FRONT COVER

Table of Contents

'04 Touring Models 99466-04

IMPORTANT NOTICE!

Safety Definitions

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

⚠WARNING

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury. (00119a)

⚠CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. (00139a)

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage. (00140a)

Printed in the U.S.A

NOTES

Refers to important information, and is placed in italic type.

It is recommended that you take special notice of these items.

HARLEY-DAVIDSON MOTORCYCLES ARE FOR ON-ROAD USE ONLY

This motorcycle is not equipped with a spark arrester and is designed to be used only on the road. Operation of off-road usage in some areas may be illegal. Obey local laws and regulations. This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when resold.

VISIT THE HARLEY-DAVIDSON WEB SITE
http://www.harley-davidson.com

YOUR OWNER'S MANUAL

WE CARE ABOUT YOU

Welcome to the Harley-Davidson® Motorcycling Family! When enjoying your Harley-Davidson motorcycle, be sure to ride safely, defensively and within the limits of the law. Ride with your headlamp on, always wear a helmet, proper eyewear and protective clothing, and insist your passenger does too. Never ride while under the influence of alcohol or drugs. Know your Harley® and read your Owner's Manual cover to cover. Enhance your ownership experience further by individualizing your motorcycle through the installation of tried and tested Harley-Davidson® Genuine Motor Parts™ and Genuine Motor Accessories™. When adding performance products to your Harley, be a good neighbor and choose products that comply with local noise and emissions regulations. Protect your privilege to ride by joining the American Motorcyclist Association.

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 minor maintenance. Major repairs are covered in the Harley-Davidson Service Manual. Such major repairs require the attention of a skilled technician 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 Company

CMI-2.5M-06/03

Printed in the U.S.A.

CUSTOMER SERVICE ASSISTANCE

Most sales or service issues will be resolved at the dealership. However if an issue arises that your dealer cannot resolve, please follow the procedure below.

1. Discuss your problem with the appropriate personnel at the dealership in the Sales, Service or Parts area. If that proves unsuccessful, speak to the owner of the dealership or the general manager.

2. If you cannot resolve the issue with the dealership, you can contact the Harley-Davidson Customer Service Department by calling (414) 343-4056 or write to:

Attention: Customer Service Department
Harley-Davidson Motor Company
P. O. Box 653
Milwaukee, WI 53201

To avoid delays, please have the following information available to give to the Customer Service Representative:

- Your name, address and phone number.
- Motorcycle V.IN. (Vehicle Identification Number) found on the vehicle registration, warranty card or stamped on the steering head and on a label located on the right front frame downtube of the motorcycle itself.
- Name and location of the dealership.
- Current mileage.
- Clear description of issue.

PERSONAL INFORMATION

Name: _____

Address: _____

City: _____ St.:_____ Zip: _____

Telephone No. (_____) _____ - _____

DEALER INFORMATION

Dealer Name: _____

Address: _____

City: _____ St.:_____ Zip: _____

Telephone No. (_____) _____ - _____

Contacts: Sales: _____

Service: _____

Parts: _____

VEHICLE INFORMATION

Vehicle Identification No.

_____

Ignition Key No.

_____

SECURITY SYSTEM PERSONAL CODE

_____ - _____ - _____ - _____ - _____

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

Harley-Davidson reserves the right to change specifications, equipment or designs at any time without notice and without incurring obligation.

TABLE OF CONTENTS

SAFETY DEFINITIONS

YOUR OWNER'S MANUAL

CUSTOMER SERVICE ASSISTANCE

PERSONAL INFORMATION

2004 TOURING MODELS

SAFETY FIRST

Safe Operating Rules 3

RULES OF THE ROAD

Rules of the Road 11
Accessories and Cargo 12

IDENTIFICATION

Vehicle Identification Number (V.I.N.) 15
Tire Data 35
Fuel Information 36
Gasoline Blends 37
Catalytic Converters 38
Bulb Chart 39

CONTROLS AND INDICATORS

Ignition/Headlamp Key Switch 41
Electric Starter Switch 46
Engine Stop Switch 46
Horn Switch 46
Head Lamp Dimmer Switch 46
Turn Signal Switches - General 47
Turn Signal Switch Operation 47
Hazard Warning 4-Way Flasher 47
Indicator Lamps - General 48
Tachometer 49
Speedometer/Odometer 49
Trip-Odometer 50
    Tip Indicator Lamp 50
Indicator Lamps 52
    Engine Check Lamp 52
    Cruise Control Equipped Models 52
Accessory Switch 52
Passing/Fog Lamp Switch
(FLHT/FLTR & FLHR/C Models) 53
Cruise Control 54
    Theory Of Operation 54
    Controls 55
    Activating/Engaging Cruise Control 55
    Deactivating/Disengaging Cruise Control 55
    Resuming Cruise Speed 56
    Accelerating Above Cruise Speed 56
    Decelerating Cruise Control 56

Deactivating Cruise Control 57
Throttle Control Grip 57
Enrichener 58
Sequential Port Fuel Injection 59
Engine Check Lamp 59
Low Fuel Lamp 59
Clutch Hand Lever 59
Gear Shifter 60
Brakes 62
Mirrors (Convex) 62
Fuel Supply Valve 63
Fuel Filler Cap 64
Fuel Gauge 65
Fork Lock 66
Air Suspension Adjustment 67
Rear Air Suspension 68
Oil Pressure Gauge 69
Voltmeter 69
Air Temperature Gauge 69
Clock 69
Sound System Controls 69
Luggage 70
Saddlebag Operation (FLHT/FLTR) 71
Opening Saddlebags 71
Closing Saddlebags 71
Removing Saddlebags 71
Installing Saddlebags 71
Adjustments 73
Saddlebag Operation
(FLHRC Road King Classic) 73
Opening 73
Closing 73
Saddllebag Operation (FLHRS) 74
Windshield (FLHRC) 75
Removal 75
Installation 75
Passenger Seat (FLHR Road King) 76
Removal 76
Installation 76
Air Deflectors (ULTRA Models) 77
Jiffy Stand 78

PREMIUM SOUND SYSTEM

Stereo Receiver 80
Front Panel Controls 81
Pushbuttons 81
LCD 85
CD Door 86
Auxiliary Input Port 86
Left Handlebar Controls 86
+/AUDIO/- Switch 86
PTT / +/SQ/- Switch 89

TABLE OF CONTENTS

Right Handlebar Controls 90
UP/MODE SEL/DN Switch 90
Receiver Operation 91
Setting Time-of-Day 91
Turning Receiver Power On/Off 91
Selecting a Frequency Band 92
Band Jump 92
AM vs. FM Reception 92
FM Stereo vs. FM Mono 93
Tuning-in a Radio Station 93
Adjusting Volume 95
Using Preset Buttons 96
Mixing Bass and Treble 96
Automatic Volume Control (AVC) 97
AVC Model Year Selection 98
CD Operation 99
Auto Load 99
BAD DISC Error Message 99
CD Eject 100
Changing CD Tracks 101
Repeating Tracks 101
CD Fast Advance and Reverse 101
Random Play 101
Recommendations For Handling CDs 102
Intercom and Citizen Band w/Passenger Speakers 102
Headsets and Sockets 103
VOX Microphones 104
Fairing Control 104
SPKR Switch 104
Rider and Passenger Speaker Balance 105
Passenger Controls 106
UP/MODE SEL/DN Switch 106
PTT / +/VOL/- Switch 106
Sidecar Controls 106
Sidecar Speakers 106
MOVE / +/TUNE/- Switch 106
VOL / PTT Knob 108
Intercom Operation 109
Activating the Intercom 109
Entering SETUP 109
Adjusting VOX Sensitivity 109
Adjusting Rider Headset Volume 110
Adjusting Passenger Headset Volume 110
Quiet Ride 110
CB Operation 111
Activating the CB 111
Entering SETUP 111
Selecting a Channel 111
Adjusting Squelch 112
Transmitting 112
Adjusting Volume 112
CB Range 113

LODX Button 113
Audio Routing and Mixing 114
Overlay Function 114
Troubleshooting 117
Operational Troubleshooting 117
Radio Fuses 119
Specifications 120

H-D FACTORY SECURITY SYSTEM

Basic Security System Operation 123
Security System Options 123
FCC Regulations 124
Arming the System 124
Using Key Fob 124
Using Auto-arming 125
Disarming the System 125
Using Key Fob to Disarm System 126
Using Personal Code Disarming 126
Battery Disconnects and Configuring 126
Security Status Lamp 128
Transport Mode 129
Security System Custom Setup 130
Key Fob Assignment 130
General 130
Personal Code 132
Creating Code for the First Time 132
Modifying Existing Codes 132
Enable Auto-arming Selection 137
Alarm Sensitivity 139
Storage Mode Configuration 141
Disabling Security System 141
Sidecar Configuration 143
Security System Maintenance 143
Key Fob Battery Replacement 143
Troubleshooting 145
Siren Diagnostics 145

OPERATION

Operating Recommendations 147
Break-In-The First 500 Miles (800 Km) 148
Starting the Engine 150
C.V. Carburetors 151
Cool Engine 151
Outside Temperature Cooler Than 60° F (16˚ C) . . . 151
Outside Temperature Warmer Than 60° F (16˚ C) . . 151
Warm Or Hot Engine 152
Sequential Port Fuel Injected Engine 152
General 152
Starting 152
Stopping The Engine 153
Shifting Gears 154

TABLE OF CONTENTS

MAINTENANCE AND LUBRICATION

Safe Operating Maintenance 157
Maintenance 157
Engine Lubrication 158
Checking Oil Level 159
    Oil Level COLD Check 160
    Oil Level HOT Check 160
Changing Oil and Oil Filter 161
Winter Lubrication 164
Transmission Lubrication 165
    Check Lubricant Level 165
    Changing Transmission Fluid 166
Primary Chaincase Lubrication 167
Chaincase Lubricant 168
    Check Lubricant Level 168
    Changing Chaincase Lubricant 170
Primary Chain 173
Rear Drive Belt 175
Chassis Lubrication 176
    Greasing 176
Oil Applications 177
Front Fork Oil 177
Fuel Strainer (Carb only) 177
Clutch 177
Hydraulic Lifters 178
Front Fork Bearings 178
Rear Fork Pivot Shaft 178
Brakes 179
Tires 181
Vehicle Alignment 183
Shock Absorbers 184
Spark Plugs 184
Ignition 185
Carburetor 185
Air Cleaner 186
Head Lamp 187
FLTR Headlamp Adjustment 190
Alternator Charging Rate and Voltage Regulator 193
    Battery 194
    General 194
Battery Testing 197
    Voltmeter Test 197
Battery Disconnection and Removal 197
Battery Cleaning and Inspection 198
Battery Charging 198
    Safety Precautions 198
    Charging Battery 199
Battery Installation And Connection 202
Battery Storage 203
Jump-Starting Procedure 205
    Positive Cable 205

Negative Cable 205
Fuses 207
Fuse Replacement 207
Saddlebag/Side Cover Removal 207
System Fuses 208
EFI Fuses 210
Removal 210
Installation 210
Saddlebag/Side Cover Installation 211
Maxi-Fuse or Main Fuse 212
Replacing the Maxi-Fuse 213
Seat 214
Removal (FLHT) 214
Installation (FLHT) 214
Removal (FLHTC/U) 216
Installation (FLHTC/U) 216
Removal (FLHR) 217
Installation (FLHR) 218
Removal (FLHRC/FLHRS) 220
Installation (FLHRC/FLHRS) 221
Removal (FLTR) 222
Installation (FLTR) 222
Placing Motorcycle In Storage 224
Removal From Storage 225

ACCESSORIES MAINTENANCE

General Maintenance 227
Cleaning Your Motorcycle 227
Leather Care 228
Whitewall Tires 228
Wheel Care 229
Windshields 230
Lubricate-Hinges, Latches,
Fuel Door, Tour-PAK
Saddlebags (if applicable) 231

TROUBLESHOOTING

General 233
Engine 233
Starter Does Not Operate or Does Not Turn
Engine Over 233
Engine Turns Over But Does Not Start 233
Starts Hard 234
Starts But Runs Irregularly or Misses 234
A Spark Plug Fouls Repeatedly 234
Pre-ignition or Detonation (Knocks or Pings) 234
Overheats 235
Excessive Vibration 235
Lubrication System 235
Oil Does Not Return to Oil Tank 235
Engine Leaks Oil From Cases, Push Rods, Hoses . . 235

TABLE OF CONTENTS

Electrical System 236
Alternator Does Not Charge 236
Alternator Charge Rate is Below Normal 236
Carburetor 236
Carburetor Floods. 236
Transmission 236
Transmission Shifts Hard 236
Transmission Jumps Out of Gear. 236
Clutch Slips. 236
Clutch Drags or Does Not Release 236
Clutch Chatters. 236
Brakes 237
Brakes Do Not Hold Normally. 237

WARRANTIES/RESPONSIBILITIES

Warranty and Maintenance 239
Owner's Identification Card 240
Keeping It All Harley 241
Important Moving Information 241
California Evaporative Emission Control 241
EPA Noise Regulations 242
Warranty/Service Information 242
Reporting Safety Defects 243
Owner Transfer Notification Form 243
Required Documentation for Imported Motorcycles 243
Limited Radio Warranty 248

MAINTENANCE SCHEDULING

Regular Service Intervals 249
Owner's Maintenance Records 253
Service Literature 254

INDEX

HARLEY-DAVIDSON FACTORY SECURITY SYSTEM WALLET CARD

BUSINESS REPLY CARD

2004 TOURING MODELS

FLTRI Road Glide®

FLHT/FLHTI Electra Glide® Standard

FLHTC/FLHTCI Electra Glide® Classic

FLHTCUI Ultra Classic® Electra Glide®

FLHR/FLHRI Road King®

FLHRCI Road King® Classic

FLHRS/FLHRSI Road King® Custom

SAFE OPERATING RULES

Before operating your new motorcycle it is your responsibility to read and follow the 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 section). Carefully read and observe the rules contained in the MOTORCYCLE SAFETY booklets accompanying this Owner's Manual. Read and familiarize yourself with the contents of the MOTORCYCLE HANDBOOK for your state.
- Before starting engine, check for proper operation of brake, clutch, shifter, throttle controls, correct fuel and oil supply.

⚠WARNING

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

- Use only Harley-Davidson approved parts and accessories. Use of certain other manufacturer's performance parts will void your new motorcycle warranty. See your Harley-Davidson dealer for details.

⚠WARNING

Stop the engine when refueling or servicing the fuel system. Do not smoke or allow open flame or sparks near gasoline. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00002a)

When refueling your motorcycle, the following rules should be observed:

- Refuel in a well ventilated area with the engine turned off.
- Remove fuel filler cap slowly.
- 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. This prevents 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.

⚠WARNING

Do not store motorcycle with gasoline in tank within the home or garage where open flames, pilot lights, sparks or electric motors are present. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00003a)

⚠WARNING

Engine exhaust from this product contains compounds known to the State of California to cause cancer, birth defects or other reproductive harm. (00004a)

⚠WARNING

Do not run motorcycle in a closed garage or confined area. Inhaling motorcycle exhaust, which contains poisonous carbon monoxide gas, could result in death or serious injury. (00005a)

⚠WARNING

The jiffy stand locks when placed in the full forward (down) position with vehicle weight on it. If the jiffy stand is not in the full forward (down) position with vehicle weight on it, the vehicle can fall over which could result in death or serious injury. (00006a)

⚠WARNING

Be sure jiffy stand is fully retracted before riding. If jiffy stand is not fully retracted, it can contact the road surface causing a loss of vehicle control, which could result in death or serious injury. (00007a)

- A new motorcycle must be operated according to the special break-in procedure. See BREAK-IN: THE FIRST 500 MILES (800 km).
- 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.

NOTE

If you are an inexperienced rider we recommend that you obtain information and formal training in the correct motorcycle riding technique. The Motorcycle Safety Foundation® offers beginning and advanced rider safety courses. Call 1-800-447-4700 for information.

⚠WARNING

Travel at speeds appropriate for road and conditions and never travel faster than posted speed limit. Excessive speed can cause loss of vehicle control, which could result in death or serious injury. (00008a)

- 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 increases the possibility of loss of control.
- Do not exceed 80 mph (130 km/h) when carrying a passenger or cargo.
- Do not exceed 90 mph (145 km/h) riding solo.
- Pay strict attention to road surfaces and wind conditions. Any two wheeled vehicle may be subject to upsetting forces such as wind blasts from passing trucks, holes in the pavement, rough road surfaces, rider control error, etc.

These forces may influence the handling characteristics of your motorcycle. If this happens, reduce speed and guide the motorcycle with a relaxed grip to a controlled condition. Do not brake abruptly or force the handlebar. This may aggravate an unstable condition.

NOTE

New riders should gain experience under various conditions while driving at moderate speeds.

- Operate your motorcycle 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 foot gear suited for motorcycle riding. Bright or light colors are best for greater visibility in traffic, especially at night. Avoid loose, flowing garments and scarves.

⚠WARNING

Avoid contact with exhaust system and wear protective clothing that completely covers legs while riding. Exhaust pipes and mufflers get very hot when engine is running and remain too hot to touch, even after engine is turned off. Failure to wear protective clothing could result in burns or other serious injury. (00009a)

- When carrying passengers, it is your responsibility to instruct them on proper riding procedures. (See Riding Tips for Motorcyclist included in your Harley-Davidson Owner's Kit.)
- Do not allow other individuals, under any circumstances, to operate your motorcycle unless you know they are experienced, licensed riders and are thoroughly familiar with the operation of your particular motorcycle.
- Protect your motorcycle against theft. After parking your motorcycle, lock the steering head and remove ignition key from switch. Set security alarm if present.
- Safe motorcycle operation requires alert mental judgment combined with a defensive driving attitude. Do not allow fatigue, alcohol or drugs to endanger your safety or that of others.
- Vehicles equipped with a sound system should have the volume adjusted to a nondistracting level before operating vehicle.
- Maintain your motorcycle in proper operating condition in accordance with the MAINTENANCE INTERVALS CHART in this Owner's Manual. Particularly important to motorcycle stability is proper tire inflation pressure, tread condition, and proper adjustment of wheel bearings and steering head bearings.

⚠WARNING

Do not operate vehicle with forks locked. Locking the forks restricts the vehicle's turning ability, which could result in death or serious injury. (00035a)

⚠WARNING

Perform the service and maintenance operations as indicated in the regular service interval table. Lack of regular maintenance at the recommended intervals can affect the safe operation of your motorcycle, which could result in death or serious injury. (00010a)

⚠WARNING

Do not operate motorcycle with loose, worn or damaged steering or suspension systems. Contact a Harley-Davidson dealer for repairs. Loose, worn or damaged steering or suspension components can adversely affect stability and handling, which could result in death or serious injury. (00011a)

⚠WARNING

Regularly inspect shock absorbers and front forks. Replace leaking, damaged or worn parts that can adversely affect stability and handling, which could result in death or serious injury. (00012a)

⚠WARNING

Use Harley-Davidson replacement fasteners. Aftermarket fasteners can adversely affect performance, which could result in death or serious injury. (00013a)

- See Harley-Davidson service manual for proper torque values.
- Aftermarket fasteners may not have the specific property requirements to perform properly.

CAUTION

Twin Cam 88 Harley-Davidson motorcycles have a plugged carburetor overflow fitting. The fuel supply valve on the vehicle should be turned off when the vehicle is not operating. Failure to do so can result in fuel drainage into the engine, dilution of the engine oil and engine damage. (00142a)

⚠WARNING

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00014a)

⚠WARNING

Replace punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the demounted tire by a Harley-Davidson dealer. Speed should NOT exceed 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 80 mph (130 km/h). Failure to follow this warning could result in death or serious injury. (00015a)

⚠WARNING

Do not exceed the motorcycle Gross Vehicle Weight Rating (GVWR). Exceeding the GVWR can affect stability and handling, which could result in death or serious injury. (00016a)

- GVWR is the sum of the weight of the motorcycle, accessories, and the maximum weight of the rider, passenger and cargo that can be safely carried.
- The GVWR is shown on the information plate, located on the frame right front down tube sticker.

⚠WARNING

Do not tow a disabled motorcycle. Towing can adversely affect stability and handling, which could result in death or serious injury. (00017a)

⚠WARNING

Do not pull a trailer with a motorcycle. Pulling a trailer can cause tire overload, reduced braking efficiency and adversely affect stability and handling, which could result in death or serious injury. (00018a)

⚠CAUTION

Direct contact of D.O.T. 5 brake fluid with eyes can cause eye irritation, swelling, and redness. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 5 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00144a)

⚠WARNING

Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling. (00019a)

⚠WARNING

Consult a Harley-Davidson dealer regarding any questions or problems that occur in the operation of your motorcycle. Failure to do so can aggravate an initial problem, cause costly repairs, cause an accident and could result in death or serious injury. (00020a)

⚠WARNING

Do not open storage compartments while riding. Distractions while riding can lead to loss of control, which could result in death or serious injury. (00082a)

RULES OF THE ROAD

- Keep to 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 oily pavement ahead.
- Always sound your horn, actuate your turn signals and exercise caution 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 you have the right-of-way, as the other driver may not know it is your turn.
- 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. 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, signal at least 100 feet (30.5 m) 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, slow down and wait for the light to change. Never run through a yellow or red traffic light.
- While turning either right or left, watch for pedestrians, animals, as well as vehicles.
- Do not leave the curb or parking area without signaling. Be sure your way is clear to enter moving traffic. A moving line of traffic always has the right-of-way.
- Be sure your license plate is installed in the position specified by law and is clearly visible at all times. Keep the plate clean.
- Ride at a safe speed that is consistent with the type of highway you are on. Pay strict attention to whether the road is dry, oily, icy or wet.
- Watch for debris such as leaves or loose gravel.
- Weather and traffic conditions on the highway dictate adjusting your speed and driving habits accordingly.

ACCESSORIES AND CARGO

Harley-Davidson Motor Company cannot test and make specific recommendations concerning every accessory or combination of accessories sold. Therefore, the rider must be responsible for safe operation of the motorcycle when installing accessories or carrying additional weight.

⚠WARNING

See the Accessory and Cargo section in your Owner's Manual. Improper loading of cargo or installation of accessories can affect motorcycle stability and handling, which could result in death or serious injury. (00021a)

⚠WARNING

Do not exceed the motorcycle Gross Vehicle Weight Rating (GVWR). Exceeding the GVWR can affect stability and handling, which could result in death or serious injury. (00016a)

- GVWR is the sum of the weight of the motorcycle, accessories, and the maximum weight of the rider, passenger and cargo that can be safely carried.
- The GVWR is shown on the information plate, located on the frame right front down tube sticker.

⚠WARNING

Do not pull a trailer with a motorcycle. Pulling a trailer can cause tire overload, reduced braking efficiency and adversely affect stability and handling, which could result in death or serious injury. (00018a)

Accessory and Cargo Guidelines

The following guidelines should be used when equipping a motorcycle, carrying passengers and/or cargo.

⚠WARNING

Travel at speeds appropriate for road and conditions and never travel faster than posted speed limit. Excessive speed can cause loss of vehicle control, which could result in death or serious injury. (00008a)

- 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 increases the possibility of loss of control.
- Never exceed 80 mph (130 km/h) when carrying a passenger or cargo.
- Do not exceed 90 mph (145 km/h) riding solo.

- Keep cargo weight concentrated close to the motorcycle and as low as possible; this minimizes the change in the motorcycle's center of gravity.
- Distribute weight evenly on both sides of the vehicle.
- Do not load bulky items too far behind the rider or add weight to the handlebars or front forks.
- Do not exceed 15 pounds (6.8 kg) maximum load in each saddlebag.
- Luggage racks are designed for lightweight items.
- Be sure cargo is secure and will not shift while riding. Recheck the cargo periodically.

