

SERVICE
SOFTAIL® MODELS

1997
1998



MANUAL



OFFICIAL FACTORY MANUAL

PN99482-98

1997/1998 SOFTAIL

SERVICE MANUAL

The information in this manual applies to
the 1997 and 1998 Softail models.

COPYRIGHT 1997
HARLEY-DAVIDSON MOTOR COMPANY
ALL RIGHTS RESERVED
PART NO. 99482-98

MAINTENANCE 1

CHASSIS 2

ENGINE 3

FUEL SYSTEM 4

ELECTRIC STARTER 5

DRIVE 6

TRANSMISSION 7

ELECTRICAL 8

APPENDIX A A

INDEX I

TABLE OF CONTENTS

	Page No.		Page No.
SECTION 1 – MAINTENANCE			
Service Intervals	1-1	Fuel System Lines and Fittings	1-45
Motorcycle Side Views	1-2	Enricher Control	1-45
Storage	1-8	Throttle Cables	1-46
Fluid Requirements	1-9	Engine Mounts	1-46
Fastener Torque Values	1-10	Spark Plugs	1-46
Metric Conversion Table	1-11	Electrical Components	1-47
Troubleshooting	1-12	Engine Idle Speed	1-47
General	1-12	Ignition Timing and V.O.E.S.	1-48
Engine	1-12	Fasteners	1-48
Lubrication System	1-13	Road Test	1-48
Electrical System	1-13		
Carburetor	1-13	SECTION 2 – CHASSIS	
Transmission	1-13	Specifications	2-1
Brakes	1-14	Dimensions	2-1
Handling	1-14	Weight	2-1
Shop Practices	1-15	Capacities	2-1
Repair Notes	1-15	Tire Data	2-1
Repair and Replacement Procedures	1-15	Torque Values	2-2
Cleaning	1-16	Vehicle Identification Number (V.I.N.)	2-3
Tool Safety	1-17	Front Wheel (Models with Hydraulic Forks)	2-4
Tools	1-19	Removal	2-4
Scheduled Service Table and Lubricants	1-33	Disassembly	2-4
Scheduled Maintenance Procedures	1-38	Cleaning and Inspection	2-4
Battery	1-38	Assembly	2-6
Engine Oil/Engine Oil Filter	1-38	Installation	2-7
Primary Chain	1-38	Front Wheel – Springer Fork (FXSTS, FXSTSB)	2-9
Primary Chaincase Lubricant	1-39	Removal	2-9
Clutch Adjustment	1-40	Disassembly	2-9
Transmission Lubricant	1-41	Cleaning and Inspection	2-9
Hydraulic Lifter Oil Screen	1-41	Assembly	2-9
Wheel Bearings	1-41	Installation	2-10
Wheel Spokes (if applicable)	1-42	Front Wheel – Springer Fork (FLSTS)	2-11
Tires	1-42	Removal	2-11
Steering Head Bearings	1-42	Disassembly	2-11
Rocker Bearing Adjustment (FXSTS, FXSTSB, FLSTS)	1-42	Cleaning and Inspection	2-11
Front Fork Oil (for models with hydraulic front forks)	1-42	Assembly	2-11
Brake Fluid	1-42	Installation	2-12
Brake Pad Linings and Discs	1-43	Laced or Disc Rear Wheel	2-15
Brake Caliper Mounting Pin	1-43	Removal	2-15
Rear Brake Pedal Height (FXSTC, FXSTS, FXSTSB)	1-43	Disassembly	2-16
Drive Belt	1-43	Cleaning and Inspection	2-16
Rear Fork Pivot Bolts	1-44	Assembly	2-16
Rear Shock Absorbers	1-44	Installation	2-17
Air Cleaner	1-44	Wheel Lacing – 16 in. Rim	2-19
Fuel Tank Filter	1-44	Wheel Lacing – 21 in. Rim	2-21
		Truing Laced Wheel	2-23

Oil Filter Mount 3-39

Removal	3-39
Installation	3-40

Hydraulic Valve Lifters and Guides 3-41

General	3-41
Removal/Disassembly	3-41
Cleaning and Inspection	3-42
Assembly/Installation	3-42

Gearcase Cover and Timing Gears 3-43

General	3-43
Disassembly	3-43
Assembly	3-44
Cleaning and Inspection	3-46
Oil Screen	3-46
Cam and Pinion Gears	3-46
Pinion Shaft and Bearing	3-46
Cam Shaft and Needle Bearing	3-46
Cam and Pinion Gear Bushings	3-48

