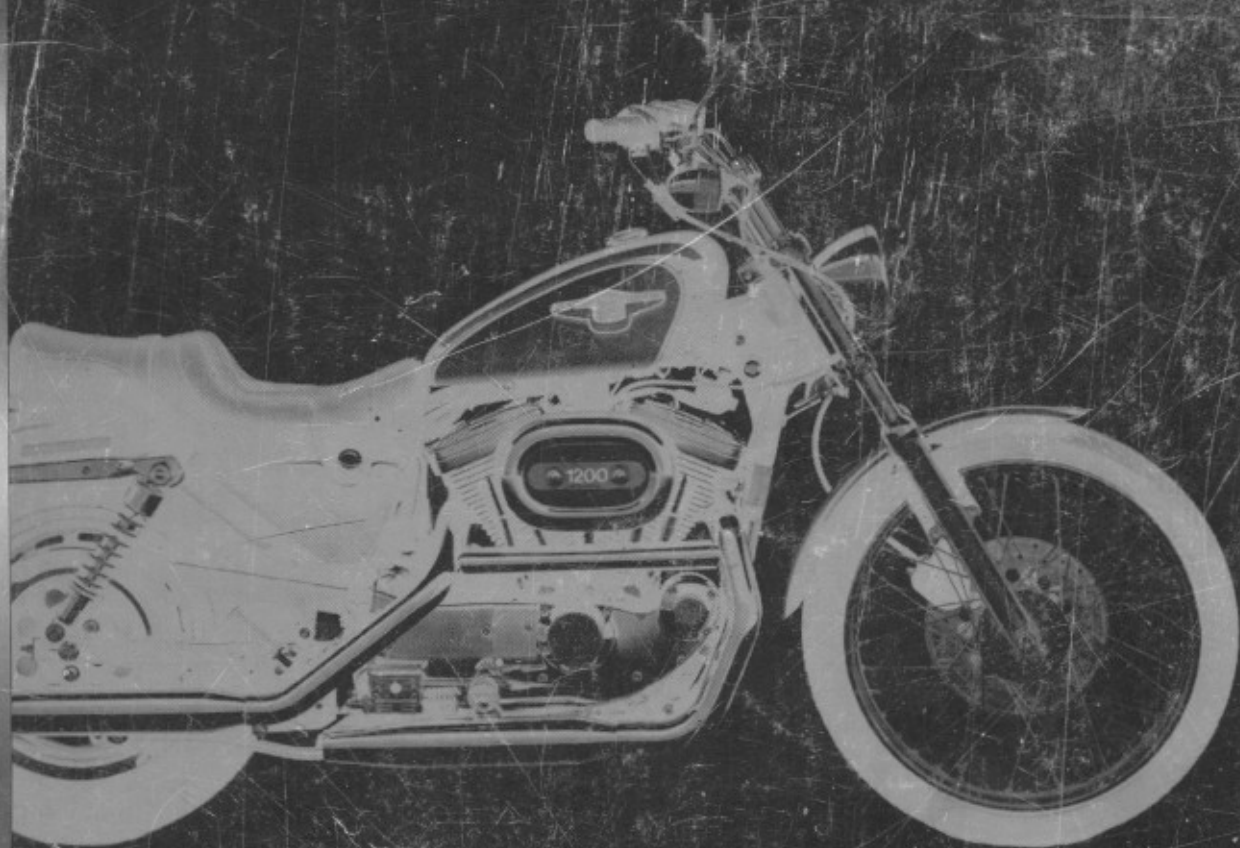


SERVICE XLH[®] MODELS 1998 MANUAL



OFFICIAL FACTORY MANUAL

PN99484-98

1998 XLH SPORTSTER MODELS

SERVICE MANUAL

The information in this Service Manual applies
to the 1998 XLH Sportster models.

PRODUCT	1
---------	---

CHASSIS	2
---------	---

ENGINE	3
--------	---

FUEL SYSTEM	4
-------------	---

ELECTRIC STARTER	5
------------------	---

DRIVE/TRANSMISSION	6
--------------------	---

ELECTRICAL	7
------------	---

INDEX	
-------	--

TABLE OF CONTENTS

SECTION 1 – PRODUCT	Page No.	SECTION 2 – CHASSIS	Page No.
General	1-1	Specifications	2-1
Servicing a New Motorcycle	1-1	Tires	2-3
Safe Operating Maintenance	1-1	Vehicle Identification Number (V.I.N.)	2-4
Regular Maintenance Intervals	1-2	Wheels	2-5
Side Views	1-3	General	2-5
Storage	1-7	Troubleshooting	2-5
General	1-7	Front Wheel	2-7
Removal from Storage	1-7	Removal	2-7
Fluid Requirements	1-8	Disassembly	2-7
General	1-8	Cleaning, Inspection, and Repair	2-7
United States System	1-8	Assembly	2-8
British Imperial System	1-8	Installation	2-10
Metric System	1-8	Rear Wheel	2-11
Wheel Bearing Grease	1-8	Removal	2-11
Brake Fluid	1-8	Disassembly	2-11
Front Fork Oil	1-8	Cleaning, Inspection, and Repair	2-11
Engine Oil	1-8	Assembly	2-12
Fuel	1-8	Installation	2-14
Primary Drive/Transmission Lubricant	1-8	Lacing Wheels	2-16
Metric Conversion Table	1-9	16-Inch Wheels	2-16
Fastener Torque Values	1-10	19-Inch Wheels	2-18
Troubleshooting	1-11	Truing Laced Wheel	2-20
Engine	1-11	Checking Cast Rim Runout	2-22
Engine Lubrication System	1-12	Tires	2-23
Electrical System	1-12	General	2-23
Fuel	1-12	Removal	2-23
Transmission	1-12	Cleaning, Inspection, and Repair	2-23
Clutch	1-12	Installation	2-24
Chassis	1-12	Brakes	2-28
Shop Practices	1-13	General	2-28
Repair Notes	1-13	Troubleshooting	2-28
Repair and Replacement Procedures	1-13	Front Brake Master Cylinder	2-29
Cleaning	1-14	Removal/Disassembly	2-29
Tool Safety	1-15	Cleaning, Inspection, and Repair	2-31
Air Tools	1-15	Assembly/Installation	2-31
Wrenches	1-15	Rear Brake Master Cylinder	2-33
Pliers/Cutters/Prybars	1-15	Adjustment	2-33
Hammers	1-15	Removal/Disassembly	2-33
Punches/Chisels	1-15	Cleaning, Inspection, and Repair	2-34
Screwdrivers	1-15	Assembly/Installation	2-34
Ratchets and Handles	1-16	Rear Brake Linkage and Sprocket Cover	2-36
Sockets	1-16	Removal	2-36
Storage Units	1-16	Installation	2-36
Tools	1-17		