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

- Additional electrical equipment may overload the motorcycle's electrical system possibly resulting in electrical system and/or component failure.

⚠WARNING

The front and/or rear guard(s) can provide limited leg and cosmetic vehicle protection under unique circumstances. (Fall over while stopped, very slow speed slide.) It is not made or intended to provide protection from bodily injury in a collision with another vehicle or any other object. (00022a)

- Large surfaces such as fairings, windshields, back rests, and luggage racks can adversely affect handling. Only genuine Harley-Davidson items designed specifically for the motorcycle model and should be used with proper installation.

⚠WARNING

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

⚠WARNING

Only Touring Harley-Davidson Motorcycles are suitable for sidecar use. Consult a Harley-Davidson dealer. Use of motorcycles other than Touring models with sidecars could result in death or serious injury. (00040a)

VEHICLE IDENTIFICATION NUMBER (V.I.N.)

See Figure 1. The full 17 digit serial, or Vehicle Identification Number (V.I.N.) is stamped on a label located on the right front frame down tube. An abbreviated V.I.N. is stamped on the left side crankcase at the base of the rear cylinder.

NOTE

Always give the full 17 digit Vehicle Identification Number when ordering parts or making any inquiry about your motorcycle.

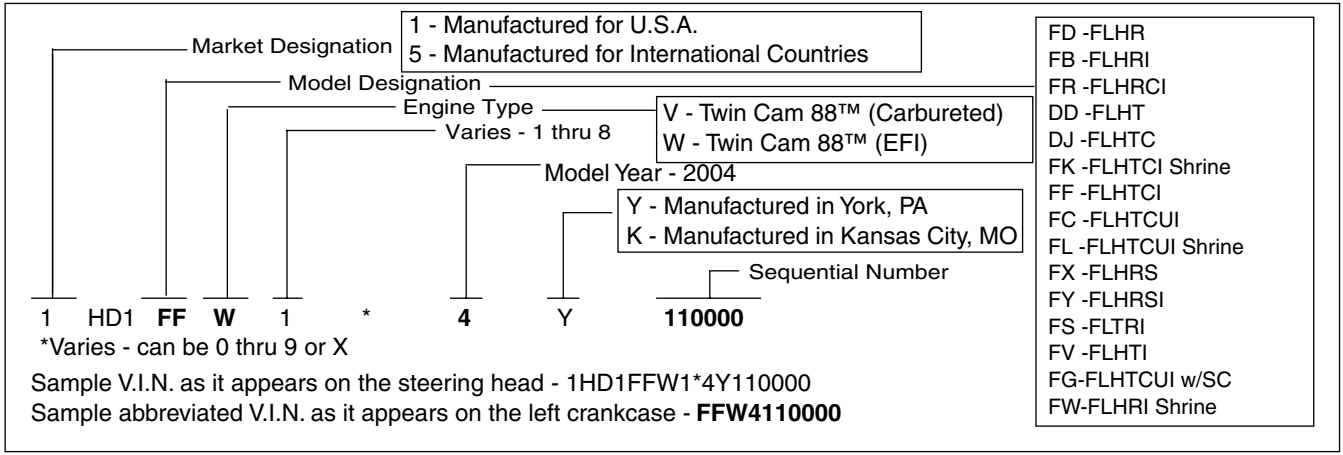
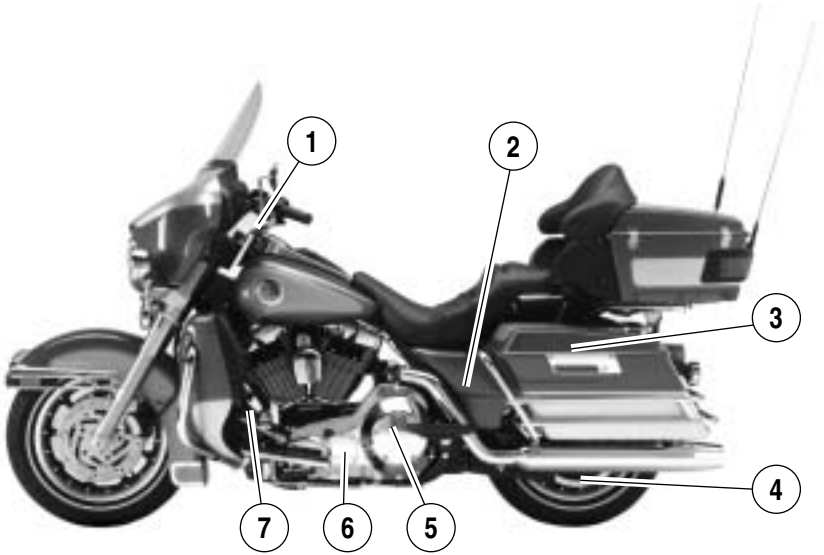


Figure 1. Vehicle Identification Number

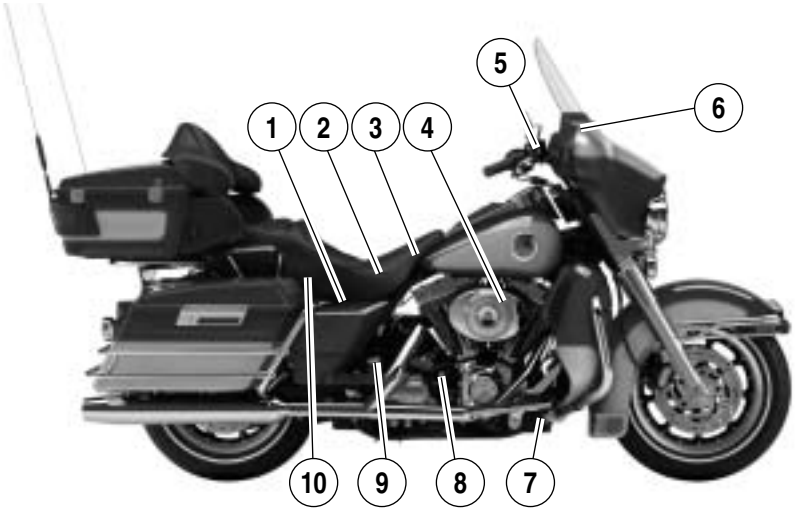
10214



1. Ignition/headlamp key switch/ Fork lock
2. Fuses
3. Rear suspension air valve
4. Rear sprocket and drive
5. Clutch inspection cover
6. Primary chain inspection cover
7. Engine oil filter

Figure 2. Ultra Classic Electra Glide (FLHTCU) - Left Side View

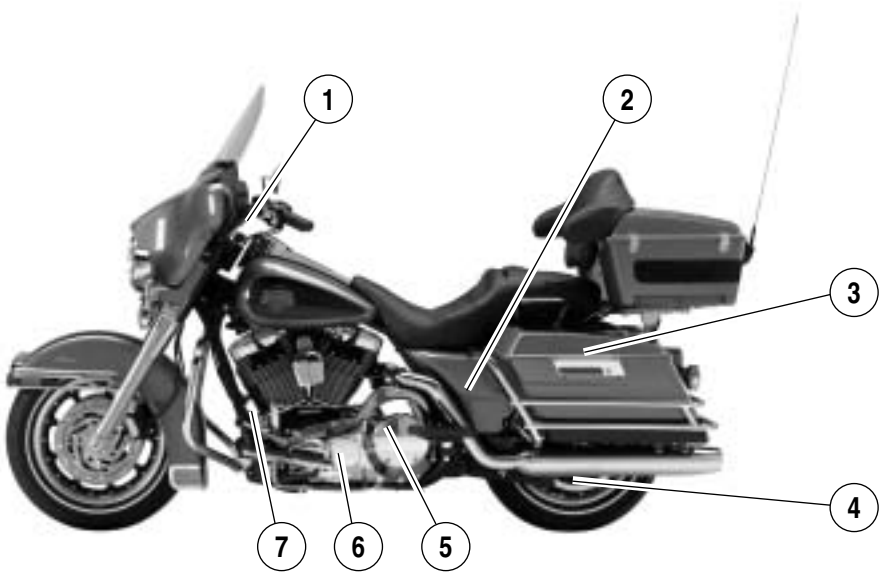
10215



1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Front brake master cylinder & reservoir
6. Speedometer/tachometer
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/Security module (under seat)

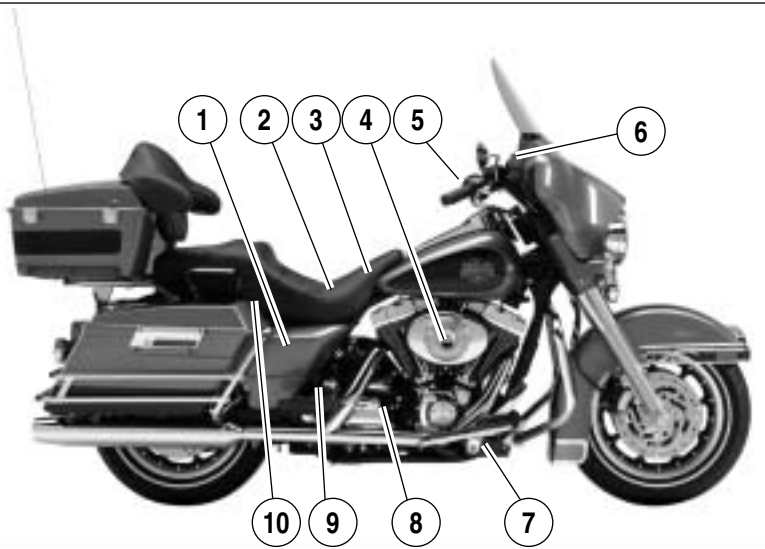
Figure 3. Ultra Classic Electra Glide (FLHTCU) - Right Side View

10212



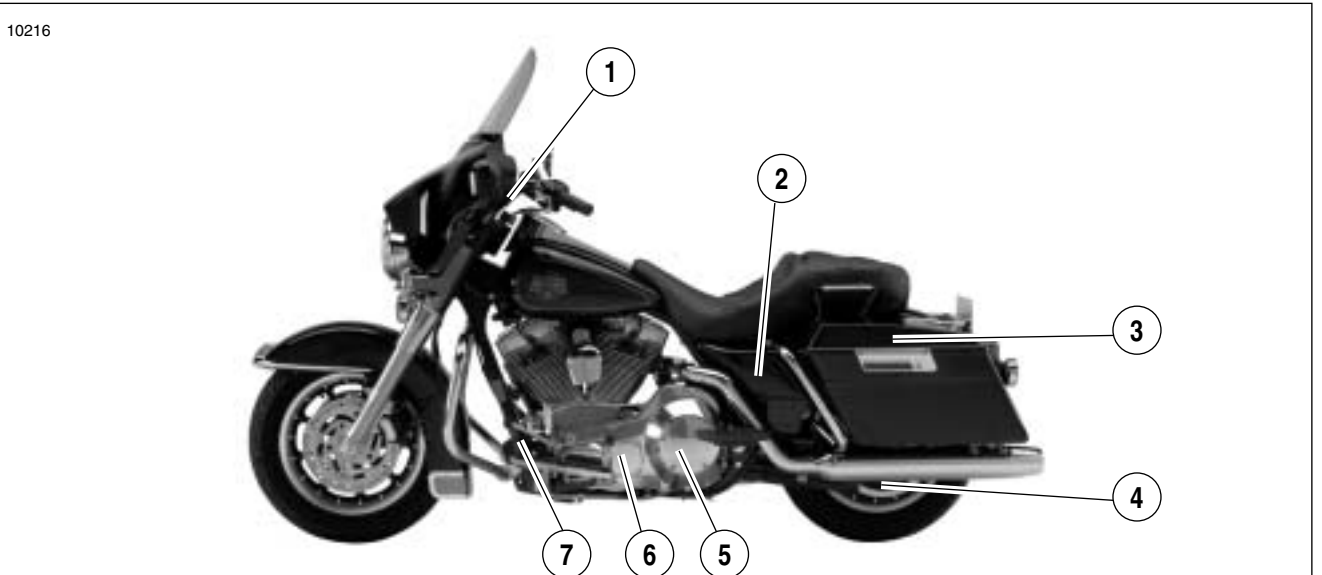
1. Ignition/headlamp key switch/ Fork lock
2. Fuses
3. Rear suspension air valve
4. Rear sprocket and drive
5. Clutch inspection cover
6. Primary chain inspection cover
7. Engine oil filter

Figure 4. Electra Glide Classic (FLHTC) - Left Side View



1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Front brake master cylinder & reservoir
6. Speedometer/tachometer
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/Security module (under seat)

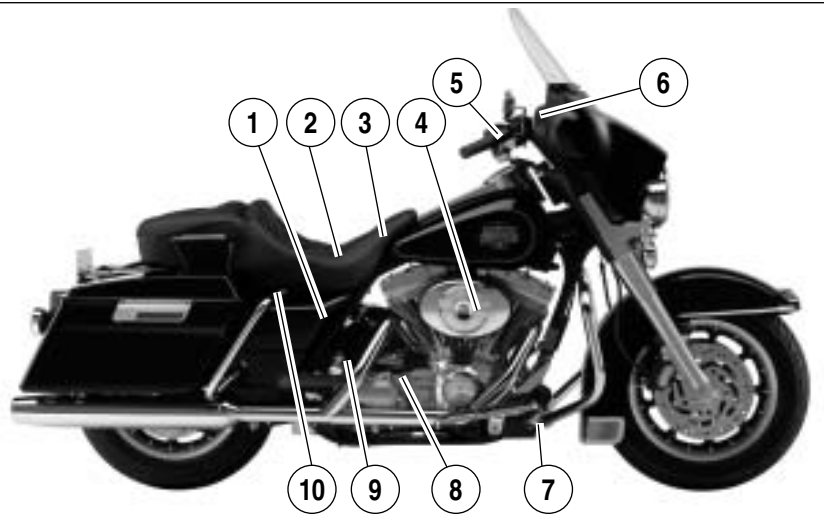
Figure 5. Electra Glide Classic (FLHTC) - Right Side View



1. Ignition/headlamp key switch/ Fork lock
2. Fuses
3. Rear suspension air valve
4. Rear sprocket and drive
5. Clutch inspection cover
6. Primary chain inspection cover
7. Engine oil filter

Figure 6. Electra Glide Standard (FLHT) - Left Side View

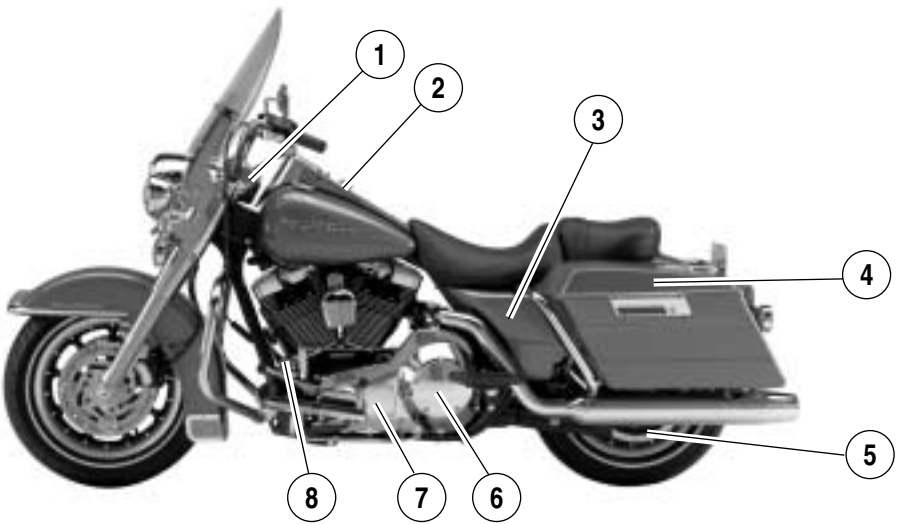
10217



1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Front brake master cylinder & reservoir
6. Speedometer/tachometer
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/Security module (under seat)

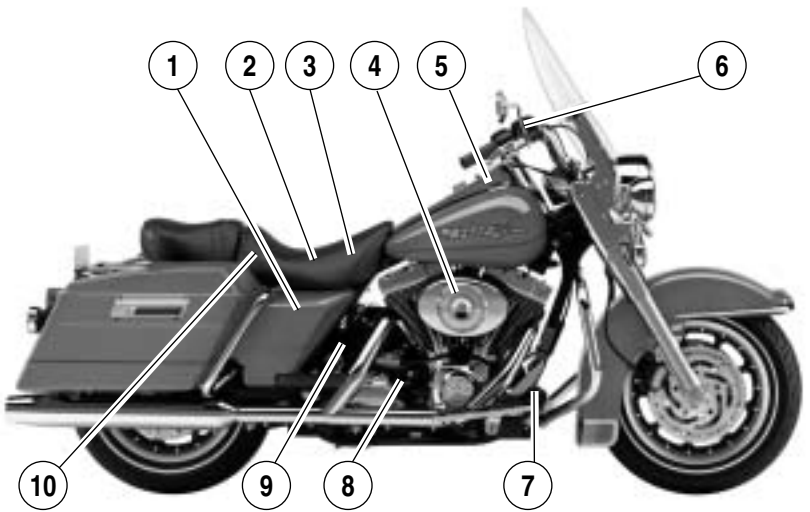
Figure 7. Electra Glide Standard (FLHT) - Right Side View

10208



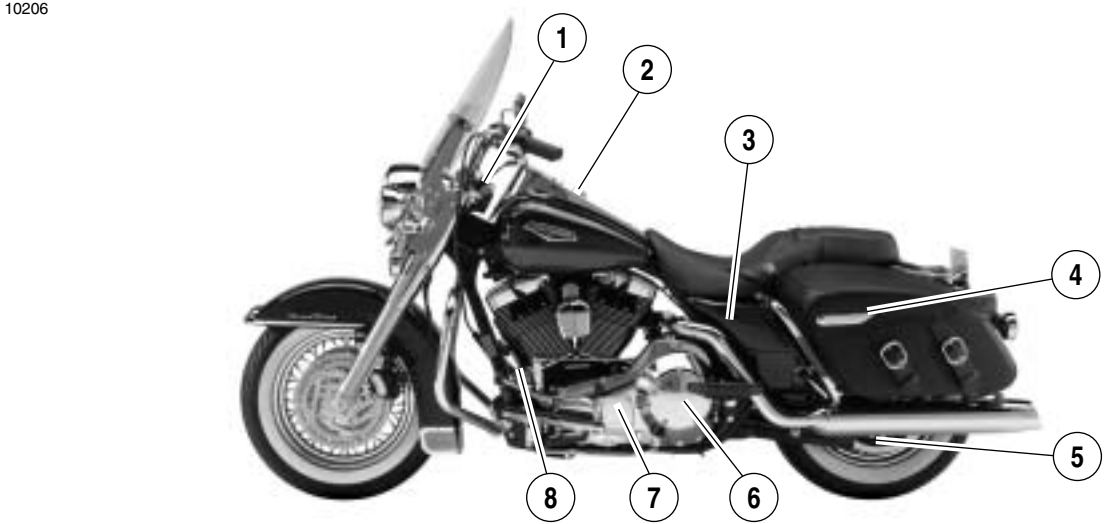
1. Fork lock
2. Ignition/headlamp key switch
3. Fuses
4. Rear suspension air valve
5. Rear sprocket and drive
6. Clutch inspection cover
7. Primary chain inspection cover
8. Engine oil filter

Figure 8. Road King (FLHR) - Left Side View



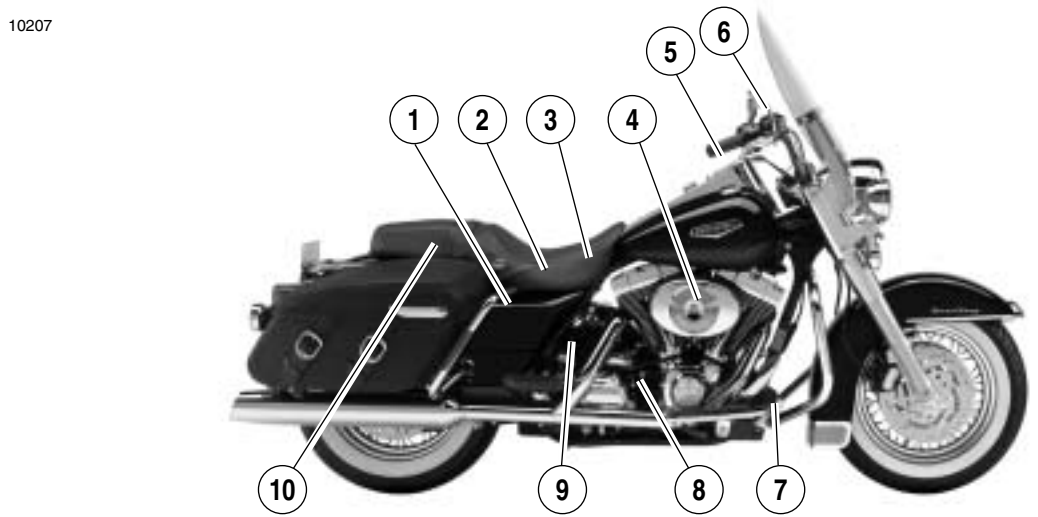
1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Speedometer
6. Front brake master cylinder & reservoir
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/security module (under seat)

Figure 9. Road King (FLHR) - Right Side View



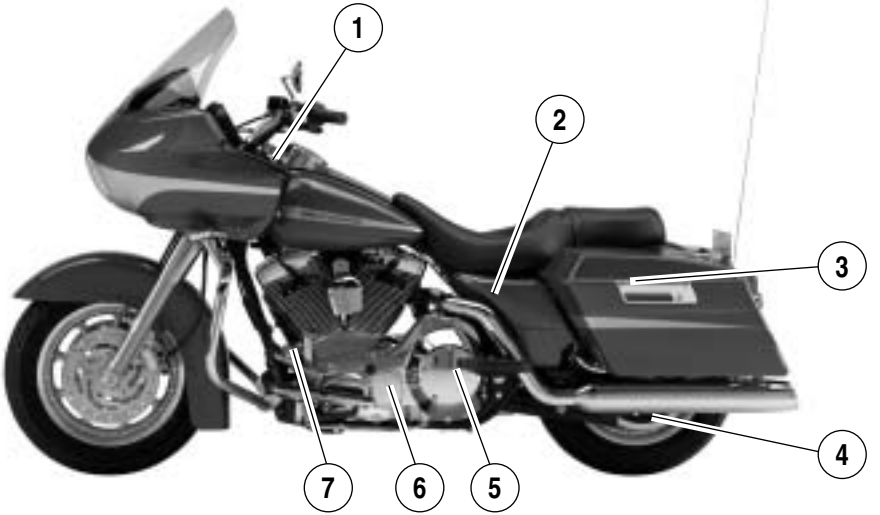
1. Fork lock
2. Ignition/headlamp key switch
3. Fuses
4. Rear suspension air valve
5. Rear sprocket and drive
6. Clutch inspection cover
7. Primary chain inspection cover
8. Engine oil filter

