5-1
GENERAL PROBLEMS	5-1
Low Engine rpm	5-1
High Engine rpm	5-1
Engine Troubleshooting	5-2
Cranking System Test	5-2
Ignition System Test	5-2
Compression Test	5-3
MECHANICAL ENGINE PROBLEMS	5-4
Twisted Crankshaft	5-4
Engine Noises	5-4
Leak Down Procedure	5-5
FUEL SYSTEM PROBLEMS	5-5
Engine Surge	5-6
Rough Engine Idle	5-6
IGNITION SYSTEM FAULTS	5-6
SPARK PLUG EVALUATION	5-7
CRANKING SYSTEM FAILURES	5-9
CHARGING SYSTEM MAL- FUNCTIONS	5-10
Charging System Testing	
Unregulated Voltage	5-11
Charging System Testing	
Regulated Voltage	5-11
TROUBLESHOOTING CHARTS	5-12

6- FUEL AND OIL

INTRODUCTION	6-1
GENERAL CARBURETOR INFO.	6-1
Diaphragm Carburetors	6-1
Fuel Flow Through System	6-2
FUEL COMPONENTS AND AVAILABLE GAS	6-5
Leaded Gasoline	6-5
Air/Fuel Mixture	6-6
Throttle & Choke Valves	6-6
FUEL PUMP	6-6
Remote Fuel Pump	6-6
Integral Fuel Pump	6-6
Fuel/Oil Mixture	6-7
Removing Fuel From System	6-7
TROUBLESHOOTING	6-7
Fuel Filter & Sediment Bowl	6-8
"Sour" Fuel	6-8
Choke Problems	6-8

Rough Engine Idle	6-9
Excessive Fuel Consumption	6-9
Engine Surge	6-9
SERVICE MIKUNI SUPER BN	6-10
Removal -- 1992-1995	6-10
Removal -- 1996 & On	6-11
Disassembling	6-13
Cleaning & Inspecting	6-17
Assembling	6-19
Bench Adjustments	6-24
Installation -- 1992 - 1995	6-25
Installation -- 1996 & On	6-26
SERVICE KEIHIN CDKII WITH INTEGRAL FUEL PUMP	6-27
Removal -- Dual Setup	6-28
Removal -- Triple Setup	6-29
Disassemble	6-30
Cleaning & Inspecting	6-33
Assemble	6-35
Bench Adjustments	6-37
Installation -- Triple Setup	6-39
Installation -- Dual Setup	6-40
REMOTE FUEL PUMP	6-41
Theory of Operation	6-41
Maintenance	6-42
Removal & Disassembling	6-42
Cleaning & Inspecting	6-44
Assembling & Installation	6-44
OIL INJECTION	6-45
Oil Pump Removal & Installation	6-46
Cable Adjustment	6-48
Pump Output Test	6-48
Purging Air From Pump & Line	6-50

7- IGNITION

INTRODUCTION AND CHAPTER COVERAGE	7-1
SPARK PLUG EVALUATION	7-1
CDI AND CHARGING SYSTEM	7-4
Description & Operation -- Ignition	7-4
Troubleshooting -- CDI System	7-5
Testing Ignition Components	7-7
Resistance Charts	7-9
TIMING ADJUSTMENTS	7-11
Timing Table	7-14
Static Timing	7-15
Dynamic Timing	7-15
CHARGING CIRCUIT	7-16
Description & Operation	7-17
Testing -- Regulated Voltage	7-17

8- ENGINE

INTRODUCTION AND CHAPTER ORGANIZATION	8-1
TWO-CYCLE ENGINE OPERATION	8-2
COMPLETE SERVICE -- THREE-CYLINDER ENGINE	8-3
Preliminary Tasks	8-4
Engine Removal	8-4
Disassembling 3-Cylinder Engine	8-10
Cleaning & Inspecting	8-17
Assembling & Installation	8-17
Engine Support Equipment	8-35
COMPLETE SERVICE -- TWO CYLINDER ENGINE	8-38
Removal	8-38
Disassembling 2-Cylinder Engine	8-42
Cleaning & Inspecting	8-46
Assembling and Installation	8-49
Engine Support Equipment	8-61
CLEANING AND INSPECTING ALL ENGINES	8-63
SEALANTS, ADHESIVES, LUBRICANTS & FUEL STABILIZERS	8-74

9- ELECTRICAL

INTRODUCTION	9-1
BATTERIES	9-1
TACHOMETER	9-7
ELECTRICAL SYSTEM - GENERAL INFORMATION	9-8
CRANKING MOTOR CIRCUIT SERVICE	9-9
Description	9-9
Cranking Motor Noises	9-10
Troubleshooting	9-10
TESTING OTHER ELECTRICAL COMPONENTS	9-12

Temperature Warning Circuit	9-12
Temperature Sensor Test	9-12
RPM Limiter	9-13
Fuel Sender Unit Test	9-14
Oil Level Sender	9-14
Trim System Motor Test	9-15
Electric Bilge Pump	9-15

10- JET PUMP

INTRODUCTION	10-1
IMPELLERS	10-3
JET PUMP SERVICE	10-5
Removal & Disassembling	10-6
Cleaning & Inspecting	10-9
Assembling	10-14
BEARING HOUSING AND DRIVESHAFT SERVICE	10-17

11- CONTROL ADJUSTMENTS

INTRODUCTION	11-1
STEERING CABLE ADJUSTMENT	11-2
REVERSE CABLE ADJUSTMENT	11-2
TRIM NOZZLE	11-3
SPEEDOMETER INSPECTION	11-4

APPENDIX

METRIC CONVERSION CHART	A-1
TAP DRILL SIZES	A-2
ENGINE TORQUE VALUES	A-3
ENGINE SPECIFICATIONS	A-4
TUNE-UP ADJUSTMENTS	A-8
CARBURETOR INSTALLATION AND BENCH ADJUSTMENTS	A-10
WIRING DIAGRAMS AND COLOR CODE IDENTIFICATION	A-12