	Page No.
Front Brake Caliper	2-37
Removal/Disassembly	2-37
Cleaning, Inspection, and Repair	2-38
Assembly	2-38
Installation	2-39
Rear Brake Caliper	2-40
Removal/Disassembly	2-40
Cleaning, Inspection, and Repair	2-41
Assembly	2-41
Installation	2-41
Brake Lines	2-43
Front Brake Line	2-43
Rear Brake Line	2-44
Bleeding Hydraulic System	2-45
General	2-45
Front Fork	2-46
General	2-46
Removal	2-46
Disassembly	2-48
Cleaning, Inspection, and Repair	2-48
Assembly	2-48
Installation	2-48
Disassembly - XL1200S	2-50
Inspection - XL1200S	2-51
Assembly - XL1200S	2-51
Installation - XL1200S	2-53
Fork Stem and Bracket Assembly	2-54
Adjustment	2-54
Lubrication	2-54
Removal/Disassembly	2-54
Cleaning, Inspection, and Repair	2-54
Assembly/Installation	2-54
Rear Fork	2-55
Removal/Disassembly	2-55
Cleaning and Inspection	2-55
Assembly	2-55
Installation	2-55
Rear Shock Absorber	2-56
Adjustment	2-56
Removal	2-56
Disassembly	2-56
Cleaning and Inspection	2-56
Installation	2-56
Throttle Control	2-58
Adjustment	2-58
Removal/Disassembly	2-59
Cleaning, Inspection, and Repair	2-59
Assembly/Installation	2-59
Handlebars	2-60
Removal	2-60
Installation	2-60

	Page No.
Clutch Control	2-64
Adjustment	2-64
Removal/Disassembly	2-64
Assembly/Installation	2-65
Exhaust System	2-66
Removal	2-66
Disassembly	2-66
Assembly	2-66
Installation	2-66
Front Fender	2-68
Removal	2-68
Installation	2-68
Rear Fender	2-69
Removal	2-69
Installation	2-70
Jiffy Stand	2-71
General	2-71
Removal	2-71
Cleaning and Lubrication	2-71
Installation	2-72
Seat	2-73
Removal	2-73
Installation	2-73

SECTION 3 – ENGINE

Specifications	3-1
Engine	3-5
General	3-5
Adjustment/Testing	3-5
Stripping Motorcycle for Engine Repair	3-8
Installing the Engine	3-11
Cylinder Head	3-13
Removal	3-13
Disassembly	3-15
Cleaning, Inspection, and Repair	3-15
Assembly	3-21
Installation	3-22
Cylinder and Piston	3-24
Removal/Disassembly	3-24
Cleaning, Inspection, and Repair	3-25
Assembly/Installation	3-30
Engine Lubrication System	3-31
Checking and Adding Oil	3-31
Changing Oil and Filter	3-31
Winter Lubrication	3-32
Oil Hose Routing	3-33
Oil Tank	3-34
Oil Pressure Signal Light Switch	3-37
Oil Pressure Signal Light	3-37
Oil Pressure	3-38
Crankcase Breathing System	3-38
Oiling System	3-39
Oil Pump	3-40
Oil Filter Mount	3-42
Valve Tappets	3-44
General	3-44
Removal	3-44
Cleaning and Inspection	3-44
Installation	3-45
Gearcase Cover and Cam Gears	3-46
General	3-46
Removal/Disassembly	3-46
Cleaning, Inspection, and Repair	3-47
Assembly/Installation	3-52
Crankcase	3-54
General	3-54
Adjustment/Testing	3-54
Disassembly	3-54
Cleaning and Inspection	3-58
Replacing Flywheel Washers	3-58
Lapping Connecting Rod Races	3-60
Fitting Rod Bearings	3-60
Fitting Sprocket Bearings	3-62
Fitting Pinion Bearings	3-62

Lapping Engine Main Bearing Races	3-66
Assembly	3-67

SECTION 4 – FUEL SYSTEM

Specifications	4-1
Carburetor	4-2
General	4-2
Troubleshooting	4-3
Vacuum Piston Assembly Troubleshooting	4-5
Operation	4-5
Adjustment	4-12
Operation Check – Vacuum Piston	4-14
Removal	4-14
Disassembly	4-14
Cleaning, Inspection, and Repair	4-14
Assembly	4-16
Installation	4-17
Air Cleaner	4-18
General	4-18
Removal	4-18
Cleaning, Inspection, and Repair	4-19
Installation	4-19
Fuel Supply Valve	4-20
General	4-20
Removal	4-20
Cleaning, Inspection, and Repair	4-20
Installation	4-20
Fuel Tank	4-21
General	4-21
Removal	4-22
Cleaning, Inspection, and Repair	4-22
Installation	4-23
Evaporative Emissions Control – California Models	4-24
General	4-24
Troubleshooting	4-25
Solenoid Electrical Tests – Air Cleaner Butterfly Valve	4-27
Removal	4-30
Cleaning, Inspection, Repair, and Lubrication	4-30
Installation and Adjustment	4-31
Hose Routing	4-32