Figure 10. Road King Classic (FLHRC) - Left Side View



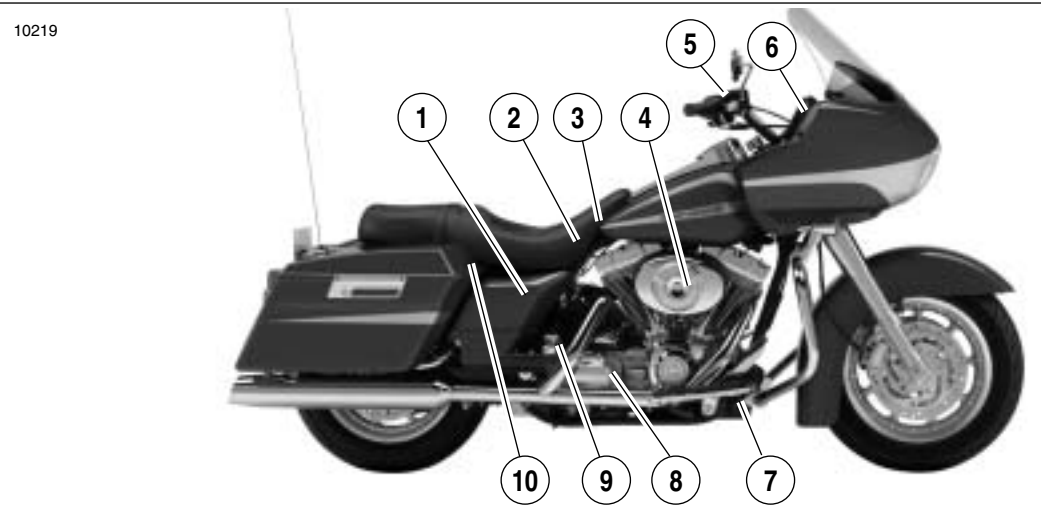
1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Speedometer
6. Front brake master cylinder & reservoir
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/security module (under seat)

Figure 11. Road King Classic (FLHRC) - Right Side View



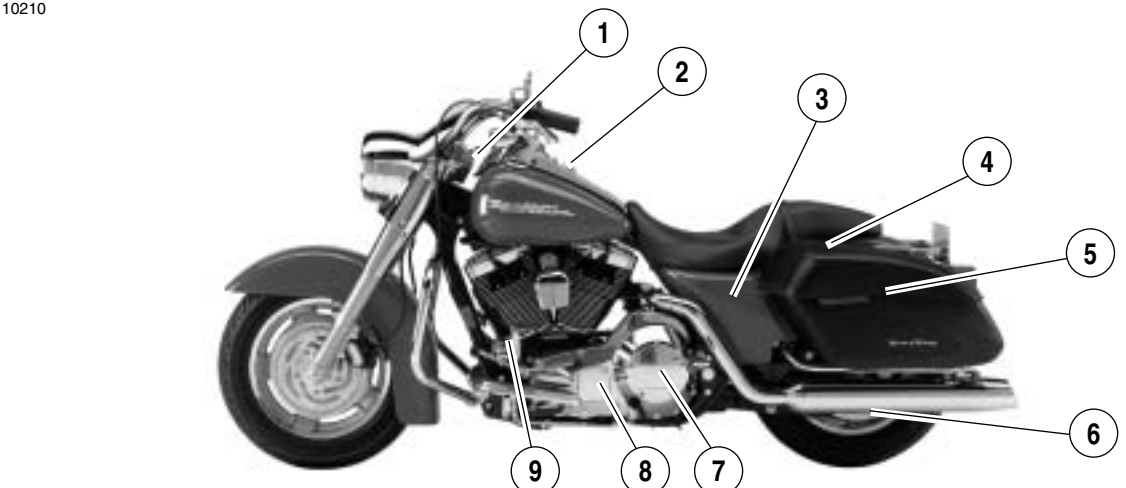
1. Fork lock/Ignition/headlamp key switch
2. Fuses
3. Rear suspension air valve
4. Rear sprocket and drive
5. Clutch inspection cover
6. Primary chain inspection cover
7. Engine oil filter

Figure 12. Road Glide (FLTR) - Left Side View



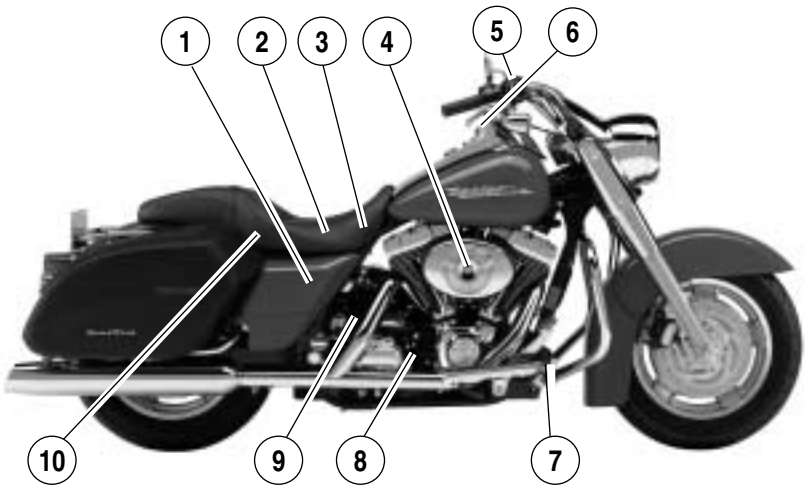
1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Front brake master cylinder & reservoir
6. Speedometer/tachometer
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/Security module (under seat)

Figure 13. Road Glide (FLTR) - Right Side View



1. Fork lock
2. Ignition/headlamp key switch
3. Fuses
4. Saddlebag latch
5. Rear suspension and air valve
6. Rear sprocket and drive
7. Clutch inspection cover
8. Primary chain inspection cover
9. Engine oil filter

Figure 14. FLHRS Road King Custom - Left Side View



1. Ignition module/ECM
2. Battery
3. ACC connector (under seat)
4. Air cleaner
5. Front brake master cylinder & reservoir
6. Speedometer
7. Rear brake master cylinder
8. Transmission fill plug
9. Engine oil fill plug & dipstick
10. Turn signal/Security module (under seat)

Figure 15. FLHRS Road King Custom - Right Side View

NOTE

Specifications in this publication may not match those of official certification in some markets due to timing of publication printing, variance in testing methods, and/or vehicle differences. Customers seeking officially recognized regulatory specifications for their vehicle should refer to certification documents and/or contact their respective dealer or distributor.

MODELS

Table 1. Dimensions

ITEM	FLHT		FLHTC & FLHTC/CU		FLHRS/I	
	IN.	MM	IN.	MM	IN.	MM
Wheel base	63.5	1612.9	63.5	1612.9	63.5	1612.9
Overall length	93.7	2380	97.5/98.3	2476.5/2496.8	93.7	2380
Overall width	39.0	990.6	39.0	990.6	39.4	1000
Road clearance	5.1	129.5	5.1	129.5	4.7	119
Overall height	61.0	1549.4	61.0	1549.4	46.4	1178
Saddle height	27.3	693.4	27.3	693.4	26.1	662
ITEM	**FLHR/C**		**FLTRI**			
	IN.	**MM**	**IN**	**MM**		
Wheel base	63.5	1612.9	63.5	1612.9		
Overall length	93.7	2380	93.7	2380		
Overall width	34.5	875	35.8	908.1		
Road clearance	5.1	129.5	5.1	129.5		
Overall height	55.1	1398.5	55.0	1397		
Saddle height	27.3/26.9	693.4/683.3	26.9	683.3		

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 right hand down tube sticker.

Table 2. Weights

ITEM	FLHT		FLHTC & FLHT/CU		FLHRS/I	
	LB.	KG	LB.	KG	LB.	KG
Weight (as shipped from factory)	758	344.1	776/788	352.3/357.8	721	327
GVWR	1259	571.6	1259	571.6	1259	571.6
GAWR front	500	227	500	227	500	227
GAWR rear	827	375	827	375	827	375
ITEM	**FLHR/C**		**FLTRI**			
	LB.	**KG**	**LB.**	**KG**		
Weight (as shipped from factory)	723/710	328.2/322.3	731	331.9		
GVWR	1259	571.6	1259	571.6		
GAWR front	500	227	500	227		
GAWR rear	827	375	827	375		

Table 3. Capacities

ITEM	ALL MODELS	
	U.S.	LITERS
Fuel tank (total)	5.0 gal	18.9
Fuel tank (reserve)*	1.0 gal	3.8
Oil tank w/filter	4.0 qt.	3.8
Transmission (approximate)	20-24 oz.	0.59-0.71
Primary chain case (approximate)	32.0 oz.	0.95
* Carbureted only		

Table 4. Ignition

COMPONENT	SPECIFICATION
Timing setting	Not Adjustable
Battery (sealed, maintenance free)	12 Volt 19 amp/hr.

Table 5. Spark Plugs

SPARK PLUG	SPECIFICATION	
Type	HD-6R12	
Size	12 mm	
Gap	0.038-0.043 in.	0.97-1.09 mm
Torque	12-18 ft-lbs	16.3-24.4 Nm

Table 6. Engine

ENGINE	SPECIFICATION	
Number of cylinders	2	
Type	4-cycle, 45 degree V-Type, air cooled	
Compression ratio	8.9:1	
Bore	3.75 in.	95.18 mm
Stroke	4.00 in.	101.52 mm
Displacement cu. in./cc	88/1450	
Torque	85.0 ft-lbs@ 3000 RPM	

Table 7. Transmission

TRANSMISSION	SPECIFICATION
Type	Constant mesh, foot shift
Speeds	5 forward

Table 8. Number of Sprocket Teeth (Primary Chain)

COMPONENT	TEETH
Engine	25
Clutch	36

Table 9. Number of Sprocket Teeth

COMPONENT	TEETH
Transmission	32
Rear wheel	70

Table 10. Gear Ratios

GEAR	RATIO
1st Gear	10.11
2nd Gear	6.958
3rd Gear	4.953
4th Gear	3.862
5th Gear	3.150

TIRE DATA

⚠WARNING

Match tires, tubes, air valves and caps to the correct wheel rim. Contact a Harley-Davidson dealer. Mismatching can result in damage to the tire bead, allow tire slippage on the rim or cause tire failure, which could result in death or serious injury. (00023a)

⚠WARNING

Use only Harley-Davidson approved tires. See a Harley-Davidson dealer. Using non-approved tires can adversely affect stability, which could result in death or serious injury. (00024a)

- Tubeless tires fitted with the correct size inner tubes may be used on all Harley-Davidson laced (wire spoked) wheels. Protective rubber rim strips must be used with tubeless tires (fitted with correct size inner tubes) when mounted on laced (wire spoked) wheels.

⚠WARNING

Use inner tubes on laced (wire spoked) wheels. Using tubeless tires on laced wheels can cause air leaks, which could result in death or serious injury. (00025a)

- Tubeless tires are used on all Harley-Davidson cast and disc wheels.
- Tire sizes are molded on the tire sidewall. Inner tube sizes are printed on the tube.

⚠WARNING

Harley-Davidson front and rear tires are not the same. Interchanging front and rear tires can cause tire failure, which could result in death or serious injury. (00026a)

⚠WARNING

Do not inflate tire beyond maximum pressure as specified on sidewall. Over inflated tires can blow out, which could result in death or serious injury. (00027a)

⚠WARNING

Harley-Davidson tires are equipped with wear bars that run horizontally across the tread. When wear bars become visible and only 1/32 in. (0.8 mm) tread depth remains, replace tire immediately. Using a worn tire can adversely affect stability and handling, which could result in death or serious injury. Use only Dunlop Harley-Davidson replacement tires. (00090a)

Table 11. Tire Pressure Specifications

DUNLOP HARLEY-DAVIDSON TIRES ONLY	FRONT		REAR	
TIRE PRESSURE (Cold)	**PSI**	**kPa**	**PSI**	**kPa**
Solo rider	36	248	36	248
Rider & passenger	36	248	40	275

Table 12. Tire Sizes All Models

MOUNT	SIZE	NUMBER
Front	16 in.	D402F MT90B16
Rear	16 in.	D402 MU85B16

FUEL INFORMATION

Always use a good quality unleaded gasoline. Octane ratings are usually found on the pump. Use at least 91 (95 RON) pump octane (R + M)/2.

Remove the fuel filler cap slowly. Fill fuel tank slowly to prevent fuel spillage. Do not fill above the bottom of the filler neck insert. Leave enough 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. Gasoline is extremely flammable and highly explosive. Inadequate safety precautions could result in death or serious injury.

⚠WARNING

Avoid spills. Slowly remove filler cap. Do not fill above bottom of filler neck insert, leaving air space for fuel expansion. Secure filler cap after refueling. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00028a)

Today's service station pumps are often 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 as well.

CAUTION

Do not spill fuel onto the motorcycle while refueling. Immediately wipe up fuel spills on your motorcycle. Fuel can cause damage to painted surfaces. (00147a)

⚠WARNING

Use care when refueling. Pressurized air in fuel tank can force gasoline to escape through filler tube. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00029a)

GASOLINE BLENDS

Your motorcycle was designed to get the best performance and efficiency using unleaded gasoline. Most gasolines sold in the United States are blended with alcohol and/or ether, to create oxygenated blends. The type and amount of alcohol or ether added to the fuel is important.

CAUTION

Do not use gasoline that contains methanol. Doing so can result in fuel system component failure, engine damage and/or equipment malfunction. (00148a)

- Gasoline containing METHYL TERTIARY BUTYL ETHER (MTBE): Gasoline/MTBE blends are a mixture of gasoline and as much as 15% MTBE. Gasoline MTBE blends can be used in your motorcycle.
- ETHANOL is a mixture of 10% ethanol (Grain alcohol) and 90% unleaded gasoline. Gasoline/ethanol blends can be used in your motorcycle if the ethanol content does not exceed 10%.

- REFORMULATED OR OXYGENATED GASOLINES (RFG): Reformulated gasoline is a term used to describe gasoline blends that are specifically designed to burn cleaner than other types of gasoline, leaving fewer tailpipe emissions. They are also formulated to evaporate less when you are filling your tank. Reformulated gasolines use additives to oxygenate the gas. Your motorcycle will run normally using this type of gas and Harley-Davidson recommends you use it when possible, as an aid to cleaner air in our environment.

You may find that some gasoline blends adversely affect the starting, driveability or fuel efficiency of your motorcycle. If you experience one or more of these problems, it recommended you operate your motorcycle on straight unleaded gasoline.

CATALYTIC CONVERTERS

California and all international motorcycles are equipped with catalytic converters.

CAUTION

Do not operate catalytic converter-equipped vehicle with engine misfire or a non-firing cylinder. If you operate the vehicle under these conditions, the exhaust will become abnormally hot, which can cause vehicle damage, including emission control loss. (00149a)

CAUTION

Use only unleaded fuel in California model catalytic converter-equipped motorcycles. Using leaded fuel will damage the emission control system. (00150a)

BULB CHART

Table 13. Bulb Chart

LAMP DESCRIPTION (ALL LAMPS 12 VOLT)	NUMBER OF BULBS (REQUIRED)	CURRENT DRAW (AMPERAGE)	HARLEY-DAVIDSON PART NUMBER
Headlamp			
FLHT/C/ULTRA, FLHR, FLTR (2)	1	4.58 (Lo), 5.0 (Hi)	68329-03
Position lamp international	1	0.32	53438-92
Tail and Stop Lamp			
Tail lamp	1	0.59	68167-88
Stop lamp	1	2.10	68167-88
Tail lamp international	1	0.59	68167-88
Stop lamp international	1	2.10	68167-88
Turn Signal Lamp			
Front/Running	2	2.25/0.59	68168-89
Front international	2	1.75	68163-84
Rear	2	2.25	68572-64B
Rear international	2	1.75	68163-84
Auxiliary Lighting			
Tour-Pak Side Lamps - FLHTC/ULTRA	8	0.30	53439-79
Tour-Pak Tail & Stop Lamp - Ultra	2	0.59	68168-89A
Fender Tip Lamps	2	0.30	53439-79

Table 13. Bulb Chart

LAMP DESCRIPTION (ALL LAMPS 12 VOLT)	NUMBER OF BULBS (REQUIRED)	CURRENT DRAW (AMPERAGE)	HARLEY-DAVIDSON PART NUMBER
License Plate Lamp International	1	0.37	53436-97
Instrument Panel Lamps - FLHT/C/U, FLHR/C/S*, FLTR			
High beam indicator	1	0.15	68024-94
Oil pressure indicator	1	0.15	68024-94
Neutral indicator	1	0.15	68024-94
Turn signal indicator	2	0.08	68024-94
Gauge Lamps - FLHR/C/S			
Speedometer*	N/A	N/A	N/A
Odometer*	N/A	N/A	N/A
Fuel gauge	1	0.19	67136-85
Engine (FLHR-I only)*	N/A	N/A	N/A
Gauge Lamps - FLHT/C/ULTRA/FLTRI			
Speedometer*	N/A	N/A	N/A
Tachometer*	N/A	N/A	N/A
Voltmeter	1	0.24	67445-00
Oil pressure indicator (FLHT/C/U)	1	0.24	67445-00
Air temp. gauge (FLHT/C/U)	1	0.24	67445-00
Fuel gauge	1	0.24	67445-00
*Illuminated with LEDs. LEDs are non-repairable. Entire assembly must be replaced if LED fails.			

GENERAL

This Owner's Manual covers 2004 Harley-Davidson motorcycles. Some features explained are unique to certain models. These features may be available as accessories for your Harley-Davidson motorcycle. See your Harley-Davidson dealer for a complete list of accessories that will fit your model.

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

⚠WARNING

Read the CONTROLS AND INDICATORS section before riding your motorcycle. Failure to understand the operation of the motorcycle could result in death or serious injury. (00043a)

IGNITION/HEADLAMP KEY SWITCH

⚠WARNING

The automatic-on headlamp feature provides increased visibility for riders. Be sure headlamp is on at all times. Low visibility of rider can result in death or serious injury. (00030a)

See YOUR OWNER'S MANUAL section. Be sure to record all your key numbers in the space provided at the front of this book.

See Figure 16. The ignition/headlamp key switch controls electrical functions of the motorcycle.

CAUTION

Protect your vehicle against theft. After parking your motorcycle, lock the steering head and remove ignition key from switch. Failure to lock your motorcycle may result in theft and/or equipment damage. (00151a)

⚠WARNING

Do not operate vehicle with forks locked. Locking the forks restricts the vehicle's turning ability, which could result in death or serious injury. (00035a)

CAUTION

Do not lubricate barrel locks with petroleum based lubricants or graphite. Inoperative locks may result. (00152a)

CAUTION

Do not switch lubricant brands indiscriminately because some lubricants interact chemically when mixed. Use of inferior lubricants can damage the engine. (00184a)

1. For FLHR Models, to remove the key from the ignition, push the key in and turn it counterclockwise.
2. For FLHT Models, to remove the key from the ignition, push the key in and turn clockwise.
3. Remove the key.

NOTES

- *ACCESS/ACCESSORY - Accessories and hazard warning flasher can be turned on. Instrument lamps are on. Brake lamp and horn can be activated. Key may be removed.*
- *The lamps illuminate when the switch is in the IGNITION position, as required by law in some localities.*
- *Harley-Davidson recommends removing key from ignition/fork lock before operating motorcycle. If you do not remove key, it can fall out during operation.*

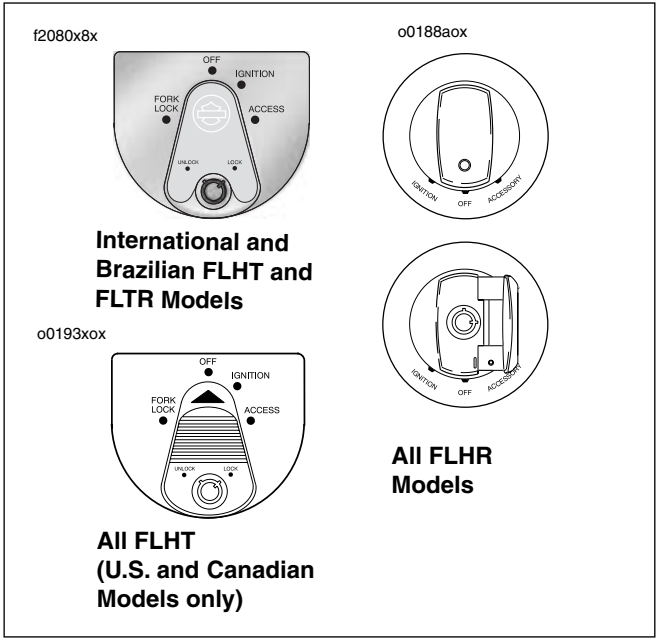


Figure 16. Ignition/headlamp Key Switch

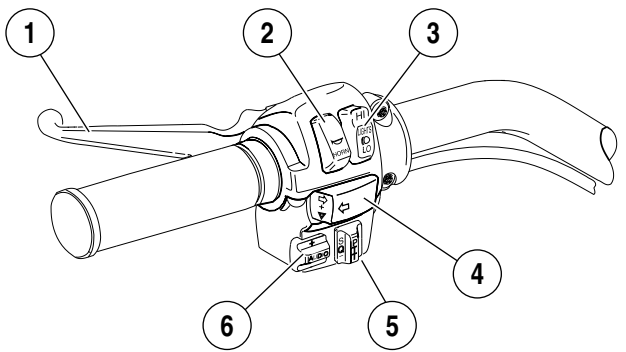
Table 14. Ignition/headlamp Key Switch

MODEL	LOCATION	SWITCH POSITIONS/FUNCTIONS
FLHT, FLTR	At bottom of instrument panel.	To unlock the switch and the front fork, push the key in and turn it counterclockwise. Be sure you push key in to move key to either position. On international models, the switch knob will pop up. Ignition/headlamp key switch can be locked in the accessory position however, forks will remain unlocked.
		To lock the fork, move fork to the full left position. Push down on knob and turn it to the left, to the FORK LOCK position. Turn key to lock. Remove the key. On international models, turn fork to full left position. Turn switch knob to fork lock, push knob down and turn key to LOCK. Remove the key.
		ACCESS/ACCESSORY - Accessories and hazard warning flasher can be left on. Instrument lamps are on. Brake lamp and horn can be activated. Key may be removed. The ignition, lamps and accessories work when the switch is in the IGNITION position, as required by law in some localities.*
FLHR/C/S	On fuel tank instrument panel.	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 any position.
		OFF - Ignition, lamps and accessories are off.
		ACCESS/ACCESSORY - Accessories are on. Hazard warning flashers can be left on. Instrument lamps are on. Brake lamp and horn can be activated.*
		LAMPS and IGNITION - Ignition, lamps and accessories are on.*

* International models have an additional function; position lamp and tail lamp are also on.

o0189xox

FLTR, FLHT/C/U (FLHTCU shown)



1. **Clutch hand lever**
2. **Horn switch**
3. **Headlamp dimmer switch**
4. **Left turn signal switch**
5. **P.T.T. (Push to Talk) switch***
6. **Audio control***

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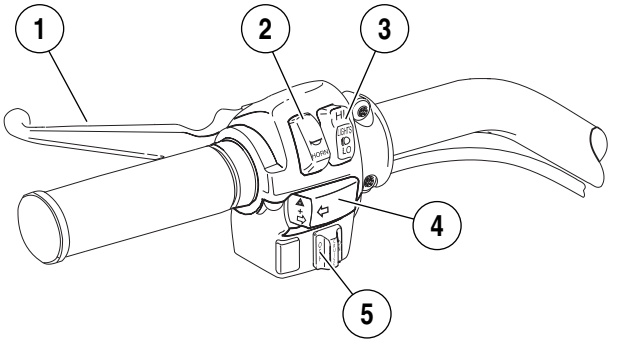
FLHR/C/S (FLHRCI Shown)

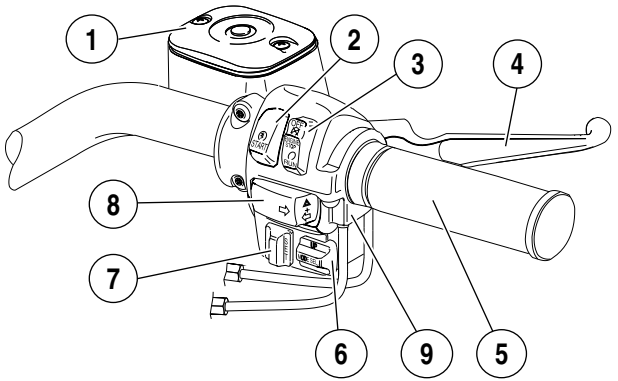


1. **Clutch hand lever**
2. **Horn switch**
3. **Headlamp dimmer switch**
4. **Left turn signal switch**
5. **ON/OFF cruise control switch***

***If Equipped**

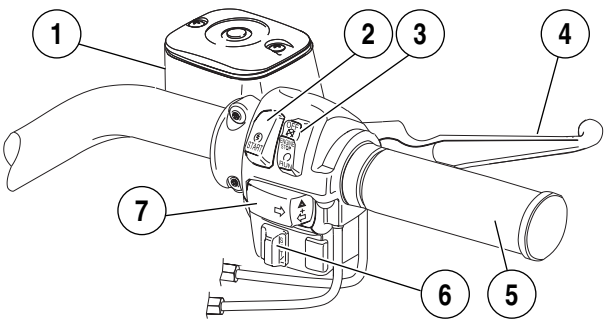
Figure 17. Left Handlebar Controls

o0190xox **FLTR, FLHT/C/U (FLHTCU shown)**



1. **Master cylinder reservoir**
2. **Electric starter switch**
3. **Engine off/run switch**
4. **Brake hand lever**
5. **Throttle control grip**
6. **Mode select***
7. **Resume/Set cruise control function switch***
8. **Right turn signal switch**
9. **Throttle friction adjusting screw (not shown) (not used on cruise control models)**

f2158x8x **FLHR/C/S (FLHRCI Shown)**



1. **Master cylinder reservoir**
2. **Electric starter switch**
3. **Engine off/run switch**
4. **Brake hand lever**
5. **Throttle control grip**
6. **Resume/Set cruise control function switch***
7. **Right turn signal switch**

***If Equipped**

Figure 18. Right Handlebar Controls

ELECTRIC STARTER SWITCH

NOTE

Off/Run switch MUST be in RUN position to operate engine.

