Owners Manual

Nineteen Eighty-Seven Models

HARLEY-DAVIDSON® MOTOR CO. INC.

IMPORTANT NOTICE!

Statements in this manual preceded by the following words are of special significance:

WARNING

Means there is the possibility of personal injury to yourself or others.

CAUTION

Means there is the possibility of damage to the vehicle.

NOTE

Other information of particular importance has been placed in italic type.

We recommend you take special notice of these items.

YOUR OWNER'S MANUAL

Welcome to the Harley-Davidson Motorcycling Family! Your new Harley-Davidson motorcycle is designed and manufactured to be the finest in its field. Your Harley-Davidson motorcycle conforms to all applicable U.S. Federal Motor Vehicle Safety Standards and U.S. Environmental Protection Agency regulations effective on the date of manufacture.

This manual has been prepared to acquaint you with the operation, care and maintenance of your motorcycle, and to provide you with important safety information. Follow these instructions carefully for maximum motorcycle performance and for your personal motorcycling safety and pleasure.

Your Owner's Manual contains instructions for operation and maintenance. Major repairs are covered in the Harley-Davidson Service Manual. Such major repairs require the attention of a skilled mechanic and the use of special tools and equipment. Your Harley-Davidson dealer has the facilities, experience and genuine Harley-Davidson parts necessary to properly render this valuable service. We recommend that any emission system maintenance be performed by an authorized Harley-Davidson dealer.

Harley-Davidson Motor Co., Inc.

CMI-.05M-07/10

Printed in U.S.A.
on Recycled Paper

PERSONAL INFORMATION

Name _____

Address _____

Telephone No. _____

VEHICLE INFORMATION

Vehicle Identification No. _____

Key No. Ignition _____

This owner's manual illustrates and describes features that are standard or available as extra cost options. Therefore, some of the equipment shown in this publication may not appear on your vehicle.

TABLE OF CONTENTS

OPERATION

MAINTENANCE AND LUBRICATION

The Touring section covers the vehicle specifications on the following Harley-Davidson models:

FLTC	FLHTC
FLTC - Shrine	FLHTC - Shrine
FLHT	FXRT - Sport Touring

TOURING

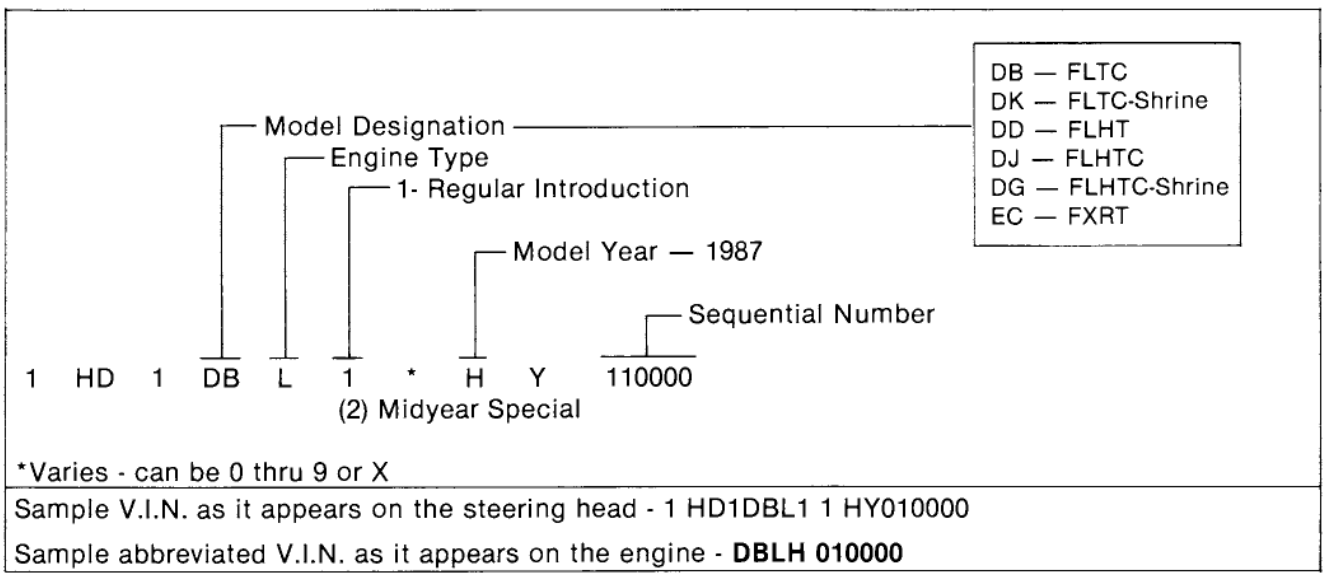
NOTES

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

The full 17 digit serial, or Vehicle Identification Number (V.I.N.) is stamped on the steering head and on a label located on the right front frame downtube. An abbreviated V.I.N. is stamped on the left side crankcase at the base of the rear cylinder.

NOTE

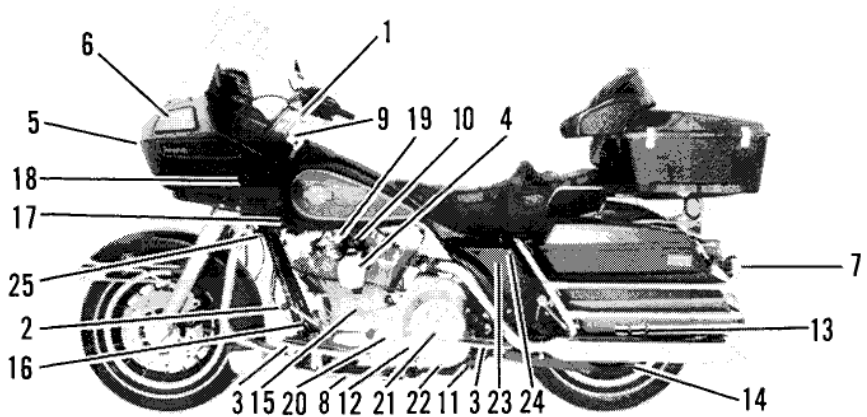
Always give one of the Vehicle Identification Numbers when ordering parts or making any inquiry about your motorcycle.



Sample V.I.N. as it appears on the steering head - 1 HD1DBL1 1 HY010000

Sample abbreviated V.I.N. as it appears on the engine - **DBLH 010000**

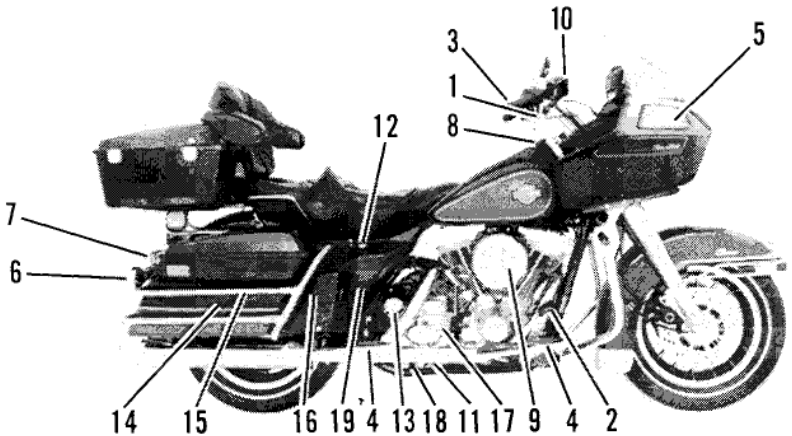
2872



1. Clutch handlever
2. Gear shifter
3. Footrest(s)
4. Horn
5. Headlamp
6. Front turn signal and running lamp
7. Rear turn signal lamp
8. Jiffy stand
9. Ignition/light switch/fork lock
10. Carburetor choke knob
11. Engine oil filter
12. Primary chain cover
13. Rear axle adjuster
14. Rear sprocket and drive
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Rear brake fluid reservoir (under side cover)
24. Rear suspension air valve
25. Front suspension air valve

FLTC — Left Side View

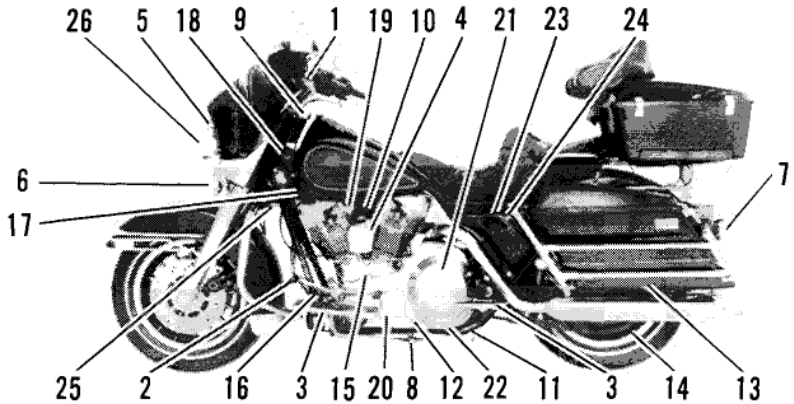
2873



1. Front brake handlever
2. Rear brake pedal
3. Throttle control grip
4. Footrest(s)
5. Front turn signal and running lamp
6. Rear turn signal lamps
7. Tail/stop lamp
8. Fuel filler cap
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under side cover)
17. Transmission fill plug
18. Transmission drain plug
19. Engine oil tank drain (under side cover)

FLTC — Right Side View

2870



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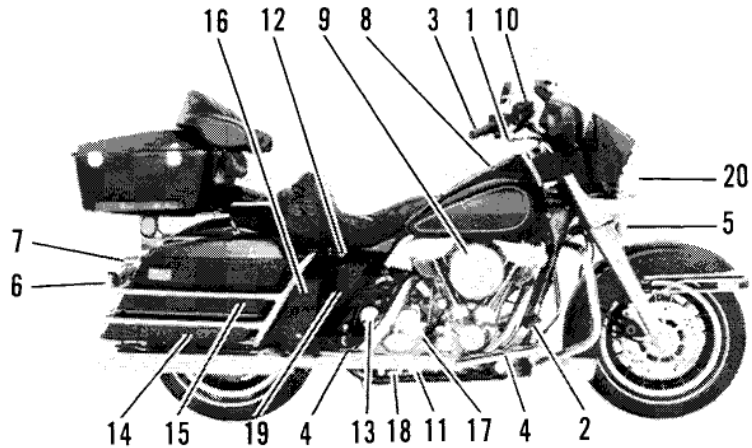
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Rear brake fluid reservoir (under side cover)
24. Rear suspension air valve
25. Front suspension air valve
26. Passing lamp

FLHT/C — Left Side View

2868



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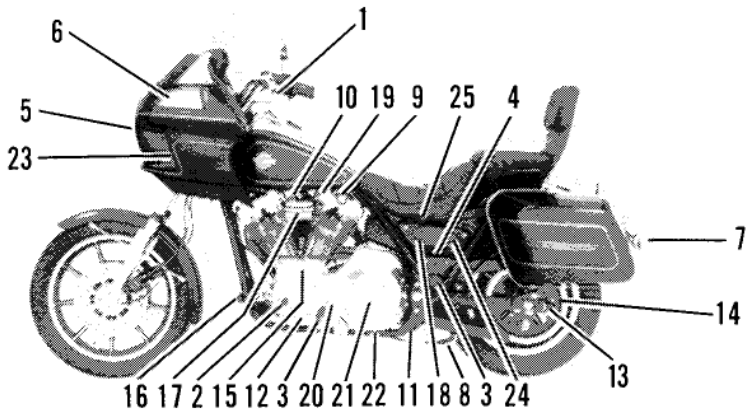
11. Rear brake master cylinder
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under side cover)
17. Transmission fill plug
18. Transmission drain plug
19. Engine oil tank drain (under side cover)
20. Passing lamp

FLHT/C — Right Side View

2911



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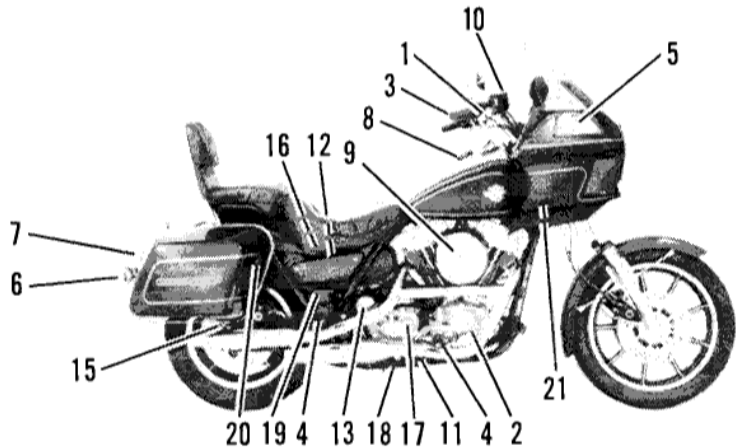
14. Rear sprocket and drive
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Front suspension air valves (under fairing)
24. Engine oil tank drain hose
25. Seat release

FXRT — Left Side View

2912



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10. Front brake master cylinder and reservoir
11. Rear brake master cylinder
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Rear brake fluid reservoir
20. Rear suspension air adjustment valve
21. Fork lock brackets (under fairing)

FXRT — Right Side View

NOTES

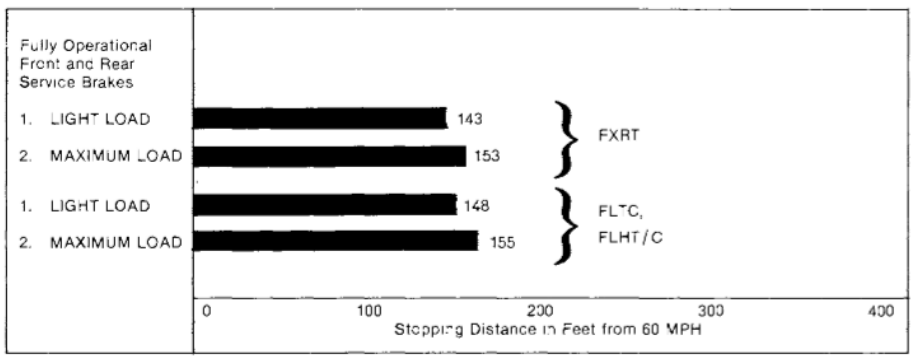
STOPPING DISTANCE

Description of vehicle: Harley-Davidson 1987 FLTC, FLHT/C and FXRT models.

Required by Federal Consumer Information Regulations.

Notice: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

These figures indicate braking performance that can be met or exceeded by the vehicle to which it applies, without locking the wheels, under different conditions of loading.



1. Light Load Vehicle Weight includes 200 lb. driver - no accessories.
2. Maximum Loaded Vehicle Weight includes 300 lb. driver and passenger load plus full accessory equipment.

DIMENSIONS (in.)

	FLTC	FLHT/C	FXRT
Wheel Base	62.94	62.94	64.7
Overall Length	94.25	94.25	94.2
Overall Width	37.0	39.0	34.5
Road Clearance	5.12	5.12	6.0
Overall Height	58.75	61.0	59.5
Saddle Height	29.6	28.0	27.75

WEIGHT (lbs.)

	FLTC	FLHT/C	FXRT
DRY WEIGHT (as shipped from the factory)	741	722	640
GVWR	1216	1197	1085
GAWR — Front	446	427	390
GAWR — Rear	770	770	695

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are given on a label located on the front frame downtube.

CAPACITIES (U.S.)

	FLTC	FLHT/C	FXRT
Fuel Tank (gallons)			
Total	5	5	3.8
Reserve	0.7	0.7	0.4
Oil Tank (Quarts) w/filter	4	4	3.0
Transmission (Pints)	1	1	1
Front Fork — Each (Ounces)	7.75	7.75	7.2
Primary Chaincase (Quarts)	1.5	1.5	1.5

ENGINE

Number of Cylinders 2
Type ..... 4-Cycle, 45 Degree V-Type
Compression Ratio ..... 8.5 to 1

Horse power — rpm	Bore in. (mm)	Stroke in. (mm)	Displacement cu. in. (cc)	Torque lb-ft — rpm
FLTC, FLHT/C				
72/5000	3.498 (88.8)	4.25 (108.0)	81.6 (1338.6)	82/3600
FXRT				
69/5000	3.498 (88.8)	4.25 (108.0)	81.6 (1338.6)	82/3600

IGNITION SYSTEM

Spark Timing	Start	5° BTDC
	Fast Idle	35° BTDC
	1800-2800 RPM	35° BTDC
Battery		12 Volt, 22 amp. hr.

Spark Plugs

Type	HD-5R6A
Size	14mm
Gap	0.038-0.043 in.

TRANSMISSION

Type	Constant Mesh, Foot Shift
Speeds	5 Forward

NUMBER OF SPROCKET TEETH

Engine	24
Clutch	37
Transmission	32
Rear Wheel	70

OVERALL GEAR RATIOS

First (Low) Gear	10.93	Third Gear	5.40
Second Gear	7.45	Fourth Gear	4.16
		Fifth Gear	3.37

TIRE DATA

WARNING

For your own personal safety, tires, rims and air valves must be correctly matched to wheel rims. See your Harley-Davidson dealer. Mismatching tires, tubes, rims and air valves may result in damage to the tire bead during mounting or may allow the tire to slip on the rim, possibly causing tire failure. In addition, using tires other than those specified may adversely affect motorcycle stability. Use only tube tires on all Harley-Davidson laced (wire spoke) wheels and tubeless type tires on all Harley-Davidson cast and disc wheels. Protective rubber rim strips must be used with tube type tires when mounted on laced (wire spoked) wheels. Tire sizes are molded on the tire sidewall. Tube sizes are printed on the tube.

1987 DUNLOP TIRES ONLY		TIRE PRESSURE PSI (COLD)	
		FRONT	REAR
Solo Rider	FLTC	36	36
	FLHT/C	36	36
Rider & one passenger	FLTC	36	36
	FLHT/C	36	36
Solo Rider	FXRT	30	36
Rider & one passenger	FXRT	30	40

WARNING

Maximum inflation pressure must not exceed specification on tire sidewall.

FUEL

Use a good quality leaded or unleaded gasoline (89 pump octane or higher). Octane rating is usually found on the pump.

WARNING

Fill fuel tank slowly to prevent spillage. Do not overfill. Do not fill above the bottom of the filler neck insert. Leave air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow gasoline through the filler cap onto surrounding areas.

Todays service station pumps are increasingly of the higher capacity variety. With the high flow of gasoline into a motorcycle tank, air entrapment and pressurization is a possibility. The pressurized air may force gasoline to escape through whatever opening is available within the filler tube. This may not only soil clothing, but may create a potential fire hazard.

BULB CHART—FLTC, FLHT/C

LAMP DESCRIPTION (ALL LAMPS 12 V)	NUMBER OF BULBS REQUIRED	CURRENT DRAW (amperage)	HARLEY-DAVIDSON PART NUMBER
Headlamp			
FLTC	2	3.9	67717-65A
FLHT/C	1	2.73	67755-81
Tail and Stop Lamp	1		68165-64
Tail Lamp	1	0.59	
Stop Lamp		2.1	
Passing Lamps — FLHT/C	2	2.34	68674-69
Turn Signal Lamps			
Front	2	2.1	68165-64
Rear	2	2.1	68681-85A
Tour-Pak Side Lamps	4	0.10	53439-79
Fender Tip Lamps	2	0.10	53439-79
Instrument Panel Lamps	9	0.04	71099-74

BULB CHART — FXRT

LAMP DESCRIPTION (ALL LAMPS 12 V)	NUMBER OF BULBS REQUIRED	CURRENT DRAW (amperage)	HARLEY-DAVIDSON PART NUMBER
Headlamp	1		67697-81
High Beam		3.9	
Low Beam		2.73	
Tail and Stop Lamp	1		68165-64
Tail Lamp		0.59	
Stop Lamp		2.1	
Turn Signal Lamps			
Rear	2	2.1	68572-64A
Front/Running Lamp	2	2.1/.59	68165-64
Instrument Lamps			
Fuel Gauge	1	0.27	71099-74
Speedometer	2	0.12	53439-71
Tachometer	1	0.12	53439-71
High Beam Indicator	1	0.12	68588-86
Neutral Indicator	1	0.08	68574-83
Oil Pressure Signal	1	0.08	68484-83
Turn Signal Indicator	2	0.27	68465-86

The Custom section covers the vehicle specifications on the following Harley-Davidson models:

FLST	FXR
FXSTC	FXLR
FXRS - Sport Edition	FXST
	FXRS

At the rear of the Custom Identification and Specifications are:

XLH 883cc	XLH 1100cc

NOTES

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

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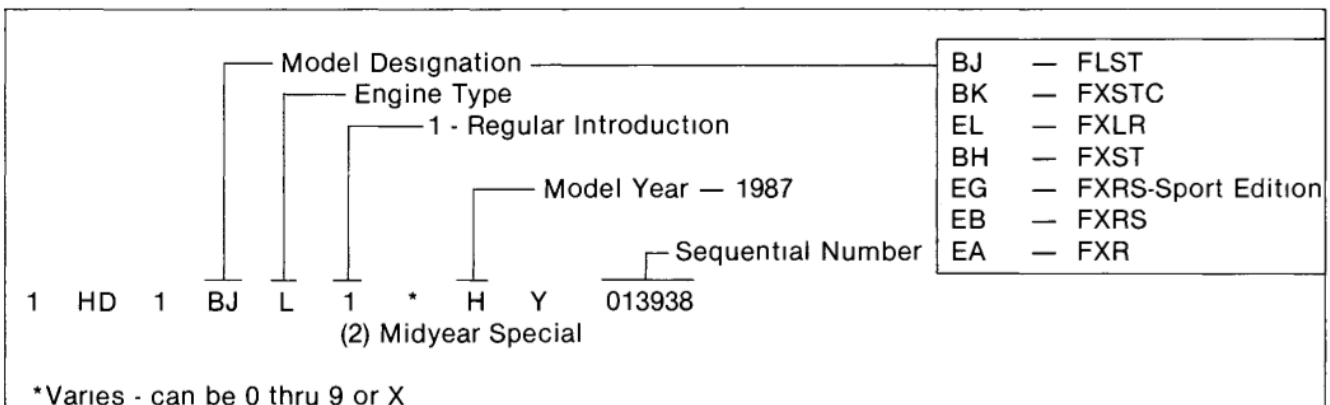
NOTE

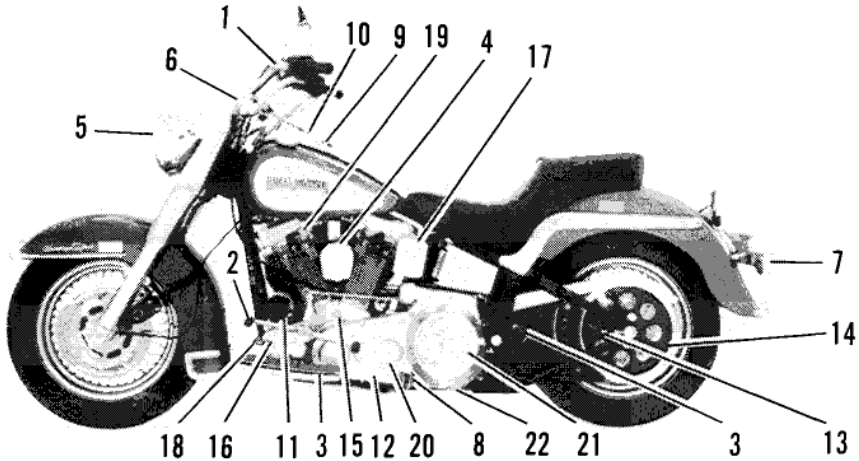
Always give the full 17 digit serial number when ordering parts or making any inquiry about your motorcycle.



Sample V.I.N. as it appears on the steering head - 1 HD1BJL1X HY013938

Sample abbreviated V.I.N. as it appears on the engine - **BJLH 013938**

3010



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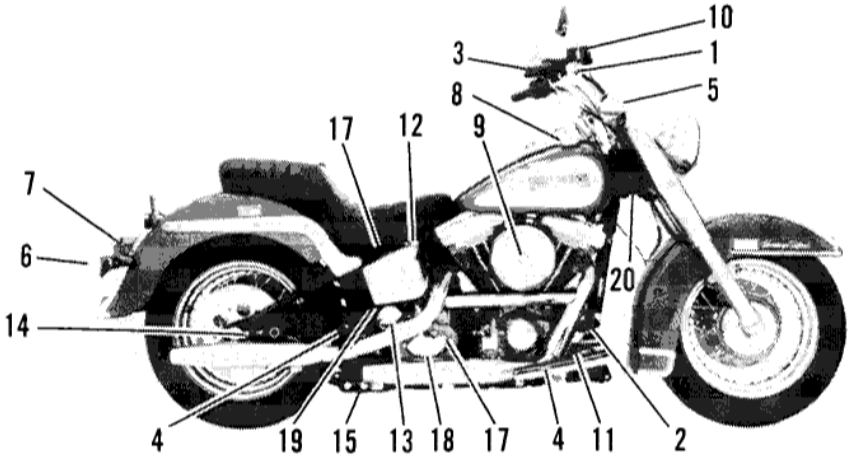
9. Ignition/light switch
10. Carburetor choke knob
11. Engine oil filter
12. Primary chain cover
13. Rear axle adjuster
14. Rear sprocket and drive
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug

FLST — Left Side View

3011



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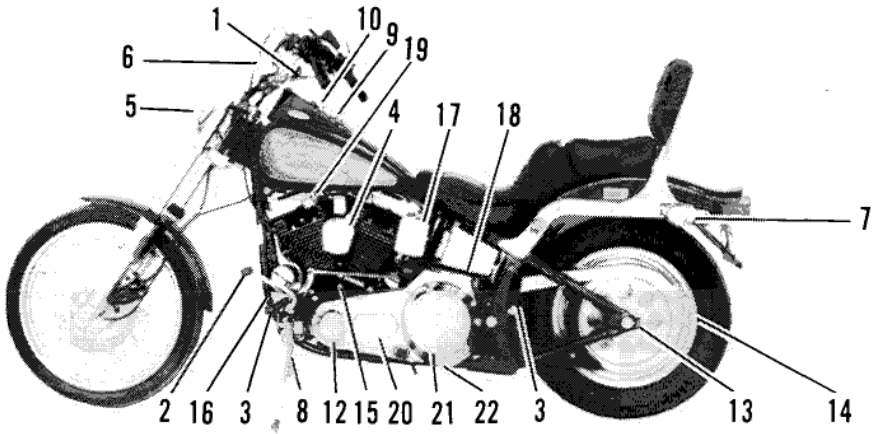
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder and reservoir
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Engine oil tank drain hose
20. Fork lock brackets

FLST — Right Side View

2859



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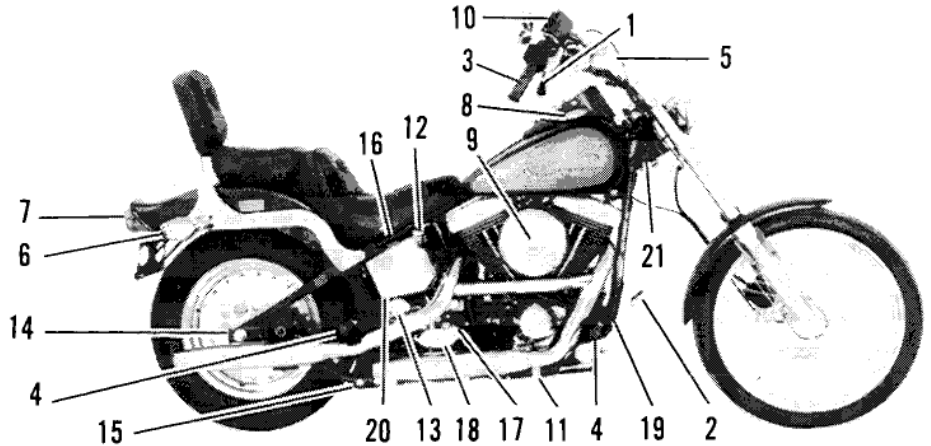
21. Clutch inspection cover
22. Primary drain plug