Crankcase 3-51

General	3-51
Adjustment – Flywheel End Play	3-51
Disassembly	3-52

Flywheels 3-54

Flywheel Disassembly	3-54
Cleaning and Inspection	3-55
Flywheel Assembly	3-55

Truing Flywheels	3-56
----------------------------	------

Flywheel Assembly Repair 3-58

Flywheel Washers	3-58
Lapping Connecting Rod Races	3-58
Replacing Rod Bearings	3-58
Establishing Proper Bearing Clearance	3-59

Replacing Rod Bearing Outer Races 3-60**Replacing Pinion Shaft Bearings** 3-61**Removing/Installing Pinion Shaft Inner Race** 3-62**Flywheel and Crankcase Assembly** 3-64

Inner/Outer Sprocket Shaft Bearings Installation	3-64
Crankcase Torque Sequence	3-66

Cylinder Studs 3-67**Crankcase Bearing Repair** 3-67

Replacing Crankcase Bearing	3-67
Lapping Crankcase Bearing	3-67
Cleaning Crankcase	3-68

Oil Tank 3-69

Removal	3-69
Installation	3-69

SECTION 4 – FUEL SYSTEM**Specifications** 4-1

Carburetor Jet Sizes	4-1
Fuel Tank Capacity	4-1
Torque Values	4-1

Carburetor 4-2

General	4-2
Troubleshooting	4-3

Vacuum Piston Assembly Troubleshooting 4-5**Operation** 4-5

Enrichener 4-5

Fuel Supply System 4-6

Starter System (Enrichener) 4-7

Idle and Low Speed Circuit 4-8

Mid Range Slide Position and Fuel Discharge 4-9

High Speed Circuit Slide Position and

Fuel Discharge 4-10

Accelerator Pump System 4-11

Adjustments 4-12

Float Level 4-12

Float Bowl Inlet (Needle) Valve Replacement 4-12

Operation Check – Vacuum Piston 4-12

Opening Malfunction 4-12

Closing Malfunction 4-12

Carburetor Removal 4-14**Installation** 4-16**Disassembly** 4-16

Vacuum Piston Chamber 4-16

Carburetor Body 4-16

Accelerator Pump 4-16

Cleaning and Inspection 4-16

Vacuum Piston Components 4-16

Carburetor Body Components 4-16

Float Replacement 4-17

Accelerator Pump 4-17

Assembly 4-17

Vacuum Piston Chamber 4-17

Carburetor Body 4-17

Accelerator Pump 4-18

Fuel Supply Valve 4-19

General 4-19

Theory of Operation 4-19

Removal 4-19

Cleaning and Inspection 4-20

Installation 4-20

Troubleshooting 4-20

Diaphragm Replacement 4-21

Vacuum Test 4-21

Fuel Tank 4-22

General 4-22

Removal 4-22

Cleaning and Inspection 4-22

Installation 4-23

Vapor Valve 4-23

Air Cleaner – General 4-24

Removal 4-24

Cleaning and Inspection 4-24

Installation 4-25

Air Cleaner Backplate Assembly -California Models 4-26

Evaporative Emissions Control – California Models Only

General	4-27
Charcoal Canister	4-28
Removal	4-28
Installation	4-28
Hose Routing/Replacement	4-29
Canister to Air Cleaner Hose	4-29

Exhaust System (Shorty Dual Exhaust)

Removal	4-30
Disassembly	4-30
Assembly	4-30
Installation	4-30

Exhaust System (FLSTS)

Removal	4-32
Installation	4-32

SECTION 5 – ELECTRIC STARTER

Specifications

Starter Motor	5-1
Service Wear Limits	5-1
Torque Values	5-1

Starter System

General	5-2
Operation	5-2

Diagnostics/Troubleshooting

General	5-4
Voltage Drops	5-4

Starting Activation Circuits

Starting System Diagnosis

Troubleshooting

Starter

On Motorcycle Testing	5-10
Removal	5-10
Installation	5-11
Testing Assembled Starter	5-11
Disassembly and Testing	5-14
Assembly	5-18

Starter Solenoid

General	5-19
Disassembly	5-19
Assembly	5-19

Starter Jackshaft

Removal/Disassembly	5-20
Assembly/Installation	5-21

SECTION 6 – DRIVE

Specifications

Clutch (1997/1998 Models)	6-1
Sprockets	6-1
Overall Gear Ratios	6-1
Torque Values	6-1