See Figure 18. The electric starter switch is located on the right handlebar control group. See STARTING THE ENGINE for detailed operation procedures.

1. Put the engine off/run switch in the RUN position and the transmission in neutral. Neutral (green) indicator lamp should be illuminated.
2. See Figure 16. Turn ignition/headlamp key switch to ON and push the START switch to operate starter motor.

ENGINE OFF/RUN SWITCH

See Figure 18. The engine off/run switch is located on the right handlebar control group.

The engine off/run switch turns the engine ON or OFF, and should be used at all times to stop the engine, especially in an emergency.

1. To stop engine, push the engine off/run switch to position marked OFF.
2. See Figure 16. Turn the ignition/headlamp key switch to the OFF position.

HORN SWITCH

See Figure 17. The horn is operated by pushing on the horn switch located on the left handlebar control group.

HEADLAMP DIMMER SWITCH

See Figure 17. The headlamp dimmer switch is located on the left handlebar control group and controls the headlamp's high and low beams.

NOTE

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

TURN SIGNAL SWITCHES - GENERAL

See Figure 18. The right turn signal switch operates the right front and right rear flashing lamps.

See Figure 17. The left turn signal switch operates the left front and left rear flashing lamps.

TURN SIGNAL SWITCH OPERATION

The turn signal switches are used by the turn signal module to control turn signal operation based on vehicle speed, vehicle acceleration and turn completion.

Momentarily depress the desired turn signal switch. The turn signal lamps will begin and continue flashing until they are manually or automatically cancelled. As long as the motorcycle is stationary, the signal will flash.

NOTES

- *If you want the turn signals on longer, hold the switch in. The turn signals will begin flashing immediately, but the microprocessor will not begin computing distance until you release the switch.*
- *If you are signaling to turn in one direction and you depress the switch for the opposite turn signal, the first signal is canceled and the opposite side begins flashing.*
- *If you want to stop the lamps from flashing, briefly depress the turn signal switch a second time. The turn signal lamps will stop flashing.*

HAZARD WARNING 4-WAY FLASHER (TURN SIGNAL SWITCHES)

Use the following method to activate the four-way flashers.

1. With the ignition key ON and security system disarmed (models with security only), press the left and right turn signal switches at the same time.
2. See Figure 16. Turn the ignition key OFF or ACCESS and arm the security system if present and desired. The four-way flashers will continue for two hours.
3. To cancel four-way flashing, disarm the security system if necessary, turn the ignition key ON and press the left and right turn signal switches at the same time.

This system allows a stranded vehicle to be left in the four-way flashing mode and secured until help is found.

INDICATOR LAMPS - GENERAL

See Figure 19. Five indicator lamps are provided.

- The green TURN indicators will flash when turn signals are activated; therefore, flashing indicates the chosen turn direction. When the 4-way hazard flashers are operating, both turn indicators will flash simultaneously.
- The blue BEAM indicator lamp, when lit, signals high beam headlamp operation.
- The green NEUTRAL lamp, when lit, signals the transmission is in neutral gear.
- The red OIL indicator lamp, when lit, signals that oil is not circulating through the engine.

NOTE

The OIL indicator lamp illuminates when the ignition is first turned on (before the engine is turned on). Once the engine is running, the oil lamp should extinguish.

Several other circumstances that could cause the red oil indicator lamp to remain illuminated, include the following:

- May be the result of a low oil level or diluted oil supply.
- In freezing weather the oil feed may clog with ice and sludge.
- A defect in the oil lamp wiring, faulty oil pressure sending unit, or damaged oil pump.

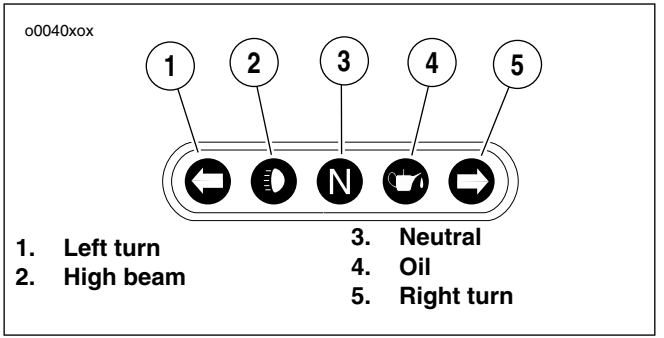


Figure 19. Indicator Lamps

- Incorrect oil viscosity.
- Broken or weak spring in the oil pressure relief valve.
- Damaged or incorrectly installed o-rings in the engine.

CAUTION

If the oil pressure indicator lamp remains lit, always check the oil supply first. If the oil supply is normal and the lamp is still lit, stop the engine at once and do not ride further until the trouble is located and the necessary repairs are made. Failure to do so may result in engine damage. (00157a)

TACHOMETER

See Figure 20. The tachometer registers the engine speed in revolutions per minute (RPM).

CAUTION

See OPERATING RECOMMENDATIONS section. Do not operate the engine above maximum safe RPM as shown under OPERATION (red zone on tachometer). Lower the RPM by upshifting to a higher gear or reducing the amount of throttle. Failure to lower RPM may cause equipment damage. (00159a)

SPEEDOMETER/ODOMETER

See Figure 20. The speedometer registers miles per hour (U.S. models only) or kilometers per hour (HDI models only) of forward speed. The odometer registers the number of miles/kilometers the vehicle has traveled.

⚠WARNING

Travel at speeds appropriate for road and conditions and never travel faster than posted speed limit. Excessive speed can cause loss of vehicle control, which could result in death or serious injury. (00008a)

CAUTION

Never attempt to tamper with or alter the vehicle odometer. This is illegal. Tampering with or altering a vehicle odometer may cause equipment damage. (00160a)

The electronic speedometer has a single display window for both the odometer and trip-odometer.

1. Press the function switch to change the display window on the speedometer face to either odometer or trip-odometer.
2. To reset the trip-odometer to zero, press button to reset speedometer display to the ODOMETER mode and hold the button in for approximately 2 to 3 seconds.

The speedometer will switch to the trip-odometer mode and reset the display to zero.

TRIP-ODOMETER

See Figure 20. Use either trip-odomete A or trip-odometer B to register number of miles/kilometers traveled on a trip or between refueling.

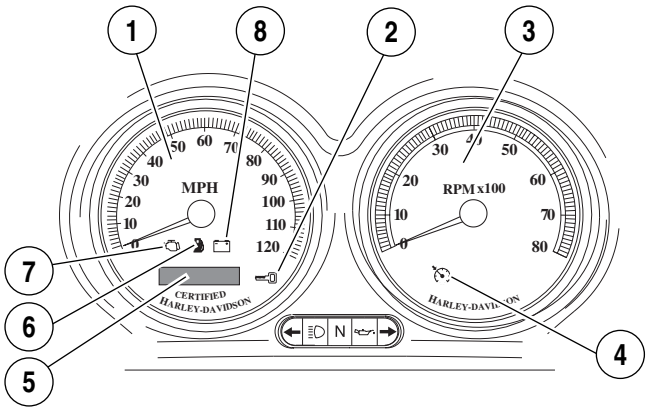
Press the function switch to change the display window on the speedometer face to either odometer or trip-odometer A or trip-odometer B.

Odometer will display mileage when bike is OFF when function switch is pressed. (No need to turn the bike on to check the odometer reading).

Tip Indicator Lamp

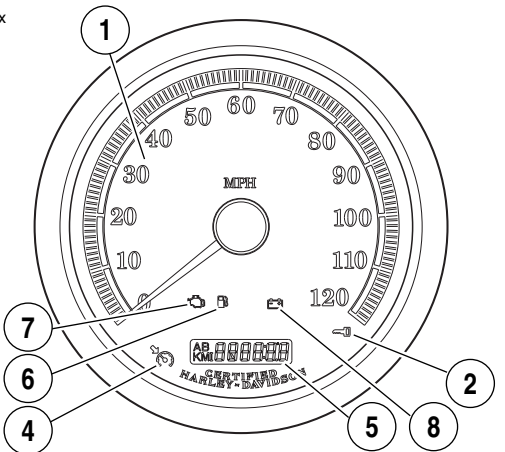
Should motorcycle be tipped over, the word “tip” will appear in the odometer window. Engine will not start until reset. To reset, cycle ignition/headlamp key switch ON-OFF-ON.

f2185xax



FLHT and FLTR Models

d0715x8x



FLHR Models

1. **Speedometer**
2. **Security system lamp**
3. **Tachometer**
4. **Cruise lamp**
5. **Odometer/trip-odometer**
6. **Low fuel warning lamp**
7. **Engine check lamp**
8. **Battery discharge lamp**

Figure 20. Indicator Lamps

INDICATOR LAMPS

Engine Check Lamp

See Figure 20. The engine check lamp is located near the lower left side of the speedometer. Its purpose is to indicate whether or not the engine management system is operating normally. The engine lamp color is amber.

The engine lamp normally comes on when the bike's ignition is first turned on and remains on for approximately 4 seconds as the engine management system runs a series of self-diagnostics.

If the engine lamp comes on at any other time, see your Harley-Davidson dealer.

Cruise Control Equipped Models

See Figure 20. Cruise control equipped models use an additional indicator lamp: a red lamp on the cruise control switch, indicating cruise control ON or OFF, and a green lamp on the tachometer, (speedometer for FLHR), indicating cruise control set or not set. See CRUISE CONTROL section for more details.

NOTE

Touring models are either equipped with cruise control or are cruise control ready. See your Harley-Davidson dealer for information.

ACCESSORY SWITCH

See Figure 22. All touring models have an accessory switch (4) for the owner's use. This switch is located on the right side of the fairing (FLHT) or left side triple clamp shroud (FLHR).

See Figure 21. There is an accessory connector located under the seat that can be activated with the ACC switch. See your Harley-Davidson dealer for possible uses.

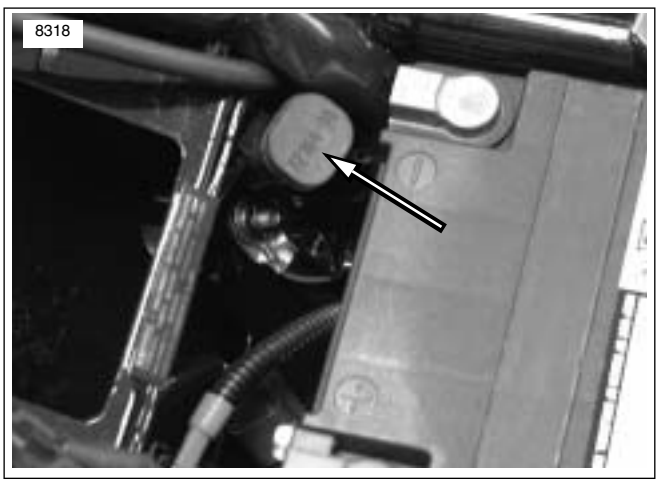


Figure 21. Accessory Connector

CAUTION

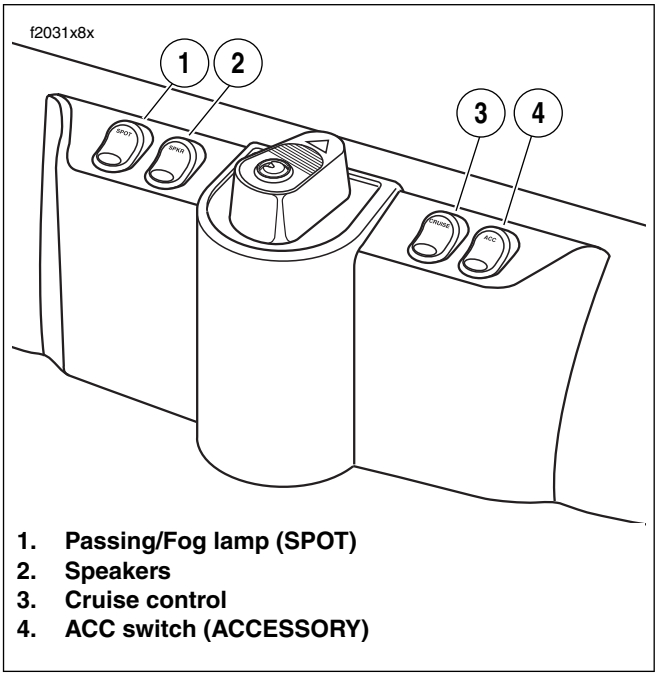
It is possible to overload your motorcycle's charging system by adding too many electrical accessories. If your combined electrical accessories operating at any one time consume more electrical current than your vehicle's charging system can produce, the electrical consumption can discharge the battery and cause vehicle electrical system damage. See a Harley-Davidson dealer for advice about the amount of current consumed by additional electrical accessories, or for necessary wiring changes. (00211b)

PASSING/FOG LAMP SWITCH (FLHT/FLTR & FLHR/C)

See Figure 22. Use the passing/fog lamp switch (1) to turn ON the passing lamps as required.

NOTES

- *On the FLHT/C/CU, the passing/fog lamp switch (SPOT) is on the left side of the ignition/headlamp key switch on fairing cap.*
- *On the FLHR/C the passing/fog lamp switch (SPOT) is on the right side of the triple clamp shroud.*
- *The passing/fog lamps (SPOT) do not work when the headlamp is on high beam.*



1. **Passing/Fog lamp (SPOT)**
2. **Speakers**
3. **Cruise control**
4. **ACC switch (ACCESSORY)**

Figure 22. Switch Indicators

CRUISE CONTROL

Theory Of Operation

The cruise control is designed to be safely operated with minimum movement by the rider and all rider control actions are natural and easy.

NOTES

- *The rider always over-rides and controls the system.*
- *The system will not work at vehicle speeds below 30 mph (48 km/h) or above 85 mph (137 km/h).*
- *The system is managed by a small computer. The tachometer provides information to disengage the system if the engine RPM suddenly increases.*
- *Besides the computer, the system has other components: a stepper-motor (controlled by the computer), which operates the throttle during CRUISE operation, a clutch which disengages the stepper-motor during non-cruise operation and several internal switches, all sending information to the computer.*
- *The system will allow rider to increase speed 10 mph (16 km/h) or more (depending on how hard the rider rolls on the throttle and the condition of the bike) over the SET point before deactivating. This feature allows the rider to momentarily increase speed, if necessary. Rolling on the throttle to greatly increase speed may deactivate the system.*

Controls

The cruise control system provides automatic vehicle speed control.

⚠WARNING

Do not use the cruise control system in heavy traffic, on roads with sharp or blind curves or on slippery roads of any kind. Using the cruise control in these circumstances can cause loss of control, which could result in death or serious injury. (00083a)

See Figure 22. A fairing cap cruise control switch (3) located to the right of the ignition/headlamp key switch turns the cruise control system ON and OFF.

On FLHR models, the cruise control switch housing is on the left handlebar.

NOTE

The cruise control icon on the speedometer or tachometer will turn red to indicate the cruise control is ON. If the red icon does NOT come on, the system is NOT ON. You cannot SET cruise speed, see your dealer.

See Figure 18. RESUME/SET switch located in the right handlebar control group.

The RESUME/SET switch controls several system functions, including:

- Set.
- Resume.
- Accelerate.
- Decelerate.

Activating/Engaging Cruise Control

1. See Figure 22. Turn the cruise control switch to the ON position. The red icon on the cruise gauge face will light when activated.
2. With the motorcycle traveling at the desired cruise speed of 30-85 mph (48-137 km/h), momentarily push the RESUME/SET switch on the right handlebar to SET. After a delay of about 1-1/2 seconds, the icon will turn green on the face of the gauge to indicate the selected cruising speed is locked in.

Deactivating/Disengaging Cruise Control

The cruise control automatically disengages whenever the cruise control module receives one of the following inputs:

- Front and/or rear brake is applied.
- Throttle is rolled back or closed, thereby actuating idle cable roll-off (disengage) switch.

- Motorcycle clutch is disengaged (module senses too great an increase in RPM).
- Vehicle speed is out of the operating range.

NOTE

Rolling on the throttle more than 10 mph (16 km/h) above the set speed may also deactivate the cruise control.

When the cruise is disengaged, the green cruise engaged icon on the face of the gauge changes to red. The red cruise control system icon remains ON until the main switch is turned off.

However, should you decide to SET a cruise speed, RESUME last set speed, ACCELERATE or DECELERATE, simply press the RESUME/SET switch.

Resuming Cruise Speed

If the system is deactivated using one of the methods described under DEACTIVATING/DISENGAGING CRUISE CONTROL, the system is still ON should you decide to RESUME the set speed. To accomplish this, simply press the RESUME/SET switch to RESUME.

NOTE

The computer will hold the SET speed in memory for the RESUME function. If the vehicle speed drops more than 15 mph (72 km/h) below the SET speed, speed can no longer be RESUMED. If cruise operation is still desired, press the RESUME/SET *switch to SET to reset the cruise speed.*

Accelerating Above Cruise Speed

1. With the cruise speed set, momentarily press the RESUME/SET switch to RESUME to increase the speed by 1 mph (1.6 km/h).
2. Pressing and holding the RESUME/SET switch at RESUME will cause the system to continue to increase speed in increments of approximately 1 mph (1.6 km/h) until the switch is released. There is a delay of about 2 seconds before the speed increases.

Decelerating Cruise Control

1. With the cruise speed set, momentarily press the RESUME/SET switch to SET to reduce the speed by 1 mph (1.6 km/h).
2. Pressing and holding the RESUME/SET switch at SET will cause the system to continue to reduce speed in increments of approximately 1 mph (1.6 km/h) until the switch is released. There is a delay of about 2 seconds before the speed decreases.

Deactivating Cruise Control

Turn cruise control switch to the OFF position. The red icon in the gauge is extinguished to indicate the system is OFF.

NOTES

System will NOT work if:

- *An uphill grade is so long and/or steep; the throttle cables are pulled their full length when the system tries to maintain vehicle speed. This feature prevents stretching the cables.*
- *Rider operates bike at vehicle speeds below 30 mph (48 km/h) or above 85 mph (137km/h).*
- *Throttle cables are too tight. See dealer.*
- *Brake lamps are on constantly. See dealer.*

THROTTLE CONTROL GRIP

See Figure 18. The throttle control grip is located on the right handlebar control group.

1. Turn control grip clockwise to close the throttle.
2. Turn control grip counterclockwise to open the throttle.

To reduce rider fatigue on long trips, a spring loaded throttle friction adjustment screw is located at the bottom of the throttle grip clamp (on non-cruise equipped models).

⚠WARNING

Do not tighten throttle friction adjustment screw to the point where the engine will not return to idle automatically. Overtightening can lead to loss of vehicle control, which could result in death or serious injury. (00031a)

3. See Figure 18. Unscrew the throttle friction adjustment screw so the throttle returns to the idle position when the hand is removed from the grip.
4. Screw the throttle adjustment screw in to increase friction on grip. This provides a damping effect on throttle motion.

NOTE

The throttle friction adjustment screw should not be used under normal stop and go operating conditions.

ENRICHENER (CARBURETED ONLY)

A constant velocity carburetor uses an enrichener instead of a choke. An enrichener is operated almost the same way as a choke except there are two differences:

CAUTION

Pay close attention to the vehicle's warm-up time. Either excessive or insufficient use of the enrichener may cause poor performance, erratic idle, poor fuel economy, spark plug fouling and equipment damage. (00164a)

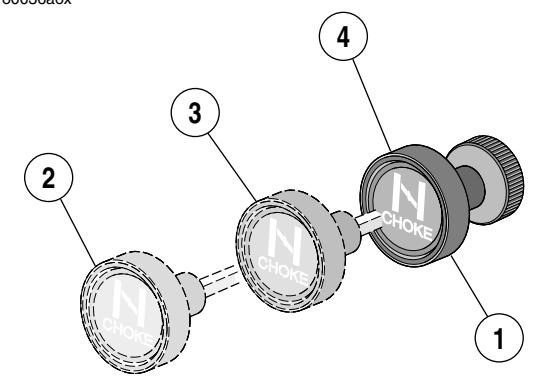
- When starting a cold engine, the throttle control must be closed for the enrichener to work properly.
- The enrichener does not have detents. The enrichener knob position can be adjusted from full in to full out.

See Figure 23. Engine speed increases as the enrichener knob is pulled out. By moving the enrichener knob, you adjust the air/fuel mixture to start a cold or warm engine.

1. Pull enrichener knob all the way out for cold engine starting.
2. Change the enrichener knob position between **FULL-OUT**, or **FULL-IN**, as the situation requires.

NOTES

- *See OPERATION section for detailed starting procedures.*
- *Fuel injected models do not use an enrichener.*



1. Enrichener knob
2. Full-out (cold engine starts)
3. 1/2 Way position
4. Full-in (normal running position)

Figure 23. Setting the Enrichener

SEQUENTIAL PORT FUEL INJECTION

Engine Check Lamp

See Figure 20. The engine check lamp is located near the lower left side of the speedometer (FLHT models) or lower center of the speedometer (FLHR models). Its purpose is to indicate whether or not the engine/engine management system is operating normally. The engine lamp color is amber.

The engine lamp normally comes on when the bike's ignition is first turned on and remains on for approximately 4 seconds, as the engine management system runs a series of self-diagnostics.

If the engine lamp comes on at any other time, see your Harley-Davidson dealer.

Low Fuel Lamp

See Figure 20. There is a low fuel lamp on the speedometer, lower center by check engine lamp. The low fuel lamp illuminates to indicate that you have approximately 1 gallon (3.8 liters) of gasoline left in the tank. The low fuel lamp color is amber.

CLUTCH HAND LEVER

⚠WARNING

Do not position fingers between hand control lever and handlebar grip. Improper hand positioning can impair control lever operation and cause loss of vehicle control, which could result in death or serious injury. (00032a)

See Figure 17. The clutch hand lever is located on the left handlebar where it is operated with the fingers of the left hand.

1. Pull clutch hand lever in against handlebar grip to fully disengage clutch.
2. After selecting the proper gear, engage clutch by releasing hand lever slowly to its full outward position.