SECTION 5 – ELECTRIC STARTER

Specifications	5-1
Electric Starter System	5-1
General	5-1
Troubleshooting	5-4
Starting System Diagnosis	5-6
Starter System Testing	5-10
“On-Motorcycle” Tests	5-10

	Page No.
Starter	5-11
Removal	5-11
Testing Assembled Starter	5-11
Disassembly, Inspection, and Repair	5-12
Assembly	5-17
Installation	5-17
 Starter Solenoid	 5-18
General	5-18
Disassembly	5-18
Assembly	5-18

SECTION 6 – DRIVE/TRANSMISSION

Specifications	6-1
 Primary Chain	 6-3
General	6-3
Adjustment	6-4
Removal	6-4
Installation	6-5
 Secondary Drive Belt	 6-7
General	6-7
Adjustment	6-7
Cleaning	6-7
Removal and Installation	6-7
 Clutch	 6-9
General	6-9
Troubleshooting	6-9
 Clutch Release Mechanism	 6-10
Adjustment	6-10
Disassembly	6-11
Cleaning, Inspection, and Repair	6-11
Assembly	6-11
 Primary Drive/Clutch	 6-12
Removal	6-12
Disassembly	6-12
Inspection and Repair	6-14
Assembly	6-14
Installation	6-15
 Transmission	 6-16
General	6-16
Lubrication	6-16
 Transmission Case	 6-18
General	6-18
Removal	6-18
Cleaning, Inspection, and Repair	6-19

	Page No.
Shifter Forks and Drum	6-20
Disassembly	6-20
Cleaning, Inspection, and Repair	6-21
Assembly	6-21
 Mainshaft and Countershaft ..	 6-23
Disassembly	6-23
Cleaning, Inspection, and Repair	6-27
Assembly	6-27
 Main Drive Gear	 6-30
Removal	6-30
Disassembly	6-31
Assembly	6-31
Installation	6-31
 Access Door Bearings	 6-32
Removal	6-32
Installation	6-32
 Right Transmission Case Bearings	 6-33
Removal	6-33
Installation	6-33
 Transmission Installation and Shifter Pawl Adjustment	 6-34
 SECTION 7 – ELECTRICAL	
Specifications	7-1
 Electrical Bracket	 7-2
Replace Fuse(s)	7-2
Replace Main Circuit Breaker	7-3
Replace Starter Relay	7-3
Replace Electrical Bracket	7-3
 Ignition System	 7-5
General	7-5
Troubleshooting	7-6
Diagnostic Charts - All Models Except 1200S	7-9
Checking for Trouble Codes - 1200S	7-14
Check Engine Lamp	7-14
Retrieving Trouble Codes	7-14
Scanalyzer	7-15
Breakout Box Installation	7-18
Diagnostic Check 1200S Sport	7-19
Trouble Code 12 MAP Sensor	7-33
Trouble Code 16 Battery Voltage	7-35
Trouble Code 24 and 25 Ignition Coil	7-37
Trouble Code 35 Tachometer	7-40
Trouble Code 41 Cam Sync Failure	7-41
Trouble Code 44 Bank Angle Sensor	7-42
Trouble Codes 52, 54, 55 Ignition Module Failure	7-44
Ignition Timing	7-45
Static Timing 1200S	7-45
Adjust Timing using Scanalyzer - 1200S	7-45
Static Timing - All except 1200S	7-46
Dynamic Timing	7-46

	Page No.		Page No.
Bank Angle Sensor	7-47	Alternator	7-67
MAP Sensor - 1200S	7-48	Removal and Disassembly	7-67
Vacuum-Operated Electric Switch (V.O.E.S.)	7-49	Cleaning, Inspection, and Repair	7-68
Adjustment/Testing	7-49	Assembly and Installation	7-68
Removal	7-50	Voltage Regulator	7-69
Installation	7-50	General	7-69
Ignition/Light Switch	7-51	Removal	7-69
General	7-51	Installation	7-69
Removal	7-51	Battery	7-70
Installation	7-52	General	7-70
Ignition Module - 1200S	7-53	Activating and Testing New Battery	7-70
General	7-53	Cleaning and Inspection	7-71
Removal	7-53	Charging	7-71
Installation	7-53	Disconnection and Removal	7-72
Cam Position Sensor and Rotor		Storage	7-72
1200S	7-54	Installation and Connection	7-72
General	7-54	Battery Cable Replacement	7-72
Removal	7-54	Lamps	7-75
Installation	7-54	General	7-75
Ignition Module - All except 1200S	7-55	Adjustment	7-75
General	7-55	Removal/Installation	7-76
Removal	7-55	Rear Brake Switch	7-80
Installation	7-56	Handlebar Switches	7-81
Spark Plugs	7-57	General	7-81
General	7-57	Removal	7-81
Adjustment	7-57	Installation	7-81
Cleaning and Inspection	7-57	Switch Repair/Replacement	7-84
Installation	7-57	Horn	7-92
Spark Plug Cables	7-58	General	7-92
General	7-58	Troubleshooting	7-92
Removal	7-58	Neutral Indicator Switch	7-94
Inspection	7-58	General	7-94
Installation	7-58	Testing	7-94
Ignition Coil	7-59	Removal and Installation	7-94
General	7-59	Directional (Turn Signal) Cancellor	7-95
Troubleshooting	7-59	Operation	7-95
Removal - All Except 1200S	7-59	Distance Test	7-95
Installation - All Except 1200S	7-60	Time Test (Alternate)	7-95
Removal - 1200S	7-60	Rider Preference and Control	7-95
Installation - 1200S	7-60	Troubleshooting	7-95
Charging System	7-61	883 Only	7-97
General	7-61	1200 Models	7-98
Troubleshooting	7-61	Removal/Installation	7-101
Adjustment/Testing	7-61	Fuses and Main Circuit Breaker	7-102
		General	7-102
		Electronic Speedometer	7-103