FXSTC — Left Side View

2860



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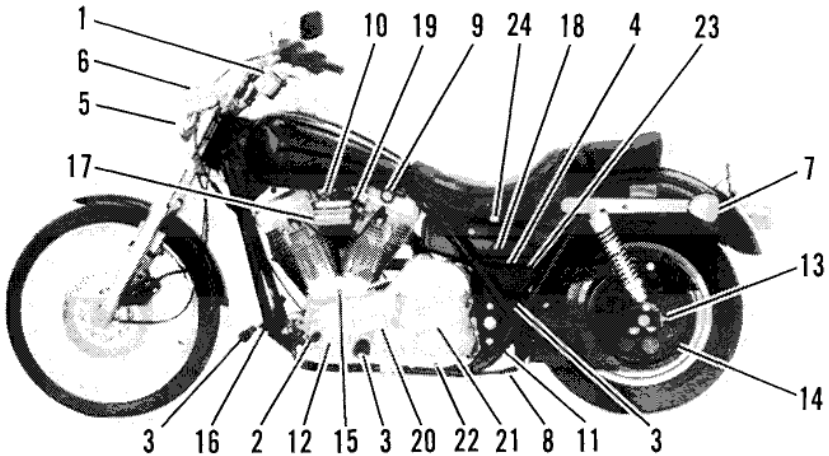
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Rear brake fluid reservoir
20. Engine oil tank drain hose
21. Fork lock brackets

FXSTC — Right Side View

3027



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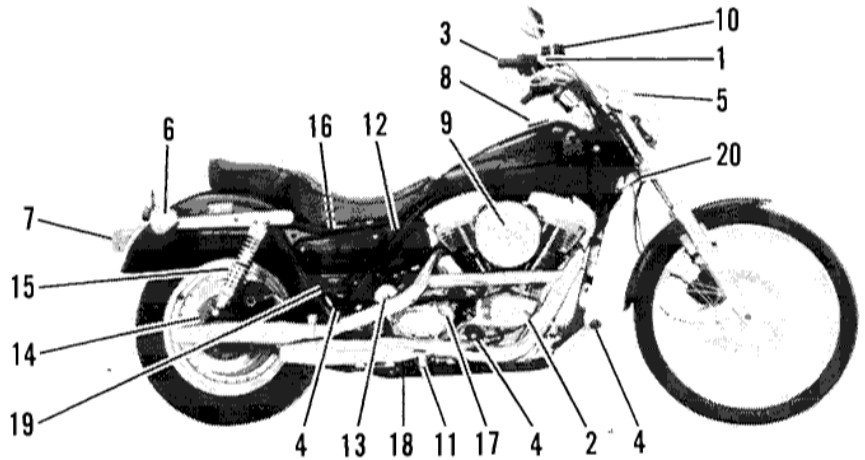
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Oil tank drain hose

FXLR — Left Side View

3028



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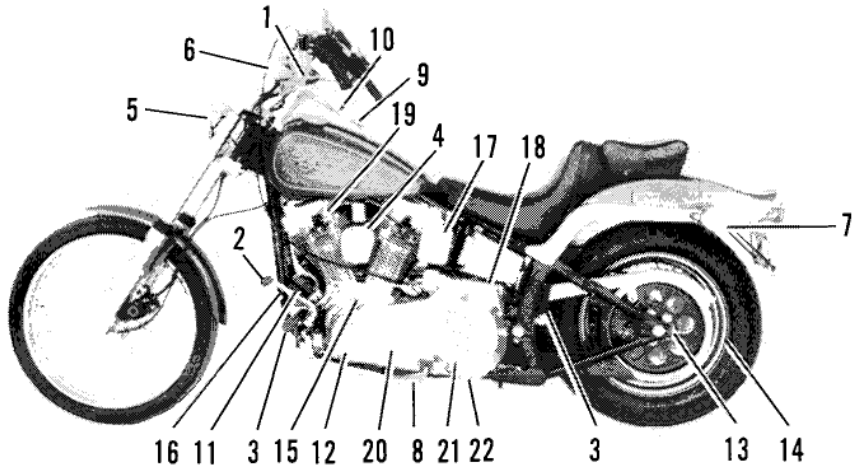
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Rear brake fluid reservoir
20. Fork lock brackets

FXLR — Right Side View

2861



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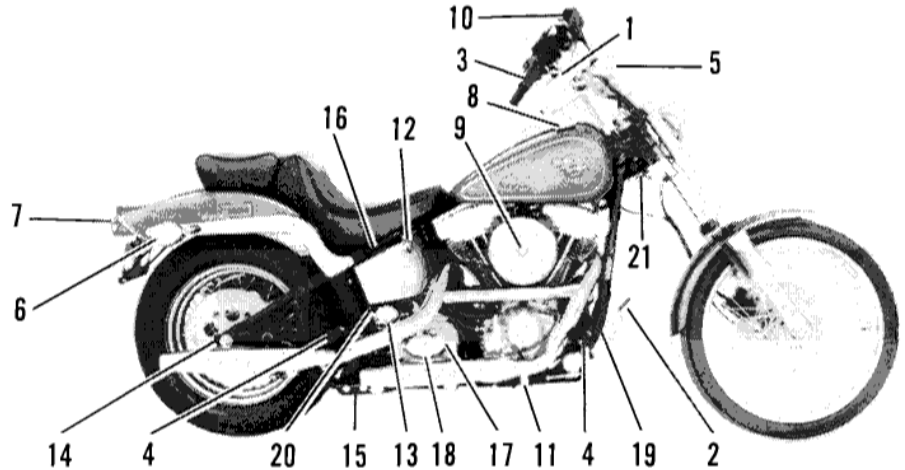
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug

FXST — Left Side View

2862



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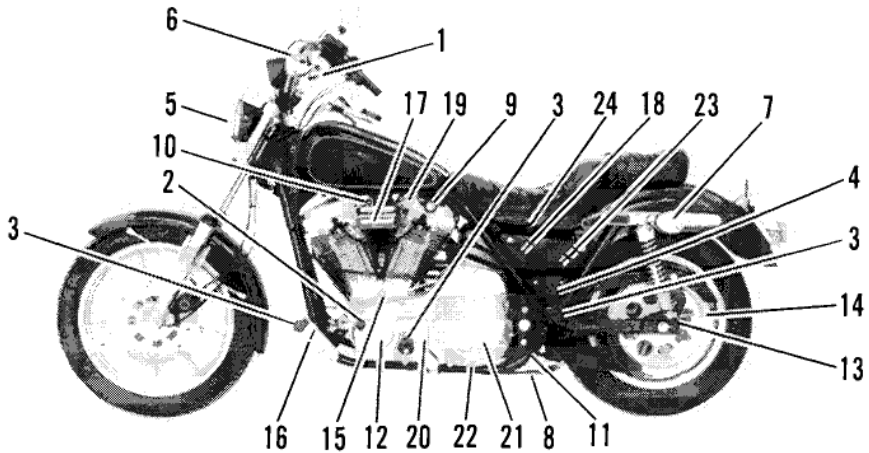
19. Rear brake fluid reservoir
20. Engine oil tank drain hose
21. Fork lock brackets

FXST — Right Side View

2881



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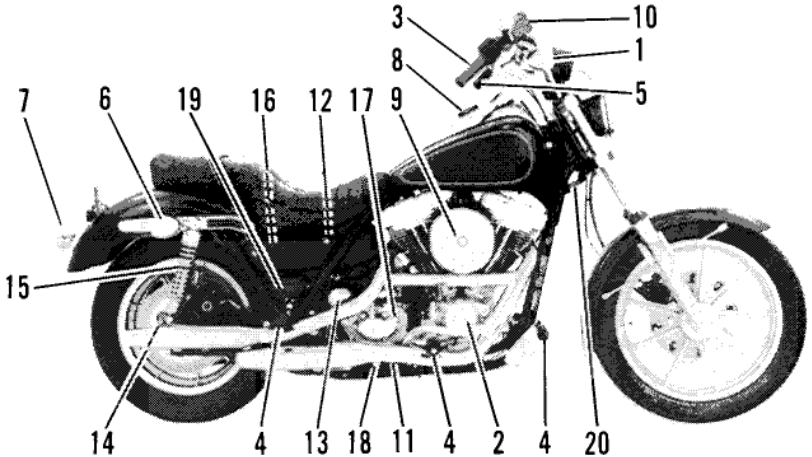
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Oil tank drain hose
24. Seat release

FXRS/SE — Left Side View

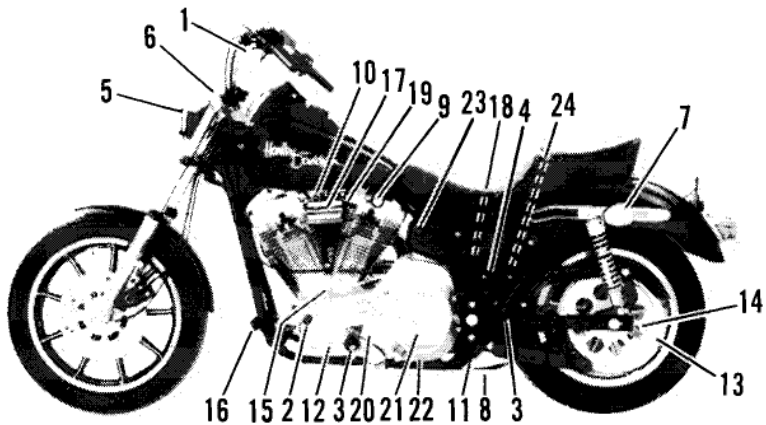
2869



1. Front brake handlever
2. Rear brake pedal
3. Throttle control grip
4. Footrest(s)
5. Front turn signal and running lamp
6. Rear turn signal lamps
7. Tail/stop lamp
8. Fuel filler cap
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Rear brake fluid reservoir
20. Fork lock brackets

FXRS/SE — Right Side View

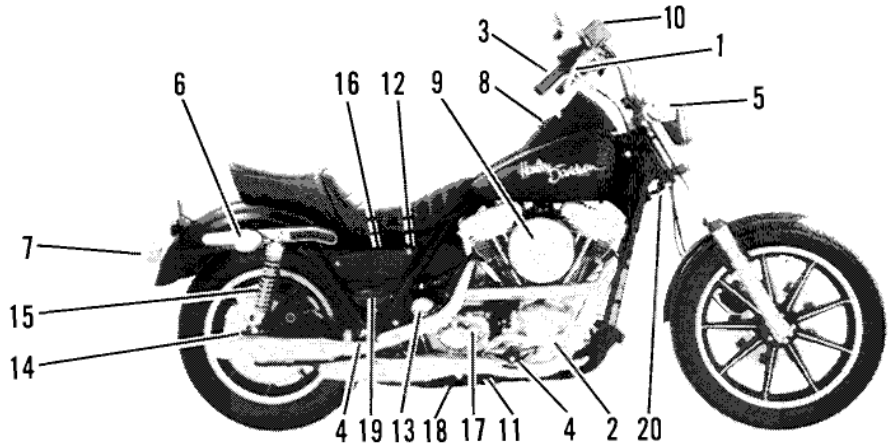
2867



1. Clutch handlever
2. Gear shifter
3. Footrest(s)
4. Horn
5. Headlamp
6. Front turn signal and running lamp
7. Rear turn signal lamp
8. Jiffy stand
9. Ignition/light switch
10. Carburetor choke knob
11. Engine oil filter
12. Primary chain cover
13. Rear axle adjuster
14. Rear sprocket and drive
15. Timing inspection hole plug
16. Voltage regulator
17. Ignition coil
18. Ignition module
19. Fuel supply valve
20. Primary chain inspection cover
21. Clutch inspection cover
22. Primary drain plug
23. Oil level sight gauge
24. Oil tank drain hose

FXR — Left Side View

2871



1. Front brake handlever
2. Rear brake pedal
3. Throttle control grip
4. Footrest(s)
5. Front turn signal and running lamp
6. Rear turn signal lamps
7. Tail/stop lamp
8. Fuel filler cap
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Battery (under seat)
17. Transmission fill plug
18. Transmission drain plug
19. Rear brake fluid reservoir
20. Fork lock brackets

FXR — Right Side View

NOTES

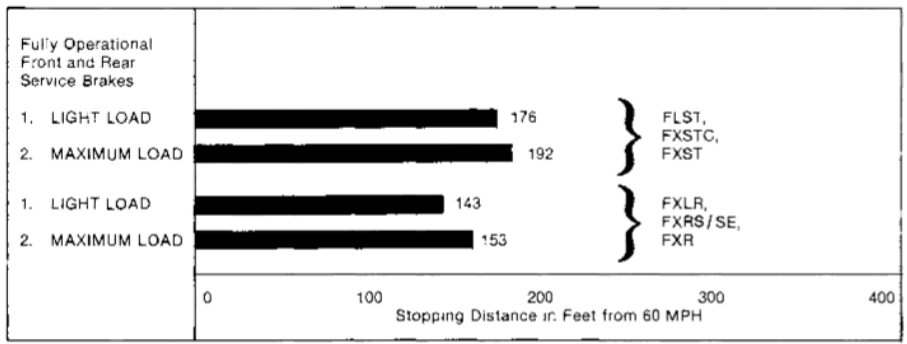
STOPPING DISTANCE

Description of vehicle: Harley-Davidson FLST, FXST/C, FXLR, FXRS/SE and FXR models.

Required by Federal Consumer Information Regulations.

Notice: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

These figures indicate braking performance that can be met or exceeded by the vehicle to which it applies, without locking the wheels, under different conditions of loading.



1. Light Load Vehicle Weight includes 200 lb. driver - no accessories.
2. Maximum Loaded Vehicle Weight includes 300 lb. driver and passenger load plus full accessory equipment.

DIMENSIONS (in.)

	FLST	FXLR	FXST /C	FXRS *(SE)	FXR/ FXRS
Wheel Base	62.5	63.2	66.3	64.7	63.13
Overall Length	93.8	91.63	94.3	93.2	91.65
Overall Width	38.0	31.0	29.0	31.0	31.0
Overall Height	49.0	48.0	47.0	50.0	48.0
Saddle Height	26.5	26.5	26.12	27.50	26.50
Ground Clearance	5.3	5.25	5.12	6.0	5.25

WEIGHT (lbs.)

	FLST	FXLR	FXST /C	FXRS *(SE)	FXR/ FXRS
DRY WEIGHT (as shipped from the factory)	650	575	618	585	575
GVWR	1085	1085	1085	1085	1085
GAWR — Front	390	390	390	390	390
GAWR — Rear	695	695	695	695	695

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are given on a label located on the front frame downtube.

CAPACITIES (U.S.)

	FLST	FXST/C	FXR FXRS *(SE) FXLR
Fuel Tank (gallons)			
Total	4.2	5.2	3.8
Reserve	0.5	1.2	0.4
Oil Tank (Quarts) w/filter	3	3	3.0
Transmission (Pints)	1	1	1
Front Fork — Each (Ounces)	7.75	11.0	6
Primary Chaincase (Quarts)	1.5	1.5	1.5

ENGINE

Number of Cylinders 2
Type ..... 4-Cycle, 45 Degree V-Type
Compression Ratio ..... 8.5 to 1

Horse power — rpm	Bore in. (mm)	Stroke in. (mm)	Displacement cu. in. (cc)	Torque lb-ft — rpm
69/5000	3.498 (88.8)	4.25 (108.0)	81.6 (1338.6)	82/3600

*(SE) Sport Edition

IGNITION SYSTEM

Spark Timing	Start	5° BTDC
	Fast Idle	35° BTDC
	1800-2800 RPM	35° BTDC
Battery		12 Volt, 22 amp. hr.

Spark Plugs

Type	HD-5R6A
Size	14mm
Gap	0.038-0.043 in.

TRANSMISSION

Type	Constant Mesh, Foot Shift
Speeds	5 Forward

NUMBER OF SPROCKET TEETH

Engine	24
Clutch	37
Transmission	32
Rear Wheel	70

OVERALL GEAR RATIOS

First (Low) Gear	10.93	Third Gear	5.40
Second Gear	7.45	Fourth Gear	4.16
		Fifth Gear	3.37

TIRE DATA

WARNING

For your own personal safety, tires, rims and air valves must be correctly matched to wheel rims. See your Harley-Davidson dealer. Mismatching tires, tubes, rims and air valves may result in damage to the tire bead during mounting or may allow the tire to slip on the rim, possibly causing tire failure. In addition, using tires other than those specified may adversely affect motorcycle stability. Use only tube tires on all Harley-Davidson laced (wire spoke) wheels and tubeless type tires on all Harley-Davidson cast and disc wheels. Protective rubber rim strips must be used with tube type tires when mounted on laced (wire spoked) wheels. Tire sizes are molded on the tire sidewall. Tube sizes are printed on the tube.

1987 DUNLOP TIRES ONLY		TIRE PRESSURE PSI (COLD)	
		FRONT	REAR
Solo Rider	FLST	36	36
Rider & one passenger	FLST	36	40
Solo Rider	FXST/C	30	32
Rider & one passenger	FXST/C	30	32
Solo Rider	FXLR	30	36
Rider & one passenger	FXLR	30	40
Solo Rider	FXRS/SE, FXR	30	36
Rider & one passenger	FXRS/SE, FXR	30	40

WARNING

Maximum inflation pressure must not exceed specification on tire sidewall.

FUEL

Use a good quality leaded or unleaded gasoline (89 pump octane or higher). Octane rating is usually found on the pump.

WARNING

Fill fuel tank slowly to prevent spillage. Do not overfill. Do not fill above the bottom of filler neck insert. Leave air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow gasoline through the filler cap onto surrounding areas.

Todays service station pumps are increasingly of the higher capacity variety. With the high flow of gasoline into a motorcycle tank, air entrapment and pressurization is a possibility. The pressurized air may force gasoline to escape through whatever opening is available within the filler tube. This may not only soil clothing, but may create a potential fire hazard.

BULB CHART — FLST, FXST/C

LAMP DESCRIPTION (ALL LAMPS 12 V)	NUMBER OF BULBS REQUIRED	CURRENT DRAW (amperage)	HARLEY-DAVIDSON PART NUMBER
Headlamp			
FLST	1	3.9	67713-86
FXST/C	1	3.9	67698-81A
Tail and Stop Lamp	1		68165-64
Tail Lamp		0.59	
Stop Lamp		2.1	
Instrument Lamps			
High Beam Indicator	1	0.04	68597-86
Oil Pressure Signal	1	0.08	68489-86
Neutral Indicator		0.08	68574-86
Turn Signal Indicator		0.08	68468-86
Speedometer	1	0.27	71090-64
Turn Signal Lamps			
Front	2	2.1	68165-64
Rear	2	2.1	68572-64A
Fender Tip Lamps — FLST	2	0.5	53439-79

BULB CHART — FXLR, FXRS/SE, FXR

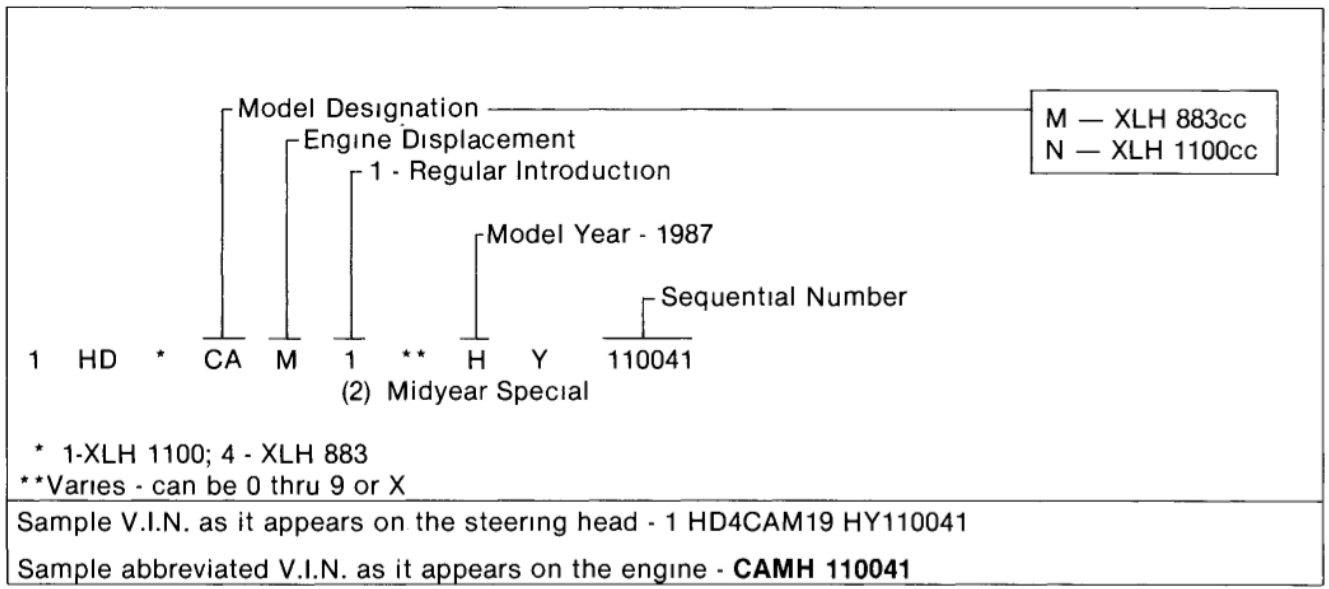
LAMP DESCRIPTION (ALL LAMPS 12 V)	NUMBER OF BULBS REQUIRED	CURRENT DRAW (amperage)	HARLEY-DAVIDSON PART NUMBER
Headlamp	1		67697-81
High Beam		4.69	
Low Beam		4.29	
Tail and Stop Lamp	1		68165-64
Tail Lamp		0.59	
Stop Lamp		2.1	
Turn Signal Lamps			
Front	2	2.1	68165-64
Rear	2	2.1	68572-64A
Instrument Lamps			
Turn Signal Indicator	2	0.27	68465-83
High Beam Indicator	1	0.27	70021-83
Neutral Indicator	1	0.80	68574-83
Oil Pressure Indicator	1	0.80	68489-83
Speedometer	1	0.27	71090-64
Tachometer	1	0.27	71090-64
Fuel Gauge	1	0.12	71099-74

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

The full 17 digit serial, or Vehicle Identification Number (V.I.N.) is stamped on the steering head and on a label located on the right front frame downtube. An abbreviated V.I.N. is stamped on the right side crankcase between the cylinders.

NOTE

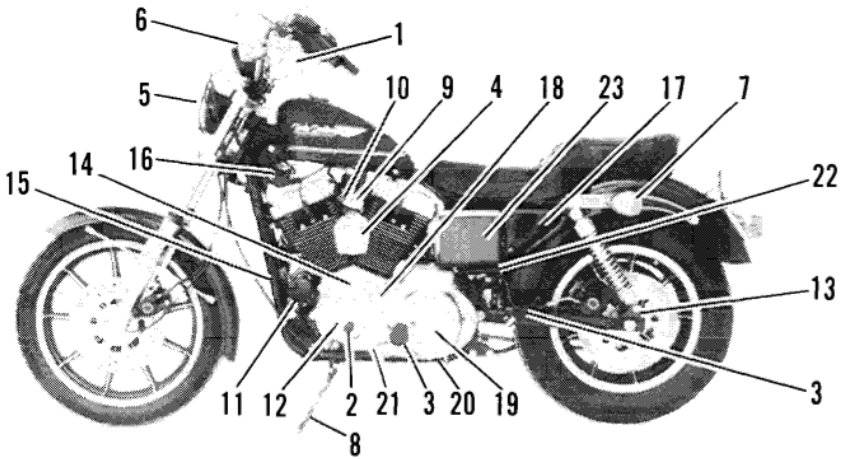
Always give the Vehicle Identification Number when ordering parts or making any inquiry about your motorcycle.



Sample V.I.N. as it appears on the steering head - 1 HD4CAM19 HY110041

Sample abbreviated V.I.N. as it appears on the engine - **CAMH 110041**

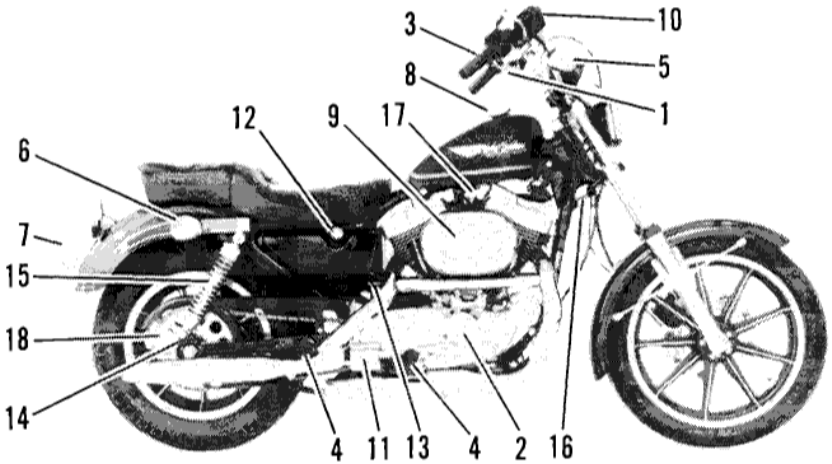
2817



1. Clutch handlever
2. Gear shifter
3. Footrest(s)
4. Horn
5. Headlamp
6. Front turn signal and running lamp
7. Rear turn signal lamp
8. Jiffy stand
9. Ignition/light switch
10. Carburetor choke knob
11. Engine oil filter
12. Primary chain cover
13. Rear axle adjuster
14. Timing inspection hole plug
15. Voltage regulator
16. Ignition coil
17. Ignition module
18. Primary chain inspection and fill plug
19. Clutch inspection plug
20. Primary and transmission drain plug
21. Primary/transmission level plug
22. Engine oil tank drain plug
23. Battery

XLH 1100 — Left Side View

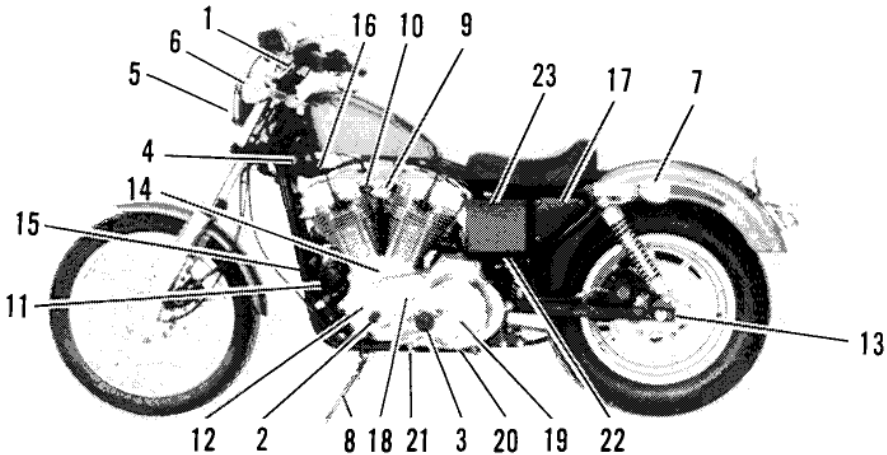
2816



1. Front brake handlever
2. Rear brake pedal
3. Throttle control grip
4. Footrest(s)
5. Front turn signal and running lamp
6. Rear turn signal lamps
7. Tail/stop lamp
8. Fuel filler cap
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder and reservoir
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Fork lock brackets
17. Fuel supply valve
18. Sprocket and rear drive
19. Engine oil tank drain (under side cover)

XLH 1100 — Right Side View

2815



1. Clutch handlever
2. Gear shifter
3. Footrest(s)
4. Horn
5. Headlamp
6. Front turn signal and running lamp
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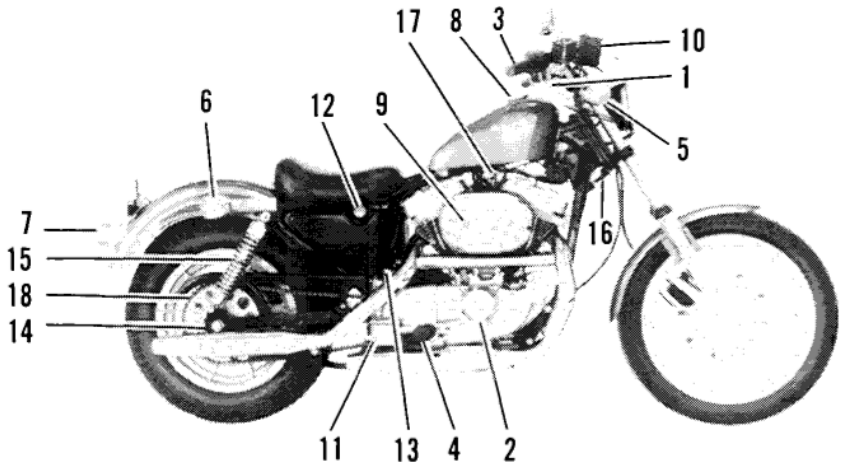
8. Jiffy stand
9. Ignition/light switch
10. Carburetor choke knob
11. Engine oil filter
12. Primary chain cover
13. Rear axle adjuster
14. Timing inspection hole plug
15. Voltage regulator
16. Ignition coil
17. Ignition module
18. Primary chain inspection and fill plug
19. Clutch inspection plug
20. Primary and transmission drain plug
21. Primary/transmission level plug
22. Engine oil tank drain plug
23. Battery

XLH 883 — Left Side View

2814



1. Front brake handlever
2. Rear brake pedal
3. Throttle control grip
4. Footrest(s)
5. Front turn signal and running lamp
6. Rear turn signal lamps
7. Tail/stop lamp
8. Fuel filler cap
9. Carburetor/air cleaner
10. Front brake master cylinder and reservoir
11. Rear brake master cylinder and reservoir
12. Engine oil tank fill plug and dipstick
13. Electric starter motor
14. Rear axle adjuster
15. Shock absorber(s)
16. Fork lock brackets
17. Fuel supply valve
18. Sprocket and rear drive
19. Engine oil tank drain (under side cover)

XLH 883 — Right Side View

NOTES

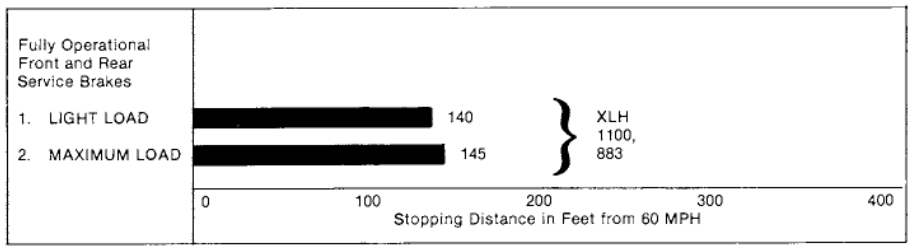
STOPPING DISTANCE

Description of vehicle: Harley-Davidson 1987 XLH 1100, 883 models.