GEAR SHIFTER

See Figure 24. The gear shifter is located on the left side, where it is operated with the toe or heel of the left foot.

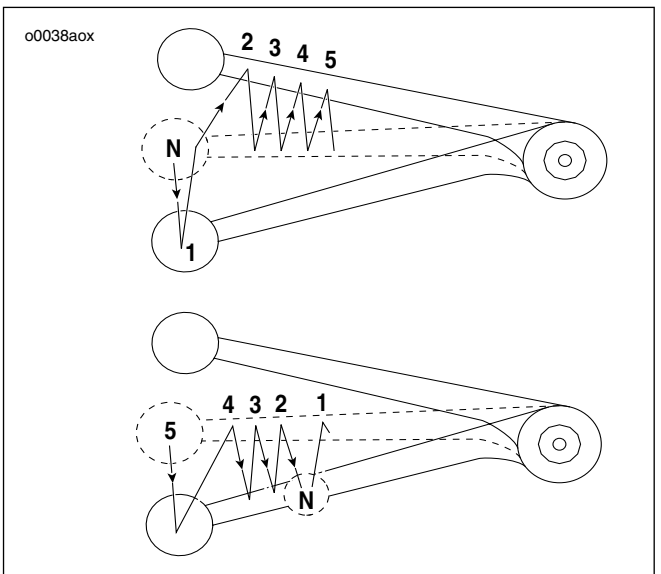


Figure 24. Foot Shifter Lever

NOTES

- *See Figure 25. Touring motorcycles have a heel-toe shifter lever. With this shift lever, upshifts can be made with the heel of the left foot. Up or down shifts can be made with the toe.*
- *Pushing toe foot shift lever all the way down (full stroke) shifts the transmission to the next lower gear.*
- *Lifting the toe foot shift lever all the way up (full stroke) shifts the transmission into the next higher gear.*
- *The heel lever can be used to up shift only by stepping down.*

Release the foot shift lever after each gear change. This allows the lever to return to its central position before another gear change can be made.

- The neutral position is between first (low) and second gear.
- First gear is the last gear position that can be found by pushing the toe foot shift lever full strokes downward.

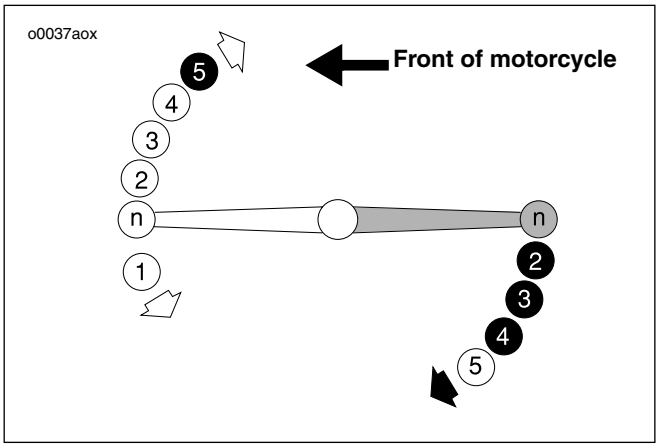


Figure 25. Heel - Toe Foot Shift Lever

NOTE

By lifting the toe gear shifter lever up, a higher gear is engaged; by pushing the toe gear shifter lever down, a lower gear is engaged. When stopping, operate gear shift until you reach neutral. Neutral is 1/2 stroke up from first gear.

Occasionally, it is necessary to roll the motorcycle to fully engage the gears.

To roll the motorcycle backward or forward:

1. Stand the motorcycle still and shut the engine off.
2. Disengage the clutch while maintaining a slight pressure on the foot shift lever to shift from one gear to another.

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, as a result, they are not lined up to permit engagement.

CAUTION

When difficulty of shifting gears 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. (00161a)

If you cannot shift gears do the following:

1. Either roll the motorcycle as previously indicated.
2. If the engine is running, lightly engage the clutch while applying minimal pressure to the shifter lever to make the shift.

See OPERATION section. Both of these procedures set transmission gears in motion to enable ease of shifting.

BRAKES

The brake pedal controls the rear wheel brake and is located on the motorcycle's right side. It is operated by the right foot.

See Figure 18. The brake hand lever controls the front wheel brake and is located on the right handlebar. It is operated by the fingers of the right hand.

NOTE

Brakes should be applied uniformly and evenly to prevent wheels from locking up. A balance between rear and front braking is generally best.

⚠WARNING

Do not apply brake strongly enough to lock the wheel. A locked wheel will skid and can cause loss of vehicle control, which could result in death or serious injury. (00053a)

MIRRORS (CONVEX)

Your vehicle is equipped with convex mirrors that have a curved surface. This type of mirror is designed to give a much wider view to the rear than a flat mirror; however, cars and other objects seen in this type of mirror will look smaller and farther away than when seen in a flat mirror. Use care when judging the size or distance of objects seen in these mirrors.

⚠WARNING

Objects in mirrors are closer than they appear. Use caution when judging distance of objects in mirrors. Failure to judge correct distances could result in death or serious injury. (00033a)

Adjust the mirrors to clearly reflect the area behind the motorcycle.

NOTE

Adjust mirrors 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 motorcycle.

FUEL SUPPLY VALVE (CARBURETED ONLY)

The fuel supply valve is located under the fuel tank. The fuel supply is cut off to the engine when the valve handle is horizontal, and when the engine is turned OFF.

- See Figure 26. Turn the handle to the horizontal position to turn OFF main fuel supply.
- Turn the handle to position (5) to turn ON main fuel supply.
- Turn the handle to position (3) to turn ON reserve fuel supply.

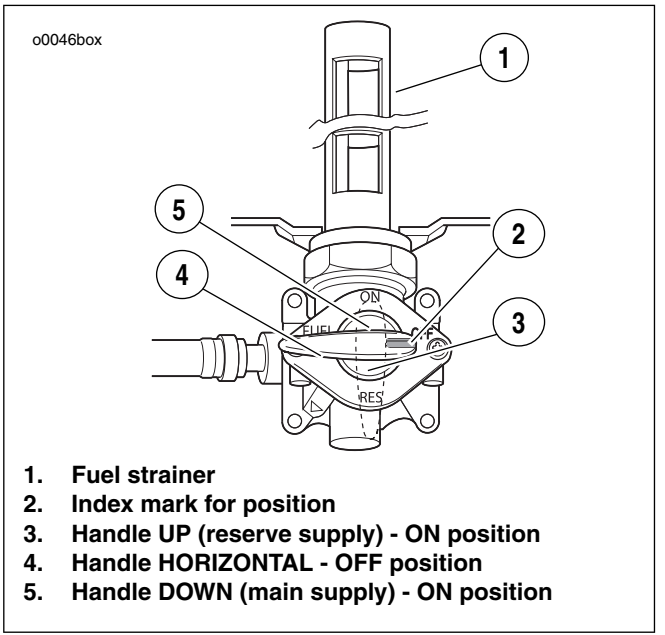
Valve is vacuum-operated and will open and close when engine is turned ON or OFF.

NOTE

The fuel supply valve on the vehicle should be turned OFF when the vehicle is not operating.

NOTE

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



1. **Fuel strainer**
2. **Index mark for position**
3. **Handle UP (reserve supply) - ON position**
4. **Handle HORIZONTAL - OFF position**
5. **Handle DOWN (main supply) - ON position**

Figure 26. Fuel Supply Valve

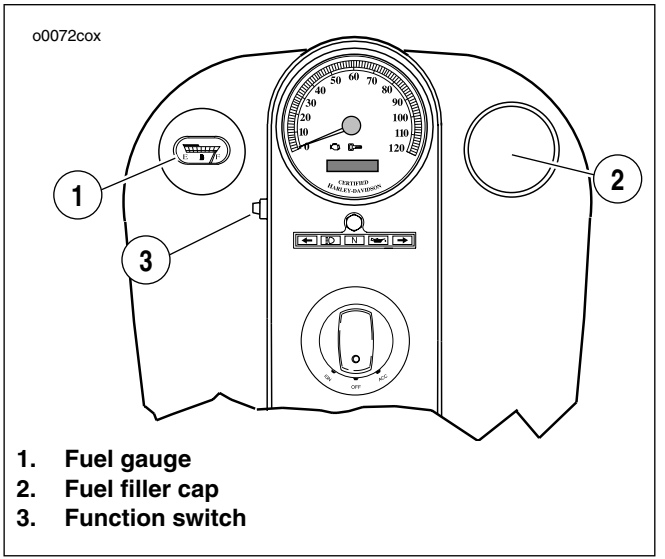
FUEL FILLER CAP

See Figure 27. To open, turn fuel filler cap counterclockwise and lift up. To close, turn fuel filler cap clockwise until it clicks. The ratchet action of the cap prevents overtightening.

NOTES

- *FLHT/FLTR model fuel filler cap is located beneath a door and have a ratchet action. The fuel filler cap should be fully closed before closing the fuel door.*
- *Fuel filler cap turns approximately a 3/4 turn before it starts unscrewing.*
- *FLHR model fuel filler cap is located on the right side of the fuel tank. The cap on the left side is the fuel gauge and is not removable.*

See SAFE OPERATING RULES and review safety procedures listed below.



1. **Fuel gauge**
2. **Fuel filler cap**
3. **Function switch**

Figure 27. Fuel Tank (FLHR)

CAUTION

Do not spill fuel onto the motorcycle while refueling. Immediately wipe up fuel spills on your motorcycle. Fuel can cause damage to painted surfaces. (00147a)

CAUTION

Use only unleaded fuel in California model catalytic converter-equipped motorcycles. Using leaded fuel will damage the emission control system. (00150a)

⚠WARNING

Do not store motorcycle with gasoline in tank within the home or garage where open flames, pilot lights, sparks or electric motors are present. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00003a)

⚠WARNING

Avoid spills. Slowly remove filler cap. Do not fill above bottom of filler neck insert, leaving air space for fuel expansion. Secure filler cap after refueling. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00028a)

⚠WARNING

Do not use aftermarket fuel caps. Aftermarket fuel caps may fit improperly and leak, which could lead to death or serious injury. See a Harley-Davidson dealer for approved fuel caps. (00034a)

FUEL GAUGE

See Figure 27. The fuel gauge indicates the approximate amount of fuel in the fuel tank(s) and is located to left of the speedometer or on the left front panel of the fairing.

NOTE

The FLHR left side fuel cap is a fuel gauge only. Do not remove.

FORK LOCK

CAUTION

Protect your vehicle against theft. After parking your motorcycle, lock the steering head and remove ignition key from switch. Failure to lock your motorcycle may result in theft and/or equipment damage. (00151a)

See Figure 28. The FLHR/C/S has a fork lock at the top of the steering head, behind the headlamp nacelle and inset in the handlebar clamp shroud.

Using the fork lock immediately after parking your motorcycle will discourage unauthorized use or theft when parking your motorcycle.

⚠WARNING

Do not operate vehicle with forks locked. Locking the forks restricts the vehicle's turning ability, which could result in death or serious injury. (00035a)

NOTE

The fork lock is integrated into the ignition switch on FLHT/FLTR models.

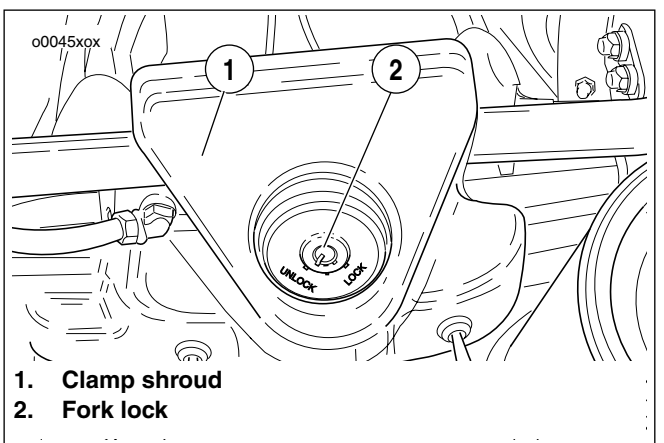
To Lock Fork on FLHR/C/S Models

1. Turn fork to full left position.
2. Insert key into fork lock and turn counterclockwise to lock.
3. Remove key.

To Lock Fork on FLHT, FLTR Models

1. Turn fork to full left position.
2. Push down on knob and turn left to FORK LOCK position.
3. Turn key to lock and remove key.

For fork lock detail, refer to Table 14.



1. Clamp shroud
2. Fork lock

Figure 28. Fork Lock (FLHR/C/S)

AIR SUSPENSION ADJUSTMENT

See Figure 29. All models feature air-adjustable rear suspension. Air pressure may be varied to suit personal comfort.

Refer to Table 15. Table shows recommended pressures for your riding comfort. For FLHRS models, refer to Table 16.

NOTE

An AIR SUSPENSION PUMP AND GAUGE (Part No. HD-34633) is available at your Harley-Davidson dealer.

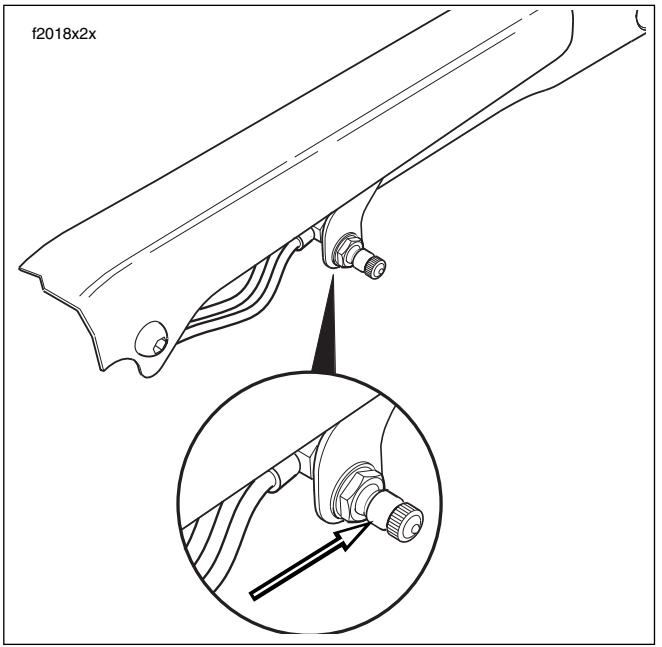


Figure 29. Rear Air Suspension Air Valve

Rear Air Suspension

See Figure 29. Adjust the rear shock air suspension pressure by adding or removing air from the air valve located just below the frame cover on the left side of the vehicle.

CAUTION

Do not exceed maximum air pressure for rear suspension. Air components fill rapidly. Therefore, use low air line pressure. Failure to do so may result in possible damage to components. (00165a)

NOTE

Using pressures outside the recommended loading range will result in a reduction of available suspension travel and reduced rider comfort.

⚠WARNING

Use caution when bleeding air from the suspension. Moisture combined with lubricant may leak onto the rear wheel, tire and/or brake components and adversely affect traction, which could result in death or serious injury. (00084a)

Table 15. Recommended Pressures for Air Suspension Adjustments - All Models Except FLHRS

SHOCK LOAD	LB.	KG	PSI	kPa
Solo rider	Up to 150	0-68	0	0
Solo rider	150-200	68-91	0-10	0-69
Solo rider	200-250	91-113	5-15	35-103
Rider with passenger	Up to 150	0-68	10-15	69-103
Rider with passenger	Up to 200	0-91	20-25	138-172
Max GVWR			20-35	138-241

NOTES

- *Do not exceed max GVWR.*
- *Always clear the line by adding 3-5 psi (21-35 kPa) before releasing air from the pump's valve, but do not exceed 35 psi (241 kPa).*
- *These are recommended starting points; adjust to suit load conditions, riding style, and comfort desired. Less initial pressure does not necessarily result in a softer ride.*

Table 16. Recommended Pressures for Air Suspension Adjustments - Model FLHRS Only

SHOCK LOAD	LB.	KG	PSI	kPa
Solo rider	Up to 160	0-73	0-5	0-35
Solo rider	160-200	73-91	0-10	0-69
Solo rider	Over 200	91	5-10	35-69
Rider with passenger	Up to 150	0-68	20-30	138-207
Rider with passenger	Over 150	0-68	25-35	172-241
Max GVWR			40-50	276-345

NOTES

- *Do not exceed max GVWR.*
- *Always clear the line by adding 3-5 psi (21-35 kPa) before releasing air from the pump's valve, but do not exceed 50 psi (345 kPa).*
- *These are recommended starting points; adjust to suit load conditions, riding style, and comfort desired. Less initial pressure does not necessarily result in a softer ride.*

OIL PRESSURE GAUGE

The oil pressure gauge indicates engine oil pressure and is found on the front panel of the fairing. Engine oil pressure will normally vary from 5 psi (34 kN/m^2) at idle speed to 30-38 PSI (207-262 kN/m^2) at 2000 RPM when engine is at normal operating temperature of 230˚ F (110˚ C).

VOLTMETER

The voltmete indicates electrical system voltage and is found on the front panel of the fairing. With the engine running above 1500 RPM, the voltmeter should register 13-14.5 volts with battery at full charge.

AIR TEMPERATURE GAUGE

The air temperature gauge indicates the ambient air temperature in ˚ F. This gauge is found on the front panel of the fairing.

CLOCK (IN RADIO)

The clock runs continuously as long as there is battery power. See the premium sound system section in this manual to reset clock.

SOUND SYSTEM CONTROLS

For sound system controls, see Figure 17. For a more detailed explanation of the sound system controls, see the premium sound system section in this manual.

LUGGAGE

⚠WARNING

Do not exceed the motorcycle Gross Vehicle Weight Rating (GVWR). Exceeding the GVWR can affect stability and handling, which could result in death or serious injury. (00016a)

- GVWR is the sum of the weight of the motorcycle, accessories, and the maximum weight of the rider, passenger and cargo that can be safely carried.
- The GVWR is shown on the information plate, located on the frame steering head.

TOUR-PAK OPERATION

See Figure 30. Unlock lock and open draw catch.

⚠CAUTION

Do NOT pull on any electrical wires. Pulling on electrical wires may damage the internal conductor causing high resistance, which may result in minor or moderate injury. (00168a)

See the service manual or your Harley-Davidson dealer about Tour-Pak removal.

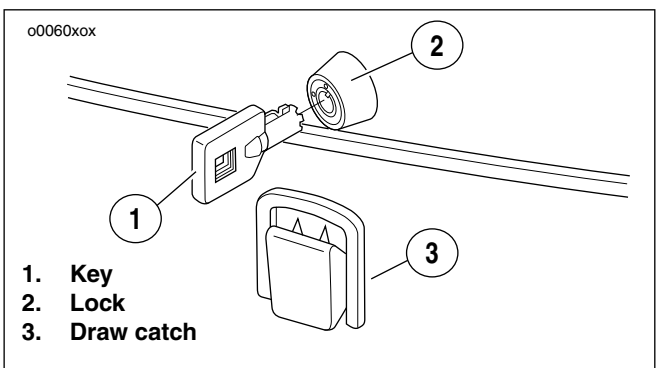


Figure 30. Tour-Pak Lock and Draw Catch

SADDLEBAG OPERATION (FLHT/FLTR)

NOTE

The saddlebag lids are designed to stay attached to the bags at all times.

Opening

1. See Figure 31. Unlock latch.
2. Place fingers under latch and lift.
3. Place one hand at OUTSIDE CORNER of cover and other hand at opposite outside corner.
4. Lift outside edge of cover, pivoting inside edge of cover in brackets.
5. Lift inside edge of cover to disengage brackets.
6. Bring cover towards you, over saddlebag.
7. As you bring cover toward you, let it flip over, so the inside faces up. Let cover rest against rub bars and nylon check strap.

Closing

1. See Figure 31. Use both hands to hold OUTSIDE corners of cover up and slide inside edge back into place so brackets slide together.
2. Close lid and secure latch. Brackets will engage automatically.

NOTE

Saddlebag latch and Tour-Pak draw catches should be closed and locked whenever motorcycle is in operation.

Removing

See Figure 31. The saddlebags are secured to the support brackets by 1/4 turn fasteners called bail head studs.

NOTE

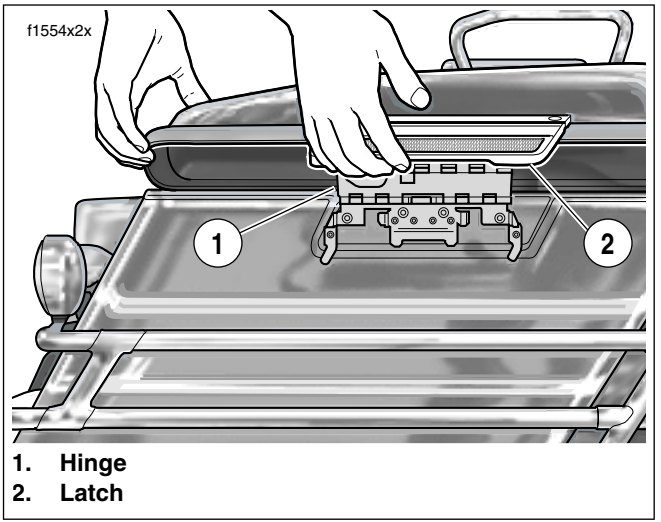
If your vehicle (international only) does not have the wire form "bail", use a flat bladed screwdriver to turn the studs.

1. Unscrew saddlebag fasteners by turning 1/4 turn counterclockwise.
2. Remove saddlebag.

Installing

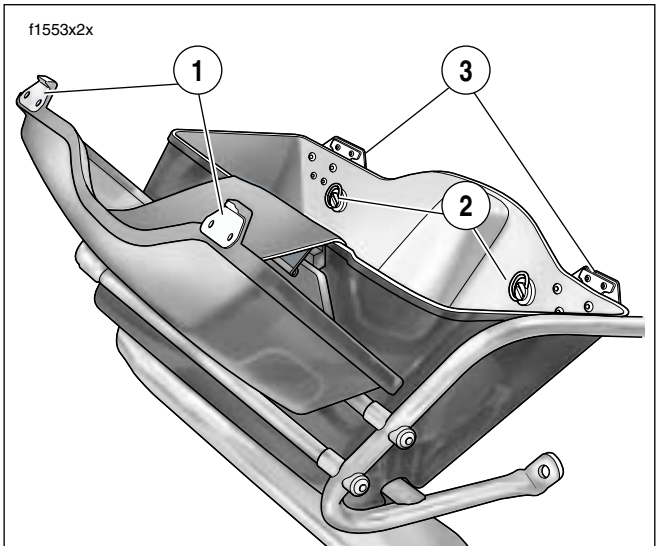
Carefully place saddlebag in position on saddlebag rail and align the bail head studs with the support bracket fasteners.

1. Fasten studs by pushing into support bracket fasteners and turning 1/4 turn clockwise.
2. Check that studs are securely fastened.



1. Hinge
2. Latch

Figure 31. Saddlebags (FLHT/FLTR)



1. Anchor tabs
2. Bail head studs
3. Anchor brackets

Figure 32. Bail Head Studs

Adjustments

See Figure 31. If the latches become loose, you can adjust the latch fingers.

See LUBRICATE-HINGES, LATCHES, FUEL DOOR, TOUR-PAK, SADDLEBAGS (IF APPLICABLE) in the accessories maintenance section.

CAUTION

Adjust the latch fingers only enough to enable them to properly engage the latch hinge. Bending latch fingers back and forth can overstress the metal and weaken the fingers. (00169a)

Bend the fingers until they firmly engage the hinge.

SADDLEBAG OPERATION (FLHRC)

Opening

See Figure 33. To use the quick disconnect strap feature, lift up the strap end to expose the quick release buckle and press on the lock tabs as shown.

The straps may also be opened and closed using the buckle in a conventional manner.