How-it Works	7-104
Speedometer Removal 1200 Models	7-104
Speedometer Installation 1200 Models	7-104
Speedometer Removal 883 Models	7-105
Speedometer Installation 883 Models	7-105
Tachometer Removal	7-105
Tachometer Installation	7-105
Speedometer sensor Replacement	7-105
Odometer reset switch Replacement	7-106
883 Speedometer (Late Model)	7-106
Speedometer/Tachometer Performance Check	7-107
Troubleshooting	7-109

Deutsch Connectors	7-111
-------------------------------------	--------------

Amp Multilock Connectors	7-116
---	--------------

Packard Electrical Connectors	7-120
--	--------------

Sealed Butt Connectors	7-122
---	--------------

Crimp Tables	7-123
-------------------------------	--------------

Wiring Diagrams	7-127
XL 1200S Domestic and International Models - Main Harness	7-127
XLH All Models, Starting and Charging - XL1200S Front Lamps	7-128
XL 1200S Domestic and International - Ignition Circuit XL 1200s Domestic and International - Horn and Instruments	7-129
XL 1200S Domestic and International - Lights	7-131
All XL Domestic and International (Except 1200S) - Main Harness	7-132
All XL Domestic and International (Except 1200S) - Ignition Circuit	7-133
All XL Domestic and International (Except 1200S) - Horn and Instruments	7-134

INDEX	I-1
------------------------	------------

SUBJECT	PAGE NO.
1. General	1-1
2. Regular Maintenance Intervals	1-2
3. Side Views	1-3
4. Storage	1-7
5. Fluid Requirements	1-8
United States System	1-8
British Imperial System	1-8
Metric System	1-8
6. Metric Conversion Table	1-9
7. Fastener Torque Values	1-10
8. Troubleshooting	1-11
9. Shop Practices	1-13
10. Tool Safety	1-15
11. Tools	1-17

GENERAL

SERVICING A NEW MOTORCYCLE

WARNING

Always follow the listed service and maintenance recommendations, since they affect the safe operation of the motorcycle. Failure to follow service and maintenance recommendations could result in personal injury.

Service operations to be performed before customer delivery are specified in the applicable model year PREDELIVERY AND SETUP MANUAL.

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

After a new motorcycle has been driven its first 500 miles, and again at 5000 miles, a Harley-Davidson dealer should perform the service operations listed in the Regular Maintenance Intervals table on the next page.

SAFE OPERATING MAINTENANCE

A careful check of certain equipment is necessary after periods of storage, and frequently between regular service intervals, to determine if additional maintenance is required.

CAUTION

- Do not attempt to retighten engine head bolts. Retightening can cause engine damage.
- During the initial 500 mile (800 km) break-in period, use only Harley-Davidson 20W50 engine oil. Failure to use the recommended oil will result in improper break-in of the engine cylinders and piston rings.
- Do not lubricate the enrichment cable on CV carburetors.

Check:

1. Tires for abrasions, cuts and correct pressure.
2. Secondary drive belt for proper tension and condition.
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, crimping and free operation.
6. Engine oil and transmission fluid levels.
7. Wheel spoke tightness, if applicable.
8. Headlamp, tail lamp, brake lamp and directional lamp operation.

Regular Maintenance Intervals – XLH Sportster Models

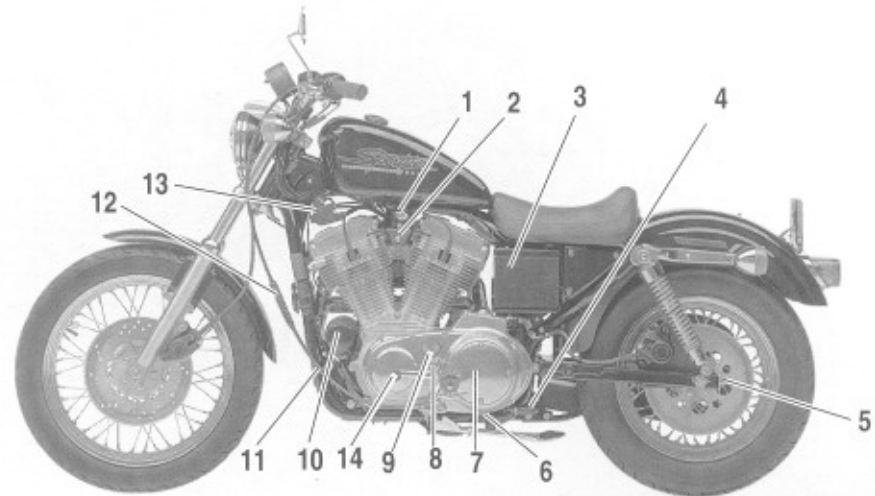
SECTION	ODOMETER READING SERVICE OPERATIONS (see chart code below)	P r e r i d e																					
		5	2	5	7	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	5		
		000	500	000	500	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000		
		mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi	mi			
		8	4	8	2	1	1	2	2	2	3	3	4	4	4	5	5	6	6	6	7	7	8
		000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	
		000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	000	
		km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	km	
2	Wheel bearings*					IL				IL				IL			IL					IL	
2	Wheel spoke tightness	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Tire pressure and inspect tire for wear/damage	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Brake fluid level and condition*		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Rear brake pedal height adjustment and freeplay	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Rear brake linkage			IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	
2	Brake pad linings and discs for wear	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Condition of rear brake caliper mounting pins and boots			IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	
2	Front fork oil					R				R				R			R				R		
2	Front fork bearing adjustment		I	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	
2	Rear fork pivot bolt		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Rear fork bearings*		I	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	IL	I	
2	Condition of rear shock absorbers		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
2	Throttle control grip sleeve, speedometer cable	I		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
2	Front brake hand lever, throttle control cables, clutch control cable and hand lever		L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
2	Jiffy stand		I	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	
3	Engine mounts		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
3	Engine Oil*	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	
3	Oil filter		R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	
4	Engine idle speed	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
4	Operation of throttle and enrichener controls	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
4	Air cleaner		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
4	Fuel valve, lines and fittings for leaks		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
4	Fuel tank filter screen			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
4	Air cleaner backplate EVAP butterfly valve operation (if equipped)	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
6	Primary chain		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
6	Primary chaincase/transmission lubricant		R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	
6	Rear drive belt	I	A	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
6	Clutch adjustment		A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
7	Ignition timing and MAP sensor (1200S) or vacuum-operated electric switch (V.O.E.S.)			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
7	Bank Angle Sensor			I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
7	Operation of all electrical equipment and switches	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	
7	Spark plugs			I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	
7	Battery connections		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
-	All fasteners except engine head bolts		T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
-	Road test	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	

Table Code:

- A** - Adjust.
- I** - Inspect, and if necessary, correct, adjust, clean or replace.
- L** - Lubricate with specified lubricant.