Required by Federal Consumer Information Regulations.

Notice: The information presented represents results obtainable by skilled drivers under controlled road and vehicle conditions, and the information may not be correct under other conditions.

These figures indicate braking performance that can be met or exceeded by the vehicle to which it applies, without locking the wheels, under different conditions of loading.



1. Light Load Vehicle Weight . . . . . includes 200 lb. driver - no accessories.
2. Maximum Loaded Vehicle Weight . . . . . includes 300 lb. driver and passenger load plus full accessory equipment.

DIMENSIONS (in.)

	XLH 1100	XLH 883
Wheel Base	60	60
Overall Length	87.5	87.5
Overall Width	33	32
Road Clearance	6.75	6.75
Overall Height	49.75	47.5
Saddle Height	29.0	28.5

WEIGHT (lbs.)

	XLH 1100	XLH 883
DRY WEIGHT (as shipped from the factory)	461	461
GVWR	900	900
GAWR — Front	320	320
GAWR — Rear	580	580

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are given on a label located on the frame steering head.

CAPACITIES (U.S.)

Fuel Tank (gallons)
- Total ..... 2.25 U.S.
- Reserve ..... 0.25 U.S.

Oil Tank (Quarts) 3
Transmission (Pints) 1½
Front Fork — Each (Ounces) 6.40

ENGINE

Number of Cylinders 2
Type ..... 4-Cycle, 45 Degree V-Type
Compression Ratio ..... 9.0 to 1

Horse power — rpm	Bore in. (mm)	Stroke in. (mm)	Displacement cu. in. (cc)	Torque lb-ft — rpm
XLH 1100				
62/6000	3.350 (84)	3.812 (96.8)	67.2 (1100)	63 @ 4000
XLH 883				
52/6000	3.000 (76)	3.812 (96.8)	53.9 (883)	53 @ 4250

IGNITION SYSTEM

Spark Timing	Start	5° BTDC
	Fast Idle	40° BTDC
	950 RPM	30° BTDC
Battery		12 Volt, 19 amp. hr.

Spark Plugs

Type	HD-6R12
Size	12mm
Gap	0.038-0.043 in.

TRANSMISSION

Type	Constant Mesh, Foot Shift
Speeds	4 Forward

NUMBER OF SPROCKET TEETH

Engine	34
Clutch	59
Transmission	21
Rear Wheel	48

OVERALL GEAR RATIOS

First (Low) Gear	9.44	Third Gear	4.96
Second Gear	6.58	Fourth Gear	3.97

TIRE DATA

WARNING

For your own personal safety, tires, rims and air valves must be correctly matched to wheel rims. See your Harley-Davidson dealer. Mismatching tires, tubes, rims and air valves may result in damage to the tire bead during mounting or may allow the tire to slip on the rim, possibly causing tire failure. In addition, using tires other than those specified may adversely affect motorcycle stability. Use only tube tires on all Harley-Davidson laced (wire spoke) wheels and tubeless type tires on all Harley-Davidson cast and disc wheels. Protective rubber rim strips must be used with tube type tires when mounted on laced (wire spoked) wheels. Tire sizes are molded on the tire sidewall. Tube sizes are printed on the tube.

1987 DUNLOP TIRES ONLY		TIRE PRESSURE PSI (COLD)	
		FRONT	REAR
Solo Rider	XLH 1100, 883	26	30
Rider & one passenger	XLH 1100, 883	26	32

WARNING

Maximum inflation pressure must not exceed specification on tire sidewall.

FUEL

Use a good quality unleaded gasoline (89 pump octane or higher). Octane rating is usually found on the pump.

WARNING

Fill fuel tank slowly to prevent spillage. Do not overfill. Do not fill above the bottom of the filler neck insert. Leave air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow gasoline through the filler cap onto surrounding areas.

Todays service station pumps are increasingly of the higher capacity variety. With the high flow of gasoline into a motorcycle tank, air entrapment and pressurization is a possibility. The pressurized air may force gasoline to escape through whatever opening is available within the filler tube. This may not only soil clothing, but may create a potential fire hazard.

BULB CHART — XLH

LAMP DESCRIPTION (ALL LAMPS 12 V)	NUMBER OF BULBS REQUIRED	CURRENT DRAW (amperage)	HARLEY-DAVIDSON PART NUMBER
Headlamp	1	3.9/2.73	67698-81A
Tail and Stop Lamp	1		68165-64
Tail Lamp		0.59	
Stop Lamp		2.1	
Turn Signal Lamps			
Front	2	2.1	68407-86
Rear	2	2.1	68572-64A
Instrument Lamps			
Speedometer	1	0.27	71090-64
High Beam Indicator	1	0.04	68597-86
Neutral Indicator	1	0.08	68574-86
Oil Pressure Signal	1	0.08	68489-86

NOTES

SAFE OPERATING RULES

Before operating your new motorcycle it is your responsibility to read and follow operating and maintenance instructions in this manual, and follow these basic rules for your personal safety.

- Know and respect the rules of the road (See RULES OF THE ROAD). Read and follow the advice in the MOTORCYCLE SAFETY booklets that come with this Owner's Manual. You should also read and know the contents of the MOTORCYCLE HANDBOOK for your state.

- Use only genuine Harley-Davidson approved parts and accessories.

- Gasoline is extremely flammable and is explosive under certain conditions. Refuel in a well ventilated area with the engine turned off. Do not smoke or allow open flames or sparks when refueling or servicing the fuel system. Always close the fuel supply valve when the engine is not running to prevent flooding of the carburetor and the surrounding area with gasoline. Do not fill fuel tank above the bottom of the filler neck insert. Leave air space to allow for fuel expansion.

- Motorcycle exhaust contains poisonous carbon monoxide gas. Do not inhale exhaust gases and never run the engine in a closed garage or confined area.

- Before starting engine, check for proper operation of brake, clutch, shifter, throttle controls, correct fuel and oil supply.

- A new motorcycle must be operated according to special break-in procedure. (See BREAK-IN — THE FIRST 500 MILES.)

- Operate motorcycle only at moderate speed and out of traffic until you have become thoroughly familiar with its operation and handling characteristics under all conditions. If you are an inexperienced rider we recommend that you obtain information and formal training in correct motorcycle riding technique.

- Do not exceed the legal speed limit or drive too fast for existing conditions. Always reduce speed when poor driving conditions exist. High speed increases the influence of any other condition affecting stability and possibility of loss of control.

- Pay strict attention to road surfaces and wind conditions. Any two wheeled vehicle may be subject to upsetting forces. Wind blasts from passing trucks, holes in the pavement, rough road surfaces, rider control error, etc., may influence the handling characteristics of your motorcycle. Should this happen, reduce speed and guide the motorcycle with a relaxed grip to a controlled condition. Do not brake abruptly or force the handlebar because this may aggravate an unstable condition. New riders should gain experience under various conditions while driving at moderate speeds.

- Operate your motorcyle defensively. Remember a motorcycle does not afford the same protection as an automobile in an accident. One of the most common accident situations occurs when the driver of the other vehicle fails to see or recognize a motorcycle and turns left into the on-coming motorcyclist. Operate only with headlamp on .

- Wear an approved helmet, clothing and footgear suited to motorcycle riding. Bright or light colors are best for greater visibility in traffic, especially at night. Avoid loose, flowing garments and scarves.

- The exhaust pipes and mufflers get very hot when the engine is running and remain too hot to touch for some time after the engine is turned off. Wear clothing that will completely cover the legs when riding. Avoid contact with the exhaust system.

- When carrying passengers, it is your responsibility to instruct them on proper riding procedures. (See Riding Tips for Motorcyclist included in your Owner's Kit.)

- Do not allow others under any circumstances to operate your motorcycle unless you are certain that they are experienced, licensed riders and are familiar with the operation of your particular motorcycle.

- When leaving motorcycle unattended, lock the steering head and remove ignition key from switch. Protect your motorcycle against theft.

- Safe motorcycle operation requires mental awareness and good judgment combined with a defensive driving attitude. Don't allow fatigue, alcohol or drugs to endanger your safety or the safety of others. Vehicles equipped with a sound system should have the volume adjusted to a non-distracting level before operating vehicle.

- Maintain your motorcycle in proper operating condition in accordance with the MAINTENANCE INTERVALS in this Owner's Manual. Particularly im-

portant to motorcycle stability is the tire inflation pressure, tread condition, and proper adjustment of wheel bearings and steering head bearings. Do not operate motorcycle with a loose, worn or damaged steering system or front and rear suspension system because handling will be adversely affected. Contact your dealer for repair of steering or suspension system wear or damage.

- Be sure all equipment required by federal, state, and local law is installed and in good operating condition.

- Maintain proper tire pressure and wheel and tire balance. Improper tire and wheel balance and abnormal tread wear can cause poor handling. Inspect your tires periodically. Replace tires with approved tires only. (See your Harley-Davidson dealer.)

- Do not exceed the Gross Vehicle Weight Rating of your motorcycle. Maximum allowable vehicle weights with rider and passenger are specified on the Identification Label affixed to your vehicle. Overloading, particularly at the rear of a motorcycle, can cause instability. Carefully check any approved accessories for the maximum weight capacities.

- Do not tow a trailer.

- Regularly inspect shock absorbers and front forks. Worn parts can affect stability. If you have questions as to how these should function, see your Harley-Davidson dealer.

- Keep hazardous substances such as brake and battery fluids and cleaning compounds away from eyes and skin and out of mouth. Keep all hazardous substances out of the reach of children.

- Consult your dealer regarding any questions you may have about your motorcycle. Should any abnormality occur in the operation of your motorcycle, immediately contact your Harley-Davidson dealer for correction of the problem. Continued operation of a misperforming motorcycle will probably aggravate an initial problem, cause repairs to be more costly and perhaps affect your personal safety.

- The front and rear guards may provide limited leg protection and cosmetic vehicle protection under unique circumstances (i.e., fall to the side while stopped, very slow speed slide). It is not intended to provide protection in a collision with another vehicle or other object.

RULES OF THE ROAD

- Keep on the right side of the road centerline when meeting other vehicles coming in the opposite direction. Ride to left of center of your lane to avoid possible oily pavement.

- Always sound your horn, actuate your turn signals and pass on the left side when passing other vehicles going in the same direction. Never try to pass another vehicle going in the same direction at street intersections, on curves, or when going up or down a hill.

- At street intersections give the right-of-way to the vehicle on your right. Do not presume too much when you have the right-of-way; the other driver may not know you have it.

- Always signal when preparing to stop, turn, or pass.

- All traffic signs, including those used for the control of traffic at intersections, should be obeyed promptly and to the letter. SLOW DOWN signs near schools and caution signs at railroad crossings should always be observed and your actions governed accordingly.

- When intending to turn to the left, give signal at least 100 feet before reaching the turning point. Move over to the centerline of the street (unless local rules require otherwise), slow down, enter the intersection of the street and then turn carefully to the left.

- Never anticipate a traffic light. When a change is indicated from GO to STOP (or vice versa) in the traffic control systems at intersections, await the change.

- While turning either right or left, watch for pedestrians as well as vehicles.

- Do not leave the curb or parking area without signaling and being sure that your way is clear to enter moving traffic. A moving line of traffic has the right-of-way.

- Be sure that your license plate is installed in the position specified by law and that it is clearly visible under all conditions. Keep it clean.

- Ride at a safe speed — a speed consistent with the type of highway you are on, and always note whether the road is dry, oily, icy or wet. Each varying condition on the highway means adjusting your speed and driving habits accordingly.

ACCESSORIES AND CARGO

WARNING

The addition of accessories and additional weight to this motorcycle can affect the motorcycle's stability, handling characteristics, and safe operating speed. Because Harley-Davidson cannot test and make specific recommendations concerning every accessory or combination of accessories sold, the rider must be responsible for safe operation of the motorcycle when installing accessories or carrying additional weight. The following guidelines should be used when equipping a motorcycle and carrying passengers and cargo.

1. **The Gross Vehicle Weight Rating (GVWR) is shown on the information plate located on the frame steering head. GVWR is the sum of the weight of the motorcycle and accessories and the maximum weight of the rider, passenger and cargo that may be safely carried. Do not tow a trailer with this motorcycle. Do not exceed the Gross Vehicle Weight Rating as indicated on the frame label. Overloading the motorcycle or towing a trailer will cause unstable handling and reduced braking efficiency which could result in an accident and personal injury.**

2. **Keep cargo weight concentrated close to the motorcycle and as low as possible to minimize the change in the motorcycle's center of gravity. Distribute weight evenly on both sides of the vehicle and do not load bulky items too far behind the rider or add weight to the handlebars or front forks. Do not exceed 15 pounds maximum load on each saddlebag or 25 pounds maximum in Tour Pak.**

3. **Luggage racks are designed for lightweight items — do not overload racks.**

4. **Be sure cargo is secure and will not shift while riding. Recheck load periodically.**

5. **Accessories that change the operator's riding position may increase reaction time and affect handling.**

6. **Additional electrical equipment may overload the motorcycle's electrical system and cause an unsafe operating condition.**

7. **The front and rear guard may provide limited leg protection and cosmetic vehicle protection under unique circumstances (i.e., fall to the side while stopped, very slow speed slide). It is not intended to provide protection in a collision with another vehicle or other object.**

8. Large surfaces such as fairings, windshields, backrests, and luggage racks can adversely affect handling. These items should be designed and approved by Harley-Davidson specifically for the motorcycle model and be properly installed.

WARNING

The FLST is a special edition, custom motorcycle. It has been carefully designed and engineered to be ridden in the original configuration. DO NOT alter the handling characteristics of this motorcycle by adding weight, such as fairings or radios. Do not attempt "custom" alterations, such as extended forks on the front end.

The above constitute misuse of this vehicle. Misuse of this vehicle could adversely affect handling characteristics, posing a potential hazard to the rider.

NOTE

This Owner's Manual covers the 1987 Harley-Davidson motorcycles. Some features explained are unique to individual model configurations. These features may be available as accessories for your Harley-Davidson vehicle. See your Harley-Davidson dealer for a complete list of accessories that will fit your model.

NOTE

Refer to the side view photographs in the front of the manual to locate the items discussed in this manual.

IGNITION/LIGHT KEY SWITCH

See Figure 1 and Table I. The ignition/light key switch controls electrical functions of the motorcycle.

CAUTION

To prevent theft of your motorcycle, always lock ignition and remove key when motorcycle is left unattended.

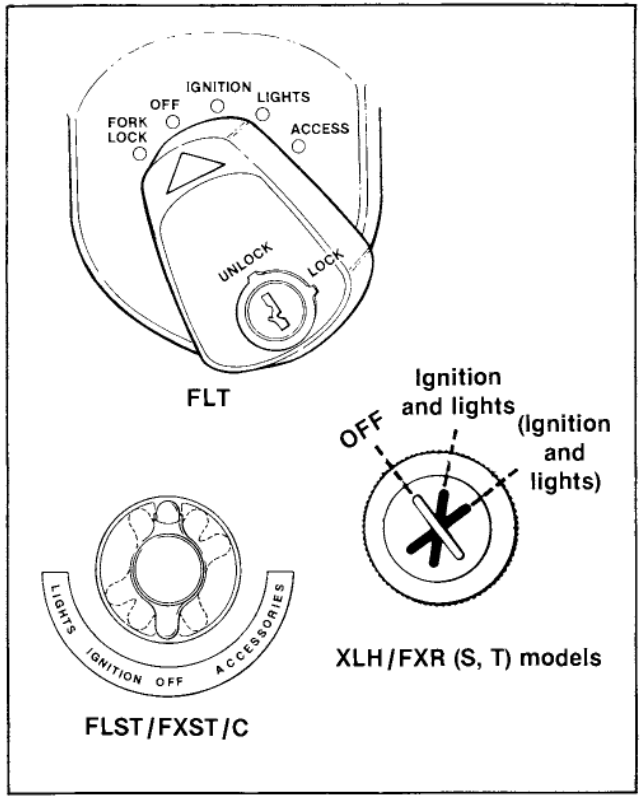


Figure 1. Ignition/Light Key Switch

Table I. Ignition/Light Switch

MODEL	LOCATION	SWITCH POSITIONS/FUNCTION
FLT	At bottom of instrument panel	To unlock the switch and the front fork, insert the key and turn it clockwise. Press the lever down and turn it to the OFF position. Remove the key after the switch is unlocked. To lock the fork, push down on lever and turn it to the left, to the FORK LOCK position. Turn the key to the right, to the LOCK position. Both the ignition and lights operate when the switch is in the IGNITION and LIGHTS position as required by law in some localities. The ACCESS position operates accessories only.
FXR XLH	Below fuel tank	OFF — Key may be removed, ignition and lights off. IGNITION — Ignition and lights are ON in both clockwise positions.
FXST/C FLST	On fuel tank instrument panel	OFF — Ignition, lights and accessories off. LIGHT and IGNITION — Ignition and lights are ON. ACCESSORIES — Accessories are ON. Switch is locked or unlocked by lifting switch cover, inserting key and turning key counterclockwise to lock, clockwise to unlock. Key may be removed in locked or unlocked position.

ELECTRIC STARTER

See Figure 2. The electric starter switch (4) is located on the right handlebar control. Put engine stop switch (5) in RUN position and transmission in neutral. Turn ignition ON and push the START switch to operate starter motor.

ENGINE STOP SWITCH

See Figure 2. Engine stop switch (5) is located on the right handlebar control. The engine stop switch turns ignition ON or OFF and should be used at all times to stop the engine, especially in an emergency. To stop engine, push switch to position marked OFF.

NOTE

Switch must be in RUN position to operate engine.

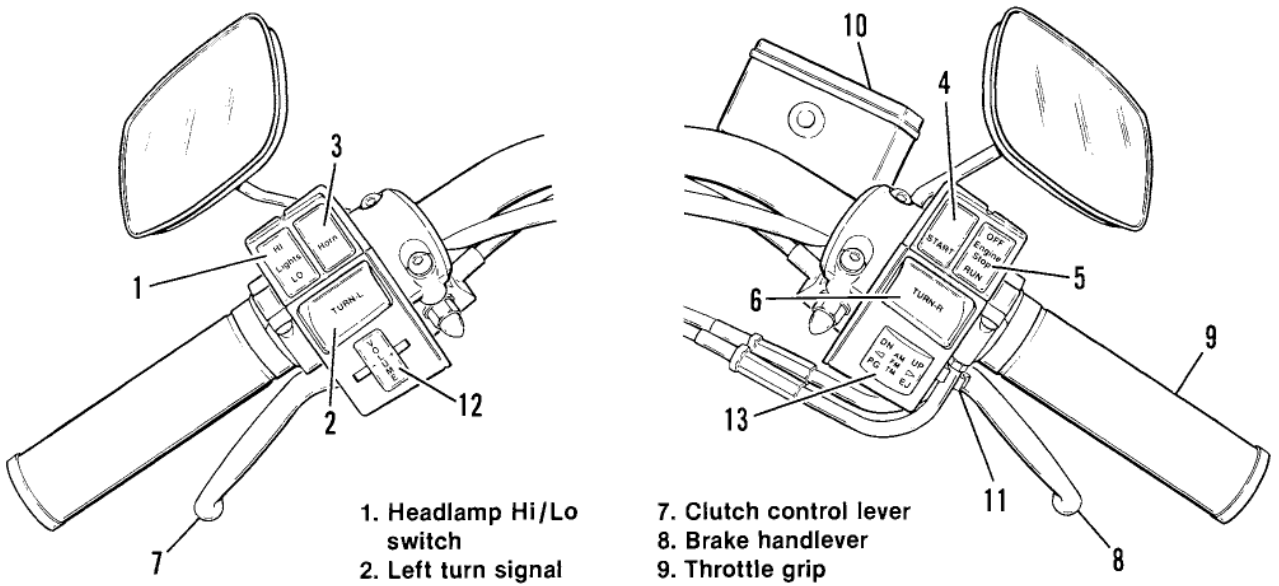
THROTTLE CONTROL GRIP

See Figure 2. The throttle control grip (9) is located on the right handlebar control. Turn control grip clockwise to close throttle; turn control grip counterclockwise to open throttle.

A spring loaded friction adjusting screw is located at the bottom of the throttle grip clamp. Turn the knob (11) outward so throttle returns to idle position when hand is removed from throttle grip. Turn the knob inward to increase friction on grip as described to provide a damping effect on throttle motion. This reduces rider fatigue on long trips, where steady speeds are maintained. The throttle friction screw **should not** be used under normal stop and go operating conditions.

WARNING

Do not overtighten the friction adjustment screw. Operation with the friction screw overtightened is not recommended because of the possible hazard involved when the engine will not return to idle automatically in an emergency.



1. Headlamp Hi/Lo switch
2. Left turn signal switch
3. Horn switch
4. Starter switch
5. Engine stop switch
6. Right turn signal switch
7. Clutch control lever
8. Brake handlever
9. Throttle grip
10. Master cylinder
11. Friction screw knob
12. Volume control*
13. Function control*

* If equipped

Figure 2. Handlebar Controls

CHOKE

See Figure 3. The choke system is composed of a choke valve and a fast idle cam. The fast idle cam increases engine speed as the choke knob is pulled out. By moving the choke knob, the choke valve and high idle can be adjusted for a cold or warm engine.

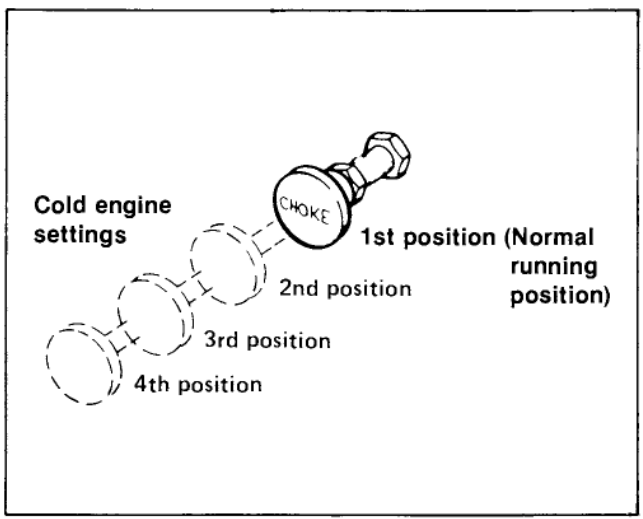


Figure 3. Setting the Choke

The choke knob has four detented positions. In the first position, choke knob all the way in, the choke plate is fully open and the engine operates at low idle speed.

When the choke knob is pulled out to the second position, the choke plate is fully open and the fast idle cam moves the throttle valve to the high idle position.

In the third position, the choke plate is half open and the throttle plate opens more.

With the choke knob all the way out, the choke plate is fully closed for cold engine starting.

CLUTCH HAND LEVER

WARNING

Be sure fingers are not positioned between hand control levers and handlebar grips or operation of vehicle could be impaired.

See Figure 2. The clutch hand lever (7) is located on the left handlebar where it is operated with the fingers of the left hand. Pull lever in against handlebar grip to disengage clutch; release the lever slowly to its outward position to engage clutch.

GEAR SHIFTER

The gear shifter is located on the left side, where it is operated with the toe of the left foot.

NOTE

Some motorcycles have a "heel-toe" shifter lever. With this shift lever, upshifts can be made with the heel of the left foot. Downshifts can be made with the toe.

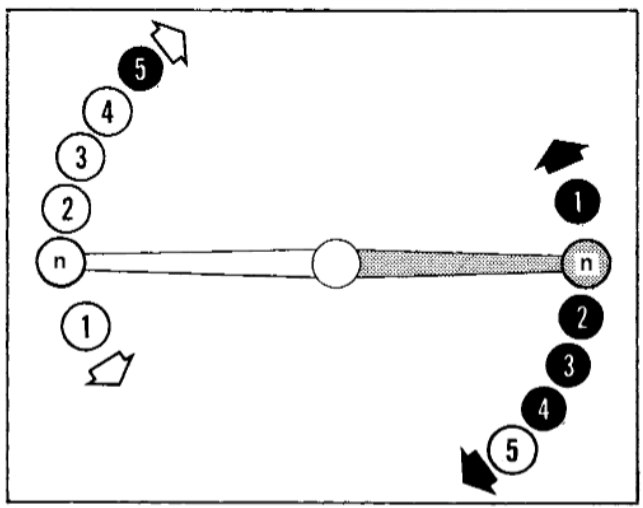


Figure 4. Gear Shifter

Pushing lever all the way down (full stroke) shifts transmission to the next lower gear, while lifting lever all the way up (full stroke) shifts transmission into the next higher gear. The operator must release lever after each gear change to allow lever to return to its central position before another gear change can be made.

Neutral position is between first (low) and second gears. First gear is the last gear position that can be found by pushing lever full strokes downward. To shift from first gear to neutral, lift lever half its full stroke.

NOTE

The XLH 4-speed transmission can be shifted to neutral from second gear.

NOTE

The mechanism on 5-speed transmissions does not permit shifting to neutral from second gear. Neutral can only be engaged from first gear.

With the motorcycle standing still and the engine not running, it usually will be necessary to roll the motorcycle backward and forward with the clutch fully disengaged while maintaining a slight pressure on the foot shift lever before a shift from one gear to another can be

made. Even with the engine running and the motorcycle standing still, difficulty may be experienced in shifting gears. This difficulty arises when transmission gears are not turning and shifting parts are not lined up to permit engagement. When this difficulty is experienced, *do not under any circumstances,* attempt to force the shift. The results of such abuse will be a damaged or broken shifter mechanism. Either roll the motorcycle as indicated above, or if the engine is running, engage the clutch very slightly while applying light pressure to the shifter lever to make the shift. Both of these procedures set transmission gears in motion and then the shift can be made easily. See Shifting Gears in the OPERATION section.

BRAKES

The brake pedal controls the rear wheel brake and is located on the right side where it is operated by the right foot. The brake hand lever controls the front wheel brake and is located on the right handlebar, where it is operated by the fingers of the right hand.

Brakes should be applied uniformly and gradually to prevent wheels from locking up. A balance between rear and front braking is generally best. Begin braking with the rear brake and then apply the front brake lightly as more braking force is needed.

WARNING

Do not apply either brake strongly enough to lock the wheel. This may cause the wheel to skid with possible loss of control of the motorcycle.

TURN SIGNAL SWITCHES

See Figure 2. The right handlebar turn signal switch (6) operates the right front and right rear flashing lamps. The left handlebar turn signal switch (2) operates the left front and left rear flashing lamps. Front turn signal lamps also function as running lamps.

HEADLAMP DIMMER SWITCH

See Figure 2. The headlamp dimmer switch (1) on the left handlebar controls the headlamp high and low beams.

NOTE

The beam (blue) indicator light remains lit when high beam is on.

HORN SWITCH

See Figure 2. The horn is operated by the horn switch (3) on the left handlebar control.

HAZARD WARNING FLASHER SWITCH

The hazard warning flasher switch operates all four turn signal lamps at the same time. It is located at the bottom right side of the instrument pod (FLTC) and right side of the inner fairing (FLHT/C). The hazard warning flasher will operate when the ignition switch is in the ignition, lights or access position.