Closing

Insert the male strap end into the receptacle on the bag and push until a positive “click” is felt.

NOTE

Read ACCESSORIES AND MAINTENANCE section for proper saddlebag care.

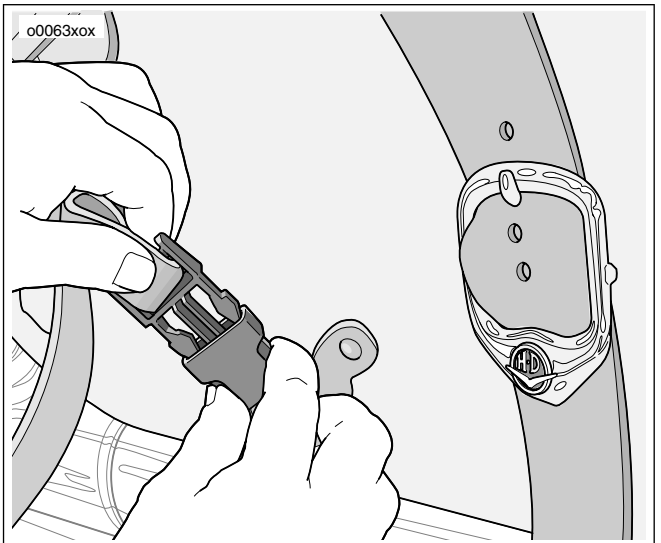


Figure 33. Saddlebag (FLHRC)

SADDLEBAG OPERATION (FLHRS)

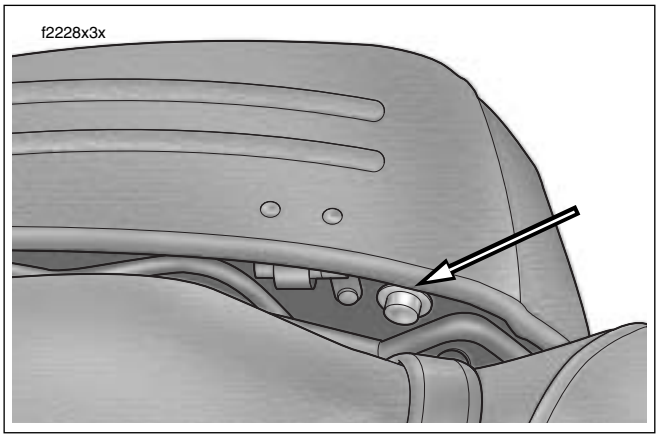


Figure 34. Open Saddlebag (FLHRS)

Opening

See Figure 34. Depress button on front inboard side of saddlebag and while holding button in, raise lid.

Closing

Lower lid until latch assembly fastens.

WINDSHIELD (FLHR/C)

Removal

1. See Figure 35. Insert your fingers into the wire form latch springs at either side of the windshield and move the TOP of the windshield assembly forward, until the TOP bracket notches slide away from the grommets.
2. Carefully lift the windshield bracket BOTTOM notches off the bottom grommets.
3. Remove windshield.

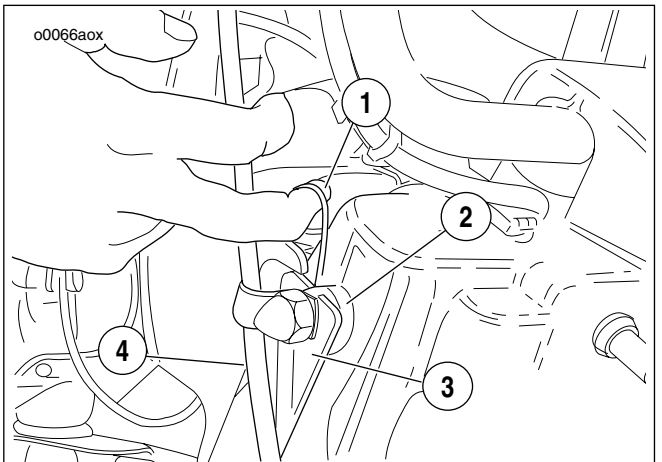
For proper windshield maintenance, see ACCESSORIES AND MAINTENANCE Section.

Installation

CAUTION

Be sure you position the windshield bracket between the rubber grommets. Windshield can be damaged by incorrect installation. (00170a)

1. See Figure 35. Insert your fingers into the wire form latch springs at either side of the windshield and slide the BOTTOM windshield bracket notches onto the bottom grommets.
2. Slide the TOP bracket notches onto the top grommets.



1. **Wire form latch spring**
2. **Grommet**
3. **Windshield**
4. **Clutch cable**

Figure 35. Windshield (FLHR/C)

PASSENGER SEAT (FLHR)

The FLHR standard seat is designed to be converted to solo configuration by removing the passenger section.

Removal

1. Remove screw from rear seat bracket.
2. Lift rear of seat up slightly and carefully slide toward rear of motorcycle. This will detach passenger seat from seat mounting studs.
3. See Figure 36. Under the passenger seat is a chrome plug on the seat frame.
4. The chrome plug is a press-fit. To remove plug from passenger seat, grasp with fingers and pull straight up.
5. Insert plug in seat nut hole by pressing into position with finger pressure.

Installation

1. Remove chrome plug from rear seat nut hole and press into hole on underside of passenger seat.
2. Slide slots on leading edge of passenger seat into seat mounting studs.
3. Position seat bracket over seat nut and install mounting screw.

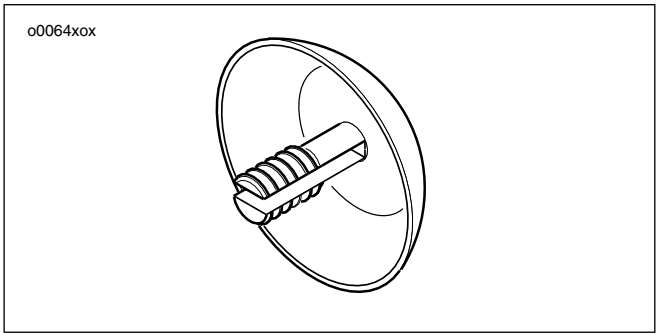


Figure 36. Seat Mounting Hole Plug

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

4. Verify seat is secure.

AIR DEFLECTORS (FLHTCU)

Air deflectors, located along the left and right bottom edge of the fairing, are removable.

Under some conditions, rider comfort may be improved by removing the deflectors to allow more air movement behind the fairing.

1. See Figure 37. To detach the deflectors, remove the three thumb screws.
2. Store thumb screws and deflectors in Tour-Pak.

⚠WARNING

Stop vehicle to remove air deflectors. Removing air deflectors while riding could cause loss of control, resulting in death or serious injury. (00085a)

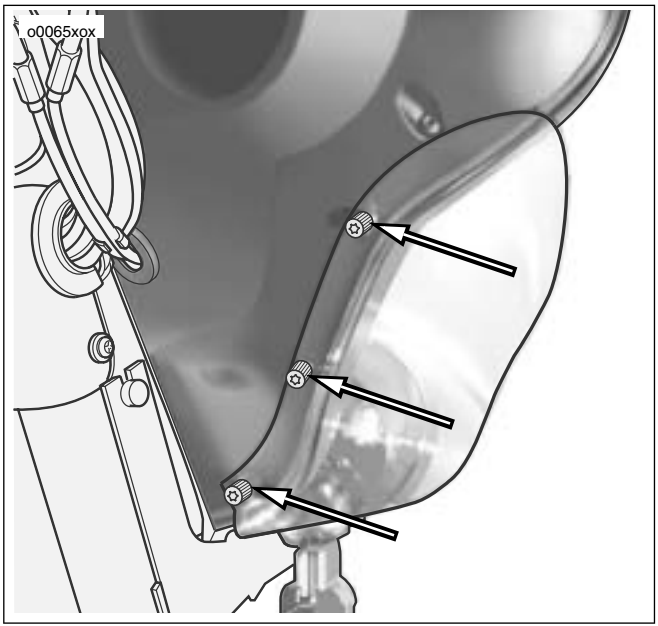


Figure 37. Air Deflector Thumb Screws

JIFFY STAND

See Figure 38. The jiffy stand is located on the left side of the motorcycle and swings outward to support the motorcycle for parking.

⚠WARNING

Always park motorcycle on a level, firm surface. An unbalanced motorcycle can fall over, which could result in death or serious injury. (00039a)

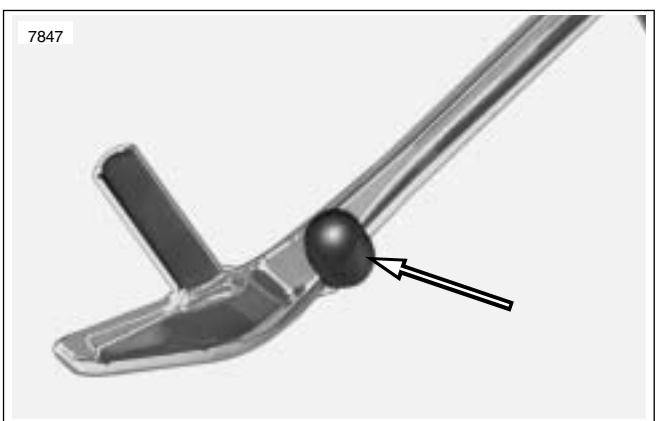


Figure 38. Jiffy Stand Rubber Bumper (FLT)

⚠WARNING

The jiffy stand locks when placed in the full forward (down) position with vehicle weight on it. If the jiffy stand is not in the full forward (down) position with vehicle weight on it, the vehicle can fall over which could result in death or serious injury. (00006a)

⚠WARNING

Be sure jiffy stand is fully retracted before riding. If jiffy stand is not fully retracted, it can contact the road surface causing a loss of vehicle control, which could result in death or serious injury. (00007a)

CAUTION

Verify that rubber bumper is in place on prong of jiffy stand. Without the bumper, the stand will make hard contact with the lower frame tube when retracted, which may result in chipping or nicking of the powder coat. (00163a)

PREMIUM SOUND SYSTEM

This section will acquaint you with the premium sound system on your new Harley-Davidson motorcycle. The premium sound system consists of a radio frequency (AM, MW, LW, FM, and/or WB) stereo receiver that supports a compact disc (CD) player, an auxiliary (AUX) input and special features that will add to your enjoyment.

The receiver in the Ultra Classic Electra Glide (FLHTCU) also supports additional passenger speakers, a rider/passenger intercom and a citizen band (CB) radio.

Since there are many unique aspects in this system, we recommend that you read this section to thoroughly understand its operation.

⚠WARNING

Do not change compact discs while riding, and do not select a volume level that blocks out traffic noise. Distractions or a volume level that blocks out traffic noise, could cause loss of control resulting in death or serious injury. (00086a)

CAUTION

There are no serviceable parts inside the unit; leave all servicing to qualified service personnel. Disassembly of the unit could result in equipment damage and/or equipment malfunction. (00172a)

⚠WARNING

Do not disassemble unit. Laser radiation is present if disc player is disassembled and the interlock fails or is defeated. Exposure to laser radiation could lead to death or serious injury. (00087a)

⚠WARNING

Set intercom volume level and other controls before riding to minimize adjustments on the road. Distractions can lead to loss of control, resulting in death or serious injury. (00088a)

STEREO RECEIVER

For receiver frequency, bands refer to Table 17. The Harley-Davidson stereo receiver is a radio (3 band maximum) with a full function compact disc (CD) player and an auxiliary (AUX) input.

Table 17. Receiver Frequency Bands

BAND	FREQUENCY	STEPS
DOMESTIC		
AM	530-1700 kHz	10 kHz
FM	88.1-107.9 MHz	200 kHz
WB	162.400-162.550 MHz	25 kHz
INTERNATIONAL		
LW	155-281 kHz	9 kHz
MW	522-1629 MHz	9 kHz
FM	87.5-108 MHz	50 kHz
JAPANESE		
MW	522-1629 MHz	9 kHz
FM	76.1-89.9 MHz	100 kHz

Receiver features include:

- Electronic single in-line compact disc player featuring track up/down, forward and reverse scan, and random play.
- Remotely located controls for tuning, band change/CD select, volume, and bass/treble/fader mixing.
- Electronic digital volume control.
- Automatic volume control (AVC) - automatically adjusts volume to compensate for ambient noise due to motorcycle speed. See Automatic Volume Control (AVC).
- Time-of-day clock.
- Weather band frequencies are displayed as NOAA channel numbers (active on North American units only).

Table 18. Speaker Output Power

ROAD GLIDE ELECTRA GLIDE CLASSIC	ULTRA CLASSIC
80 watts (2 speakers @ 40 watts)	160 watts (4 speakers @ 40 watts)
8 ohms per speaker	8 ohms per speaker

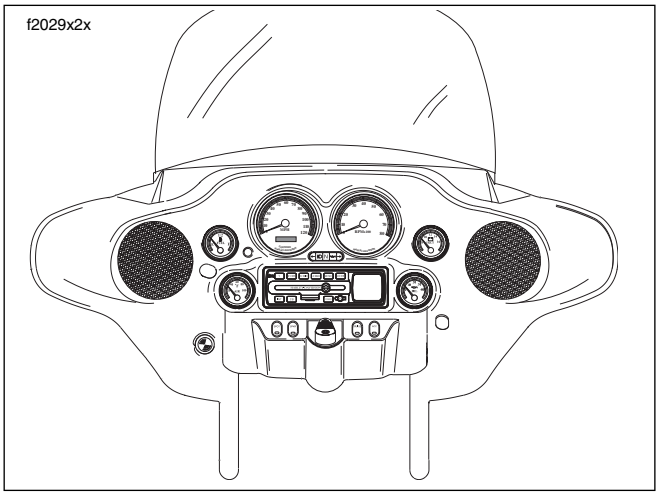


Figure 39. FLHTCU Electra Glide Ultra Classic Front Panel

FRONT PANEL CONTROLS

See Figure 41. The front panel consists of a set of pushbuttons, a liquid crystal display, (LCD), a protective door for the Compact Disc (CD) slot and a covered input port for auxiliary (AUX) devices.

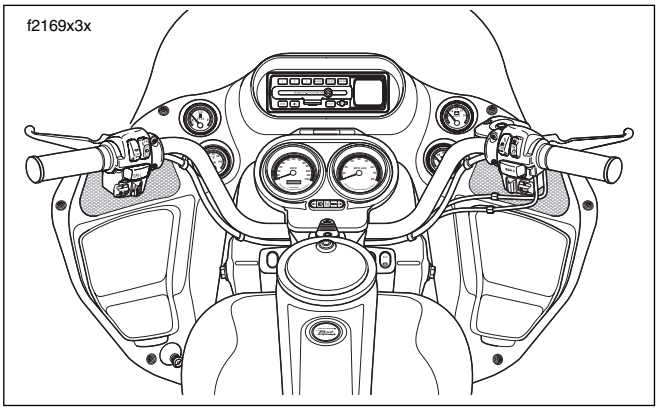


Figure 40. FLTR Road Glide Front Panel

Pushbuttons

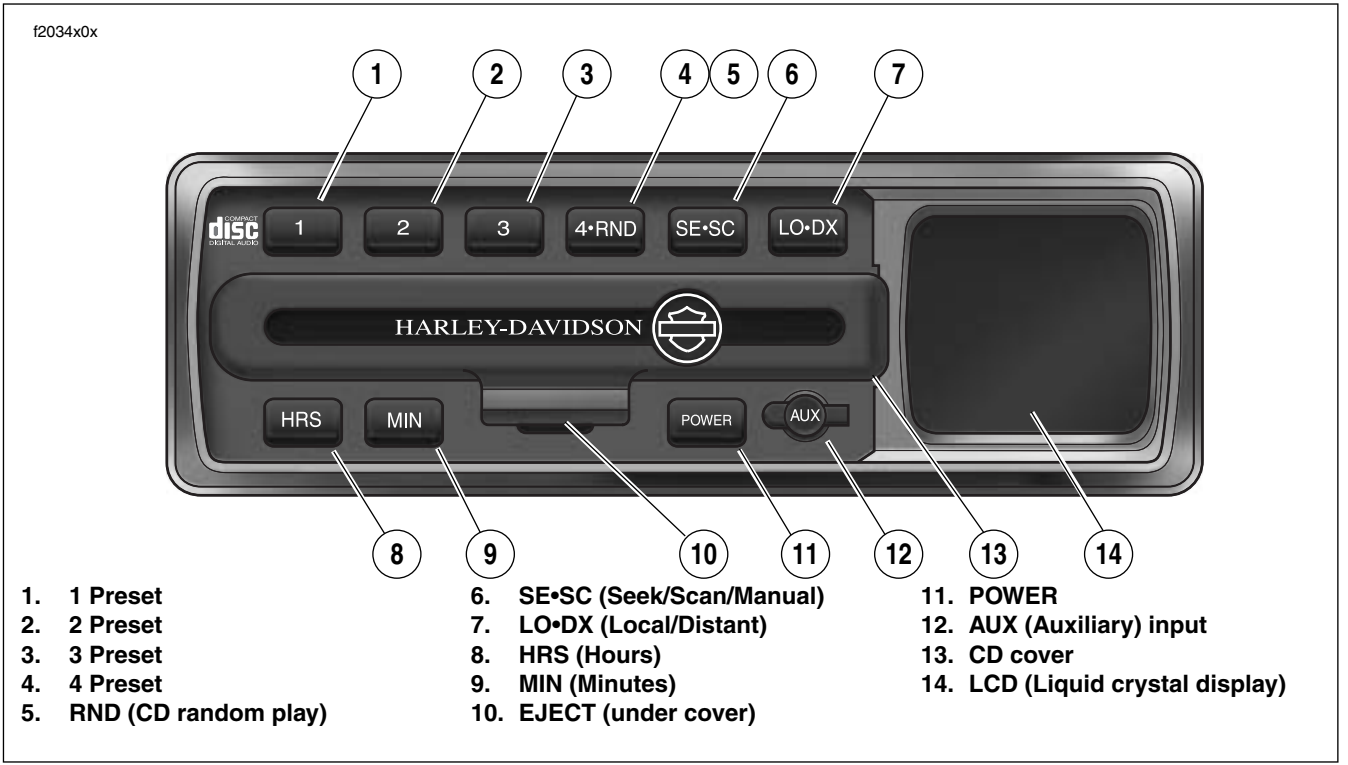
1

First (1) preset button is used to store and then recall a selected radio frequency.

2 or 2•HRS

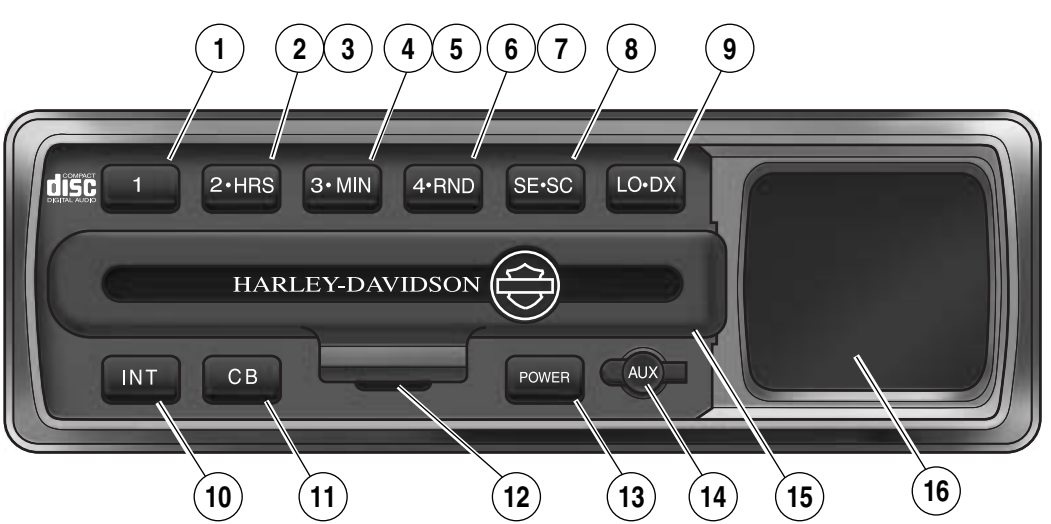
2: Second (2) preset button is used to store and then recall a selected radio frequency.

HRS: Time-of-day hours (HRS) set button. With receiver



1. 1 Preset
2. 2 Preset
3. 3 Preset
4. 4 Preset
5. RND (CD random play)
6. SE•SC (Seek/Scan/Manual)
7. LO•DX (Local/Distant)
8. HRS (Hours)
9. MIN (Minutes)
10. EJECT (under cover)
11. POWER
12. AUX (Auxiliary) input
13. CD cover
14. LCD (Liquid crystal display)

Figure 41. FLTR Road Glide and FLHTC Electra Glide Classic Front Panel



1. 1 Preset
2. 2 Preset
3. HRS (Hours)
4. 3 Preset
5. MIN (Minutes)
6. 4 Preset
7. RND (CD random play)
8. SE•SC (Seek/Scan/Manual)
9. LO•DX (Local/Distant)
10. INT (Intercom)
11. CB (Citizen band)
12. EJECT (under cover)
13. POWER
14. AUX (Auxiliary) input
15. CD cover
16. LCD (Liquid crystal display)

Figure 42. FLHTCU Ultra Classic Front Panel

POWER off, momentarily press the 2•HRS button to increment the hours in the time-of-day display by one. Pressing and holding the button will cause the hours to continue to increment until the button is released.

NOTE

The 2•HRS button is found only on the FLHTCU Ultra Classic Electra Glide. On all other models, the HRS function uses a separate HRS button.

3 or 3•MIN

3: Third (3) preset button is used to store and then recall a selected radio frequency.

MIN: Time-of-day minutes (MIN) set button. With the receiver POWER off, momentarily press the 3•MIN button to increment the minutes in the time-of-day display by one. Pressing and holding the button will cause the minutes to continue to increment until the button is released.

NOTE

The 3•MIN button is found only on the FLHTCU Ultra Classic Electra Glide. On all other models, the MIN function uses a separate MIN button.

4•RND

4: Fourth (4) preset button is used to store and then recall a selected radio frequency.

RND: Random (RND) play button used to initiate random CD track play. See Random Play**.**

SE•SC

Radio tuning seek (SE) or scan (SC) mode. Continue pressing the SE•SC button stopping at the desired mode. The word SEEK appears in the LCD when the seek mode is selected. SCAN is displayed when the scan mode is selected. When SEEK and SCAN do not appear in the LCD, the receiver is in the MANUAL tuning mode. See Tuning-in a Radio Station.

POWER

Power on and off. Press POWER to turn the receiver on and off.

EJECT

CD eject button found under the CD cover. Press EJECT to eject the CD.

LO•DX

The two-position LO•DX button alternates between local and distant. LO or DX is displayed in the LCD.

LO: The local (LO) position reduces the sensitivity of the receiver and can improve performance in urban areas.

DX: The distant (DX) position increases the sensitivity of the radio receiver to pick up weak signals. At times, this may mean more noise and unwanted signals. However, DX can improve performance in rural areas.

NOTE

The LO•DX button also affects CB reception. See CB OPERATION.

Table 19. LO•DX Switch

LOCAL (LO)	DISTANT (DX)
Reduced sensitivity	Increased sensitivity
Strong signals	Weak signals
Less noise	More noise

MIN

Time-of-day minutes (MIN) set button. With the radio POWER off, press MIN to increment the minutes in the time-of-day display by one. Pressing and holding MIN will cause the minutes to continue to increment until MIN is released.

HRS

Time-of-day hours (HRS) set button. With receiver POWER off, press HRS to increment the hours in the time-of-day display by one. Pressing and holding HRS will cause the hours to continue to increment until HRS is released.

NOTE

Separate HRS and MIN buttons are found on the FLTR Road Glide and the FLHTC Electra Glide Classic models.