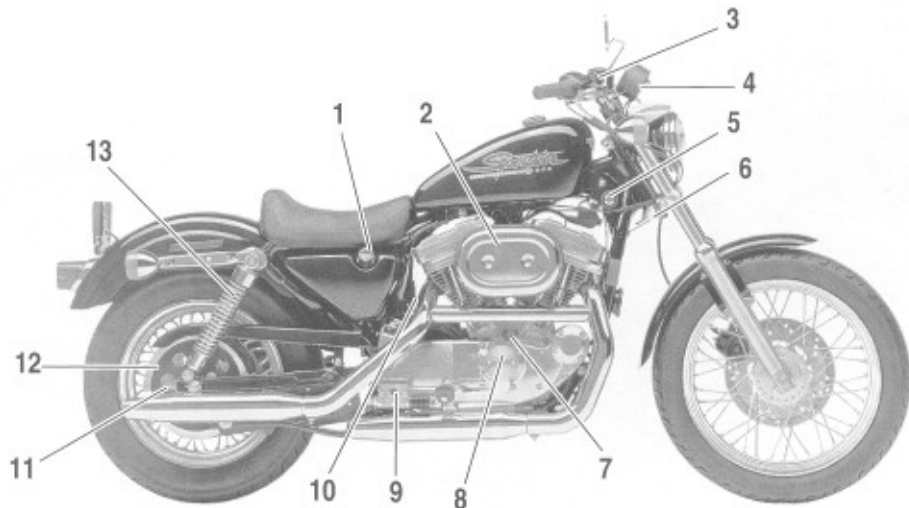
*Also perform prior to storage or annually

- R** - Replace or change.
- T** - Tighten to proper torque.
- X** - Perform.



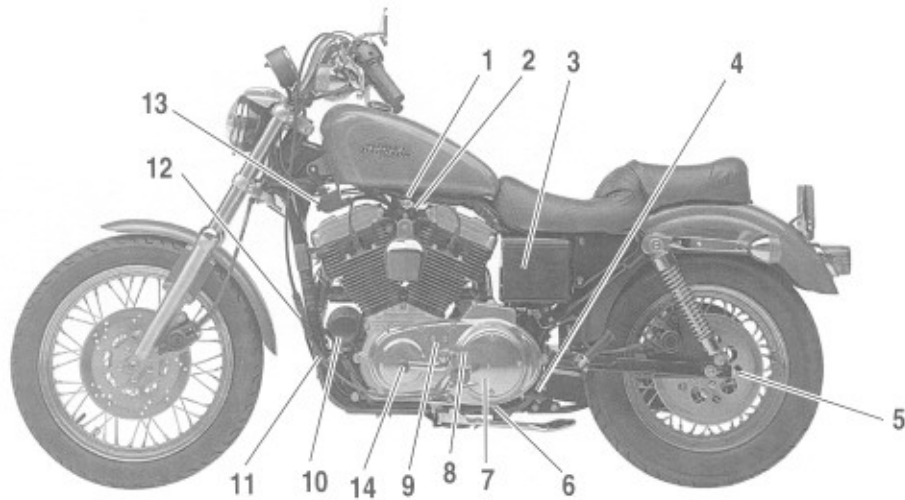
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|-------------------------------|--------------------------------------|---------------------------|
| 1. Fuel supply valve | 6. Primary & transmission drain plug | 10. Engine oil filter |
| 2. Carburetor enricher knob | 7. Clutch inspection cover | 11. Voltage regulator |
| 3. Battery | 8. Primary chain cover | 12. Clutch cable adjuster |
| 4. Engine oil tank drain hose | 9. Primary chain inspection plug | 13. Ignition coil |
| 5. Rear axle adjuster | | 14. Gear shift lever |

XLH 883 – Left Side View (Typical)



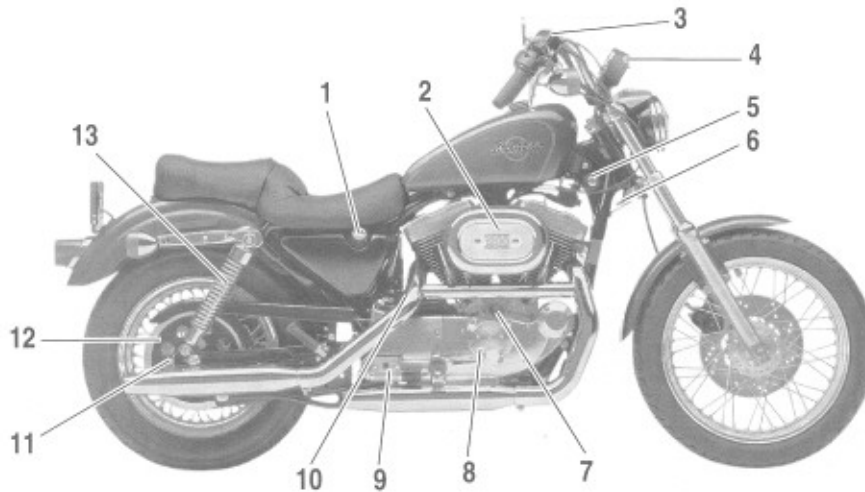
- | | | |
|--|---|-----------------------------|
| 1. Engine oil fill plug & dipstick | 5. Ignition/light switch | 10. Electric starter motor |
| 2. Carburetor/air cleaner | 6. Fork lock brackets | 11. Rear axle adjuster |
| 3. Front brake master cylinder & reservoir | 7. Timing inspection hole plug | 12. Rear sprocket and drive |
| 4. Speedometer | 8. Ignition Module | 13. Shock absorber(s) |
| | 9. Rear brake master cylinder & reservoir | |