PASSING LAMP SWITCH — FLT

The passing lamp switch is located at the right side of the inner fairing and energizes the two front passing lamps when the top of the rocker switch is depressed.

SOUND SYSTEM CONTROLS

See Figures 2, 5 for sound system controls. For a more detailed explanation of the sound system controls, read the Harley-Davidson Sound System Handbook.

Table 2. Sound System Controls

LEFT — Volume Control	RIGHT — Receiver/Tape Function Control
Forward — Louder (+) Back — Softer (–) *NOTE* *Set handlebar volume control to center position, control panel volume control to desired level; AVC circuit will raise or lower volume as vehicle speed increases or decreases.*	**Receiver Functions** Push **IN** — AM/FM/TM Selection **DN** — Seek/Scan (**D**ow**N** scale) **UP** — Seek/Scan (**UP** scale) **Tape Functions** Push **PG** — Change Tape direction (**Pro**Gram) **EJ** — Eject Tape (**EJ**ect)

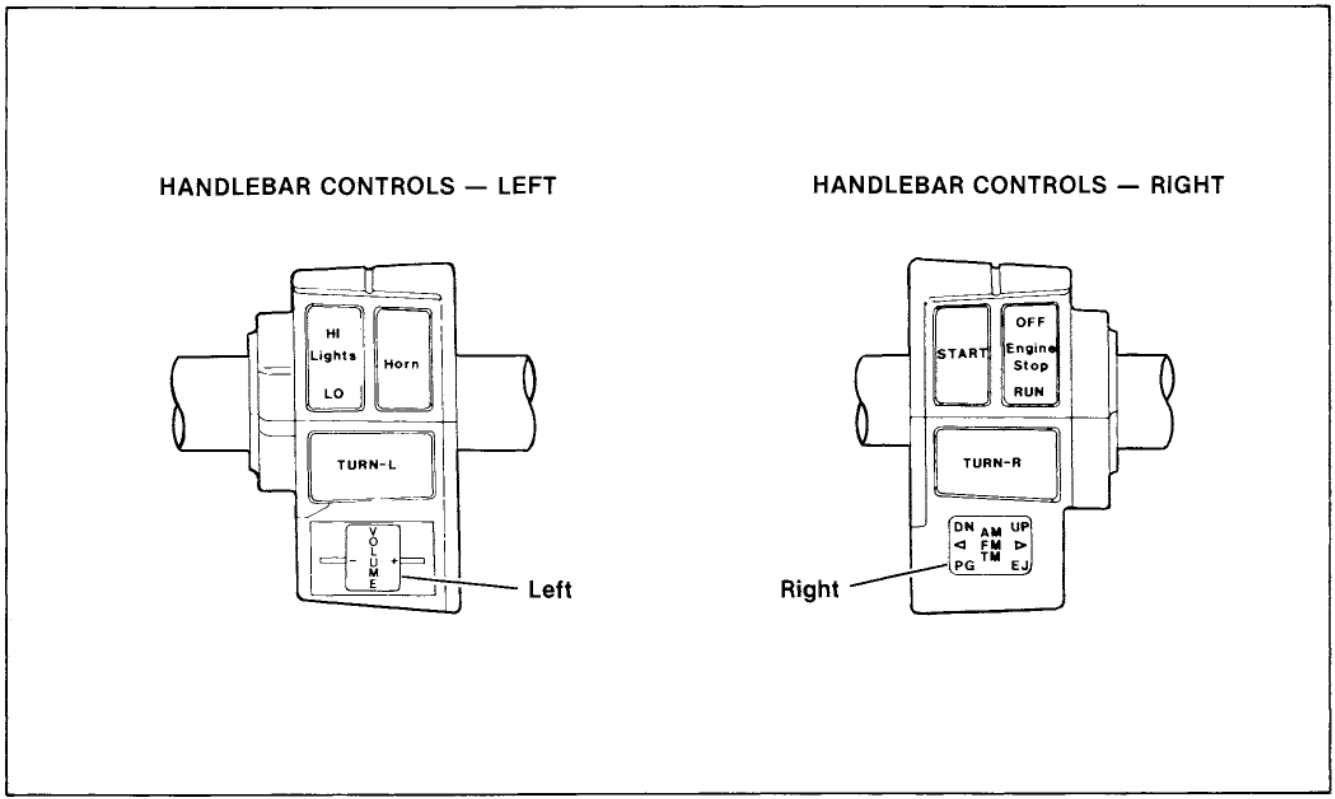


Figure 5. Sound System Handlebar Controls

INDICATOR LIGHTS

Four or five indicator lights are provided. The red OIL indicator light, when on, signals that oil is not circulating through the engine. The OIL indicator light will glow when the ignition is turned on prior to starting engine. With engine running, light should be off when engine speed is above idle. The blue BEAM indicator light, when on, signals that the high beam headlamp filament is operating. The headlamp dimmer switch on the left handlebar controls the headlamp high and low beams. The green NEUTRAL light turns on to indicate when transmission is in neutral. The yellow TURN indicator will flash when turn signals are activated. On motorcycles with two TURN indicators, the flashing indicates turn direction. Motorcycles equipped with 4-way hazard flashers will flash both turn indicators when the hazard flashers are operating.

If the oil pressure indicator light fails to go off at speeds above idling, it is usually due to an empty oil tank or to diluted oil. In freezing weather the oil feed may clog with ice and sludge, thus preventing circulation of the oil. A grounded oil signal switch wire, faulty signal switch, damaged or improperly installed check valve and/or trouble with the pump will also cause the light to remain illuminated.

CAUTION

If the oil pressure indicator light fails to go off, always check the oil supply first. If oil supply is normal and the light still does not operate normally, stop the engine at once and do not drive further until the trouble is located and the necessary repairs are made.

TACHOMETER

See Figure 6. If so equipped, the tachometer registers the engine speed in revolutions per minute (rpm).

CAUTION

Do not operate the engine above maximum safe RPM as shown in Table 6 (red zone on tachometer). Engine damage may occur. Lower the RPM by upshifting to a higher gear or reducing the amount of throttle feed.

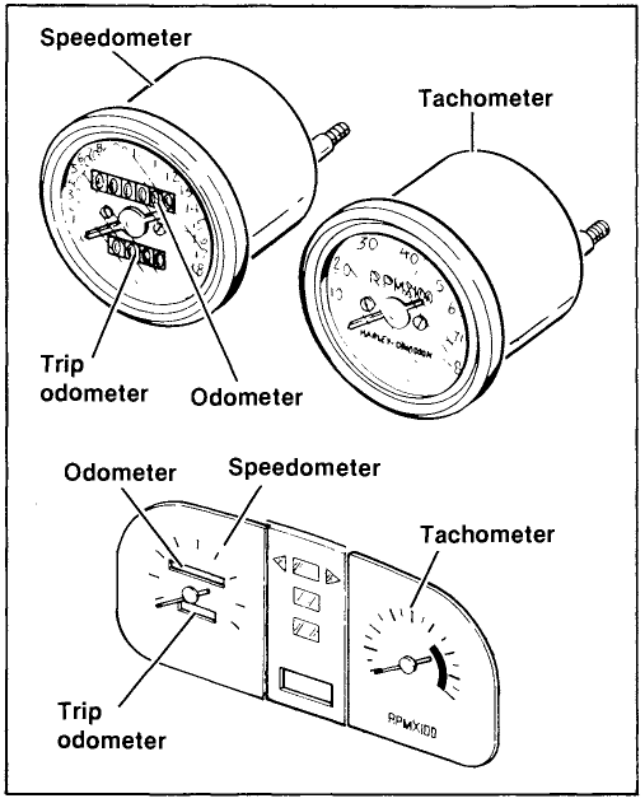


Figure 6. Speedometer, Odometer, Tachometer

SPEEDOMETER/ODOMETER

See Figure 6. The speedometer registers miles per hour of forward speed. The odometer registers the number of miles the vehicle has traveled.

WARNING

Never travel at a speed faster than the posted speed limit. Excessive speed could cause possible loss of control.

CAUTION

Never attempt to tamper with or alter the vehicle odometer. This is illegal and the speedometer will be damaged.

Use the trip-odometer to register number of miles traveled on a trip or between refueling. Use the knurled knob on the speedometer to reset the trip odometer to zero.

MIRROR

See Figure 7. Adjust the mirror(s) to clearly reflect the area behind the motorcycle.

NOTE

Adjust mirror(s) so you can see a small portion of your shoulders in each mirror. This will help you establish the relative distance of vehicles to the rear of your vehicle.

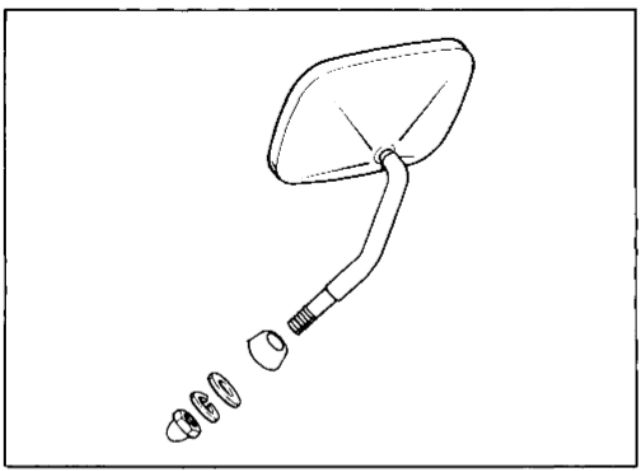


Figure 7. Mirror

OIL TEMPERATURE GAUGE

The oil temperature gauge registers the temperature of the oil in the oil tank. Normal operating oil temperature will be below 200° F. at 70° ambient temperature. The temperature of the oil will rise as outside temperature rises. Oil temperature will also vary with air flow conditions such as vehicle speed and stopping frequency. Oil temperature should not exceed 250° F. for extended periods.

OIL PRESSURE GAUGE

The oil pressure gauge registers engine oil pressure. Engine oil pressure will normally vary from 5 psi at idle speed to 12 - 15 psi at 50 mph when engine is at normal operating temperature.

VOLTMETER

The voltmeter indicates electrical system voltage. With the engine running above 1500 rpm, the voltmeter should register 13 - 14.5 volts.

CLOCK

The clock runs continually as long as there is battery power. The clock is set by pushing the reset knob inward and turning in either direction. Once the clock is properly set, release the reset knob.

FUEL GAUGE

The fuel gauge indicates the amount of fuel in the fuel tanks.

JIFFY STAND

See Figure 8. The jiffy stand is located on the left side of the motorcycle and swings outward to support the motorcycle for parking.

CAUTION

Always park the motorcycle on a level, firm surface. Vehicle weight could cause motorcycle to fall over. Cosmetic damage could occur.

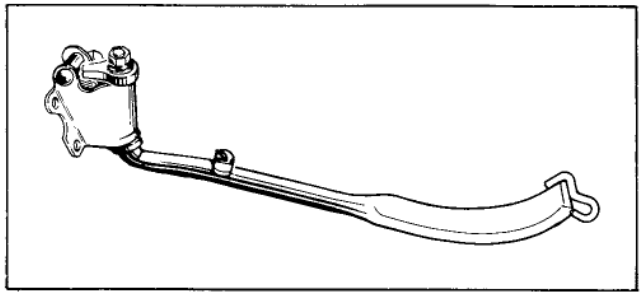


Figure 8. Jiffy Stand (Typical)

WARNING

Be sure jiffy stand is fully retracted before riding the motorcycle. If jiffy stand is not fully retracted during vehicle operation, it could contact the road surface causing a momentary disturbance before retracting. This momentary disturbance could distract the rider, possibly causing loss of vehicle control.

FORK LOCK

See Figure 9. The fork lock is located on the center of the lower front fork bracket. Turning fork to the left aligns hole in bracket with hole in steering head. A high

strength padlock is available from your dealer to lock the fork in this position. Order Part No. 45737-72A. Use of the padlock will discourage unauthorized use or theft when parking your motorcycle.

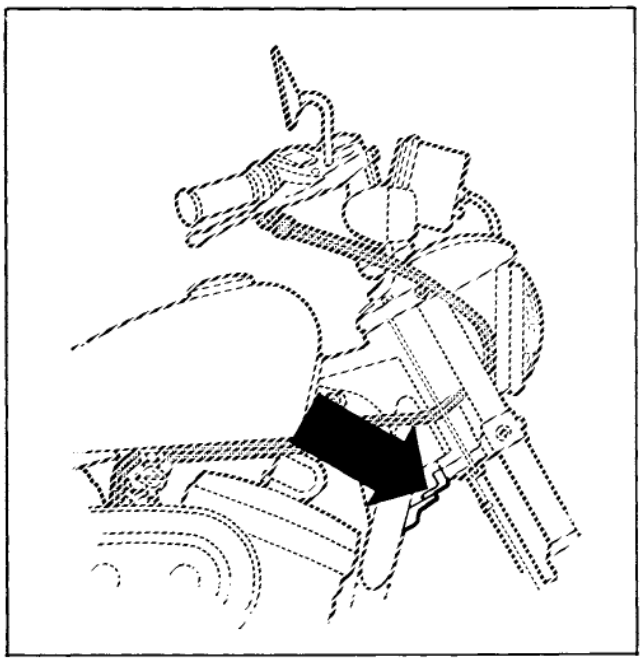


Figure 9. Fork Lock — All Models Except FLT's

NOTE

FLT models have the fork lock incorporated in the Ignition/Light switch. See Table 1, IGNITION/LIGHT SWITCH.

WARNING

Do not operate vehicle with padlock in fork lock brackets. This will restrict the vehicle's turning ability and could cause personal injury.

FUEL SUPPLY VALVE

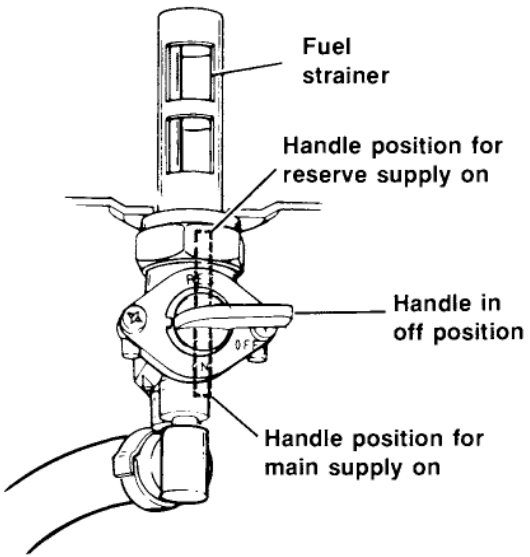
See Figure 10. The fuel supply valve is located under the fuel tank. Fuel supply to carburetor is shut off when handle is in horizontal position. Turning the handle down to vertical position turns on the main fuel supply; turning handle up to vertical position turns on reserve supply.

WARNING

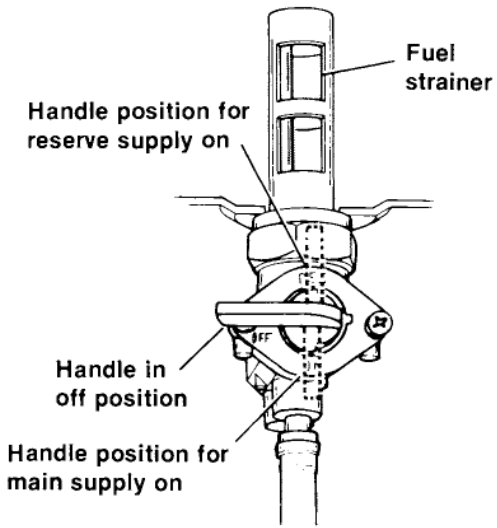
Valve should always be closed when engine is not running to prevent accidentally flooding engine or surroundings with gasoline.

NOTE

To always maintain a reserve supply, do not operate the motorcycle with the valve in the reserve (RES) position after refueling.



XLH MODELS



1340cc MODELS

Figure 10. Fuel Supply Valve

FUEL FILLER CAP (Figure 11)

To open, turn cap counterclockwise and lift up. To close turn cap clockwise until it clicks. The ratchet action of the fuel cap prevents overtightening.

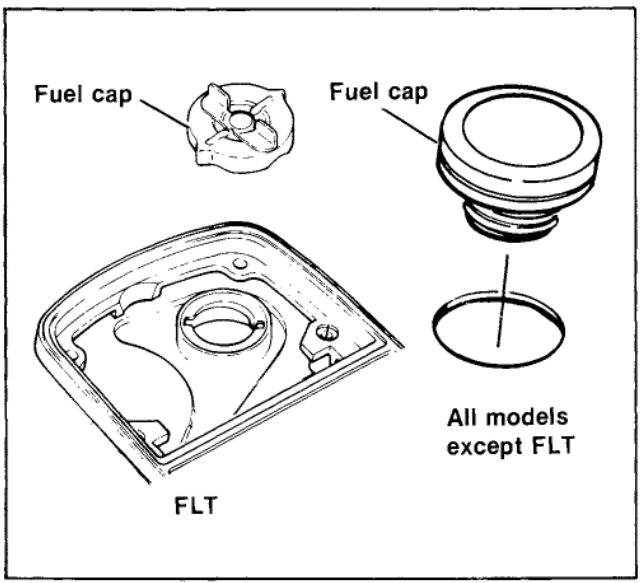


Figure 11. Fuel Filler Cap

NOTE

FLT filler caps are located beneath a door and do not have a ratchet action.

NOTE

Some models have a dual tank configuration. The left side tank cap has a left hand thread. Operation of fuel filler cap is just the opposite of right hand fuel filler cap.

WARNING

Fill fuel tank slowly to prevent fuel spillage. Do not fill above the bottom of the filler neck insert. Leave air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow fuel through the filler cap vent onto surrounding areas. After refueling, be sure filler cap is securely tightened

WARNING

Do not use decorative "spinner"' or "bullet" type fuel cap covers, which may possibly cause loosening of the cap from the tank upon impact.

SUSPENSION ADJUSTMENTS

See Table 3 for instructions on suspension adjustments.

Table 3. Suspension Adjustments

MODEL	ADJUSTMENT PROCEDURE
FLT Models	Procedure A
FXRT	Procedure B
FLST FXST	**WARNING** **The Softail models (FLST, FXST/C) feature maintenance-free non-adjustable rear suspension. Components are set at the factory. Do not attempt to adjust these components! Contents are under pressure. Do not loosen or disconnect hose fittings. In case of loss of pressure or damage, contact your Harley-Davidson dealer for repairs or replacement.**
XLH, FXLR FXR, FXRS	Procedure C

PROCEDURE A
ADJUSTABLE AIR SUSPENSION

FLT Models

See Figure 12. The FLT models feature air-adjustable suspension. Air pressure may be varied to suit your own personal comfort. Lower pressure gives a softer ride and high pressure gives a firmer ride.

Table 4 shows recommended pressures for your riding comfort.

This front air suspension features Harley-Davidson's unique Anti-Dive System. The purpose of this system is to reduce the amount of front fork deflection while braking. The amount of anti-dive is automatically set as the air pressure in the system is adjusted. Higher pressure allows less front fork deflection (more anti-dive). Lower pressure allows more front fork deflection (less anti-dive).

The front air pressure is adjusted by adding or removing air from the air valve located at the back of the engine guard on the left side.

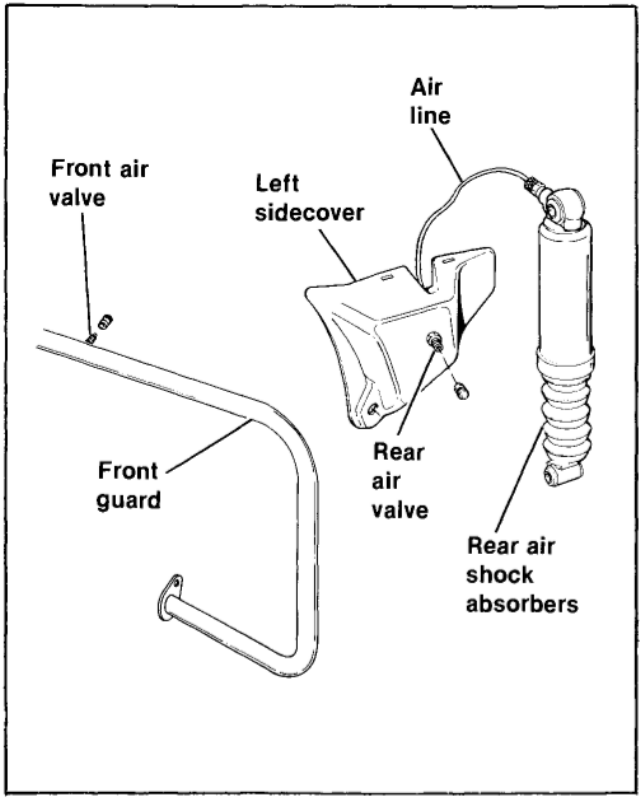


Figure 12. Air Suspension Components — FLT Models

CAUTION

Front suspension pressures over 25 psi or less than 10 psi are not recommended. Damage to air control components can result.

Rear air suspension is adjusted by adding or removing air from the air valve located on the left sidecover below the passenger seat. See Table 4 for the correct air pressure.

Table 4. FLT Air Suspension

	RECOMMENDED PRESSURES (PSI)	
LOADING	SHOCKS	FRONT GUARD
Rider weight up to 150 lbs:	0	10
For each extra 25 lbs., add:	—	—
Passenger weight for each 50 lbs., add:	1.5	—
Luggage weight for each 10 lbs., add:	—	1
Maximum Pressures:	10	20

CAUTION

Maximum air pressure of this system is 25 psi. Air components fill rapidly. To avoid possible damage to components, use low air line pressure. Pressure in front forks and air shocks should be checked weekly if in daily use or before each trip if used occasionally.

PROCEDURE B
ADJUSTABLE AIR SUSPENSION

FXRT

The FXRT features air adjustable suspension front and split shock rear air adjustable suspension. See Table 5 for recommended pressures:

Table 5. FXRT Air Suspension

LOADING	RECOMMENDED PRESSURES (PSI)		
	SHOCK	FORKS	ACCUMULATOR
Rider weight up to 150 lbs:	0 - 5	4 - 8	25 - 30
For each extra 25 lbs., add:	5	2	— —
Passenger weight for each 50 lbs., add:	10	1	— —
Luggage weight for each 10 lbs., add:	3	— —	— —
Maximum Pressures:	60	20	30

See Figure 13. The right rear air suspension is adjusted by adding or removing air from the air valve located at the front of the right saddlebag. Refer to Table 5 for the correct air pressure.

The left shock absorber does not require adjustment.

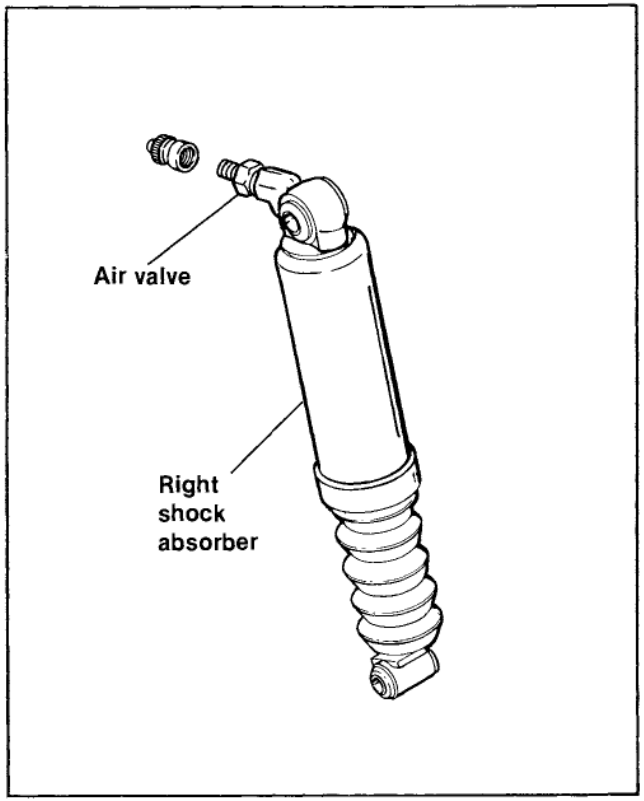


Figure 13. Rear Shock Absorber — FXRT

See Figure 14. The front suspension air pressure is adjusted by adding or removing air from the air valve located underneath the fairing between the front forks. Refer to the chart for the correct air pressure.

The accumulator has a limited range of pressure adjustment and should not need to be adjusted for varying

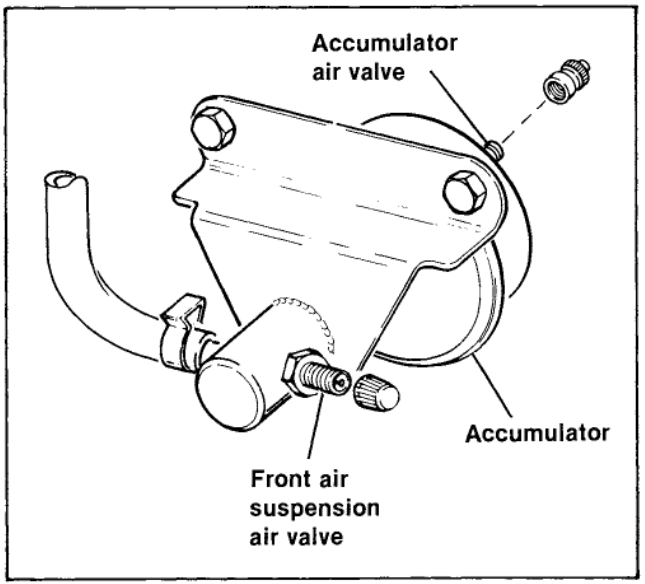


Figure 14. Front Air Suspension — FXRT

loads. The air valve on the accumulator is located directly underneath the fairing between the front forks. Maximum pressure is 30 psi.

The preferred pressure for your personal riding comfort can be selected from Table 5. Lower pressure gives a softer ride and higher pressure gives a firmer ride. Setting the pressure outside the recommended range for your loading will result in a reduction of available suspension travel and reduced ride comfort. Pressures should be adjusted with the vehicle on the jiffy stand.

WARNING

Maximum air pressure should not be exceeded. All air components fill rapidly and we recommend low air line pressure be used to avoid damage to the components.

PROCEDURE C SHOCK ABSORBER SPRING ADJUSTMENT

FXR, XLH Models

See Figure 15. The rear shock absorber springs can be adjusted for the weight the motorcycle is to carry. The shock absorbers have five positions. The average weight solo rider might use the extended spring position (off cam or first cam step). A heavy solo rider might require the position with springs slightly compressed (second cam step); passengers require the fully compressed spring position (fifth cam step).

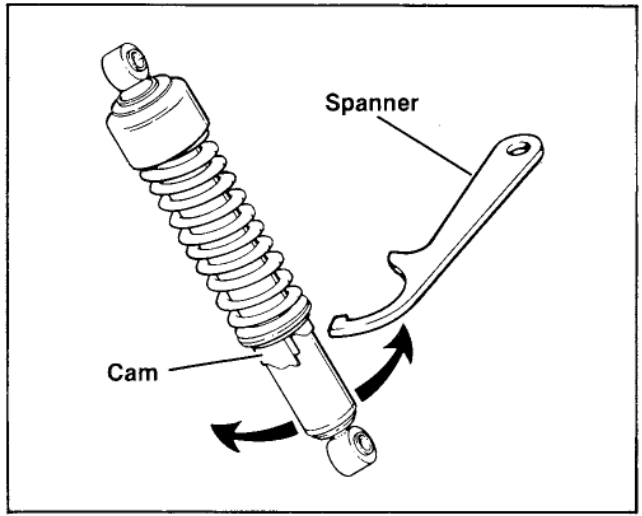


Figure 15. Shock Adjustment — FXR, XLH

To adjust the rear shock absorber springs, turn cushion spring adjusting cam to the desired position with spanner wrench.

WARNING

Both shock absorber spring adjusting cams must be adjusted to the same position. Not having the cams adjusted to the same position could cause handling difficulties.

When returning to off-cam position, cams should be backed off in opposite direction. A spanner wrench for this purpose is available from your Harley-Davidson dealer.

LUGGAGE

FLT Models

WARNING

Keep cargo weight concentrated close to the motorcycle and as low as possible to minimize the change in the motorcycle's center of gravity. Distribute weight evenly on both sides of the vehicle and do not load bulky items too far behind the rider or add weight to the handlebars or front forks. Do not exceed 15 pounds maximum load on each saddlebag or 25 pounds maximum in Tour-Pak.

The King Tour-Pak with sidelights is standard on FLT models.