Primary Chaincase

General	6-2
Primary Chaincase Cover	6-2
Removal	6-2
Installation	6-2
Primary Chaincase Housing	6-2
Removal	6-2
Inspection	6-3
Installation	6-3

Drive Components

Primary Chain	6-5
Removal	6-5
Installation	6-5
Sprocket Alignment	6-6
Compensating Sprocket	6-7
Chain Tensioner Shoe	6-7

Clutch (1997 Models)

Disassembly on Motorcycle	6-8
Complete Clutch Disassembly	6-8
Cleaning and Inspection	6-10
Assembly	6-11

Clutch (1998 Models)

General	6-12
Removal/Installation	6-12
Partial Disassembly-Clutch Pack Only	6-12
Assembly-Clutch Pack Only	6-12
Cleaning and Inspection	6-12
Complete Disassembly-Clutch Pack and Bearing	6-14
Assembly-Clutch Pack and Bearing	6-15

Transmission Sprocket

Removal	6-16
Cleaning and Inspection	6-16
Installation	6-16

Drive Belt and Sprocket

General	6-18
Removal	6-18
Installation	6-18

Handlebar Switch Assemblies	8-69
General	8-69
Removal	8-69
Installation	8-69
Switch Repair/Replacement	8-72

APPENDIX A - ELECTRICAL CONNECTORS

Amp Multilock Electrical Connectors	A-3
Removing Socket/Pin Terminals	A-3
Installing Socket/Pin Terminals	A-3
Crimping Instructions	A-6
Deutsch Electrical Connectors	A-7
Removing/Disassembling	A-7
Removing/Installing Sockets	A-7
Removing/Installing Pins	A-9
Assembling/Installing	A-9
Crimping Instructions	A-10
Sealed Butt Connectors	A-12
Installing Sealed Butt Connectors	A-12
Packard Electrical Connectors	A-13
Push-To-Seat Terminals	A-13
Removing	A-13
Installing	A-13
Crimping Instructions	A-13
Amp Electrical Connectors	A-15
1-Place Connector	A-15
Socket Terminal Removal	A-15
Socket Terminal Installation	A-15
Pin Terminal Removal	A-16
Pin Terminal Installation	A-16

Crimping Tables	A-17
General	A-19
Crimping Information	A-19
Crimping Table Legend	A-19
1997 Components	A-19
1997 Main Harness	A-20
1997 Starter to 30 A Circuit Breaker	A-20
1997 Passing Lamp Harness	A-20
1997 Rear Lighting Harness	A-20
1998 Components	A-21
1998 Main Harness	A-21
1998 Starter to 30 A Circuit Breaker	A-21
1998 Passing Lamp Harness	A-22
1998 Rear Lighting Harness	A-22

CONNECTOR LOCATIONS

1997 and 1998 Softtail Electrical Connector Locations	A-25
-------------------------------------------------------------	------

WIRING DIAGRAMS

1997 Softtail Wiring Diagrams	A-27
Main Wiring Diagram	A-29
Instruments	A-30
Headlamp, Front/Rear Turn Signals and Tailamp	A-31
1998 Softtail Wiring Diagrams	A-32
Main Wiring Diagram	A-32
Instruments	A-33
Headlamp, Front/Rear Turn Signals and Tailamp	A-34

INDEX

I-1

SUBJECT**PAGE NO.**

1. Service Intervals	1-1
2. Motorcycle Side Views	1-2
3. Storage	1-8
4. Fluid Requirements	1-9
5. Fastener Torque Values	1-10
6. Metric Conversion Table	1-11
7. Troubleshooting	1-12
8. Shop Practices	1-15
9. Tool Safety	1-17
10. Tools	1-19
11. Scheduled Service Table and Lubricants	1-33
12. Scheduled Maintenance Procedures	1-38

SERVICE INTERVALS

BREAK-IN MAINTENANCE

⚠WARNING

Always follow the listed service and maintenance recommendations, since they affect the safe operation of the motorcycle and the personal welfare of the rider. Failure to follow recommendations may cause personal injury.

The performance of new motorcycle initial service is required to keep new motorcycle warranty in force and to ensure proper emissions system operation.

After a new motorcycle has been driven the first 500 miles (800 km), initial service operations should be performed by an authorized Harley-Davidson dealer.

CHECK AT FIRST 500 MILES (800 km)

After 500 miles (800 km) a Harley-Davidson dealer should perform the 500 mile (800 km) maintenance listed in the Owner's Manual (see Scheduled Service Table).

SAFE OPERATING MAINTENANCE

Good maintenance means a safe machine. A careful check of certain equipment must be made after periods of storage and frequently between the regular service intervals to determine if additional maintenance is necessary.