XLH 883 – Right Side View (Typical)



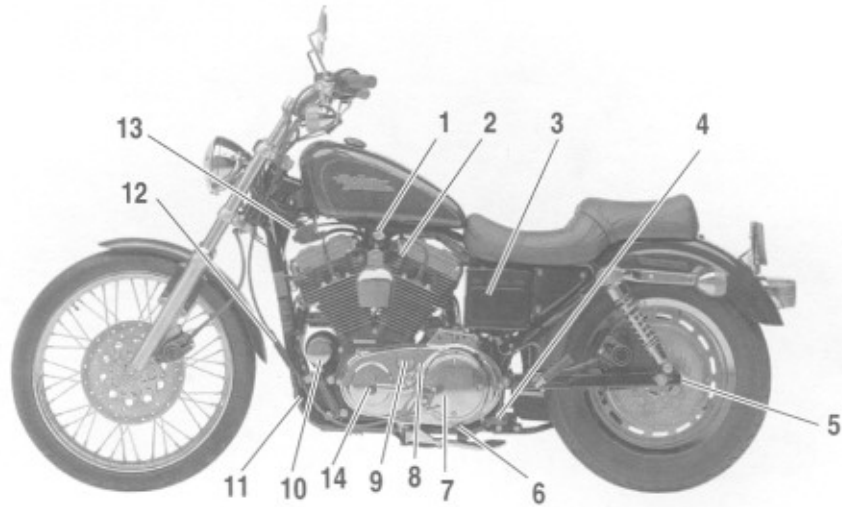
- | | | |
|-------------------------------|--------------------------------------|---------------------------|
| 1. Fuel supply valve | 6. Primary & transmission drain plug | 10. Engine oil filter |
| 2. Carburetor enrichener knob | 7. Clutch inspection cover | 11. Voltage regulator |
| 3. Battery | 8. Primary chain cover | 12. Clutch cable adjuster |
| 4. Engine oil tank drain hose | 9. Primary chain inspection plug | 13. Ignition coil |
| 5. Rear axle adjuster | | 14. Gear shift lever |

XLH 1200 – Left Side View (Typical)



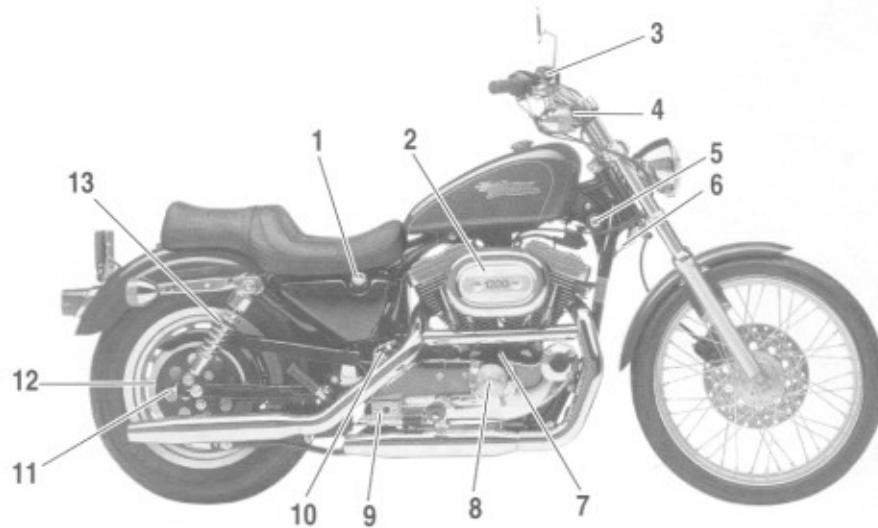
- | | | |
|--|---|-----------------------------|
| 1. Engine oil fill plug & dipstick | 5. Ignition/light switch | 10. Electric starter motor |
| 2. Carburetor/air cleaner | 6. Fork lock brackets | 11. Rear axle adjuster |
| 3. Front brake master cylinder & reservoir | 7. Timing inspection hole plug | 12. Rear sprocket and drive |
| 4. Speedometer/tachometer | 8. Ignition Module | 13. Shock absorber(s) |
| | 9. Rear brake master cylinder & reservoir | |

XLH 1200 – Right Side View (Typical)



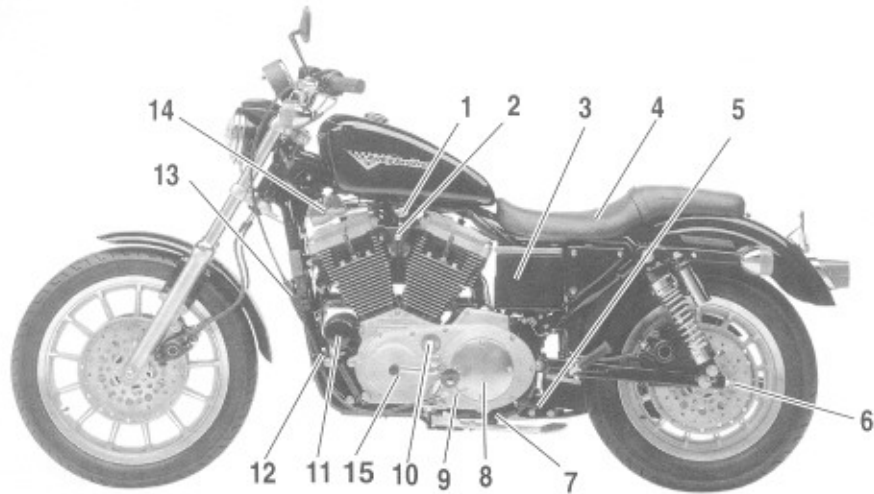
- | | | |
|-------------------------------|--------------------------------------|---------------------------|
| 1. Fuel supply valve | 6. Primary & transmission drain plug | 10. Engine oil filter |
| 2. Carburetor enrichener knob | 7. Clutch inspection cover | 11. Voltage regulator |
| 3. Battery | 8. Primary chain cover | 12. Clutch cable adjuster |
| 4. Engine oil tank drain hose | 9. Primary chain inspection plug | 13. Ignition coil |
| 5. Rear axle adjuster | | 14. Gear shift lever |