Tour-Pak Removal (Figure 16)

1. Unplug the wiring harness leading from the Tour-Pak to the motorcycle. Grasp both ends of the molded rubber connector and pull apart. On Classic Models the antenna must also be disconnected.

CAUTION

Do not pull on the wires because this may break them.

2. Open Tour-Pak and remove mat at bottom of Tour-Pak exposing bolt heads.

3. Remove bolts and washers with wrench at inside of Tour-Pak. Remove Tour-Pak from luggage rack.

NOTE

When reinstalling King Tour-Pak, reconnect lights at the rubber connector.

Tour-Pak drawcatches should be closed whenever motorcycle is in operation.

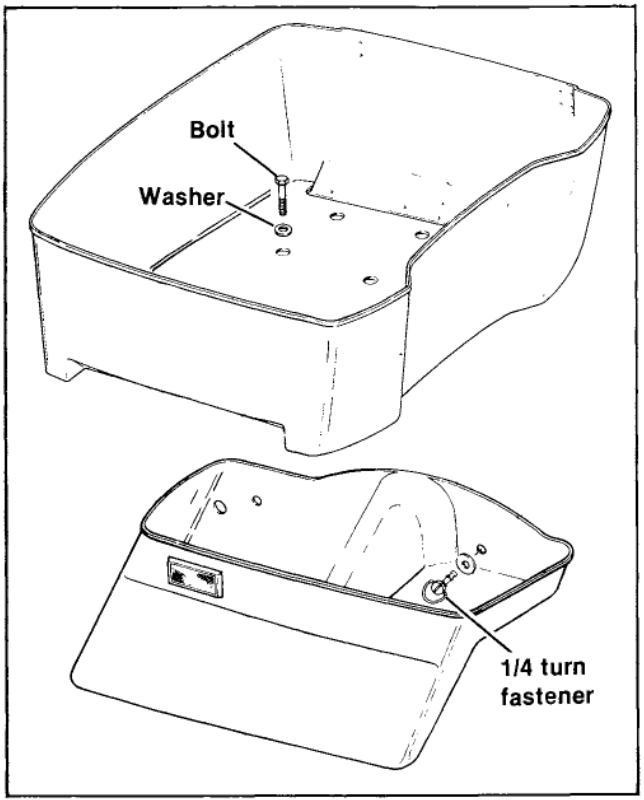


Figure 16. Tour-Pak and Saddlebag Installation — FLT

WARNING

The Tour-Pak supports the passenger backrest. Check the Tour-Pak mounting bolts periodically for tightness. Be sure that they are in good condition and tightened properly when installing the Tour-Pak.

Saddlebag Removal (Figures 16 and 17)

The saddlebags must be removed from the motorcycle when performing operations such as adjusting the rear belt. To remove saddlebags:

1. Unlock the lock, lift the drawcatch up. Lift the cover off.

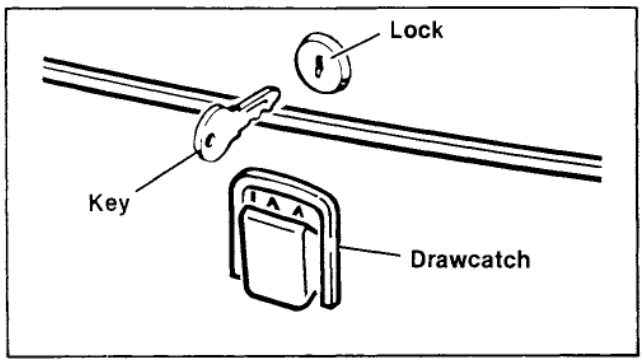


Figure 17. Lock and Drawcatch

2. Lift wire loop and turn the 1/4 turn fasteners counterclockwise until they release. Lift the saddlebag free of motorcycle.

The saddlebags and Tour-Pak are provided with travel bags that can be removed, packed and set down into the open saddlebag. The saddlebag can then be closed and locked.

NOTE

When installing saddlebag covers, be sure that the covers are engaged into the catch at the front ends. If not engaged, the covers may come loose during operation.

NOTE

Saddlebag drawcatches should be closed whenever motorcycle is in operation.

FXRT

Tour-Pak or Saddlebag Removal (Figure 18)

1. Disconnect the cable attached to the Tour-Pak radio antenna by turning the knurled connector sleeve in a counterclockwise direction.

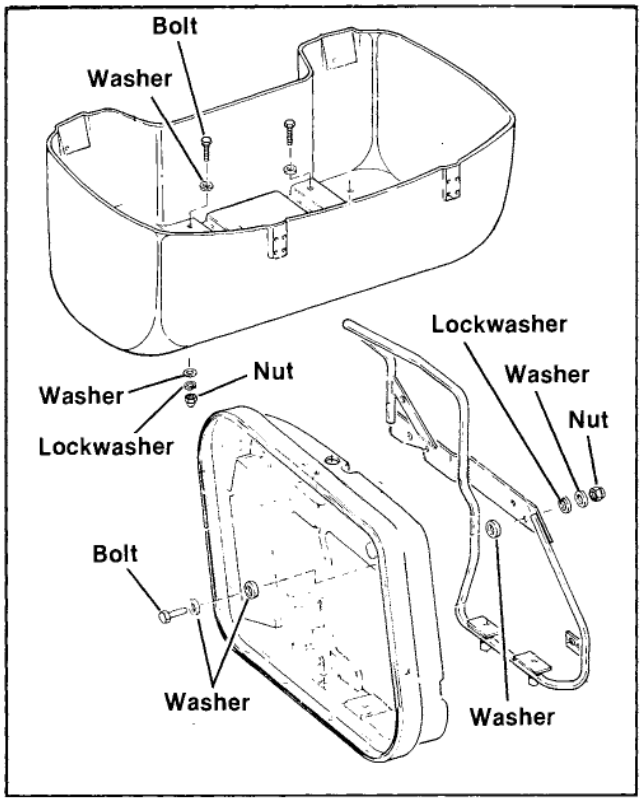


Figure 18. Tour-Pak and Saddlebag Installation — FXRT

CAUTION

Do not pull on the wires because this may break them.

2. While holding bolts with wrench at inside of Tour-Pak on saddlebag, remove the acorn nuts under the Tour-Pak on saddlebag support bracket. Remaining four bolts are held in place with weldnuts on underside of Tour-Pak. Use a wrench to remove these bolts.

3. Remove bolts. Carefully free the antenna ground wire from under bolt head. Remove Tour-Pak or saddlebag from support bracket.

NOTE

When installing Tour-Pak, reconnect antenna and ground wire.

See Figure 19. The saddlebags and Tour-Pak open with a lock and a drawcatch. Drawcatch can be locked by inserting key in lock and turning key to horizontal position. Lift drawcatch up and open saddlebag or Tour-Pak.

To close, be sure the drawcatch is in the open position until lid seats. Then snap the drawcatch closed. To lock, turn the key to vertical position and remove for security.

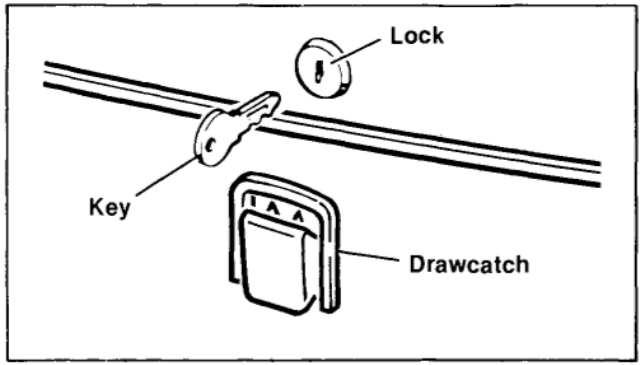


Figure 19. Lock and Drawcatch

The saddlebags and Tour-Pak are provided with travel bags that can be removed, packed and set down into the open saddlebag outer. They can then be closed and locked as described above.

NOTE

Saddlebags and Tour-Pak drawcatches should be closed whenever motorcycle is in operation.

WARNING

Maximum recommended load for each saddlebag is 15 lbs with maximum inflation pressure in rear tire. Overloading could cause handling difficulties. Maximum recommended load for Tour-Pak is 25 lbs.

NOTES

OPERATING RECOMMENDATIONS

CAUTION

Do not run the engine at extremely high RPM with clutch disengaged or transmission in neutral. Do not exceed maximum safe RPM specified in Table 6 under any conditions.

Table 6. Maximum Recommended RPM

MODEL	MAXIMUM ENGINE SPEED (RPM)
XLH Models	5800
All other models	5200

CAUTION

Do not exceed maximum recommended safe engine speed. Do not idle the engine unnecessarily for more than a few minutes with motorcycle standing still.

NOTE

The 1340cc ignition module has a "cut-out" feature which will automatically retard the spark advance to 0° if the engine exceeds 5100 RPM.

The XLH ignition module has a "cut-out" feature which will automatically retard the spark advance to 0° if the engine exceeds 6000 RPM.

An engine run long distances at high speed must be given closer than ordinary attention to avoid overheating and possible damage. Have the engine checked regularly and keep it well tuned. Valve seating and good compression are particularly important. This applies particularly to a motorcycle equipped with windshield, fairing and lowers.

CAUTION

Resting your feet on the highway footrests alters the air flow to the rear cylinder head. When ambient temperature exceeds 95° F. it is possible that the rear cylinder head temperature will exceed the 500° F. critical point. Continued operation will result in engine damage.

WARNING

When riding on wet roads or under rainy conditions, braking efficiency is greatly reduced. Caution must be used when applying the brakes, accelerating and turning. This is especially true immediately after the rain begins and the oil from the road surface combines with the water.

When descending a long, steep grade, downshift and use engine compression together with intermittent application of both brakes to slow the motorcycle. Avoid continuous use of brakes which may cause overheating of the brake and reduced efficiency.

Do not coast for a long distance with the engine off because the transmission is properly lubricated only when the engine is running. To prevent transmission damage, do not tow the motorcycle without removing the drive belt/chain.

BREAK-IN — THE FIRST 500 MILES

The sound design, quality materials, and workmanship that is built into your new Harley-Davidson will give you optimum performance right from the start. However, for the first 500 miles, to wear-in critical parts, observe the few simple driving rules below. This will assure future performance and durability.

1. During the first 50 miles, keep the engine speed below 2500 RPM in any gear.

2. Up to 500 miles, vary the engine speed, avoiding any steady speed for long distances. Engine speed up to 3000 RPM is permissible in any gear.

3. Avoid fast starts at wide open throttle. Drive slowly until engine warms up.

4. Avoid running the engine at extremely low RPM in higher gears.

PRE-RIDING CHECKLIST

NOTE

Read section on CONTROLS AND INDICATORS before riding your motorcycle.

Before riding your motorcycle at any time, make a general inspection to be sure it is in safe riding condition.

1. Check amount of fuel in tank and add fuel if required.

WARNING

Fill fuel tank slowly to prevent fuel spillage. Do not fill above the bottom of filler neck insert. Leave air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow fuel through the filler cap vent to surrounding areas. After refueling, be sure filler cap is securely tightened.

2. Check oil tank oil level. See MAINTENANCE AND LUBRICATION section.

3. Check controls to be sure they are operating properly; operate the front and rear brakes, throttle clutch and shifter.

4. Check steering for smoothness by turning the handlebars through the full operating range.

5. Check tire pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability. See TIRE DATA, for correct inflation pressures to use.

6. Check all electrical equipment and switches including the stoplamp, turn signals and horn for proper operation.

7. Check for any fuel, oil or hydraulic fluid leaks.

8. Check rear belt/chain adjustment. Service as necessary.

9. Check to be sure all fasteners, except head bolts, are tight.

STARTING THE ENGINE

WARNING

Before starting engine, always shift transmission to neutral to prevent accidental movement which could cause possible damage to motorcycle and/or personal injury.

Use recommended oil for extended expected temperatures. See engine lubrication table in the MAINTENANCE AND LUBRICATION section.

CAUTION

Never accelerate the engine above 2000 RPM after a cold start. The engine should be allowed to run slowly for a few minutes during warm weather and for a longer time in cold weather. This will allow the engine to warm up and let oil reach all surfaces needing lubrication.

To start a cool engine at temperatures above 50° F, open throttle twice, then fully release. Pull choke knob to first detent (fast idle) position (above 65° F, fast idle may not be required). Turn the ignition switch on and press starter switch to operate the electric starter.

To start a cold engine at temperatures below 50° F, open throttle twice, then fully release. Pull the choke knob outward to the fully closed (choke) position; turn the ignition switch on and press starter switch to operate the electric starter.

NOTE

Engine stop switch on the right handlebar controls must be in RUN (ignition on) position to start engine.

See Figure 3. As soon as engine starts, open choke to fast idle position (2nd detent).

To start a warm or hot engine, set throttle 1/4 open, turn on ignition switch and operate the electric starter. (DO NOT USE CHOKE.)

NOTE

If the engine does not start after a few turns or if one cylinder fires weakly but engine does not start, it is usually because of an over-rich (flooded) condition. This is especially true of a hot engine. If the engine is flooded, open choke all the way, turn ignition on and operate starter with choke and throttle wide open.

WARNING

Be sure jiffy stand is fully retracted before riding the motorcycle. If jiffy stand is not fully retracted during vehicle operation, it could contact the road surface causing a momentary disturbance before retracting. This momentary disturbance could distract the rider, possibly causing loss of vehicle control.

STOPPING THE ENGINE

See Figure 2. Stop the engine by turning off the engine stop switch (5) on right handlebar, then turn off the ignition key switch. If the engine should be stalled or stopped in any way, turn off the key switch at once to prevent battery discharge.

SHIFTING GEARS

Four-Speed Transmission

See Figure 2. To start moving with motorcycle upright and engine idling, pull the clutch lever (7) to fully disengage clutch. See Figure 20. Push shifter lever down firmly but gently to end of its travel to engage first gear. Then release the clutch lever slowly to engage the

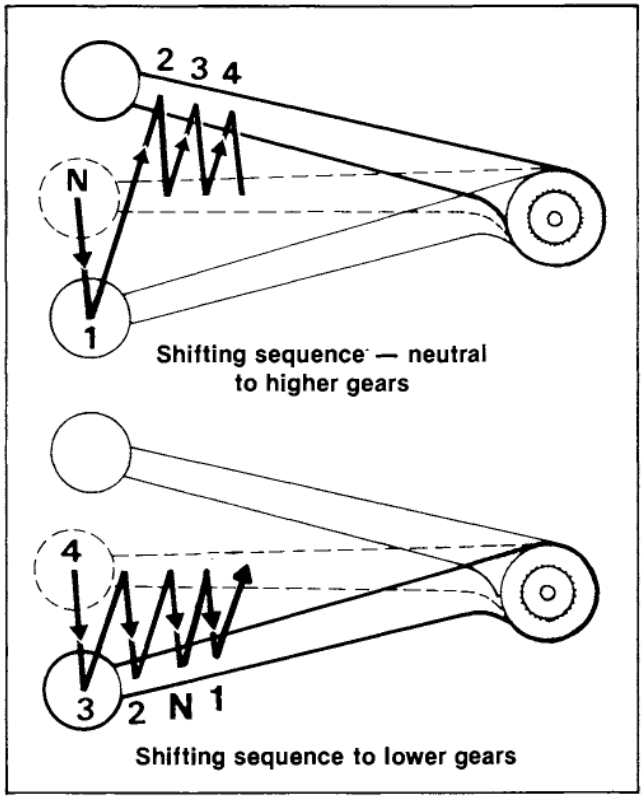


Figure 20. Shifting Sequence — 4-Speed

clutch and at the same time, open throttle gradually.

Engage second gear after the motorcycle has run a few yards as follows: Close the throttle, disengage the clutch and lift the gear shifter pedal up to the end of its travel. Engage the clutch and operate the throttle gradually. Repeat the same operation to engage third and fourth gears.

For correct operation of your motorcycle under average conditions, the following shifting points are recommended:

Table 7. Gear Change — 4-Speed

GEAR CHANGE	SPEED
Acceleration (Upshift)	
First to Second	15 mph (25 km/h)
Second to Third	25 mph (40 km/h)
Third to Fourth	40 mph (65 km/h)
Deceleration (Downshift)	
Fourth to Third	30 mph (50 km/h) or less
Third to Second	20 mph (30 km/h) or less
Second to First	10 mph (15 km/h) or less

To shift to lower gears, reverse the movement of the gear shifter lever, disengage the clutch completely before each gear change and only partially closing the throttle so that the engine will not drag when clutch is again engaged. Keep in mind that by lifting the gear shifter lever up, a high gear is engaged; by pushing the gear shifter lever down, a lower gear is engaged. When stopping, operate gear shift until neutral is reached. Note that neutral is 1/2 stroke up from first gear or 1/2 stroke down from second gear.

CAUTION

Do not shift gears without fully disengaging the clutch.

WARNING

When shifting to lower gears with the motorcycle in motion, do not downshift at speeds higher than those listed in the table. Shifting to lower gears when speed is too high may severely damage the transmission or cause the rear wheel to lose traction.

Shift to neutral before stopping engine. Shifting mechanism can be damaged by shifting gears while engine is stopped.

NOTE

Always start motorcycle in motion in first gear.

When engine speed decreases, as in climbing a hill or running at a reduced speed, shift to the next lower gear while partially closing the throttle so that the engine accelerates as soon as the clutch lever is pulled.

See Gear Shifter in the CONTROLS AND INDICATORS section.

Five-Speed Transmission

See Figures 4, 21. Follow the shifting instructions given for four-speed shifting transmissions. The recommended shift points for five-speed transmissions are as follows:

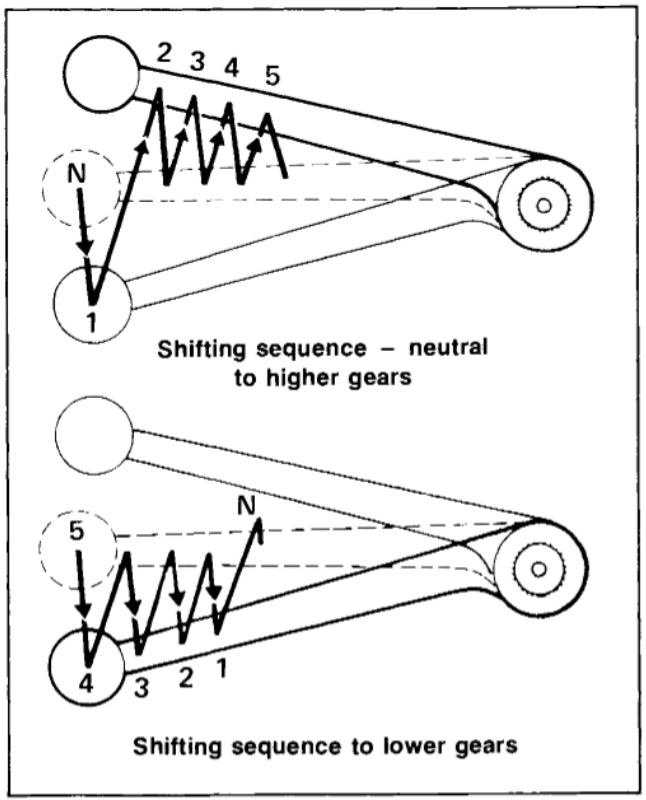


Figure 21. Shifting Sequence — 5-Speed

Table 8. Gear Change — 5-Speed

GEAR CHANGE	SPEED
Acceleration (Upshift)	
First to Second	15 mph (25 km/h)
Second to Third	25 mph (40 km/h)
Third to Fourth	40 mph (65 km/h)
Fourth to Fifth	50 mph (80 km/h)
Deceleration (Downshift)	
Fifth to Fourth	40 mph (64 km/h) or less
Fourth to Third	30 mph (50 km/h) or less
Third to Second	20 mph (30 km/h) or less
Second to First	10 mph (15 km/h) or less

NOTES

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.

The following items should be checked:

1. Tires for correct pressure, abrasions or cuts.
2. Belt/chains for proper tension. Rear chain lubrication if applicable.
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.
7. Wheel spoke tightness, if applicable.
8. Headlight, taillight, brake light and directional light operation.

WARNING

For your personal welfare, all the listed service and maintenance recommendations should be performed. Lack of regular maintenance, at the suggested intervals, may affect the safe operation of your motorcycle.

BREAK-IN MAINTENANCE

NOTE

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

After a new motorcycle has been driven its first 500 miles the motorcycle should be taken to the dealer from whom it was purchased for initial service operations with which the dealer is familiar. If it is impossible to take the motorcycle to a dealer at the mileage intervals mentioned, the owner should at least give the following outlined attention, or arrange to have it given, and take the motorcycle to the dealer for more complete servicing as soon as it is convenient.

We recommend the following maintenance procedures be performed by your Harley-Davidson dealer or any other qualified service outlet or individual.

WARNING

Stop the engine and support the motorcycle securely before performing all service procedures. Service should be performed using proper tools, in an adequately lighted and ventilated work area.

When working on the motorcycle, do not support motorcycle by placing supports under the brake pedal. Damage to the brake system could occur causing possible malfunction and personal injury.

WARNING

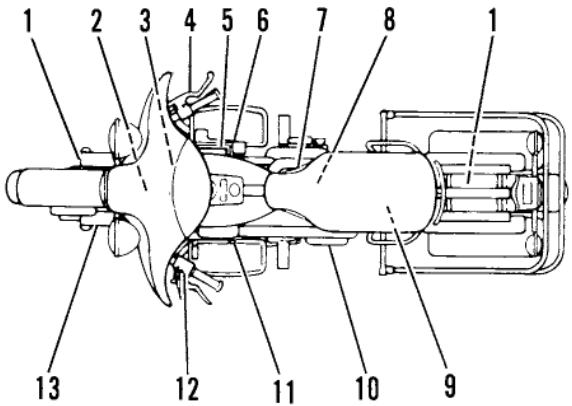
For your personal welfare, all the listed service and maintenance recommendations should be followed because they may affect the safe operation of your motorcycle.

CHECK AT FIRST 500 MILES

1. Change engine oil.
2. Replace oil filter.
3. Clean tappet oil screen.*
4. Change primary chaincase lubricant and clean magnetic drain plug.
5. Inspect air cleaner and service as required.
6. Check and adjust primary chain.
7. Check battery electrolyte level; check and clean connections.
8. Check rear brake pedal height adjustment and free-play.
9. Inspect brake pad linings and discs for wear.
10. Check brake fluid level and condition.
11. Check clutch adjustment.
12. Inspect fuel valve, lines and fittings for leaks.
13. Inspect oil lines and brake system for leaks.
14. Lubricate the following: front brake handlever, throttle control cables, clutch control cable and handlever.
15. Check tightness of all fasteners, except head bolts.
16. Check stabilizer links* and engine mounts.
17. Check tire pressure and inspect tread.
18. Check engine low and high idle speed adjustment.
19. Check operation of throttle and choke controls.
20. Check operation of all electrical equipment and switches.
21. Check wheel alignment.
22. Check wheel spoke tightness.*
23. Check and adjust rear drive belt or chain.
24. Change transmission lubricant and clean magnetic drain plug.*
25. Clean fuel tank filter screen.
26. Check rear fork pivot nut tightness.*
27. Check front fork bearing adjustment.
28. Check and adjust air suspension system.*
29. Road test.

* If applicable.

LUBRICATION



Lubrication Intervals

Regular Lubrication Intervals Service Operation	Pre-ride	500	5,000	10,000
1 Wheel bearings		✓		✓
2 Front fork bearing		✓		✓
3 Speedometer cable			✓	
4 Throttle grip sleeve, throttle control cables, choke control cable, front brake handlever			✓	
5 Air cleaner			✓	
6 Rear brake pedal grease fitting		✓	✓	
7 Engine oil	✓	✓	✓	
8 Transmission lubricant		✓	✓	
9 Oil filter		✓	✓	
10 Primary chaincase lubricant		✓		
11 Shifter pivot fitting*		✓	✓	
12 Clutch control cable and handlever		✓	✓	
13 Front fork oil				✓

* If applicable.

REGULAR SERVICE INTERVALS

Regular lubrication and maintenance will help keep your new Harley-Davidson operating at peak performance. Your Harley-Davidson dealer knows best how to service your motorcycle with factory approved methods and equipment assuring you of thorough and competent workmanship.

NOTE

Regular service interval operations are required to keep your new motorcycle warranty in force. The use of other than Harley-Davidson approved parts and service procedures may void the warranty. Also, any alterations to the emission system components, such as the carburetor and exhaust system, may be in violation of Federal and State laws.

Regular Maintenance Intervals Chart

ODOMETER READING (miles) SERVICE OPERATIONS (see chart code below)	Pre-ride	500	2,500	5,000	7,500	10,000	12,500	15,000	17,500	20,000	22,500	25,000	27,500	30,000	32,500	35,000	37,500	40,000	42,500	45,000	47,500	50,000
Engine oil*	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
Oil filter		R		R		R		R		R		R		R		R		R		R		R
Air cleaner		IL		IL		IL		IL		R		IL		IL		IL		R		IL		IL
Tappet oil screen**		I		I		I		I		I		I		I		I		I		I		I
Rear belt	I	A	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Rear chain (lubricate every 300 miles)	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Primary chain		I		I		I		I		I		I		I		I		I		I		I
Primary chaincase lubricant		R		R		R		R		R		R		R		R		R		R		R
Battery fluid level, connections*		I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Rear brake pedal height adjustment and free play		I		I		I		I		I		I		I		I		I		I		I
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
Brake fluid level and condition*		I		I		I		R		I		I		R		I		I		R		I
Clutch adjustment		A		A		A		A		A		A		A		A		A		A		A
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	I
Front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever		L		L		L		L		L		L		L		L		L		L		L
All fasteners except head bolts		T		T		T		T		T		T		T		T		T		T		T
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	I
Engine low and fast idle speed adjustment	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
Operation of throttle and choke controls	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

*** Also perform prior to storage, or annually.**

**** If applicable.**

Chart Code:

I — Inspect, and if necessary correct, clean or replace.
A — Adjust.
R — Replace or change.
T — Tighten to proper torque.
L — Lubricate with specified lubricant.
X — Perform.

Regular Maintenance Intervals Chart (Cont'd)

ODOMETER READING (miles) / SERVICE OPERATIONS (see chart code below)	Pre-ride	500	2,500	5,000	7,500	10,000	12,500	15,000	17,500	20,000	22,500	25,000	27,500	30,000	32,500	35,000	37,500	40,000	42,500	45,000	47,500	50,000
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	I
Ignition timing and vacuum operated electric switch (V.O.E.S.)		I		I		I		I		I		I		I		I		I		I		I
Spark plugs				I		R		I		R		I		R		I		R		I		R
Transmission lubricant*		R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R	I	R
Rear fork pivot nut**		I		I		I		I		I		I		I		I		I		I		I
Engine mounts**		I		I		I		I		I		I		I		I		I		I		I
Stabilizer links**		I				I				I				I				I				I
Air suspension components**		I		I		I		I		I		I		I		I		I		I		I
Wheel spokes tightness**		I		I		I		I		I		I		I		I		I		I		I
Front fork bearing adjustment		I		I		IL		I		IL		I		IL		I		IL		I		IL
Condition of rear shock absorbers		I		I		I		I		I		I		I		I		I		I		I
Throttle control grip sleeve, speedometer cable				L		L		L		L		L		L		L		L		L		L
Grease fittings (2), shift and brake lever pivots, rear brake linkage**				IL		IL		IL		IL		IL		IL		IL		IL		IL		IL
Condition of rear brake caliper mounting pins and boots				IL		IL		IL		IL		IL		IL		IL		IL		IL		IL
Swing arm bearings**		L		L		L		L		L		L		L		L		L		L		L
Wheel bearings*						IL				IL				IL				IL				IL
Front fork oil		R				R				R				R				R				R
Road test		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

*** Also perform prior to storage, or annually.**

**** If applicable.**

Chart Code:

I — Inspect, and if necessary correct, clean or replace.
A — Adjust.
R — Replace or change.
T — Tighten to proper torque.
L — Lubricate with specified lubricant.
X — Perform.

ENGINE LUBRICATION

Engine oil is a major factor in the performance and service life of the engine. Use the proper grade of oil for the lowest temperature expected before the next oil change as shown below. Your Harley-Davidson dealer has the proper grade oil to suit your requirements.

Use Harley-Davidson MULTIGRADE OIL for normal and severe usage in air temperatures between 20°F and 100°F. For other conditions, or if MULTIGRADE is not available, use oils as shown in the chart below.