Check the following items:

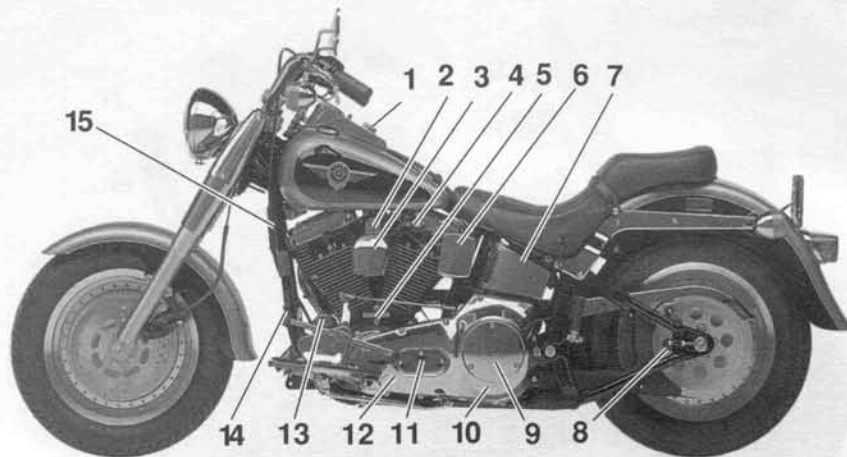
1. Tires for correct pressure, abrasions, cuts and wear.
2. Belt for proper tension.
3. Brakes, steering, and throttle for responsiveness.
4. Brake fluid level and condition. Hydraulic lines and fittings for leaks. Also, check brake pads and discs for wear.
5. Cables for fraying or crimping and free operation.
6. Engine oil, primary chaincase, and transmission fluid levels. Do not overfill oil tank.
7. Wheel spoke tightness, if applicable.
8. Headlight, taillight and turn signal operation.

REGULAR SERVICE INTERVALS

Regular lubrication and maintenance is required to keep Harley-Davidson motorcycles operating at peak performance levels. In addition, regular maintenance will provide for longer motorcycle life and greater riding pleasure.

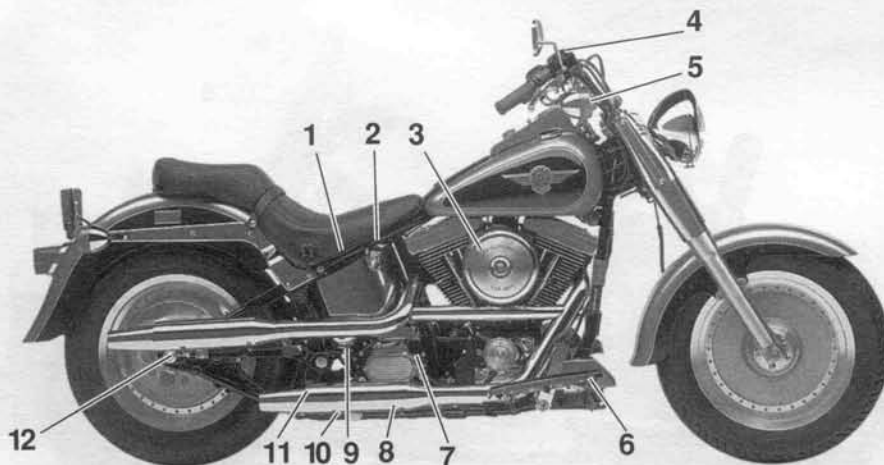
NOTE

Any alterations to the emission system components, such as carburetor and exhaust system, may be in violation of federal and state laws.