XL 1200C Custom-- Left Side View (Typical)



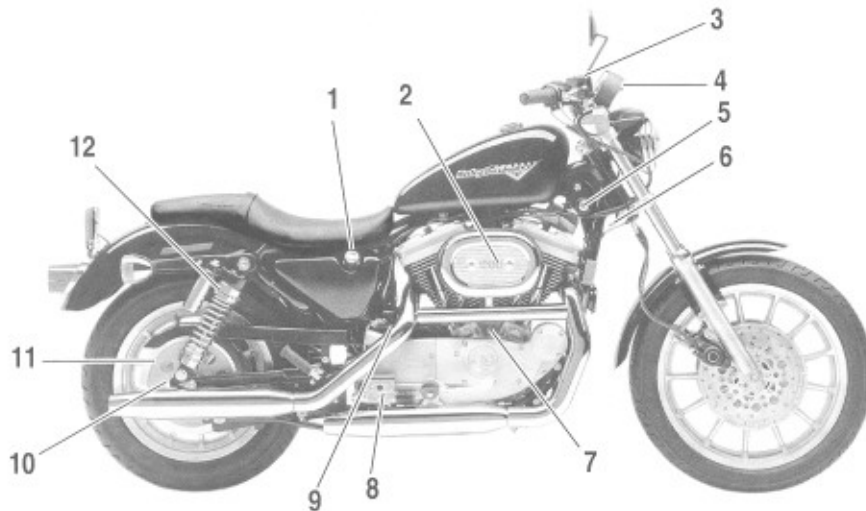
- | | | |
|--|---|-----------------------------|
| 1. Engine oil fill plug & dipstick | 6. Fork lock brackets | 10. Electric starter motor |
| 2. Carburetor/air cleaner | 7. Timing inspection hole plug | 11. Rear axle adjuster |
| 3. Front brake master cylinder & reservoir | 8. Ignition Module | 12. Rear sprocket and drive |
| 4. Speedometer/tachometer | 9. Rear brake master cylinder & reservoir | 13. Shock absorber(s) |
| 5. Ignition/light key switch | | |

XL 1200C Custom – Right Side View (Typical)



- | | | |
|---------------------------------|--------------------------------------|-----------------------------------|
| 1. Fuel supply valve | 6. Rear axle adjuster | 10. Primary chain inspection plug |
| 2. Carburetor enrichener knob | 7. Primary & transmission drain plug | 11. Engine oil filter |
| 3. Battery | 8. Clutch inspection cover | 12. Voltage regulator |
| 4. Ignition module (under seat) | 9. Primary chain cover | 13. Clutch cable adjuster |
| 5. Engine oil tank drain hose | | 14. Ignition coil |
| | | 15. Gear shift lever |

XL 1200S Sport– Left Side View (Typical)



- | | | |
|--|---|-----------------------------|
| 1. Engine oil fill plug & dipstick | 5. Ignition/light switch | 9. Electric starter motor |
| 2. Carburetor/air cleaner | 6. Fork lock brackets | 10. Rear axle adjuster |
| 3. Front brake master cylinder & reservoir | 7. Timing inspection hole plug | 11. Rear sprocket and drive |
| 4. Speedometer/tachometer | 8. Rear brake master cylinder & reservoir | 12. Shock absorber(s) |

XLH 1200S Sport– Right Side View (Typical)

STORAGE

GENERAL

If the motorcycle will not be operated for several months, such as during the winter season, there are several things which should be done to protect parts against corrosion, to preserve the battery and to prevent the buildup of gum and varnish in the carburetor.

This work should be performed by your local Harley-Davidson dealer or other qualified technician following Service Manual procedures.

WARNING

Gasoline is flammable. Do not store motorcycle having gasoline in tank within the home or garage where open flames, pilot lights, sparks or electric motors are present. Failure to heed this warning could lead to an explosion or fire resulting in personal injury.

1. Fill fuel tank and add a gasoline stabilizer. Use one of the commercially available gasoline stabilizers following the manufacturer's instructions. Turn fuel supply valve off. Drain all gasoline from carburetor by loosening fuel bowl drain screw one full turn; gasoline will drain through fuel overflow fitting. Retighten drain screw after all gasoline has been drained from carburetor.

OR

Drain all gasoline from the fuel tank. Spray the inside of the fuel tank with one of the commercially available rust preventatives. Follow the manufacturer's instructions.

2. Fill the oil tank. Pinch off (or remove and plug) the line leading from the oil tank bottom to the oil pump feed fitting. This prevents oil from seeping past the check ball into the oil pump and filling the engine flywheel compartment.
3. Remove the spark plugs, inject a few squirts of engine oil into each cylinder and crank the engine 5-6 revolutions. Reinstall spark plugs.
4. Grease wheel bearings and install new seals.
5. Adjust primary chain.
6. Check tire inflation. If the motorcycle will be stored for an extended period of time, securely support the motorcycle under the frame so that all weight is off the tires.
7. Wash painted and chrome-plated surfaces. Apply a light film of oil to exposed unpainted surfaces.

WARNING

Do not apply any oil to brake discs or brake pads. Oil on disc pads degrades braking efficiency and can result in an accident resulting in personal injury.