Table 9. Recommended Engine Oils

Harley-Davidson Type	Viscosity	Harley-Davidson Rating	Ambient Temperature	Cold Weather Starts Below 50° F.
H.D. Multigrade	SAE20W50	HD 240	Above 20° to 100°	Excellent
H.D. Regular Heavy	SAE50	HD 240	Above 60° to 100°	Poor
H.D. Extra Heavy	Grade 60	HD 240	Above 80° to 100° F+	Poor

CHECKING OIL LEVEL (Figures 22, 23 and 24)

Engine oil level should be checked only when engine is at normal operating temperature. The engine will require a longer warm up period in colder weather. The motorcycle should be driven to ensure oil is hot and is at normal operating oil pressure. When the above conditions are met, turn the engine off. Refer to Table 10.

See Figure 24. Wipe off dipstick and insert into tank with plug pushed completely into filler neck. Remove and note oil level. If oil level is down to or below lower mark on dipstick add only enough oil to bring level to upper mark on dipstick. See Figure 23. For FLST and FXST, add only to fill mark on dipstick.

CAUTION

Do not allow hot oil level to fall below lower mark on dipstick. Do not overfill oil tank. Overfilling may cause oil carryover to the air cleaner.

CAUTION

Do not switch brands indiscriminately because some oils interact chemically when mixed. Use of inferior oils or non-detergent oils can damage the engine.

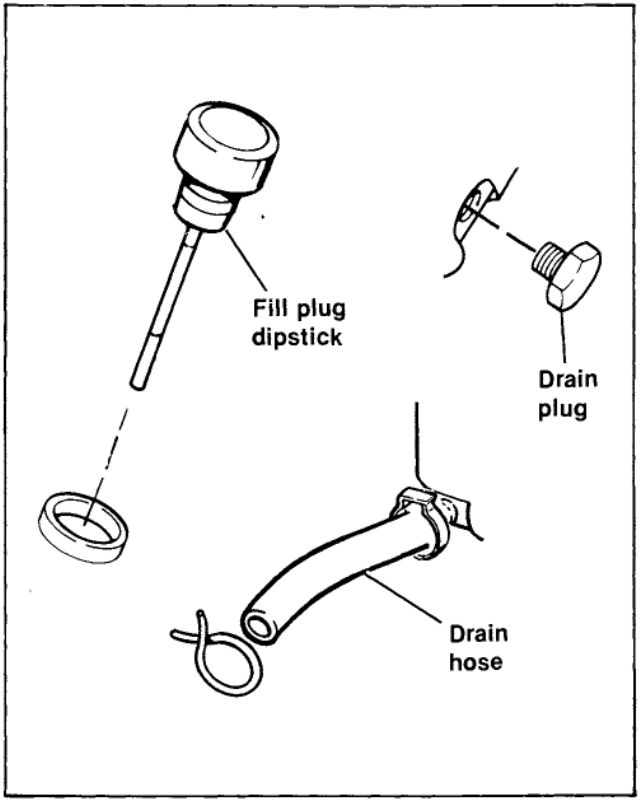


Figure 22. Fill Plug Dipstick and Oil Tank Drains

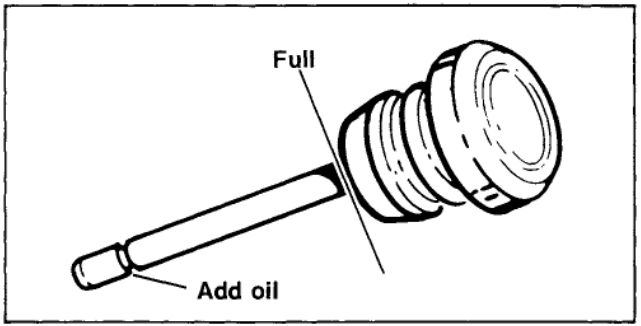


Figure 23. Engine Oil Level — FXST, FLST

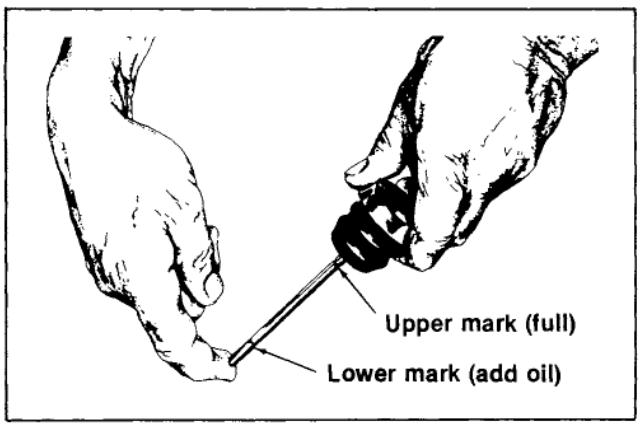


Figure 24. Oil Level Dipstick — All Other Models

Check oil supply at each complete fuel refill. Oil should be changed after the first 500 miles for a new engine, and thereafter at 5000 mile intervals in normal service at warm or moderate temperatures. Oil change intervals should be shorter in cold weather — see WINTER LUBRICATION. Completely drain oil tank of used oil and refill with fresh oil. If service is extremely hard or on dusty roads, drain and refill at shorter intervals. Draining should be done after a ride while oil is hot. It is not necessary to drain the crankcase because it does not accumulate used oil. At the time of the first 500 mile oil change, and at least every second oil change thereafter, thoroughly flush and clean out tank to remove any sediment and sludge that may have accumulated. Your dealer has facilities for quick flushing and cleaning of oil tank. The oil filter should be replaced every time the oil is changed.

Table 10. Checking Oil Level

MODEL	DRAIN	FILL	DIPSTICK	VEHICLE POSITION
XLH	Drain hose under battery.	Right side below seat.	On fill plug.	Straight up and level.
FLT Models	Drain plug.	Plug under right side cover.	On fill plug.	Straight up and level.
FXR Models	Drain hose under left side cover.	Under seat.	On fill plug.	Resting on jiffy stand.
FXST, FLST	Drain hose, right side of oil tank.	Plug, right side of oil tank.	On fill plug.	Straight up and level.

OIL FILTER

Oil filters are located underneath the motorcycle, behind the transmission, on FLT and FXR engines. On XLH, FLST and FXST, filters are mounted in front of engine.

Completely drain oil tank before removing oil filter. Clean filter gasket contact surface on mounting plate. Surface should be smooth and free of any debris or old gasket material. Apply a thin film of oil to gasket contact surface on mounting plate and to gasket on new oil filter.

NOTE

On XLH models pour four ounces of clean oil into filter.

See Figure 25. Screw filter onto adapter until gasket contacts plate surface. Apply another 1/4 to 12 turn by hand.

WARNING

Be sure no oil gets on rear tire when changing the filter. Traction will be adversely affected.

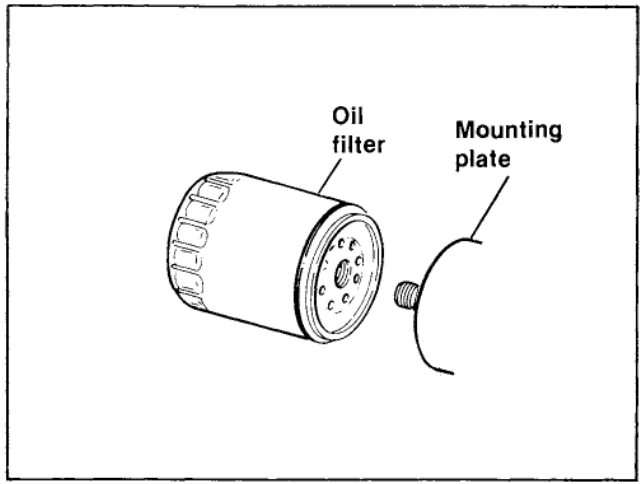


Figure 25. Oil Filter

Winter Lubrication

Combustion in any engine produces water vapor. When starting and warming up in cold weather, much of the vapor condenses to water on the relatively cool metal surfaces. If engine is driven enough to get the crankcase thoroughly warmed up frequently, most of this water is again vaporized and blown out through the

breather. However, a moderately driven engine, making only short runs now and then and seldom getting thoroughly warmed up, is likely to accumulate an increasing amount of water in the oil tank. In freezing weather this water will become slush or ice and if allowed to accumulate too long, may block the oil lines and cause damage to the engine. Water mixed with oil for some time forms sludge that is harmful to the engine and causes undue wear of various working parts. Therefore, in winter the oil change interval should be shorter than normal for all engines, and any engine used only for short runs must have oil drained frequently along with a thorough tank flush-out before new oil is put in tank. The farther below freezing the temperature drops, the shorter the oil change interval should be.

Tappet Oil Filter Screen (Figure 26) (1340cc Engines Only)

The tappet oil filter screen is located in the crankcase above the oil pump. Unscrew the slotted plug (1), remove and clean or replace the screen (2) initially at 500 miles and every 5000 miles thereafter. Oil screen is installed with closed end up.

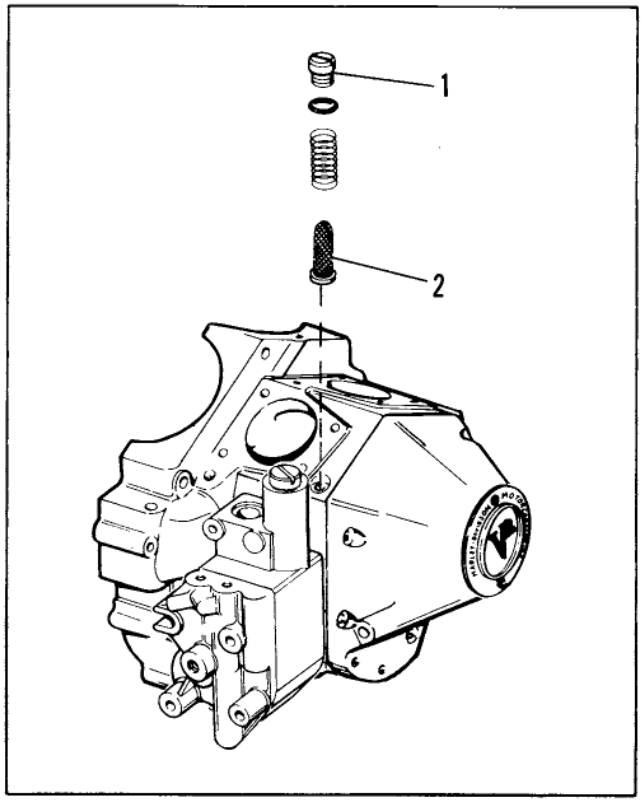


Figure 26. Tappet Filter Screen

TRANSMISSION LUBRICATION

1340cc Models

The transmission oil level should be checked monthly. When filling the transmission, use Harley-Davidson TRANSMISSION LUBRICANT, Part No. 99892-84.

NOTE

When checking the transmission lubricant level, motorcycle should be standing STRAIGHT UP, not leaning on the jiffy stand.

When normal operating temperature is achieved, turn the engine off and position motorcycle STRAIGHT UP and completely level.

NOTE

Keep motorcycle upright for a short period of time to equalize oil level in the transmission compartments.

See Figure 27. Remove the threaded filler plug. Clean dipstick and reinstall all the way. Remove dipstick and take reading. Lubricant level should be between the two marks on the dipstick. Add lubricant if necessary. Do not overfill or leakage may occur. The transmission capacity is approximately one pint. When reinstalling the filler plug, tighten it finger tight.

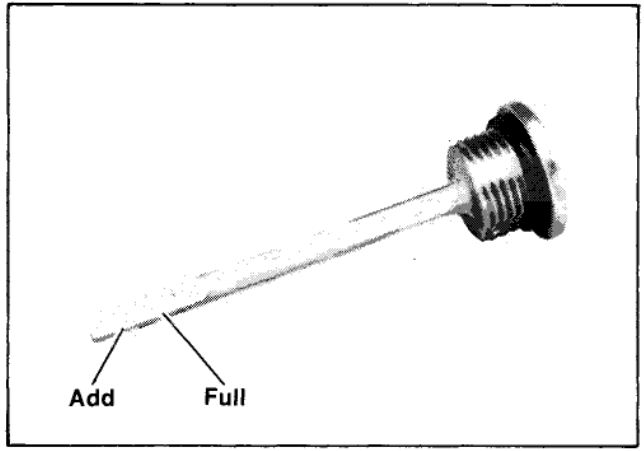


Figure 27. Transmission Oil Dipstick — 1340cc

The transmission should be drained and refilled with fresh oil after the first 500 miles and thereafter seasonally or every 5000 miles, whichever comes first.

On all models, except the FXST and FLST the transmission drain plug is located underneath the transmission,

in the middle of the case. When reinstalling the drain plug, tighten it to 7 ft-lbs torque.

On the FXST and FLST, the transmission magnetic drain plug is located at the right side of the transmission housing. Remove foreign material from end of plug. Reinstall drain plug so it projects 0.16 - 0.18 in. above surface of housing.

WARNING

Do not overtighten drain plug. When draining and refilling the transmission, be careful that dirt and debris do not get into the case. Do not allow draining lubricant to get on rear wheel, tires or brakes. Traction could be adversely affected.

NOTE

XLH models transmission and primary chaincase share common lubricant supply.

PRIMARY CHAINCASE LUBRICATION

Lubrication is a major factor in the performance and service life of the clutch components. Use Harley-Davidson PRIMARY CHAINCASE LUBRICANT, Part No. 99887-84 for all operating temperatures.

Chaincase lubricant should be changed initially at 500 miles and every 5000 miles thereafter. Chaincase capacity is 1-1/2 quarts in 1340cc models, 1-1/2 pints in XLH models.

CHECKING CHAINCASE LUBRICANT

1340cc Models

1. Position motorcycle STRAIGHT UP and level.
2. See Figure 28. Remove screws and nylon washers that secure clutch inspection cover.
3. Remove clutch inspection cover carefully to avoid damaging O-ring or finish on cover.
4. Primary chaincase lubricant should be level with bottom of clutch inspection opening.

CAUTION

Replace O-ring if damaged or not sealing properly to avoid oil leakage.

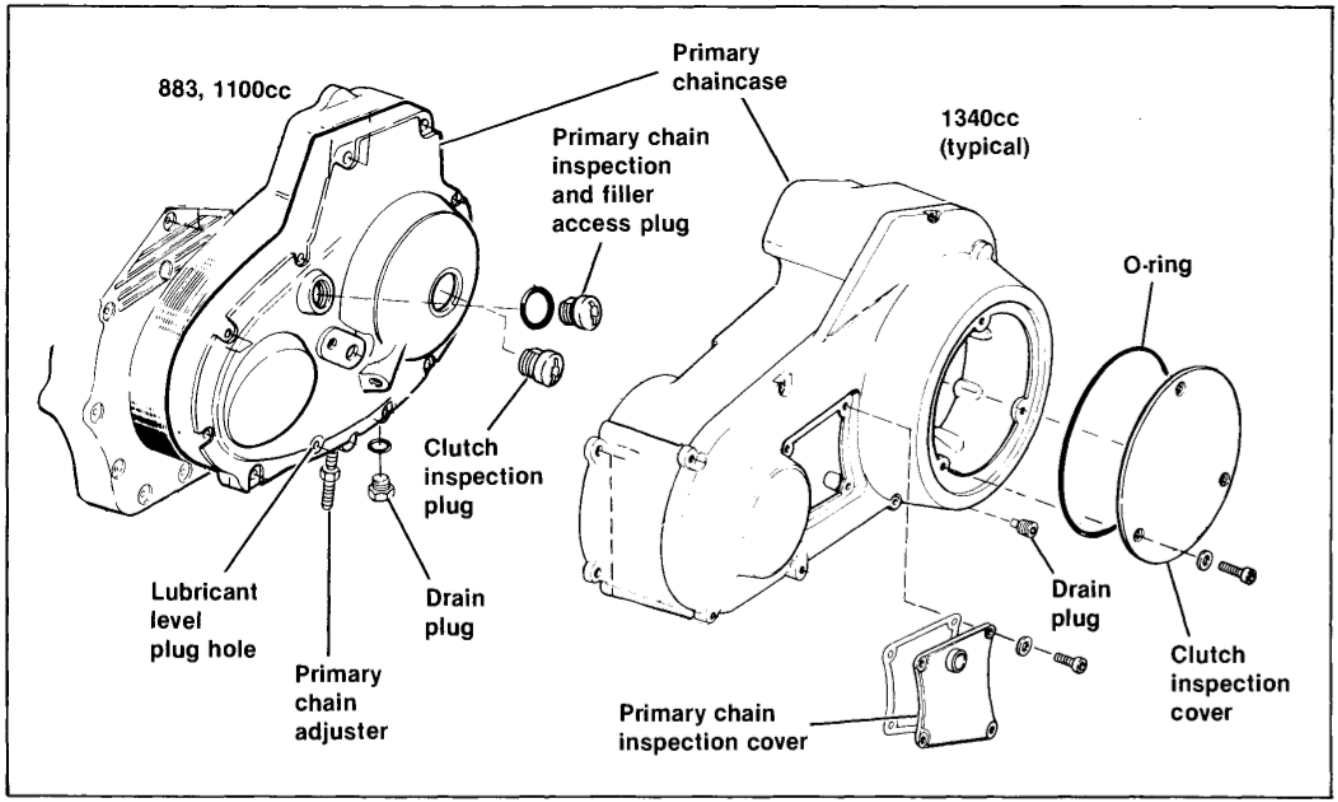


Figure 28. Primary Chaincase

5. Replace clutch inspection cover and secure with screws and new nylon washers. Tighten to 4 - 6 ft-lbs torque. Do not overtighten.

CAUTION

When draining or refilling with lubricant, do not allow dirt or debris to enter chaincase. Do not allow draining lubricant on rear wheel, tire, or brake components.

NOTE

Whenever draining chaincase lubricant, inspect and clean chaincase magnetic drain plug.

Check clutch adjustment every 5000 miles. We recommend your Harley-Davidson dealer perform these services for you.

XLH Models

Use Harley-Davidson PRIMARY CHAINCASE LUBRICANT, Part No. 99887-84 for all operating temperatures. Capacity of primary chaincase and transmission is 1-1/2 U.S. pints. Draining should be done while lubricant is hot.

An opening between the transmission and the front chain compartments allows the same lubricant supply to lubricate the parts in both compartments.

See Figure 28. The drain plug is located on the underside of the chaincase. The filler access is located near the top of the chaincase cover. The lubricant level plug is located near the bottom of the chaincase cover. To determine correct lubricant level in the transmission and chaincase compartments, proceed as follows:

1. Stand motorcycle straight up. Motorcycle must remain in this position during entire procedure.

2. Remove transmission and primary chaincase lubricant filler screw and lubricant level plug.

NOTE

If the lubricant is to be changed, remove drain plug and allow lubricant to drain. Remove foreign material from magnet on end of plug. Install drain plug and tighten to 10 ft-lbs torque before proceeding with the next step.

CAUTION

Do not over-tighten drain plug.

3. Add lubricant until it begins to overflow through lubricant level hole. Let excess lubricant continue to flow from lubricant level hole until it ceases to run. This establishes correct lubricant level.

4. Install and tighten lubricant level plug and filler screw.

PRIMARY CHAIN

See Figure 29. The front chain adjustment should be checked initially at 500 miles and every 5000 miles thereafter and serviced as necessary. If the chain is allowed to run loose, it will cause the motorcycle to jerk when running at low speed, and both chain and sprocket will wear excessively.

Inspect chain occasionally for links in bad condition. If any are found, replace entire chain.

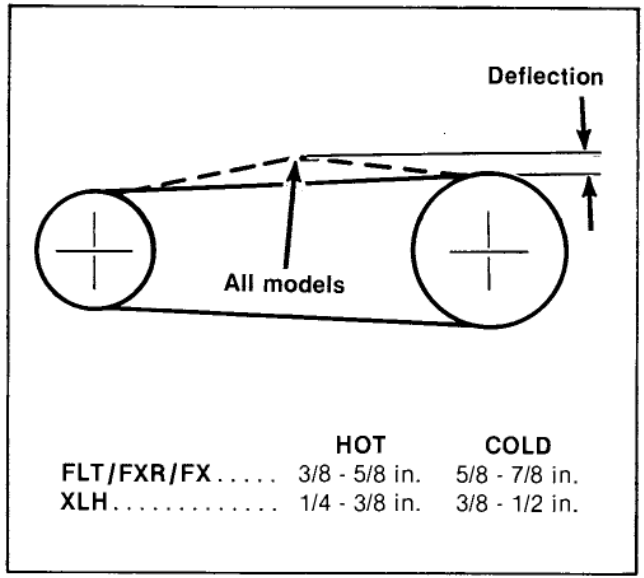


Figure 29. Primary Chain Adjustment

REAR DRIVE CHAIN/BELT

Rear Drive Chain Lubrication — XLH

Brush dirt off chain and lubricate at 300 mile intervals with Harley-Davidson CHAIN SPRAY or CHAIN LUBE PLUS if available; if not available, use engine oil. Apply to both rollers and side plates.

If the motorcycle is operated under extremely dusty or dirty conditions, thorough cleaning and lubrication of the rear chain may be advisable from time to time.

NOTE

An O-ring chain requires less frequent lubrication.

Periodically remove accumulated surface dirt only by wiping with rag dampened in Kerosene.

To protect the chain from rust and lubricate the roller surfaces, periodically lubricate the chain with HARLEY-DAVIDSON CHAIN LUBE PLUS, Part No. 99865-81, especially after cleaning.

CAUTION

Never SOAK your O-ring chain in cleaning solvent. This will wash the lubricant out of the rollers.

CAUTION

Be sure the lubricant you use is recommended for use on O-ring chains. Incorrect lubricant will deteriorate the O-rings, causing rapid chain wear.

Rear Chain Adjustment — XLH

See Figure 30. A properly adjusted chain should have the correct deflection midway between the transmission sprocket and the rear wheel sprocket.

1. Loosen axle nut on right side.

2. With the motorcycle upright and one rider sitting on it, turn the axle adjuster nuts on both sides of the rear wheel an equal amount of turns to keep the rear wheel in alignment. See your Harley-Davidson dealer for correct VEHICLE ALIGNMENT.

CAUTION

Check vehicle alignment. See VEHICLE ALIGNMENT.

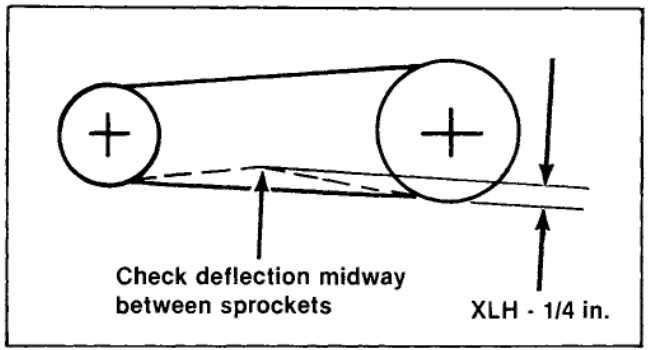


Figure 30. Rear Chain Adjustment

3. With correct free play established in chain midway between sprocket, tighten axle nut to 60 - 65 ft-lbs torque.

4. Check rear brake caliper position on rear brake disc. Disc should run true within brake caliper.

WARNING

Misalignment of rear wheel and/or brake caliper could cause rear brake disc to bind-up resulting in severe damage and/or personal injury.

Rear Drive Belt

The secondary belt inner tooth surface has a thin coating of polyethylene. During initial operation, this coating will wear as it is burnished into the belt fabric. This is a normal condition and not an indication of belt wear.

Belt tension should be checked after the first 500 miles and every 2500 miles thereafter.

See Figure 31. When 10 lbs of force is applied at the mid-point of the belt's appropriate strand, deflection should be as shown. Rear wheel must be on the ground and one rider sitting on the motorcycle.

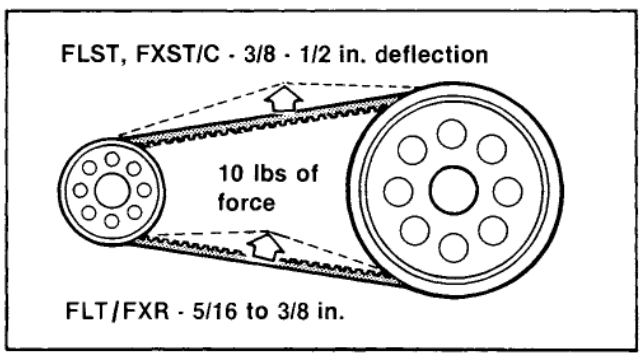


Figure 31. Belt Adjustment

BELT TENSION GAUGE, Part No. HD-35381 can be used to check belt tension. If belt requires adjustment, see your Harley-Davidson dealer, or follow instructions given in the applicable Service Manual.

Check rear brake caliper position on rear brake disc. Disc should run true within brake caliper.

WARNING

Misalignment of rear wheel and/or brake caliper could cause rear brake disc to bind-up resulting in severe damage and/or personal injury.

CHASSIS LUBRICATION

Greasing

1. Use recommended wheel bearing grease for steering head bearings and wheel bearings. Use a multipurpose chassis grease for other applications.

2. Repack front and rear wheel bearings every 10,000 miles (more often in adverse conditions), or yearly if operated under winter conditions or prior to storage. Replace seals and axle spacers if they show any wear or distortion.

3. Remove and lubricate handlebar throttle control grip sleeve with fresh graphite every 5000 miles, once each year, or when operation indicates lubrication is necessary.

4. Every 5000 miles lubricate front brake handlever, throttle control cables, speedometer drive cable and clutch control cable and handlever.

5. On FLT, FXST and FLST models, grease the rear brake pedal and shifter shaft pivots every 5000 miles at the fitting.

6. On XLH pack rear swing arm pivot bearings with fresh grease at 5000 mile intervals. Inspect rear swing arm pivot bearings.

7. Pack the steering head bearings with fresh grease at 10,000 mile intervals or 2 years, whichever occurs first.

Oil Applications

All control connections and parts as indicated in the REGULAR MAINTENANCE INTERVAL CHART should be oiled regularly, particularly after washing motorcycle or driving in wet weather.

Front Fork Oil

Drain front fork oil and refill after first 500 miles and every 10,000 miles thereafter or annually. If fork does not appear to be working properly or an appreciable amount of oil leakage should develop, attention should be given by a Harley-Davidson dealer. Incorrect recoil action will result if there is insufficient oil in either side of fork.

FUEL STRAINER

See Figure 10. A screen type fuel strainer is located on top of the supply valve inside the fuel tank. Check the fuel valve, lines and fittings for leakage as part of the pre-ride inspection. Screen should be cleaned after the first 500 miles and every 5000 miles thereafter.

CARBURETOR

The carburetor has been specifically designed for emissions control operation. All jets are fixed at the factory.

Carburetor controls include throttle, choke and low/high idle speed adjusting screws. Operation should be checked and adjusted after the first 500 miles and every 5000 miles thereafter.

CAUTION

Operation at higher altitudes (approximately 4000 ft. elevation) may require carburetor modifications for best engine performance. See your Harley-Davidson dealer for these adjustments.

We recommend that any carburetor service be performed by your Harley-Davidson dealer.

AIR CLEANER (Figure 32)

Carburetor air cleaner is equipped with a plastic foam air filter element which is oil saturated.

Remove air cleaner cover and inspect filter element at least every 5000 miles, or more often under dusty conditions. The need for servicing is indicated by the appearance of the outside surface of the filter. Filter should be cleaned and re-oiled if a film of dirt has built up covering the surface pores, or if light spots show on the surface which means that dust is drying out the oil. A dark appearance is normal, as long as pores in the filter remain open and covered with an oil film.

1. To clean filter, remove it from screen and wash it in a non-flammable petroleum solvent or detergent and water. Allow to dry thoroughly.

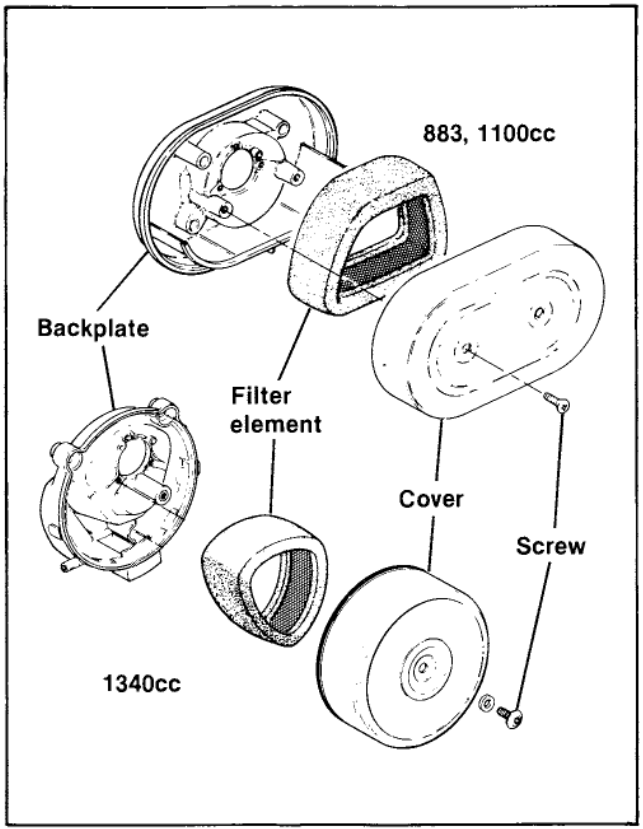


Figure 32. Air Cleaner

2. Evenly apply 1 to 1½ tablespoons of engine oil to the filter element with an atomizer or work that amount of oil into the filter element by hand. There should be no excess.