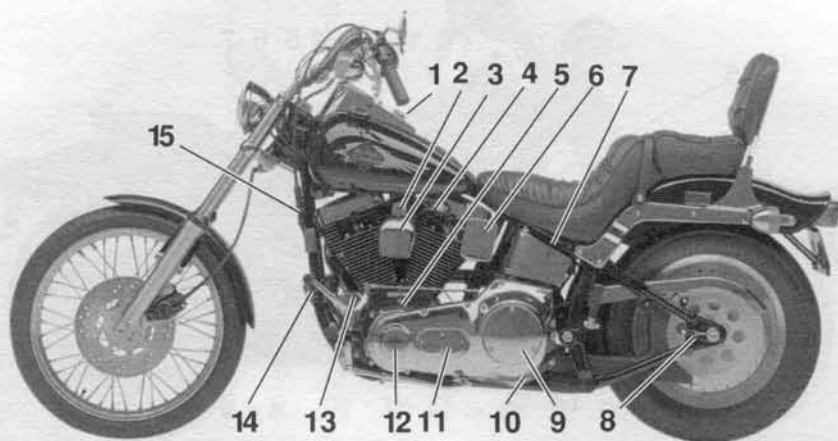
- | | | |
|--------------------------------|---------------------------------|------------------------------------|
| 1. Ignition/light switch | 6. Ignition coil | 11. Primary chain inspection cover |
| 2. Carburetor enrichener knob | 7. Ignition module (under seat) | 12. Primary chain cover |
| 3. Horn | 8. Rear axle adjuster | 13. Engine oil filter |
| 4. Fuel supply valve | 9. Clutch inspection cover | 14. Voltage regulator |
| 5. Timing inspection hole plug | 10. Primary drain plug | 15. Clutch cable adjuster |

Fat Boy (FLSTF) – Left Side View (Typical - 1997 Model Shown)



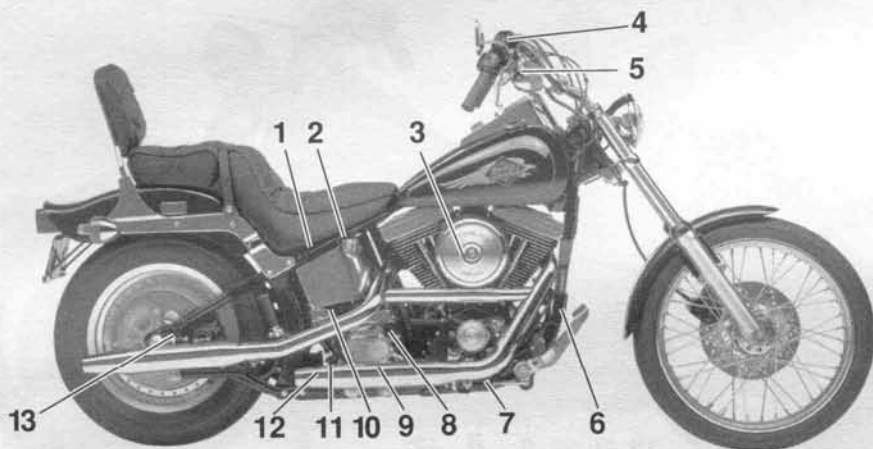
- | | | |
|------------------------------------------|-----------------------------------------|---------------------------|
| 1. Battery (under seat) | 5. Front turn signal and running lamp | 9. Electric starter motor |
| 2. Engine oil fill plug/dipstick | 6. Rear brake master cylinder/reservoir | 10. Shock absorbers |
| 3. Carburetor/air cleaner | 7. Transmission fill plug | 11. Engine oil tank drain |
| 4. Front brake master cylinder/reservoir | 8. Transmission drain plug | 12. Rear axle adjuster |

Fat Boy (FLSTF) – Right Side View (Typical - 1997 Model Shown)



- | | | |
|--------------------------------|---------------------------------|------------------------------------|
| 1. Ignition/light switch | 6. Ignition coil | 11. Primary chain inspection cover |
| 2. Carburetor enrichener knob | 7. Ignition module (under seat) | 12. Primary chain cover |
| 3. Horn | 8. Rear axle adjuster | 13. Engine oil filter |
| 4. Fuel supply valve | 9. Clutch inspection cover | 14. Voltage regulator |
| 5. Timing inspection hole plug | 10. Primary drain plug | 15. Clutch cable adjuster |

Softail Custom (FXSTC) – Left Side View (Typical - 1997 Model Shown)



- | | | |
|------------------------------------------|-----------------------------------------|----------------------------|
| 1. Battery (under seat) | 5. Front turn signal and running lamp | 10. Electric starter motor |
| 2. Engine oil fill plug/dipstick | 6. Rear brake master cylinder/reservoir | 11. Engine oil tank drain |
| 3. Carburetor/air cleaner | 7. Rear brake master cylinder/reservoir | 12. Shock absorbers |
| 4. Front brake master cylinder/reservoir | 8. Transmission fill plug | 13. Rear axle adjuster |
| | 9. Transmission drain plug | |

Softail Custom (FXSTC) – Right Side View (Typical - 1997 Model Shown)

Thank you so much for reading.
Please click the “Buy Now!”
button below to download the
complete manual.



After you pay.

You can download the most
perfect and complete manual in
the world immediately.

Our support email:

ebooklibonline@outlook.com