CB

Citizen Band (CB) radio on and off button found only on the FLHTCU Ultra Classic Electra Glide model. See CB OPERATION. Press CB and hold to turn the citizen band radio on and off.

INT

Intercom (INT) on and off button found only on the FLHTCU Ultra Classic Electra Glide model. See INTERCOM OPERATION. Press INT and hold to turn the rider/passenger intercom on and off.

NOTE

The intercom is voice activated (VOX) with the microphone found on Harley-Davidson headsets plugged into the rider and passenger intercom sockets.

LCD

See Figure 41. The operational status of the stereo receiver is displayed in a liquid crystal display (LCD).

CD Door

The CD door is a spring-loaded cover and will stay open when exchanging CDs. To close the door, push the door down until it latches.

AUX

Auxiliary (AUX) cover and input port connects the receiver to an auxiliary device such as a cassette or MP3 player.

See K in Figure 47. Using a 1/8 in. (3.5 millimeter) male to male extension cord, plug the line out or headset out from the auxiliary device into the AUX port. AUX appears in the LCD as a mode selectable with the MODE SEL switch.

The user has control of volume, bass and treble and fader if so equipped but all other player functions are performed with the auxiliary device. The volume level of the AUX device must be set to normal or average.

NOTE

Close the protective cap whenever the AUX port is not in use.

LEFT HANDLEBAR CONTROLS

+/AUDIO/- Switch

AUDIO: Press and hold the AUDIO switch for at least 0.5 seconds to access the audio menu on the LCD. The LCD indicates the function selected. Press and release AUDIO to toggle to the next function in sequence from VOLUME to BASS, TREBLE, FADER and then back to VOLUME .

If the AUDIO switch is left on any selection other than VOLUME, the function automatically reverts back to VOLUME after a period of approximately 2-3 seconds.

NOTE

The FADER function is only available on FLHTCU models. FADER adjusts the balance between rider and passenger speakers. Pressing AUDIO upward (+) moves the balance to the front speakers while pressing AUDIO downward (-) moves the balance to the rear speakers. Equal volume in front and rear speakers is indicated by one horizontal single line in the center position.

+/-: Pressing the AUDIO switch upward (+) raises the level for the currently selected AUDIO (VOLUME, BASS, OR TREBLE). Pressing the switch downward (-) lowers the level. The level is raised or lowered as long as the switch is held until the minimum or maximum level is reached.

See I and J in Figure 47. The LCD displays a horizontal dashed line to indicate the level. In the center of the line is a single thin dash. When the level is at the center, the selected audio is at a mid-point of its range.

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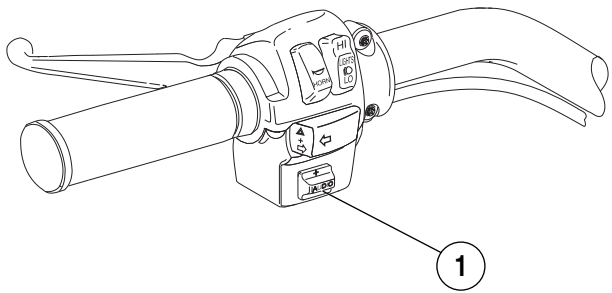

Left Hand Grip

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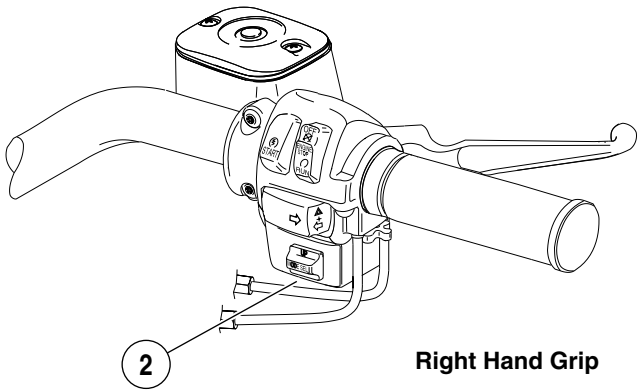
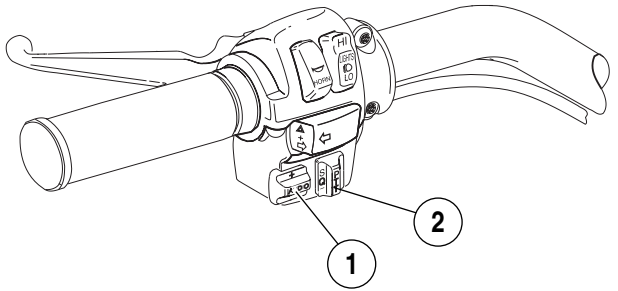


Right Hand Grip

1. +/AUDIO/- switch
2. UP/MODE SEL/DN switch

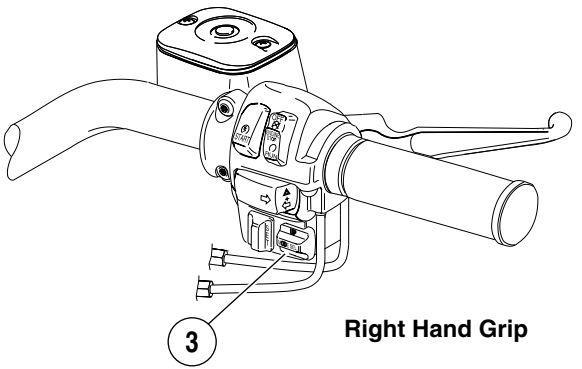
Figure 43. FLHTC Electra Glide Classic Handlebar Audio Controls

f1367a8x



Left Hand Grip

o0221xox



Right Hand Grip

NOTE

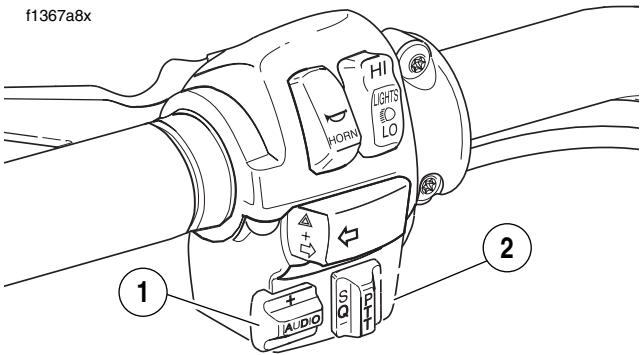
Although the FLTR Road Glide does not have a CB or Intercom, the motorcycle is equipped with Ultra Classic handlebar switches.

1. **+/AUDIO/- switch**
2. **PTT / +/SQ/- switch**
3. **UP/MODE SEL/DN switch**

Figure 44. FLTR Road Glide and FLHTCU Ultra Classic Handlebar Audio Controls

NOTE

Bass is rolled off as the volume is increased, so the effect of any change is less noticeable at higher volumes.



1. +/AUDIO/- switch
2. PTT / +/SQ/- switch (FLHTCU Ultra Classic & FLTR Road Glide)

Figure 45. Left Handlebar Switch Assembly

PTT / +/ SQ /- Switch

Push to talk (PTT) and the squelch control switch (SQ) is located on the left handlebar switch assembly.

PTT: With the POWER on and the LCD indicating CB is active, press and hold the PTT switch to transmit over the channel displayed. Release PTT to end transmission.

SQ +/-: Lower the threshold to allow reception of CB signals by pressing the SQ switch toward the rear (-) or raise the threshold by pressing the SQ switch toward the front (+).

See O in Figure 47. The LCD displays a dashed line that changes length with the setting.

NOTE

The PTT / +/SQ/- switch is found on the FLHTCU Ultra Classic and the FLTR Road Glide models. On the FLTR, this switch is inoperative unless an ultra radio is installed.

RIGHT HANDLEBAR CONTROLS

UP/MODE SEL/DN Switch

The mode select (MODE SEL) switch is located on the right handlebar switch assembly.

MODE SEL: With the radio POWER on, press and release the MODE SEL switch to sequence between the radio band modes.

When a CD is inserted into the CD player the CD function is added to the selections. When a 1/8 in. (3.5 mm) connector is plugged into the AUX input port the AUX function is added to the selections.

See Figure 47. The front panel LCD indicates the function selected with the MODE SEL switch.

UP/DN: Allows up or down radio station tuning in Manual, SEEK and SCAN. In CD mode, changes tracks and performs fast advance and fast reverse. In the CB mode, the MODE SEL switch changes the CB channel. In the intercom mode, the MODE SEL switch changes the voice activated microphone (VOX) sensitivity.

For a detailed description of the various modes, see RECEIVER OPERATION and AVC Model Year Selection.

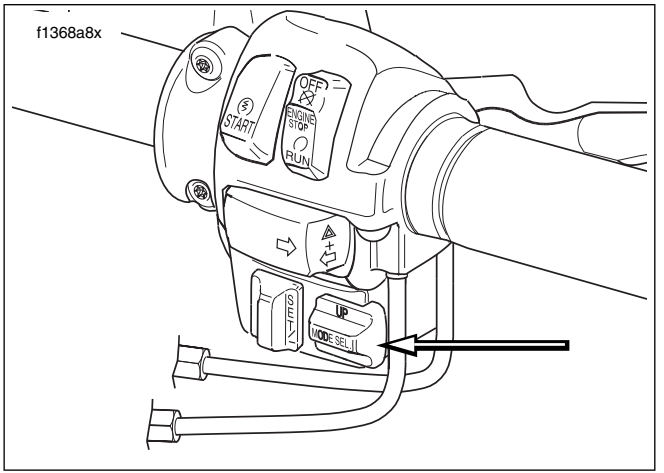


Figure 46. UP/MODE SEL/DN Switch (Ultra Classic Shown)

Table 20. Mode Selections

DOMESTIC	INTERNATIONAL	JAPANESE
AM	LW	MW
FM1	MW	FM1
FM2	FM1	FM2
WB	FM2	
If Present		
CD	CD	CD
AUX	AUX	AUX

NOTE

The intercom and CB can be activated at the same time with the receiver modes. The intercom and CB signals are passed to the audio circuits only if the signal strength exceeds the threshold established by CB squelch or VOX microphone sensitivity levels. Depending on the position of the speaker control switch, the receiver function, the CB, and the VOX microphone can be heard in the headsets simultaneously. See CB OPERATION and INTERCOM OPERATION.

RECEIVER OPERATION

Setting Time-of-Day

The time-of-day is set with the ignition/headlamp key switch to IGNITION or ACCESS but with the receiver off. See Turning Receiver Power On/Off.

See D in Figure 47. See Figure 41. Press the hours (HRS) button on the receiver front panel to increment the hours in the display. Pressing and holding HRS will cause the hours to continue to increment until the button is released.

Press the minutes (MIN) button on the receiver front panel to increment the minutes in the display. Pressing and holding MIN will cause the minutes to continue to increment until the button is released.

NOTE

On the FLHTCU Ultra Classic Electra Glide, these buttons are dual function buttons labeled 2•HRS and 3•MIN.

Turning Receiver Power On/Off.

See Figure 41. To turn the receiver on or off, turn the ignition/headlamp key switch to IGNITION or ACCESS and press the POWER button on the front panel.

If the receiver is on when the ignition is turned OFF, the receiver will power up when the ignition/headlamp key switch is turned to IGNITION.

Selecting a Frequency Band

See Figure 43. Using the right thumb, press the MODE SEL switch on the right hand grip and release to cycle through the frequency bands.

See The LCD indicates the selected band.

Table 21. Radio Frequency Bands

DOMESTIC	INTERNATIONAL	JAPANESE
AM	LW	MW
FM1	MW	FM1
FM2	FM1	FM2
WB	FM2	-

NOTE

Each band can store 4 preset frequencies. Separate FM1 and FM2 bands allow the rider to store 2 sets of 4 preset FM frequencies (8 total). The full range of FM frequencies can be selected in either FM1 or FM2. See Preset Memory/Tuning.

Band Jump Feature

Band Jump allows you to switch between 2 bands without having to cycle through each band individually. Press and hold the MODE SEL switch for 1 second and the receiver will jump from the currently selected band to FM1. Press and hold the MODE SEL switch again and it will jump back to the originally selected band.

If a CD is inserted, Band Jump will allow you to jump between any previously selected band and CD instead of FM1.

AM vs. FM Reception

Commercial radio broadcasting is either AM (Amplitude Modulation) or FM (Frequency Modulation).

NOTE

Refer to Table 26. The long wave (LW) and medium wave (MW) bands found in International and Japanese versions of the Premium Sound System are also amplitude modulated bands.

AM

AM radio waves reflect off the ionosphere which results in consistent signal reception at a long range (up to 100 miles).

However, AM radio can be displaced by loud humming, popping and crackling noises. This is electrical interference caused by noise from vehicle ignitions, electric signs, power lines and electrical storms.

FM

The advantages of FM radio are high fidelity sound, stereo reception, a wide range of broadcasting formats, and a signal that is free of electrical interference.

The disadvantage of FM radio is its short range. FM radio waves travel in straight lines, called “line-of-sight,” therefore, FM signals cannot be received over the horizon. At the limit of a station's range, the reception may fade in and out when objects pass between the transmitter and the motorcycle.

FM Stereo vs. FM Mono

Normally, the Harley-Davidson Premium Sound System plays FM signals in stereo. The LCD will indicate ST.

However, the stereo receiver has circuits which eliminate or minimize FM flutter due to weak stereo signals. The circuits detect a weak FM stereo signal and automatically blend it into a stronger FM mono signal. The transition is smooth and flutter free because it occurs over a range of signal conditions, rather than at a minimum threshold.

When the system is automatically blending or is receiving an FM mono signal, the stereo indicator (ST) will disappear from LCD screen.

Tuning-in a Radio Station

The radio has three tuning modes in each of the frequency bands:

- MANUAL
- SEEK
- SCAN

See Figure 41. With the receiver POWER on, press the seek or scan (SE•SC) button on the front panel to sequence the tuning modes.

See C in Figure 47. When neither SEEK nor SCAN appear in the LCD, the system is in the MANUAL mode.

See A in Figure 47. The word SEEK appears in the LCD when the SEEK mode is selected.

See B in Figure 47. SCAN is displayed when the SCAN mode is selected.

Tuning in all three modes continuously wraps around the ends of the band.

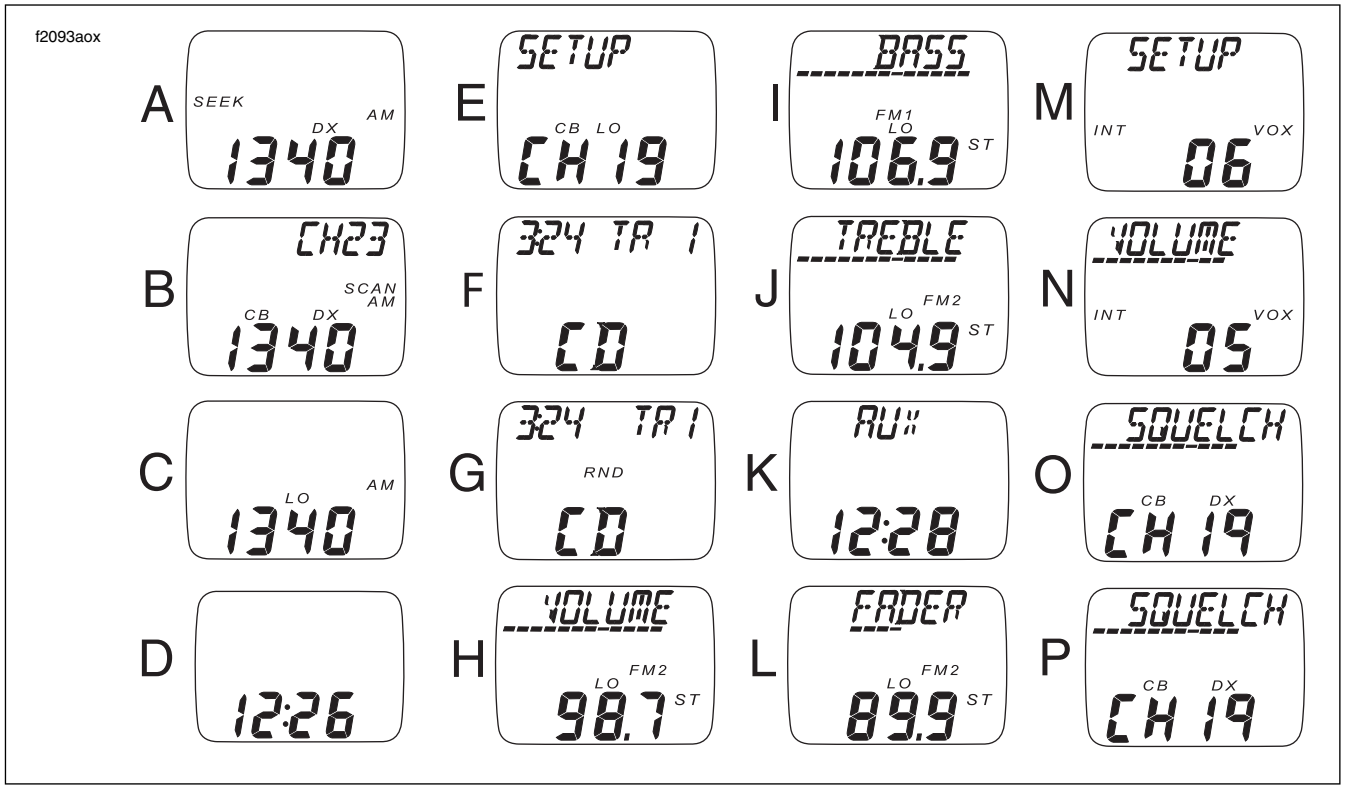


Figure 47. LCD Screen Examples

MANUAL Tuning

See C in Figure 47. Press the SE•SC button on the front panel until neither SEEK nor SCAN appear in the LCD.

To manually tune the radio to a different frequency:

Press MODE SEL up (UP) to select the next highest frequency. Hold the switch UP, and after a short delay of 1.5 seconds, the radio will continue to change frequencies until the switch is released.

or

Press MODE SEL switch down (DN) to select the next lowest frequency. Hold the switch DN, and after a delay of 1.5 seconds, the radio will continue to change frequencies until the switch is released.

SEEK Tuning

In the SEEK mode, the radio tunes in to the next strong station.

See A in Figure 47. Press the SE•SC button until SEEK appears in the LCD.

Press the MODE SEL switch up (UP) to tune in the next strong station upward in the band. Press the switch down (DN) to tune in the next strong station downward in the band.

SCAN Tuning

In the SCAN mode, the radio continuously tunes from one strong station to the next until the SCAN is cancelled.

See B in Figure 47. Press the SE•SC button until SCAN appears in the LCD.

Press the MODE SEL switch UP or DN to scan the band for strong station signals. Each strong station remains tuned in for 10 seconds before the radio moves to the next station.

To select a station, cancel SCAN while the radio is tuned to that station. Press the MODE SEL switch UP to cancel a SCAN moving up the band. Press the MODE SEL switch DN to cancel a SCAN moving down the band.

Adjusting Volume

See Figure 43. Volume is adjusted with the AUDIO switch on the left hand grip. Using left thumb, press the AUDIO switch up (+) to raise the volume or down (-) to lower the volume.

See N in Figure 47. The LCD displays the word VOLUME and a dashed line that changes length with the volume. The thin center dash indicates a middle setting.

Five (5) seconds after the AUDIO switch is released, the display switches to the time-of-day.

NOTE

Bass is rolled off as the volume is increased, so the effect of any change is less noticeable at higher volume.

Preset Memory/Tuning

Refer to Table 22. Use the preset buttons to store frequently tuned stations. Four station frequencies may be stored per band.

Table 22. Preset Buttons

ROAD GLIDE (FLTR) ELECTRA GLIDE CLASSIC (FLHTC)	ULTRA CLASSIC (FLHTCU)
1	1
2	2•HRS
3	3•MIN
4•RND	4•RND

To store a current station, press and hold any one of the four preset buttons for 1.5 seconds. The audio will be muted. When the audio level returns, the station's frequency has been stored.

To tune to a stored station, press the same preset button.

NOTE

Separate FM1 and FM2 bands allow 2 sets of 4 preset FM frequencies (8 total) to be stored.

Mixing Bass and Treble

Bass and treble range adjustments can be applied to any Premium Sound System audio source.

BASS: Press and hold AUDIO to sequence to BASS. Using the left thumb, press the AUDIO switch up (+) to increase the bass range or down (-) to lower the bass range.

See I in Figure 47. The LCD displays the word BASS and a dashed line that changes length with the setting. The thin center dash indicates a middle setting.

TREBLE: Press and hold AUDIO to sequence to TREBLE. Using the left thumb, press the AUDIO switch up (+) to increase the treble range or down (-) to lower the treble range.

See J in Figure 47. The LCD displays the word TREBLE and a dashed line that changes length with the setting. The thin center dash indicates a middle setting.

Automatic Volume Control (AVC)

Automatic Volume Control (AVC) automatically adjusts volume level to compensate for ambient noise associated with motorcycle speed.

If the AVC does not adequately compensate for ambient noise (or if it overcompensates), enter the diagnostic screens.

Press and hold any two preset buttons on the front panel while turning the ignition/light key switch from OFF to IGNITION or ACCESS.

See Figure 48. Diagnostic group 1 (d1), the first of several diagnostic screens will appear in the LCD.

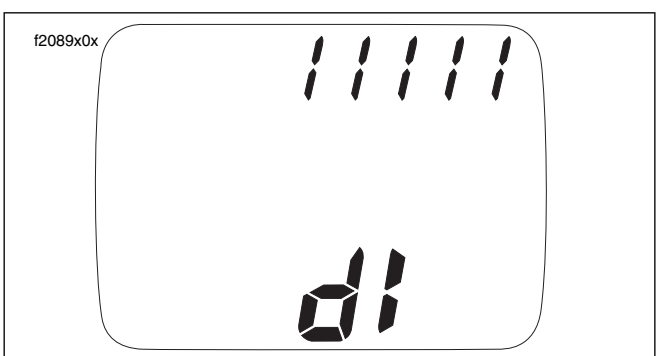


Figure 48. Diagnostic Screen D1

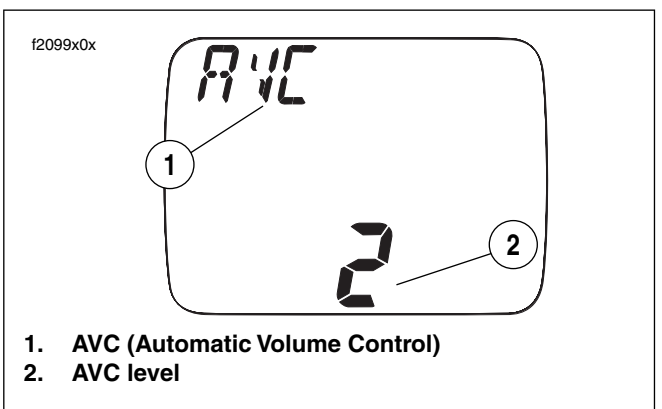
See Figure 49. Press the local/distant (LO•DX) button to cycle through the diagnostic screens. Stop at the AVC adjustment screen. AVC is displayed in the upper portion of the display, while the AVC level appears in the lower portion.

NOTE

Although the factory presets the AVC level at 2, it is adjustable from 0 (off) to 4 (most compensating).

To ramp the AVC up, press the MODE SEL switch UP. To ramp the AVC down, press the switch DN.

After selecting an AVC level, repeatedly press the LO•DX button until the receiver reverts back to normal radio operation.