3. Replace element on screen so that the grooves are toward screen, and install on engine.

CAUTION

Do not run engine without filter element in place.

HYDRAULIC TAPPETS

Tappets are self-adjusting, hydraulic type. They automatically adjust length to compensate for engine expansion and valve mechanism wear, keeping the valve mechanism free of lash when the engine is running.

When starting an engine which has been turned off even for a few minutes, the valve mechanism may tend to be slightly noisy until the hydraulic units completely refill with oil. If at any time, other than for a short period immediately after engine is started, valve mechanism becomes abnormally noisy, it is an indication that one or more of the hydraulic units may not be functioning properly. Always check the oil supply in the oil tank first,

since normal circulation of oil through the engine is necessary for proper operation of the hydraulic units. If there is oil in the tank, the units may not be functioning properly due to dirt in the oil supply passages leading to the lifter units. Inspect and clean tappet oil supply filter screen (1340cc engines, Figure 26). See your Harley-Davidson dealer for service.

CLUTCH (Figure 33)

Periodic adjustment of the clutch and oiling of the clutch control cable is required every 5000 miles to compensate for lining wear. The need for attention to clutch and controls will also be indicated by the clutch slipping under load, or dragging in released position. In any case, the first thing to be checked is the control cable adjustment. See your Harley-Davidson dealer for proper service.

NOTE

Clutch cable adjuster is in the cable on 1987 1340cc models. XLH clutch cable adjusters are at the primary cover on early 1987 models and in the cable on late 1987 models.

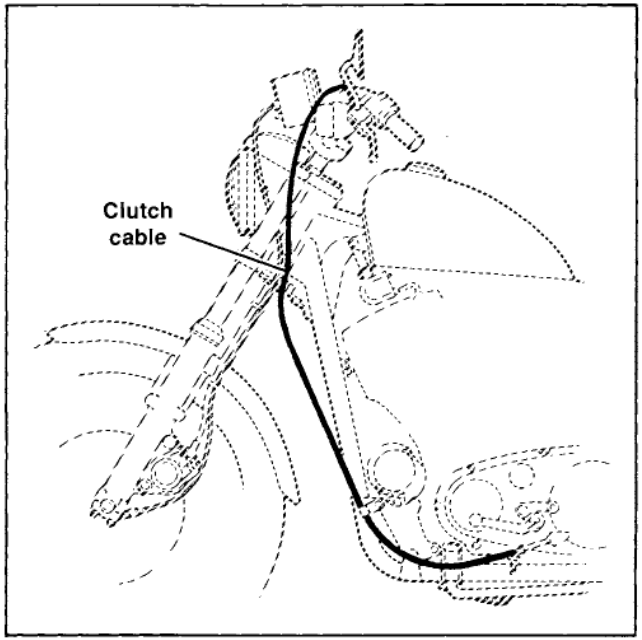


Figure 33. Clutch Control Cable (Typical)

BRAKES

Every 5000 miles, check the fluid level in the master cylinder reservoirs and check brake pads and brake discs for wear. Use only D.O.T. 5 HYDRAULIC BRAKE FLUID that is approved for brake system use and which is available from your Harley-Davidson dealer.

WARNING

Because brake performance is a critical safety item, brake system servicing requires special tools, correct replacement parts and procedures. We recommend that you see your Harley-Davidson dealer for these services.

Brake pads must be inspected for wear every 2500 miles. However, if you ride under adverse conditions, steep hills, heavy traffic, etc., or if you tend to use the rear brake only, more frequent inspection, 1000 miles or less, will be necessary. We do not recommend using the rear brake only.

See Figure 34. Visual inspection of brake pads can be made without removing the caliper by viewing the lower area of each caliper with the aid of a flashlight. If the brake pad friction material is 1/16 in. thick or less (the thickness of a nickel), **the pads must be replaced immediately.** Always replace brake pads in pairs. If this routine maintenance is ignored, loss in braking performance and brake system component damage could occur.

See Figure 35. The rear brake outer pad on all models can be measured from the caliper bracket side using a thin plastic 6 in. rule. Place the rule against the brake disc through the notch in the bracket. On FLT models the rule is inserted through the space alongside the pad. For XLH models see Figure 36. The outer surface of the

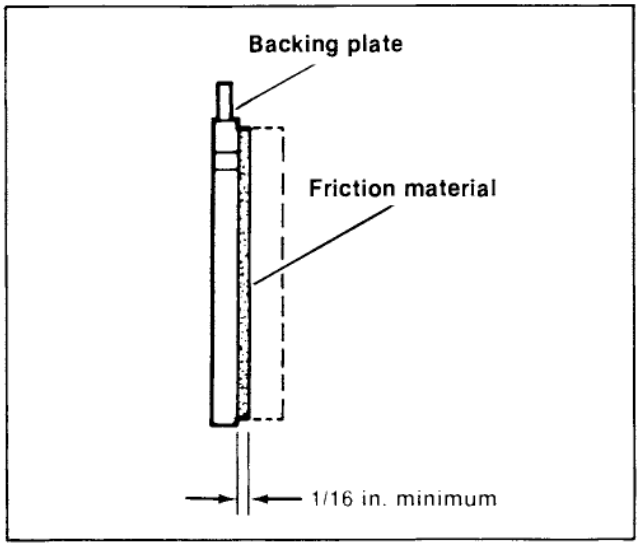


Figure 34. Brake Pad Side View

brake pad backing plate should measure 1/4 in. or more away from the brake disc. **If it measures less than 1/4 in., replace both brake pads immediately.**

NOTE

This 1/4 in. dimension includes the thickness of the backing plate plus minimum 1/16 in. for friction material.

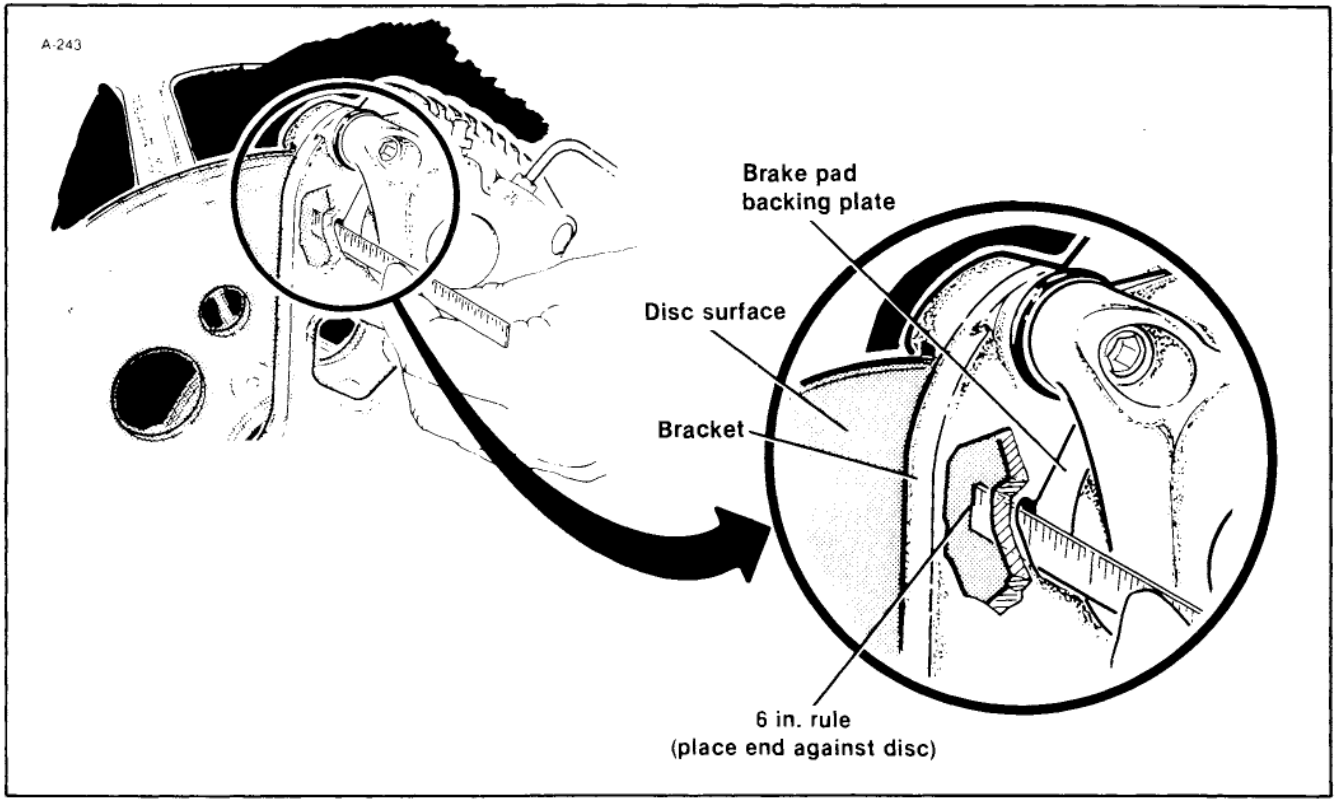


Figure 35. Measuring Rear Brake Outer Pad (Typical)

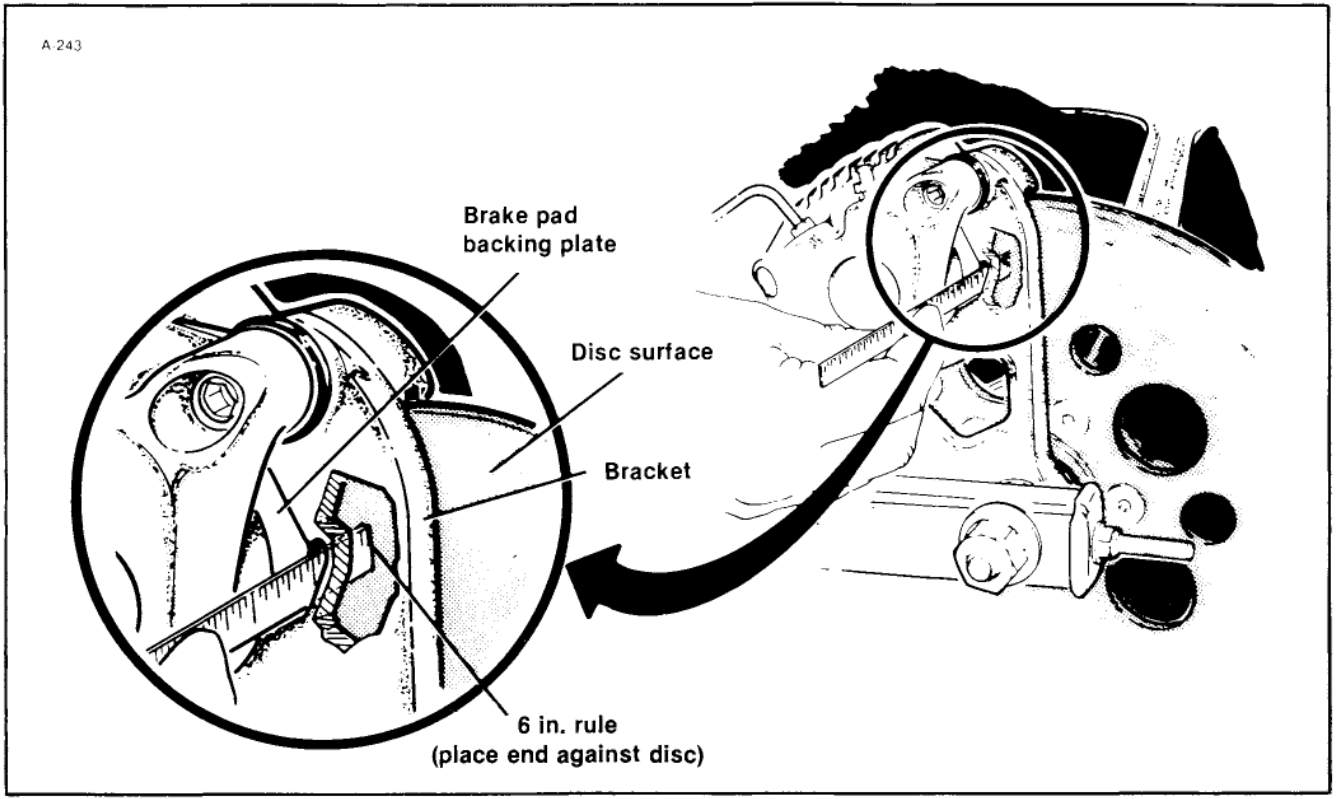


Figure 36. Measuring Rear Brake Outer Pad — XLH Models

TIRES

Be sure to keep tires properly inflated. See TIRE DATA, for correct cold tire inflation pressures. Check before riding when tires are cold. Do not over-inflate tires.

WARNING

Improper tire inflation will cause abnormal tread wear and could result in unstable handling. Under-inflation could result in the tire slipping on the rim, or sudden tire failure.

Check inflation pressure and inspect tread for punctures, cuts breaks, etc., at least weekly if in daily use; or before each trip, if used occasionally.

WARNING

Riding with excessively worn, unbalanced or improperly inflated tires is hazardous and will adversely affect traction, steering and handling.

Do not attempt to use damaged or punctured and repaired tire(s). Once a motorcycle tire has been damaged or punctured, it is unsafe to use.

Same as original equipment tires must be used. Other tires will not fit correctly and may be hazardous to use.

Because tires, tubes and wheels are critical safety items, and servicing of these items requires special tools and skills, we recommend you see your dealer for these services.

SHOCK ABSORBERS

Shock absorbers and rubber bushings should be inspected every 5000 miles for leaks and bushing deterioration.

NOTE

FLST and FXST shock absorbers are not repairable. See your dealer if leakage or malfunction occurs.

VEHICLE ALIGNMENT

FLT, FXR Models

The stabilizer links and engine mounts should be checked for wear according to Service Manual pro-

cedures after the first 500 miles and every 5000 miles thereafter. Stabilizer links should be replaced if they have 0.025 in. or more end play. See your Harley-Davidson dealer for this service.

WARNING

Vehicle alignment is important. Vehicle stability is adversely affected if wheels are out of alignment. Major alignment of the front and rear wheel is controlled by two stabilizer links. One at the front of the engine and one at the top of the engine. Do not change the adjustment of the links. Changing the adjustment as little as 1/3 turn will adversely affect motorcycle stability.

All Models

Vehicle alignment should be checked after the first 500 miles, every 5000 miles thereafter and whenever the rear wheel is removed and installed or when the rear drive chain/belt is adjusted.

WARNING

Major alignment should be performed only by your Harley-Davidson dealer using Service Manual procedures.

WHEEL BEARINGS

Bearings should be repacked at 10,000 mile intervals, once a year, or prior to storage. Use wheel bearing grease and new seals. Excessive play or roughness indicates worn bearings that will require replacement. Check each time wheel is removed.

FRONT FORK BEARINGS

WARNING

Adjustment of front fork bearings is critical. Improperly adjusted bearings will adversely affect motorcycle handling and stability. We recommend that fork bearing adjustments be performed by your Harley-Davidson dealer.

Check front fork for proper bearing adjustment at 500 miles and every 5000 miles thereafter. With front end of motorcycle raised off the floor, make sure front fork turns freely without any binding or interference and that there is no appreciable front to rear fork shake indicating excessive bearing looseness. Steering head bearings should be adjusted if necessary according to Service Manual procedure.

REAR FORK PIVOT SHAFT

On all models except FXST and FLST, the tightness of the rear fork pivot nuts should be checked after the first 500 miles and every 5000 miles thereafter.

SPARK PLUGS

Check the spark plugs every 5000 miles and replace if necessary. Replace the spark plugs every 10,000 miles on all models.

Disconnect spark plug cables from plugs by pulling on the molded connector caps. Connection is the simple snap-on type.

CAUTION

Do not pull on wires because this may damage the internal conductor causing high resistance and reduction in firing voltage.

Before installing spark plugs, the gap should be checked and adjusted if necessary to 0.038 - 0.043 in. Be sure that your motorcycle has the correct spark plug:

1340cc Models . . . . . Harley-Davidson 5R6A
883, 1100cc . . . . . Harley-Davidson 6R12

Spark plugs must be tightened to the torque specified for proper heat transfer. See chart below. If a torque wrench is not available, tighten plugs finger tight and tighten an additional one quarter turn with a spark plug wrench.

MODEL	TORQUE (ft-lbs)
1340cc Models	18 - 22
883, 1100cc	11 - 18

IGNITION TIMING

Ignition timing is preset at the factory. Spark timing is advanced electronically as engine speed increases to suit starting, low speed and high speed requirements.

Ignition timing should be checked every 5000 miles. If ignition timing is not correct, see your Harley-Davidson dealer.

The engines in these vehicles have been designed specifically to achieve optimum fuel economy within exhaust emission controls. Ignition characteristics have been developed to provide maximum engine performance and driveability.

The ignition control unit uses a two-stage curve, and in certain transient light load conditions, as the throttle is opened, the initiation of the spark changes from normal to fully advanced. At this point, the operator may detect a slight noise which is caused by the rapid pressure rise within the combustion chamber as the spark advances rapidly. This noise should not be confused with detonation, which can be relieved by the use of a higher grade of fuel, but is simply a mechanical response to the instantaneous rapid pressure rise. The noise is not detrimental to the performance of the engine.

HEADLAMP (Figure 37)

The headlamps are either sealed beam or replaceable quartz halogen bulb type. When replacement is required, use only the specified sealed beam unit or bulb, available from your Harley-Davidson dealer. Improper wattage sealed beam or bulb may cause charging system problems.

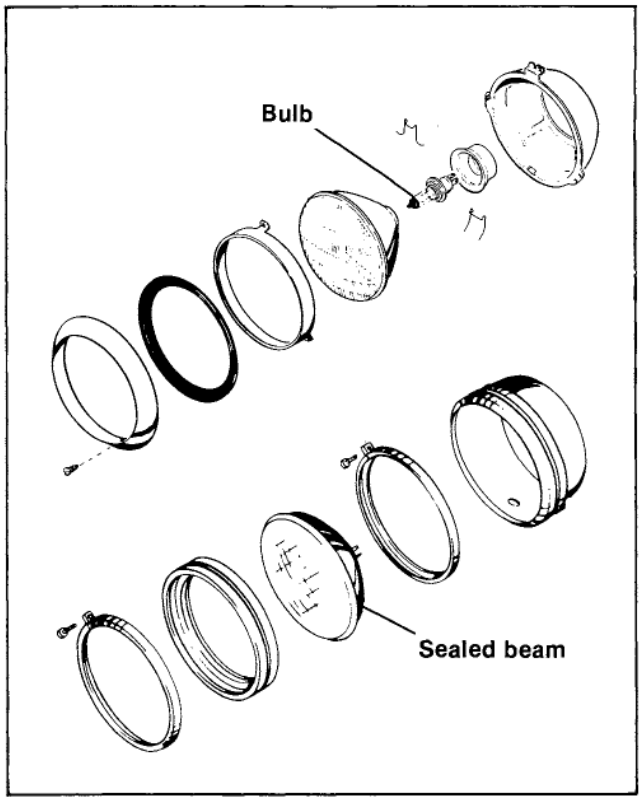


Figure 37. Headlamp

ALTERNATOR CHARGING RATE AND RECTIFIER/REGULATOR

See Figure 38. The alternator output is controlled and changed to direct current by the rectifier/regulator located at the front of the engine. The rectifier/regulator increases charging rate when battery is low or lamps are lit, decreases charging rate when no lamps are lighted and when battery charge is up. This unit requires no interval attention. Should any electrical system trouble be experienced, that might be traceable to the alternator or rectifier/regulator, the motorcycle should be taken to your Harley-Davidson dealer who has the necessary electrical testing equipment to give required attention.

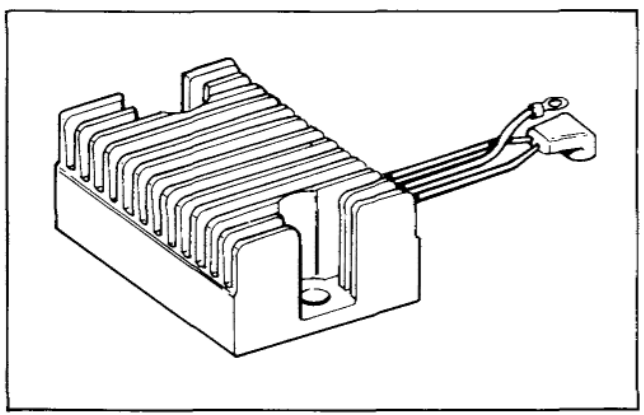


Figure 38. Rectifier/Regulator

BATTERY (Figure 39)

See the following table for battery location.

Table 11. Battery Location

MODEL	LOCATION ON MOTORCYCLE
FLT Models	Right side — remove right saddlebag and right side cover to gain access to battery
XLH Models	Left side
FXST, FLST Models	Under seat
FXR Models	Under seat

It is the care given a battery, rather than the time and miles of service, which is most important in determining its life.

See Figure 39. Inspect the battery solution level at least once a month during motorcycle operation, adding pure distilled water as often as necessary to keep the solution above the plates. If the motorcycle is not used for an extended period of time, check solution level before placing in service.

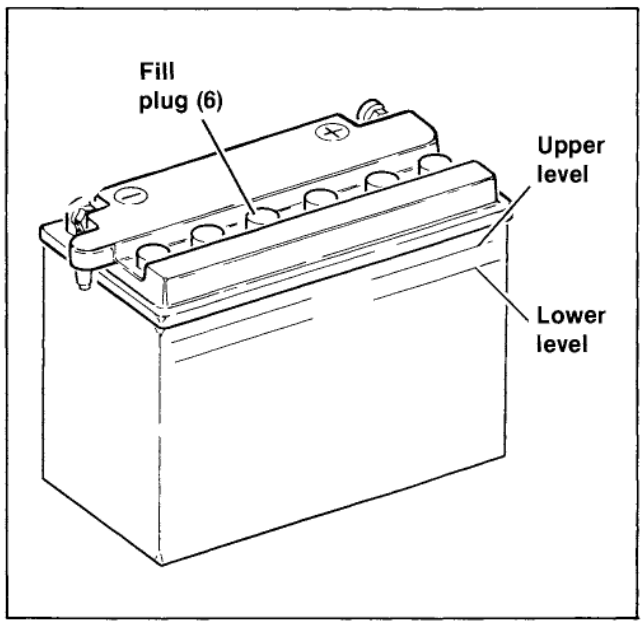


Figure 39. Battery

Remove the battery filler plugs. With a hydrometer or syringe, add water to each cell to raise level of solution between upper and lower level limits shown on battery. Motorcycle should be in an upright position to check the solution level.

Clean connections and check tightness every 2500 miles or monthly.

WARNING

Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing.

ANTIDOTE

External — Flush with water.

Internal — Drink large quantities of water followed by milk of magnesia, vegetable oil, or beaten eggs. Call doctor immediately.

WARNING

Batteries produce explosive hydrogen gas at all times — especially when being charged. Keep cigarettes, open flame, and sparks away from battery at all times. Ventilate area when charging battery. Always protect hands and protect eyes with shield or goggles when working near a battery or acid. KEEP BATTERIES AND ACID OUT OF THE REACH OF CHILDREN!

CAUTION

If battery is filled to a higher level than specified, some of the solution will be forced out through the vent tube when battery is charging. This will not only weaken the solution, but also may damage parts near the battery. Keep battery clean and lightly coat terminals with petroleum jelly to prevent corrosion. Do not overtighten terminal connections. To prevent battery case damage caused by pressure build-up, be sure vent tube is properly routed and not kinked or obstructed.

CIRCUIT BREAKERS

There are four circuit breakers to protect the motorcycle wiring: main, lighting, accessory, and ignition. Sound system equipped motorcycles may have one or two additional circuit breakers.

Each of these breakers is self-resetting and automatically returns steady power to the circuit when an electrical fault that causes it to trip is found and corrected. If the electrical fault is not found and corrected, the breaker cycles on and off causing the motorcycle to operate erratically and eventually the battery will lose its charge.

For electrical problems, it is best to see your Harley-Davidson dealer who has necessary parts and equipment to perform electrical services.

GENERAL MAINTENANCE

Chrome and aluminum parts must be maintained regularly to ensure that they retain their original shine and luster. Care should be taken to keep your new Harley-Davidson motorcycle waxed and clean as often as possible to inhibit rust and corrosion.

CLEANING YOUR MOTORCYCLE

To aid you in keeping your motorcycle clean, see your Harley-Davidson dealer for the following products:

WARNING

Observe warnings and cautions given on labels of cleaning compounds to prevent personal injury or damage to your motorcycle.

Harley-Davidson GUNK Cleaner

Harley-Davidson GUNK will quickly and efficiently remove grease and oil from the metal parts of your motorcycle leaving a clean, bright finish. For unpainted metal surfaces, use full strength. For enameled surfaces dilute according to instructions on can.

CAUTION

Do not allow GUNK cleaner to come in contact with any plastic parts such as windshield, trim strips, seat or saddlebags, since it will discolor the surface or cause deterioration. Use Harley-Davidson PLASTIC CLEANER, VINYL DRESSING or mild soap and water to clean these materials.

CAUTION

When washing your motorcycle, be careful not to get the brakes, engine, mufflers or air cleaner too wet. Wet brake pads or a wet disc may affect braking, and a wet engine could start and run poorly until it dries. Start engine immediately after washing and be sure brakes and engine are operating properly before riding in traffic.

Harley-Davidson CHROME CLEANER

Use Harley-Davidson CHROME CLEANER to make the chrome parts of your motorcycle glitter and sparkle.

Harley-Davidson CYCLE POLISH

Harley-Davidson CYCLE POLISH is made to clean and polish the enamel parts to maintain or restore these parts as close as possible to their original luster.

Harley-Davidson VINYL DRESSING

Harely-Davidson VINYL DRESSING is specially formulated for seats, pegs, grips, tires and all other vinyl, rubber, leather and plastic surfaces. Retards fading, cracking and aging. Restores full rich colors leaving a soft natural appearance. Full instructions appear on the container.

Harley-Davidson PLASTIC CLEANER

Use Harley-Davidson PLASTIC CLEANER to clean and remove fine scratches from most flexible or rigid plastic surfaces. Flush with water first to soften and remove excessive dirt. Follow instructions on the container.

STORAGE

If your 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, preserve the battery and to prevent the build-up of gum and varnish in the carburetor.

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

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.

GENERAL

The following checklist of possible operating troubles and their probable causes will be helpful in keeping your motorcycle in good operating condition. More than one of these conditions may be causing the trouble and all should be carefully checked.

WARNING

The troubleshooting section of this Owner's Manual is intended solely as a guide to diagnosing problems. Carefully read the appropriate sections of this manual before performing any work. Repair and maintenance operations not listed in this Owner's Manual are in the service manual and should be performed by your Harley-Davidson dealer.

ENGINE

Starter Does Not Operate or Does Not Turn Engine Over

1. Engine run switch in "OFF" position.
2. Ignition switch not on.
3. Discharged battery or loose or corroded connections (solenoid chatters).

Engine Turns Over But Does Not Start

1. Fuel tank empty.
2. Fuel valve turned off.
3. Fuel valve or filter clogged.
4. Discharged battery or loose or broken battery terminal connections.
5. Fouled spark plugs.
6. Spark plug cables in bad condition and shorting or cable connections loose.
7. Ignition timing badly out of adjustment.
8. Loose wire connection at coil or battery connection.
9. Engine flooded with fuel as a result of overchoking.
10. Engine oil too heavy (winter operation).

Starts Hard

1. Spark plugs in bad condition or have improper gap or are partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Battery nearly discharged.
4. Loose wire connection at one of the battery terminals or at coil.

5. Carburetor control not adjusted correctly.
6. Engine oil too heavy (winter operation).
7. Ignition not timed properly. See dealer.
8. Fuel tank cap bent or plugged, or carburetor fuel line closed off, restricting fuel flow.
9. Water or dirt in fuel system and carburetor.
10. Choke disc stuck in open position.
11. Air leak at intake manifold.