8. Remove battery from vehicle. Charge battery until the correct voltage is obtained. Charge the battery every other month if it is stored at temperatures below 60°F (16°C). Charge battery once a month if it is stored at temperatures above 60°F (16°C).

WARNING

- **Always unplug or turn off battery charger before connecting or disconnecting charger clamps at battery. Connecting or disconnecting clamps with charger on could cause a spark and a possible battery explosion. A battery explosion may rupture the battery case and spray sulfuric acid onto the surrounding area and personnel, resulting in injury.**
 - **Store battery out of reach of children. Battery contains sulfuric acid which can cause severe burns to eyes, skin and clothing.**
9. If motorcycle is to be covered, use a material that will breathe, such as light canvas. Plastic materials that do not breathe promote the formation of condensation.

REMOVAL FROM STORAGE

WARNING

After extended periods of storage and prior to starting vehicle, place transmission in gear, disengage clutch, and push vehicle back and forth a few times to ensure proper clutch disengagement. Incomplete clutch disengagement could cause vehicle to move unexpectedly at start-up, resulting in personal injury.

1. Charge and install battery.
2. Remove and inspect the spark plugs. Replace if necessary.
3. Clean the air cleaner element.
4. If fuel tank was drained, fill fuel tank with fresh gasoline.
5. If oil feed line was pinched off or plugged, unplug it and reconnect.
6. Start the engine and run until it reaches normal operating temperature.
7. Check engine oil level. Check the transmission lubricant level. Fill to proper levels with correct fluids, if required.
8. Perform all of the checks in the PRE-RIDING CHECKLIST in the Owner's Manual.

FLUID REQUIREMENTS

GENERAL

United States System

Unless otherwise specified, all fluid volume measurements in this Service Manual are expressed in United States (U.S.) units-of-measure. See below:

- 1 pint (U.S.) = 16 fluid ounces (U.S.)
- 1 quart (U.S.) = 2 pints (U.S.) = 32 fl. oz. (U.S.)
- 1 gallon (U.S.) = 4 quarts (U.S.) = 128 fl. oz. (U.S.)

British Imperial System

Fluid volume measurements in this Service Manual do not include the British Imperial (Imp.) system equivalents. The following conversions exist in the British Imperial system:

- 1 pint (Imp.) = 20 fluid ounces (Imp.)
- 1 quart (Imp.) = 2 pints (Imp.)
- 1 gallon (Imp.) = 4 quarts (Imp.)

Although the same unit-of-measure terminology as the U.S. system is used in the British Imperial (Imp.) system, the actual volume of each British Imperial unit-of-measure differs from its U.S. counterpart. The U.S. fluid ounce is larger than the British Imperial fluid ounce. However, the U.S. pint, quart and gallon are smaller than the British Imperial pint, quart and gallon, respectively. Should you need to convert from U.S. units to British Imperial units (or vice versa), refer to the following:

- fluid ounces (U.S.) x 1.042 = fluid ounces (Imp.)
- pints (U.S.) x 0.833 = pints (Imp.)
- quarts (U.S.) x 0.833 = quarts (Imp.)
- gallons (U.S.) x 0.833 = gallons (Imp.)
- fluid ounces (Imp.) x 0.960 = fluid ounces (U.S.)
- pints (Imp.) x 1.201 = pints (U.S.)
- quarts (Imp.) x 1.201 = quarts (U.S.)
- gallons (Imp.) x 1.201 = gallons (U.S.)

Metric System

Fluid volume measurements in this Service Manual include the metric system equivalents. In the metric system, 1 liter (L) = 1,000 milliliters (mL). Should you need to convert from U.S. units-of-measure to metric units-of-measure (or vice versa), refer to the following:

- fluid ounces (U.S.) x 29.574 = milliliters
- pints (U.S.) x 0.473 = liters
- quarts (U.S.) x 0.946 = liters
- gallons (U.S.) x 3.785 = liters
- milliliters x 0.0338 = fluid ounces (U.S.)
- liters x 2.114 = pints (U.S.)
- liters x 1.057 = quarts (U.S.)
- liters x 0.264 = gallons (U.S.)

WHEEL BEARING GREASE

Use Harley-Davidson WHEEL BEARING GREASE (H-D Part No. 99855-89).

BRAKE FLUID

WARNING

D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID can cause eye irritation. In case of contact with eyes, flush with plenty of water and get medical attention. KEEP BRAKE FLUID OUT OF THE REACH OF CHILDREN!

Use only D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID (H-D Part No. 99902-77).

FRONT FORK OIL

Use only HYDRAULIC FORK OIL TYPE "E" (H-D Part No. 99884-80).

ENGINE OIL

Engine oil is a major factor in the performance and service life of the engine. Always use the proper grade of oil for the lowest temperature expected before the next scheduled oil change.

If it is necessary to add oil and Harley-Davidson oil is not available, use an oil certified for diesel engines. Acceptable diesel engine oil designations include CE, CF, CF-4 and CG-4. The preferred viscosities for the diesel engine oils, in descending order, are 20W-50, 15W-40 and 10W-40. At the first opportunity, see a Harley-Davidson dealer to change back to 100 percent H-D oil

Harley-Davidson Type	Viscosity	Harley-Davidson Rating	Lowest Ambient Temperature	Cold Weather Starts Below 50°F (10°C)
HD Multi-grade	SAE 10W40	HD 240	Below 40°F (4°C)	Excellent
HD Multi-grade	SAE 20W50	HD 240	Above 40°F (4°C)	Good
HD Regular Heavy	SAE 50	HD 240	Above 60°F (16°C)	Poor
HD Extra Heavy	SAE 60	HD 240	Above 80°F (27°C)	Poor

FUEL

Use a good quality leaded or unleaded gasoline (87 pump octane or higher). Pump octane is the octane number usually shown on the gas pump.

PRIMARY DRIVE/TRANSMISSION LUBRICANT

Use only Harley-Davidson SPORT TRANS FLUID (H-D Part No. 98854-96 quart (U.S.) size or H-D Part No. 98855-96 gallon (U.S.) size).

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