Starts But Runs Irregularly or Misses

1. Spark plugs in bad condition or partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Spark plug gap too close or too wide.
4. Battery nearly discharged.
5. Damaged wire or loose connection at battery terminals or coils.
6. Intermittent short circuit due to damaged wire insulation.
7. Water or dirt in fuel system, carburetor or filter.
8. Fuel tank cap vent plugged or carburetor vent line closed off.
9. Carburetor controls misadjusted.
10. Air leak at intake manifold or air cleaner.

A Spark Plug Fouls Repeatedly

1. Incorrect spark plug for the kind of service.
2. Piston rings badly worn or broken. See dealer.
3. Fuel mixture too rich.
4. Valve guides badly worn. See dealer.

Pre-ignition or Detonation (Knocks or Pings)

1. Excessive carbon deposit on piston head or in combustion chamber.
2. Incorrect spark plug for the kind of service.
3. Ignition timing advanced. See dealer.
4. Fuel octane rating too low.

Overheats

1. Insufficient oil supply or oil not circulating.
2. Heavy carbon deposit. See dealer.
3. Ignition timing retarded. See dealer.

Excessive Vibration

1. Stabilizer links worn or loose.* See dealer.
2. Rubber mounts loose.* See dealer.
3. Rear fork pivot shaft nuts loose.* See dealer.
4. Front engine mounting bolts loose.* See dealer.
5. Engine to transmission mounting bolts loose.* See dealer.

6. Broken frame.
7. Front or rear chain/belt badly worn or links tight as a result of insufficient lubrication.*
8. Wheels and/or tires damaged. See dealer.
9. Internal engine problem. See dealer.
10. Vehicle not properly aligned. See dealer.

* If applicable.

LUBRICATION SYSTEM

Oil Does Not Return to Oil Tank

1. Oil tank empty.
2. Restricted oil lines or fittings.
3. Restricted oil filter.

Engine Uses Too Much Oil or Smokes Excessively

1. Piston rings badly worn or broken. See dealer.
2. Valve guides worn. See dealer.

Engine Leaks Oil From Cases, Push Rods, Hoses

1. Loose parts. See dealer.
2. Imperfect seal at gaskets, push rod cover, washers, etc. See dealer.
3. Restricted oil return line to tank. See dealer.
4. Restricted breather hose to air cleaner. See dealer.

ELECTRICAL SYSTEM

Alternator Does Not Charge

1. Module not grounded. See dealer.
2. Engine ground wire loose or broken.* See dealer.
3. Loose or broken wires in charging circuit. See dealer.

* If applicable.

Alternator Charge Rate is Low

1. Weak battery.
2. Loose or corroded connections.

CARBURETOR

Carburetor Floods

1. Excessive "pumping" of hand throttle grip.

TRANSMISSION

Transmission Shifts Hard

1. Bent shifter rod. See dealer
2. Transmission shifting mechanism needs adjustment.* See dealer.

* If applicable.

Transmission Jumps Out of Gear

1. Shifter rod improperly adjusted. See dealer
2. Shifter forks (inside transmission) improperly adjusted. See dealer.

Clutch Slips

1. Clutch controls improperly adjusted. See dealer
2. Worn friction discs.
3. Insufficient clutch spring tension.

Clutch Drags or Does Not Release

1. Clutch controls improperly adjusted. See dealer
2. Insufficient clutch spring tension. See dealer
3. Clutch discs warped. See dealer

Clutch Chatters

1. Friction discs or steel discs worn or warped. See dealer

BRAKES

Brakes Do Not Hold Normally

1. Master cylinder low on fluid. See dealer
2. Brake line contains air bubbles. See dealer
3. Master or wheel cylinder piston worn. See dealer
4. Brake pads contaminated with grease or oil. See dealer
5. Brake pads badly worn (1/16 in. minimum lining thickness). See dealer
6. Brake disc badly worn or warped. See dealer.
7. Brake fades due to heat build up — brake pads dragging or excessive braking. See dealer.
8. Brake drags — insufficient brake pedal or hand lever free play. See dealer

OWNER'S IDENTIFICATION CARD

See Figure 40. A permanent Owner's Identification Card is issued to each Harley-Davidson new motorcycle owner when the completed warranty registration form is received at Harley-Davidson Motor Co., Inc.

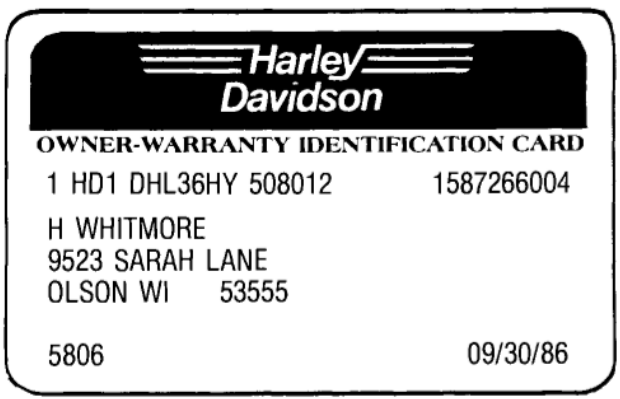


Figure 40. Owner's Warranty Identification Card

The Owner's Identification Card is a permanent record showing proof of your ownership and gives all of the information necessary for you and your dealer to simplify and expedite service and obtain parts and accessories.

Keep this card in your possession, since it is required by your Harley-Davidson dealer for any warranty service performed on your motorcycle.

If you have any questions regarding service or warranty, we recommend that you contact your Harley-Davidson dealer for service.

WARRANTY AND MAINTENANCE

This Owner's Manual contains your new motorcycle warranty and a number of tear-out service coupons.

The approved service and maintenance procedures on each coupon and the mileage intervals cover items which are the owner's responsibility to have taken care of. All of the specified maintenance services must be performed to keep your warranty in force.

Bring this Owner's Manual along when you visit your dealer at the specified mileages to have your motorcycle inspected and serviced. Have the owner record

stubs dated and signed for required proof of service during the warranty period. The dealer records should be retained by the dealer, or owner, as a record of proper maintenance. Also keep other receipts covering any service or maintenance performed. These records should be transferred to each subsequent owner.

WARNING

We caution you against the use of certain non-standard parts such as after-market and custom made extended front forks which may adversely affect performance and handling, and could cause an accident with possible injury to yourself or others. Removing factory installed standard parts may also affect performance and cause injury. The use of any non-standard parts including mufflers may void your warranty according to terms of the warranty.

Harley-Davidson dealers are independently owned and operated and may sell parts and accessories other than Harley-Davidson. Therefore, you should understand that we are not and cannot be responsible for the quality, suitability, or safety of any non-Harley-Davidson part, accessory or design modification, including labor, which may be sold and/or installed by our dealers.

IMPORTANT

If you move from your present address, or sell your motorcycle, please fill out and mail the post card at the back of this manual.

CALIFORNIA EVAPORATIVE EMISSION CONTROL

All new 1987 Harley-Davidson motorcycles sold in the state of California are equipped with an evaporative emission control system. This system is designed to meet the CARB regulations in effect at the time of manufacture.

The system requires a small amount of maintenance. Periodic inspection is required to make sure hoses are properly routed, not kinked or blocked, and that all fittings are secure. Mounting hardware should also be checked periodically for tightness.

Kits are available through authorized Harley-Davidson dealers to convert non-California vehicles to California specifications. If this need should arise, see your local California Harley-Davidson dealer for details.

EPA NOISE REGULATIONS

EPA noise regulations require that the following statements be included in the Owner's Manual.

TAMPERING WITH NOISE CONTROL SYSTEM PROHIBITED: Federal law prohibits the following acts or the causing thereof: (1) The removal or rendering inoperative by any person other than for purposes of maintenance repair, or replacement of any device or element of design incorporated into any new vehicle for the purpose of noise control prior to its sale or delivery to the ultimate purchaser or while it is in use, or (2) the use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE ACTS LISTED BELOW.

1. Replacing the muffler(s) and/or the entire exhaust system with parts not certified to be noise legal for street use.

2. Removing or modifying the muffler internal baffles in any way.

3. Replacing the air intake/cleaner assembly with one not certified to be noise legal for street use.

4. Modifying the air intake/cleaner assembly in such a way as to make the vehicle no longer noise legal for street use.

Harley-Davidson recommends that any and all noise related maintenance be done by an authorized Harley-Davidson dealer using genuine Harley-Davidson parts.

IMPORTANT

If you move from your present address, or sell your motorcycle, please fill out and mail the post card at the back of this manual.

WARRANTY/SERVICE INFORMATION

Your selling dealer is responsible for providing the warranty repair work on your motorcycle.

For normal service work or warranty work under the above conditions, you may obtain the name and location of your nearest Harley-Davidson dealer by calling **1-800-558-2001** (toll free), in any state except Wisconsin, Alaska, and Hawaii. In Wisconsin, call 1-800-242-3102 (toll free). Service is 24 hours a day, 365 days per year.

HARLEY-DAVIDSON LIMITED WARRANTY
(12 MONTHS/UNLIMITED MILEAGE)

Harley-Davidson warrants to the first retail purchaser and his authorized transferees of our new 1987 model motorcycles/sidecars that our Selling Dealer will repair or replace without charge any parts (except tires, maintenance items and battery under certain conditions) found under normal use in the U.S.A. or Canada to be defective in factory materials or workmanship, and upon the following terms and conditions:

DURATION AND TRANSFER

1. The duration of this limited warranty is twelve months, measured from the date of initial retail purchase from an authorized Harley-Davidson Selling Dealer, with no mileage limitation.

2. Any unexpired portion of this limited warranty may be transferred, with written authorization, upon the resale of the motorcycle/sidecar during the first 12 months of ownership. To obtain authorization, a transfer application must be filed with Harley-Davidson together with a fee of $25.00 to cover administrative costs, and the motorcycle/sidecar must pass inspection by one of our participating Dealers. The customer is responsible for any charge incurred for work performed by the Dealer beyond the inspection procedure itself. (See your Owner's Manual for complete details.)

OWNER OBLIGATIONS

1. To qualify for warranty protection, you and the Selling Dealer must complete the Warranty Registration Form and return it to us within 10 days after delivery. We will then send you an Owner-Warranty Identification Card.

2. To obtain warranty service, return your motorcycle/sidecar at your expense within the warranty period to the Selling Dealer, or to any other authorized Dealer if you have moved a long distance, are touring a long distance, or need emergency service. You must be able to present your Owner-Warranty Identification Card and/or Owner's Manual upon our Dealer's request. Our Dealer should be able to provide warranty service during his normal business hours and as soon as possible, depending upon his service department's workload and the availability of necessary parts.

EXCLUSIONS

This warranty will **not** apply to any motorcycle/sidecar as follows:

1. Which has not been operated or maintained as specified in the Owner's Manual.

2. Which has been abused, altered outside of original factory specifications, improperly stored or used "off the highway", for racing or competition of any other kind.

3. Which has had the odometer removed or tampered with.

OTHER LIMITATIONS

This warranty does **not** cover:

1. Parts and labor for normal maintenance as recommended in the Owner's Manual, including such items as the following: lubrication, oil and filter change, fuel system cleaning, battery maintenance, engine tune-up, spark plugs, brake, clutch and chain/belt adjustment (including chain replacement, belt damaged by road hazards).

2. Seats, saddlebags, paint, chrome, or trim deterioration caused by ordinary wear and tear, exposure or improper maintenance.

3. Motorcycle battery after the first 6 months following the date of original retail motorcycle purchase, however, if your battery is found to be defective, within the terms of this limited warranty, between the seventh through twelfth months, you will be charged for the full cost of our dealer's installation labor and for the cost of the battery's replacement, on a pro-rated basis. (See your dealer for complete details.)

IMPORTANT/READ CAREFULLY

1. Our Dealers are independently owned and operated and may sell other products. Because of this, HARLEY-DAVIDSON IS NOT RESPONSIBLE FOR THE SAFETY, QUALITY, OR SUITABILITY OF ANY NON-HARLEY-DAVIDSON PART, ACCESSORY OR DESIGN MODIFICATION INCLUDING LABOR WHICH MAY BE SOLD AND/OR INSTALLED BY OUR DEALERS.

2. THERE IS NO OTHER EXPRESS WARRANTY (OTHER THAN EMISSIONS AND NOISE WARRANTIES) ON THE MOTORCYCLE. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS IS LIMITED TO THE DURATION OF THIS WARRANTY.

3. TO THE FULLEST EXTENT ALLOWED BY LAW, HARLEY-DAVIDSON AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF USE, INCONVENIENCE, LOST TIME, COMMERCIAL LOSS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations and exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

HARLEY-DAVIDSON MOTOR CO., INC., • P.O. Box 653 • Milwaukee, Wisconsin 53201, U.S.A.

99919-84

HARLEY-DAVIDSON MOTOR CO., INC.

LIMITED WARRANTY TRANSFER FORM

(PLEASE PRINT)

VEHICLE IDENTIFICATION NUMBER

PURCHASER

FIRST INITIAL LAST
NAME

ADDRESS

CITY STATE ZIP

DEALERSHIP

NUMBER

NAME

ADDRESS

CITY STATE ZIP

WARRANTY EXPIRATION DATE
WILL BE 12 MONTHS FROM INITIAL
RETAIL PURCHASE DATE

INSPECTION PERFORMED BY TRANSFER DEALER ON: M D YR

WARRANTY TRANSFER INSTRUCTIONS:

To validate the warranty transfer, the following items **must** be complied with:

1. The prior purchaser must provide proof that required scheduled maintenance services have been performed. In the event they have not, it is the responsibility of the customer to have the next scheduled maintenance service performed or any other required work at his expense.
2. The vehicle must be inspected by an authorized Harley-Davidson Dealer to determine its condition. If any of the conditions, listed under Exclusions in the Limited Warranty exist, the Warranty is **not** transferable.
3. The Limited Warranty Transfer Form must be completed and forwarded to Harley-Davidson Motor Co., Inc. by the dealer along with the $25.00 Transfer Fee. Upon receipt of this form the purchaser will receive a Owner-Warranty Identification Card.

***NOTE:** ATTACH $25.00 TRANSFER FEE TO THIS FORM*

PURCHASER SIGNATURE **DATE**

DEALER SIGNATURE **DATE**

HARLEY-DAVIDSON USE ONLY

TRANSFER FEE RECEIVED:

Copy Distribution:
White original — to Harley-Davidson Motor Co., Inc.
Yellow — for Customer Pink — for Dealer

(Warranty Transfer Forms are availalble from your Harley-Davidson Dealer)

HARLEY-DAVIDSON EMISSION CONTROL SYSTEM WARRANTY

The following warranty applies to the emission control system and is in addition to the LIMITED WARRANTY, and NOISE CONTROL SYSTEM WARRANTY.

Harley-Davidson Motor Co., Inc., warrants to the first owner and each subsequent owner that his vehicle is designed and built so as to conform at the time of sale with applicable regulations of the U.S. Federal Environmental Protection Agency at the time of manufacture and that it is free from defects in materials and workmanship which cause his motorcycle not to meet U.S. Environmental Protection Agency Standards within 5 years or 18,641 miles (30,000 kilometers) whichever occurs first.

The warranty period shall begin on the date the motorcycle is delivered to the first retail purchaser or, if the motorcycle is placed in service as a demonstrator or company vehicle prior to sale at retail, on the date it is first placed in service.

THE FOLLOWING ITEMS ARE NOT COVERED BY THE EMISSION CONTROL SYSTEM WARRANTY

1. Failures which arise as a result of misuse, alterations, accident or non-performance of maintenance as specified in the Owner's Manual.
2. The replacement of parts (such as spark plugs, fuel and oil filters, etc.) used in required maintenance.
3. Loss of time, inconvenience, loss of motorcycle use or other consequential damages.
4. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.

RECOMMENDATIONS FOR REQUIRED MAINTENANCE

IT IS RECOMMENDED THAT ANY EMISSION SYSTEM MAINTENANCE BE PERFORMED BY AN AUTHORIZED HARLEY-DAVIDSON DEALER USING GENUINE HARLEY-DAVIDSON REPLACEMENT PARTS. THE MAINTENANCE, REPLACEMENT OR REPAIR OF THE EMISSION CONTROL SYSTEM MAY BE PERFORMED BY ANY OTHER QUALIFIED SERVICE OUTLET OR INDIVIDUAL. NON-GENUINE PARTS MAY BE USED ONLY IF SUCH PARTS ARE CERTIFIED TO COMPLY WITH U.S. ENVIRONMENTAL PROTECTION AGENCY STANDARDS.

HARLEY-DAVIDSON MOTOR CO., INC., Milwaukee, Wisconsin 53201 U.S.A.

HARLEY-DAVIDSON NOISE CONTROL SYSTEM WARRANTY

The following warranty applies to the noise control system and is in addition to the LIMITED WARRANTY, and EMISSION CONTROL SYSTEM WARRANTY.

Harley-Davidson Motor Co., Inc., warrants to the first owner and each subsequent owner that his vehicle is designed and built so as to conform at the time of sale with applicable regulations of the U.S. Environmental Protection Agency (as tested following F-76 Drive-By test procedure) at the time of manufacture and that it is free from defects in materials and workmanship which cause his motorcycle not to meet U.S. Environmental Protection Agency Standards within 1 year or 3,730 miles (6,000 kilometers) whichever occurs first.

The warranty period shall begin on the date the motorcycle is delivered to the first retail purchaser or, if the motorcycle is placed in service as a demonstrator or company vehicle prior to sale at retail, on the date it is first placed in service.

THE FOLLOWING ITEMS ARE NOT COVERED BY THE NOISE CONTROL SYSTEM WARRANTY

1. Failures which arise as a result of misuse, alterations, or accident as specified in the Owner's Manual.
2. Replacing, removing, or modifying any portion of the NOISE CONTROL SYSTEM (consisting of the exhaust system and air intake/cleaner assembly) with parts not certified to be noise legal for street use.
3. Loss of time, inconvenience, loss of motorcycle use or other consequential damages.
4. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.

RECOMMENDATIONS FOR REQUIRED MAINTENANCE

IT IS RECOMMENDED THAT ANY NOISE SYSTEM MAINTENANCE BE PERFORMED BY AN AUTHORIZED HARLEY-DAVIDSON DEALER USING GENUINE HARLEY-DAVIDSON REPLACEMENT PARTS. THE MAINTENANCE, REPLACEMENT OR REPAIR OF THE NOISE CONTROL SYSTEM MAY BE PERFORMED BY ANY OTHER QUALIFIED SERVICE OUTLET OR INDIVIDUAL. NON-GENUINE PARTS MAY BE USED ONLY IF SUCH PARTS ARE CERTIFIED TO COMPLY WITH U.S. ENVIRONMENTAL PROTECTION AGENCY STANDARDS.

HARLEY-DAVIDSON MOTOR CO., INC., P.O. Box 653 Milwaukee, Wisconsin 53201 U.S.A.

NOTES

500 MILE
(800 km)
MAINTENANCE

_____
Date

_____
Mileage

_____
Dealer (or other) Signature

OWNER RECORD

500 MILE
(800 km)
MAINTENANCE

You are authorized to perform the applicable maintenance and lubrication services listed on the back of this coupon. These services are to be performed at your regular rates and paid for by me, the owner. I also authorize you to road test this motorcycle for proper operation.

_____
Owner's Signature

_____
VIN

Date _____ **Mileage** _____

DEALER RECORD

500 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift and brake lever bearings.*	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Change transmission lubricant and clean magnetic drain plug.*	☐
23.	Check operation of all electrical equipment and switches.	☐
24.	Check front fork bearing adjustment.	☐
25.	Check stabilizer links* and engine mounts.	☐
26.	Check air suspension - pressure, operation and leakage.*	☐
27.	Road test.	☐

* If applicable.

500 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift and brake lever bearings.*	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Change transmission lubricant and clean magnetic drain plug.*	☐
23.	Check operation of all electrical equipment and switches.	☐
24.	Check front fork bearing adjustment.	☐
25.	Check stabilizer links* and engine mounts.	☐
26.	Check air suspension - pressure, operation and leakage.*	☐
27.	Road test.	☐

* If applicable.

2500 MILE
(4000 km)
MAINTENANCE

_____
Date

_____
Mileage

_____
Dealer (or other) Signature

OWNER RECORD

2500 MILE
(4000 km)
MAINTENANCE

You are authorized to perform the applicable maintenance and lubrication services listed on the back of this coupon. These services are to be performed at your regular rates and paid for by me, the owner. I also authorize you to road test this motorcycle for proper operation.

_____
Owner's Signature

_____
VIN

Date _____ **Mileage** _____

DEALER RECORD

2500 MILE MAINTENANCE

		✓
1.	Inspect engine oil.	☐
2.	Inspect rear chain / belt.	☐
3.	Inspect battery fluid level and connections.	☐
4.	Inspect brake pads and discs for wear.	☐
5.	Inspect fuel valve, lines and fittings for leaks.	☐
6.	Inspect tire pressure and inspect tread.	☐
7.	Inspect operation of throttle and choke controls.	☐
8.	Inspect operation of all electrical equipment and switches.	☐
9.	Inspect transmission lubricant.*	☐
10.	Check stabilizer links* and engine mounts.	☐
11.	Road test.	☐

* If applicable.

2500 MILE MAINTENANCE

		✓
1.	Inspect engine oil.	☐
2.	Inspect rear chain / belt.	☐
3.	Inspect battery fluid level and connections.	☐
4.	Inspect brake pads and discs for wear.	☐
5.	Inspect fuel valve, lines and fittings for leaks.	☐
6.	Inspect tire pressure and inspect tread.	☐
7.	Inspect operation of throttle and choke controls.	☐
8.	Inspect operation of all electrical equipment and switches.	☐
9.	Inspect transmission lubricant.*	☐
10.	Check stabilizer links* and engine mounts.	☐
11.	Road test.	☐

* If applicable.

5000 MILE
(8000 km)
MAINTENANCE

_____
Date

_____
Mileage

_____
Dealer (or other) Signature

OWNER RECORD

5000 MILE
(8000 km)
MAINTENANCE

You are authorized to perform the applicable maintenance and lubrication services listed on the back of this coupon. These services are to be performed at your regular rates and paid for by me, the owner. I also authorize you to road test this motorcycle for proper operation.

_____
Owner's Signature

_____
VIN

Date _____ **Mileage** _____

DEALER RECORD

5000 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift/brake lever bearings* and speedometer cable.	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Check operation of all electrical equipment and switches.	☐
23.	Check front fork bearing adjustment.	☐
24.	Check ignition timing and vacuum hose.	☐
25.	Change transmission lubricant and clean the magnetic drain plug.*	☐
26.	Change spark plugs.	☐
27.	Check condition of rear shock absorbers.	☐
28.	Change front fork oil.	☐
29.	Check engine mounts.	☐
30.	Check air suspension - pressure, operation and leakage.*	☐
31.	Road test.	☐

* If applicable.

5000 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift/brake lever bearings* and speedometer cable.	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Check operation of all electrical equipment and switches.	☐
23.	Check front fork bearing adjustment.	☐
24.	Check ignition timing and vacuum hose.	☐
25.	Change transmission lubricant and clean the magnetic drain plug.*	☐
26.	Change spark plugs.	☐
27.	Check condition of rear shock absorbers.	☐
28.	Change front fork oil.	☐
29.	Check engine mounts.	☐
30.	Check air suspension - pressure, operation and leakage.*	☐
31.	Road test.	☐

* If applicable.

7500 MILE
(12000 km)
MAINTENANCE

_____
Date

_____
Mileage

_____
Dealer (or other) Signature

OWNER RECORD

7500 MILE
(12000 km)
MAINTENANCE

You are authorized to perform the applicable maintenance and lubrication services listed on the back of this coupon. These services are to be performed at your regular rates and paid for by me, the owner. I also authorize you to road test this motorcycle for proper operation.

_____
Owner's Signature

_____
VIN

Date _____ **Mileage** _____

DEALER RECORD

7500 MILE MAINTENANCE

		✓
1.	Inspect engine oil.	☐
2.	Inspect rear chain / belt.	☐
3.	Inspect battery fluid level and connections.	☐
4.	Inspect brake pads and discs for wear.	☐
5.	Inspect fuel valve, lines and fittings for leaks.	☐
6.	Inspect tire pressure and inspect tread.	☐
7.	Inspect operation of throttle and choke controls.	☐
8.	Inspect operation of all electrical equipment and switches.	☐
9.	Inspect transmission lubricant.*	☐
10.	Check stabilizer links* and engine mounts.	☐
11.	Road test.	☐

* If applicable.

7500 MILE MAINTENANCE

		✓
1.	Inspect engine oil.	☐
2.	Inspect rear chain / belt.	☐
3.	Inspect battery fluid level and connections.	☐
4.	Inspect brake pads and discs for wear.	☐
5.	Inspect fuel valve, lines and fittings for leaks.	☐
6.	Inspect tire pressure and inspect tread.	☐
7.	Inspect operation of throttle and choke controls.	☐
8.	Inspect operation of all electrical equipment and switches.	☐
9.	Inspect transmission lubricant.*	☐
10.	Check stabilizer links* and engine mounts.	☐
11.	Road test.	☐

* If applicable.

10,000 MILE
(16,000 km)
MAINTENANCE

_____
Date

_____
Mileage

_____
Dealer (or other) Signature

OWNER RECORD

10,000 MILE
(16,000 km)
MAINTENANCE

You are authorized to perform the applicable maintenance and lubrication services listed on the back of this coupon. These services are to be performed at your regular rates and paid for by me, the owner. I also authorize you to road test this motorcycle for proper operation.

_____
Owner's Signature

_____
VIN

Date _____ **Mileage** _____

DEALER RECORD

10,000 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift/brake lever bearings* and speedometer cable.	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Check operation of all electrical equipment and switches.	☐
23.	Check front fork bearing adjustment, and lubricate bearings.	☐
24.	Check ignition timing and vacuum hose.	☐
25.	Change transmission lubricant and clean the magnetic drain plug.*	☐
26.	Change spark plugs.	☐
27.	Check condition of rear shock absorbers.	☐
28.	Repack wheel bearings with grease.	☐
29.	Change front fork oil.	☐
30.	Check stabilizer links* and engine mounts.	☐
31.	Check air suspension - pressure, operation and leakage.*	☐
32.	Road test.	☐

* If applicable.

10,000 MILE MAINTENANCE

		✓
1.	Change engine oil.	☐
2.	Replace oil filter.	☐
3.	Clean tappet oil screen.*	☐
4.	Change primary chaincase lubricant and clean magnetic drain plug.	☐
5.	Check and adjust chains/belt.	☐
6.	Inspect air cleaner and service as required.	☐
7.	Check battery electrolyte level. Check and clean battery connections.	☐
8.	Check rear brake pedal adjustment and free play.	☐
9.	Inspect brake pads and discs for wear.	☐
10.	Check brake fluid reservoir levels and condition.	☐
11.	Inspect oil lines and brake system for leaks.	☐
12.	Lubricate the following: front brake handlever, throttle control cables, choke control cable, clutch control cable and handlever.	☐
13.	Check operation of throttle and choke controls.	☐
14.	Check clutch adjustment.	☐
15.	Grease the foot shift/brake lever bearings* and speedometer cable.	☐
16.	Check tightness of all fasteners except head bolts.	☐
17.	Check tire pressure and inspect tread.	☐
18.	Check engine low and fast idle speed adjustment.	☐
19.	Inspect fuel valve, lines and fittings for leaks.	☐
20.	Clean fuel tank filter screen.	☐
21.	Check wheel spoke tightness.*	☐
22.	Check operation of all electrical equipment and switches.	☐
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24.	Check ignition timing and vacuum hose.	☐
25.	Change transmission lubricant and clean the magnetic drain plug.*	☐
26.	Change spark plugs.	☐
27.	Check condition of rear shock absorbers.	☐
28.	Repack wheel bearings with grease.	☐
29.	Change front fork oil.	☐
30.	Check stabilizer links* and engine mounts.	☐
31.	Check air suspension - pressure, operation and leakage.*	☐
32.	Road test.	☐

* If applicable.

SERVICE LITERATURE

For further technical information the following publications are available (Fall of 1987) through your Harley-Davidson dealer. Order by part numbers below.

Publication	FLT/FXR Part No.	FXST Part No.	XLH Part No.
Service Manual	**99483-87**	**99482-87**	**99484-87**
Parts Catalog	**99439-87**	**99439-87**	**99451-87**

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PATENT NOTICE

Harley-Davidson products are manufactured under one or more of the following patents: U.S. Patents — 2986162, 2987934, 2998809, 3116089, 3144631, 3144860, 3226994, 3229792, 3434887, 3559773, 3673359, 3709317, Des. 225, 626.

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HARLEY-DAVIDSON MOTOR CO., INC.

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