1. **AVC (Automatic Volume Control)**
2. **AVC level**

Figure 49. AVC Adjustment Screen

AVC Model Year Selection

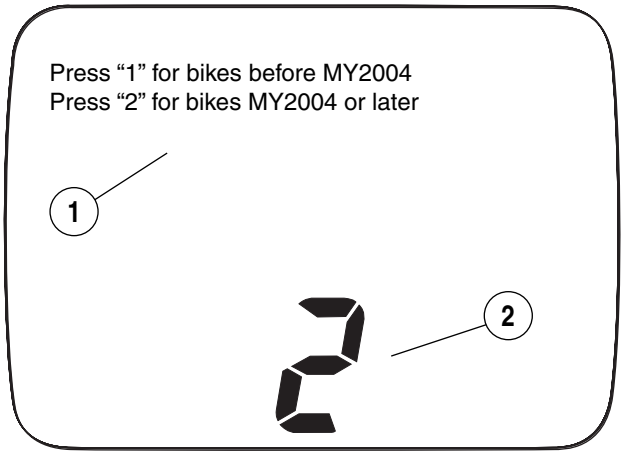
Earlier model year motorcycles use a different type of AVC signal. The 2004 radio can be set to accept either type of AVC signal.

Enter the diagnostic screens to select AVC model year. Press and hold any two preset buttons on the front panel while turning the ignition/light switch from OFF to IGNITION or ACCESS. Press the local/distant (LO-DX) button to cycle through the diagnostic screen. Stop at the AVC model year selection screen.

A scrolling message is displayed in the upper portion of the display, while the current AVC model year selection is displayed in the lower portion. The scrolling message says, “Press “1” for bikes before MY2004.....Press “2” for MY 2004 or later bikes”. Your selection is displayed in the lower portion of the display by a “1” or a “2”. See Figure 50.

NOTE

The radio retains the AVC model year selection, however if power is removed from the radio, AVC model year selection defaults to MY 2004 setting number 2.



1. **Scrolling message**
2. **AVC model year selection**

Figure 50. AVC Model Year Selection Screen

CD OPERATION

CAUTION

There are no serviceable parts inside the unit; leave all servicing to qualified service personnel. Disassembly of the unit could result in equipment damage and/or equipment malfunction. (00172a)

⚠WARNING

Do not change compact discs while riding, and do not select a volume level that blocks out traffic noise. Distractions or a volume level that blocks out traffic noise, could cause loss of control resulting in death or serious injury. (00086a)

⚠WARNING

Do not disassemble unit. Laser radiation is present if disc player is disassembled and the interlock fails or is defeated. Exposure to laser radiation could lead to death or serious injury. (00087a)

Auto Load

See Figure 41. With the receiver POWER on, raise the CD door and gently insert a CD, label side up, into the CD slot until the unit automatically pulls the CD into the player.

The receiver will automatically switch to CD operation. The CD track number and play time will appear in the LCD display. With a CD in the player, CD is added to the modes selectable with MODE SEL.

⚠WARNING

Set intercom volume level and other controls before riding to minimize adjustments on the road. Distractions can lead to loss of control, resulting in death or serious injury. (00088a)

BAD DISC Error Message

See Figure 51. If the CD loaded into the CD player is damaged, of incorrect format, or if upside down, the LCD will display the BAD DISC error message.

Eject and replace the CD. See Recommendations for Handling CDs.

CD Eject

⚠WARNING

Do not change compact discs while riding, and do not select a volume level that blocks out traffic noise. Distractions or a volume level that blocks out traffic noise, could cause loss of control resulting in death or serious injury. (00086a)

Press the EJECT button found under the CD door to eject a CD. The CD will be partially ejected. Remove the CD. Close and latch the CD door.

The receiver will automatically return to the band and frequency playing when the CD was loaded and the CD mode is no longer selectable.

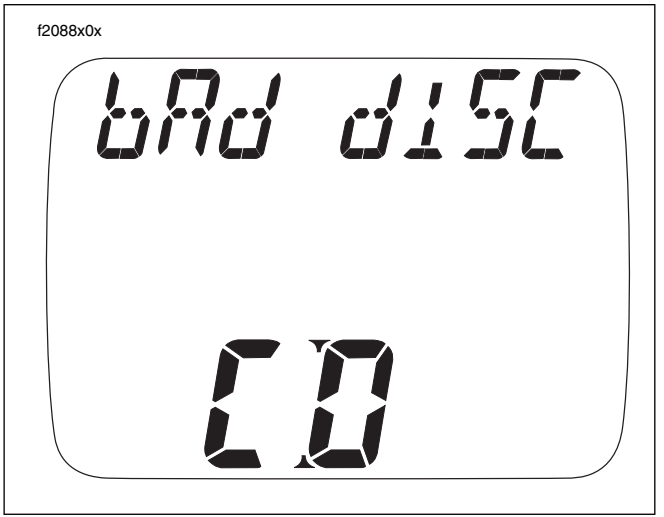


Figure 51. BAD DISC Error Message

Changing CD Tracks

To change CD tracks, use the right thumb and press the MODE SEL switch on the right hand grip. Press UP and release to select higher numbered tracks or press DN and release to select lower number tracks.

The track selection number will be displayed in the LCD.

NOTE

If the MODE SEL switch is pressed and held UP or DN longer than 1.5 seconds, the track selections will fast advance or reverse as long as the switch is held.

See F in Figure 47. CD track selection wraps around the first and last track.

Repeating Tracks

To repeat a CD track while it is playing, press the MODE SEL switch DN and quickly release.

NOTE

If the play time has been less than 2 seconds, the previous track will be played.

Fast Advance and Reverse

To fast advance a track, press the MODE SEL switch UP and hold longer than 1.5 seconds. The current track will fast advance while the switch is pressed UP. The audio will advance to the subsequent track as long as the switch is held UP.

See F in Figure 47. The play time display in the LCD will also fast advance.

To fast reverse a track, press MODE SEL DN and hold longer than 1.5 seconds. The current track will fast reverse while the switch is pressed DN.

The play time display in the LCD will also fast reverse.

Random Play

To play CD tracks randomly, press the 4•RND button on the front panel while in the CD mode. No selection is repeated until all other selections have been played.

NOTE

The 4•RND button toggles between normal and random play. Press once for random play. Press a second time to return to normal play. Random can also be cancelled by pushing the MOD SEL switch up or down.

See G in Figure 47. RND will appear in the LCD.

Recommendations for Handling CDs

- Use caution when handling a CD. Avoid touching the bottom (shiny) side.
- Store CDs in acrylic jewel cases to protect against dust, scratches, light, and changes in humidity. Store CDs in a cool dry place away from direct sunlight.
- Use commercially available cleaning tissue to clean the CDs. Never use solvents that can damage the CD.

⚠WARNING

Do not disassemble unit. Laser radiation is present if disc player is disassembled and the interlock fails or is defeated. Exposure to laser radiation could lead to death or serious injury. (00087a)

NOTE

A laser that cannot focus properly may cause skipping. A clouded lens can be caused by dirty CDs, dust, smoke, high humidity, and airborne particles may cause the laser lens to cloud. Operating the CD without allowing the motorcycle to warm up can also cause a CD to skip.

- Keep protective CD door closed at all times.

INTERCOM AND CITIZEN BAND WITH PASSENGER SPEAKERS

The Harley-Davidson CB/intercom/rear speakers system includes a digitally tuned 40 channel CB transceiver, intercom and a 40 watts per channel rear speaker amplifier.

Principle features are:

- Headset connector on fuel tank console.
- Conveniently positioned handlebar mounted push to talk (PTT) switch.
- Fairing-mounted speaker switch.
- Rear-mounted passenger controls that include:
- Digitally adjustable rear headset speaker volume.
- CB PTT push-to-talk switch.
- Stereo receiver tuning and band switching.
- Enhanced headset fidelity.
- Quiet Ride feature.
- Rider hand-held microphone compatibility for areas that prohibit headset (helmet-mounted) speakers.

HEADSETS AND SOCKETS

CAUTION

Some local governments prohibit or restrict the use of headset (helmet-mounted) speakers. Please check with local authorities and obey all applicable laws and regulations. (00173a)

Both the rider headset socket and the passenger headset socket require Harley-Davidson microphone headsets. Your Harley-Davidson dealer will help you select the correct Harley-Davidson headsets and microphones for your model Harley-Davidson. Other headset microphones will not work.

Open the socket cap and with the ridge on the headset jack facing upward insert the jack into either the front or rear headset socket.

NOTE

For areas that do not permit headset speakers, a special hand-held microphone can be used for the rider to transmit over the CB. This microphone is available through your Harley-Davidson dealer.

CAUTION

Do not pull on the cord to remove the headset from the socket. Pull on the headset jack to disconnect the headset from the socket. (00174a)

The spring loaded hinge keeps the headset socket cap from moving during vehicle operation. It protects against dirt and water when the headset or hand-held microphone is not in use. Before washing the motorcycle, verify that **BOTH** caps are closed.

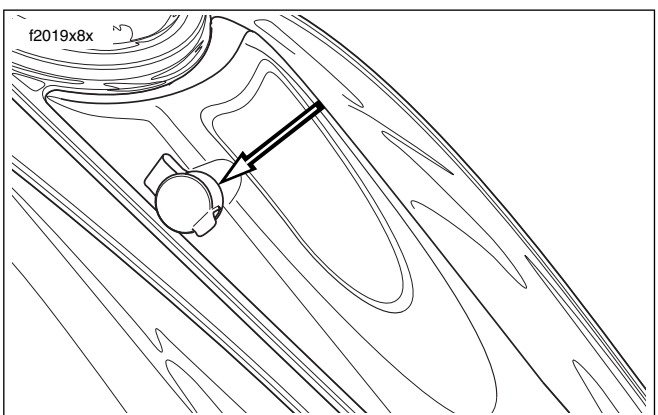


Figure 52. Front Headset Socket Cap

VOX Microphones

The Harley-Davidson intercom uses a voice activated (VOX) microphone. The microphone headset minimizes the transmission of hand-held microphone generated noise and provides for hand-free operation of the intercom.

The intercom is activated when a certain sound level is detected through the microphone. When a voice or sound exceeds the level, the voice is said to “break VOX”. The voice or sound is transmitted to the headsets.

Once broken, a conversation can proceed uninterrupted. After the absence of sound or voice, there is a delay of approximately 2 seconds before the microphone is deactivated. This delay in deactivation allows for brief pauses in conversation.

Because background sounds such as loud exhausts, passing trucks, or car horns may unintentionally activate the intercom, the sound level necessary to break VOX is adjustable and referred to as VOX sensitivity. See adjusting VOX sensitivity.

FAIRING CONTROL

SPKR Switch

See Figure 53. A three position speaker (SPKR) switch is found on the front fairing of the FLHTCU Ultra Classic and the FLTR Road Glide.

NOTE

The SPKR switch found on the FLTR Road Glide is inoperable.

Off/Forward: In the forward or off position, the speakers are off. Audio (radio, CD, AUX and CB) is played in the headsets only. During simultaneous CB reception, the other audio source is muted and only the CB is heard in the headsets.

Center: In the center position, the radio, CD player or AUX is played over the speakers while the CB is played only in the headsets.

On/Rearward: Refer to Table 24. In the back or on position, with the SPKR indicator lit, the radio, the CD player, or any AUX device and the CB are played through the rider and passenger speakers. When a CB signal is received, other audio sources mute and the CB is played over the speakers.

NOTE

The intercom is only heard in the headsets, regardless of the SPKR switch position.

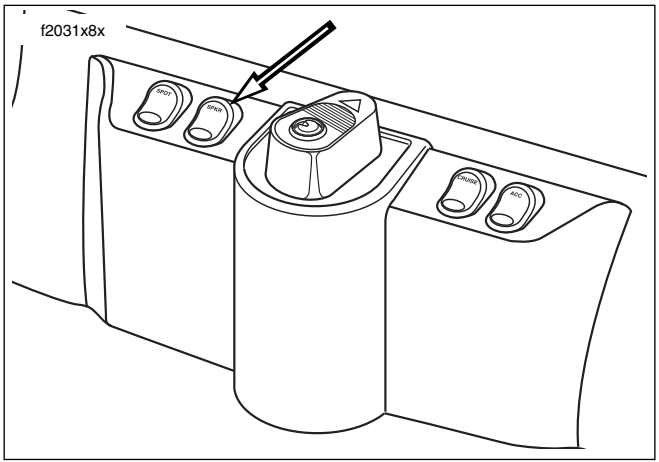


Figure 53. Speaker (SPKR) Switch (FLHTCU illustrated)

Rider to Passenger Speaker Balance

The receiver FADER control balances the front rider and rear passenger speakers. See Mixing Bass and Treble.

FADER: With the fairing speaker switch in either the SPKR or center position, press the AUDIO switch to sequence to FADER in the LCD.

Press the AUDIO switch up (+) to raise the volume from the rider speakers while lowering the volume from the passenger speakers.

Press the AUDIO switch down (-) to raise the volume from the the passenger speakers while lowering the volume from the rider speakers.

See L in Figure 47. The LCD displays the word FADER and a dashed line that changes length left or right of a thin center dash. The thin center dash represents equal balance between rider and passenger speakers.

NOTE

FADER is available only on the FLHTCU Ultra Classic Electra Glide which comes equipped with front rider and rear passenger speakers.

PASSENGER CONTROLS

UP/MODE SEL/DN Switch

See Figure 54. The passenger mode selection (MODE SEL) switch gives the passenger control of radio band selection, tuning, CD operation and all functions of the hand grip mounted MODE SEL switch.

NOTE

For information on routing audio signals to the passenger speakers and headsets, refer to Table 24.

PTT / +/VOL/- Switch

See Figure 54. The push to talk (PTT) and volume (VOL) switch on the right side of speaker box allows the passenger to talk over the intercom or transmit over the CB as well as to raise or lower the rear headset volume.

When the rear headset volume is adjusted, REAR VOL appears in the upper LCD.

NOTES

- *The passenger VOL switch affects only the passenger headset. The hand grip mounted AUDIO switch is the master volume control, and used in conjunction with the FADER, affects both the rider and passenger speaker volume.*
- *Rider and passenger headset volume cannot be adjusted at the same time. Whoever has first use of their respective volume control has priority. With regard to stereo receiver tuning, radio band selection, CD track selection or other functions, simultaneous use of front and rear MODE SEL switches may cause operation to be suspended until either rider or passenger controls are released.*

SIDECAR CONTROLS

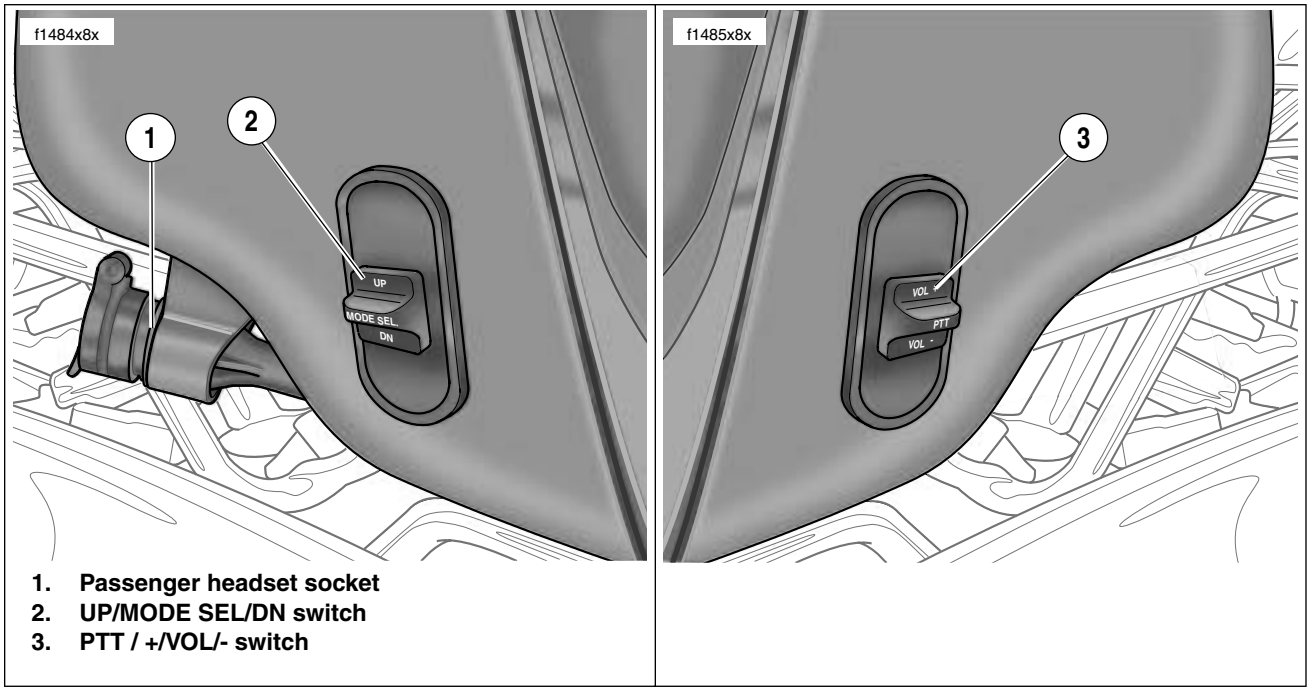
The dash of the Ultra Classic sidecar mounts stereo speakers and a MODE / +/TUNE/- switch and a VOL / PTT knob.

Sidecar Speakers

See Figure 55. The maximum sidecar volume is dependent upon the volume of the passenger speakers (a level established using the handlebar mounted +/AUDIO/- switch with the FADER function) or the passenger headset volume, depending on the position of the fairing SPKR switch. Rotating the volume and press to transmit (VOL / PTT) knob on the dash may lower the volume of the sidecar speakers but will not raise the volume above the master volume level.

MODE / +/TUNE/- Switch

See Figure 55. The MODE / +/TUNE/- switch controls radio band selection, station tuning, and CD track selection and operation. The MODE / +/TUNE/- switch operates like the hand grip mounted UP/MODE SEL/DN switch.



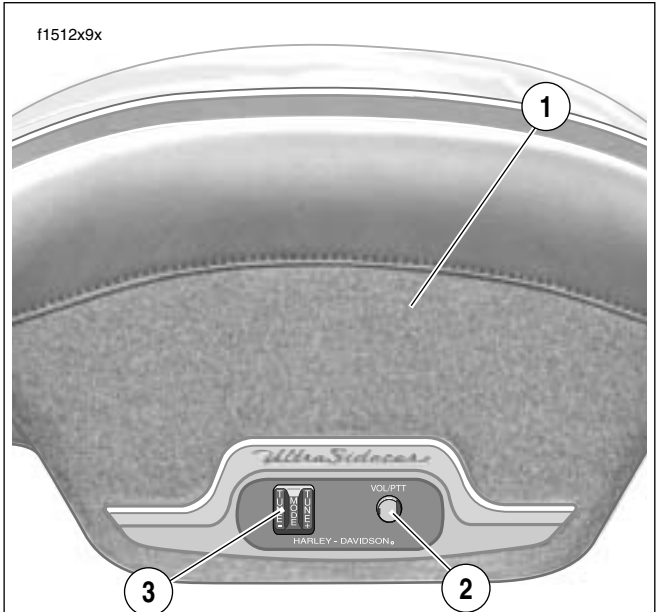
1. **Passenger headset socket**
2. **UP/MODE SEL/DN switch**
3. **PTT / +/VOL/- switch**

Figure 54. Passenger Controls

VOL / PTT Knob

See Figure 55. The VOL / PTT knob controls the volume in the sidecar speakers and is used to open the intercom and transmit over the CB.

Although the sidecar has its own headset socket, sidecar headset volume is adjusted with the VOL / PTT knob on the right rear passenger speaker box. See Passenger Controls.



1. **Speakers**
2. **VOL / PTT knob**
3. **MODE / +/TUNE/- switch**

Figure 55. Sidecar Dash and Controls

INTERCOM OPERATION

Activating the Intercom

To activate the intercom (INT) and the VOX microphones, press and hold the INT button for 1.5 seconds.

The intercom will activate in SETUP with VOX sensitivity and headset volume level settings from the previous use. VOX sensitivity and headset volume are adjusted in SETUP only.

To exit SETUP but retain an activated intercom, press and release the MODE SEL switch.

NOTE

To ensure privacy, the intercom can only be heard through the headsets.

To turn off the intercom and the VOX microphones, press and hold the INT button for 1.5 seconds.

Entering SETUP

See M in Figure 47. With INT on, press the INT button for 1.5 seconds to enter SETUP. The LCD displays SETUP in the upper half and VOX appears in the lower half.

To exit SETUP, press and release the MODE SEL switch. The intercom will still be activated.

To make adjustments to the VOX sensitivity after exiting SETUP, re-enter SETUP by pressing and quickly releasing INT.

Adjusting VOX Sensitivity

VOX sensitivity should be adjusted so that the microphones break VOX at a normal voice level.

See M in Figure 47. Enter SETUP by pressing and holding the INT button for 1.5 seconds. The LCD displays VOX sensitivity as a two-digit number (00 thru 15). A higher number indicates greater sensitivity while a lower number means less sensitivity. when VOX is 15, the microphone is always open. When VOX is 00, the microphone is closed.

NOTE

The receiver retains the sensitivity level from the previous setup. However, if power is removed from the receiver, VOX sensitivity defaults to 08.

Use MODE SEL on the right hand grip to adjust the sensitivity level. Press MODE SEL UP to make the microphone more sensitive. Press the MODE SEL DN to reduce sensitivity.To exit SETUP, press and release the MODE SEL switch.

NOTES

- *While a VOX break halts a SEEK/SCAN operation, SEEK or SCAN are automatically resumed once the break is removed.*
- *VOX sensitivity may have to be adjusted if either microphone is unintentionally activated because the microphone misinterprets radio, road or background sound as conversation.*

Adjusting Rider Headset Volume

The rider intercom headset volume is only adjustable in intercom SETUP.

See N in Figure 47. Enter intercom SETUP, speak into microphone and adjust the intercom volume with the AUDIO switch on the left hand grip. Press AUDIO up (+) to raise the volume and down (-) to lower the volume. The LCD displays a dashed line that changes length with the level.

To exit SETUP, press and release the MODE SEL switch.

⚠WARNING

Set intercom volume level and other controls before riding to minimize adjustments on the road. Distractions can lead to loss of control, resulting in death or serious injury. (00088a)

Adjusting Passenger Headset Volume

The passenger headset volume is only adjustable in SETUP.

See Figure 54. Enter SETUP. Speak into the microphone and adjust the intercom volume with the AUDIO switch on the right speaker box. Press AUDIO up (+) to raise the volume and down (-) to lower the volume. The LCD displays a dashed line that changes length with the level.

To exit SETUP, press and release the MODE SEL switch.

Quiet Ride

With the intercom on, persistent road and wind noises can repeatedly activate the microphone to the annoyance of the rider and passenger.

If conversation is intermittent, use the Quiet Ride feature:

- Turn both CB and INT off.
- To speak over the intercom, press and hold either rider or passenger PTT switch to enable the microphones. Both microphones are active while one or both PTT switches are pressed.

NOTE

Always verify that the CB is off so that private intercom conversations will not be transmitted for the entertainment of the CB community.

CB OPERATION

Activating the CB

To activate the Citizen Band radio, press and hold the CB button on the front panel for 1.5 seconds. The CB will activate in SETUP with squelch threshold and channel settings from the previous use. CB channels are selected in SETUP.

To exit SETUP but leave the receiver with the CB active, press and release the MODE SEL switch.

To turn the off the CB, press and hold the CB button for 1.5 seconds.

CAUTION

There are no adjustments internal to the CB transceiver chassis that can be performed without risking non-compliance with Federal Communications Commission (FCC) rules. Refer to the original equipment manufacturer for any service required during the warranty period. For transmitter service after the warranty period, refer to a certified repair service. Any frequency determining components, such as crystals, or power determining semiconductors, etc., should only be replaced with the original component manufacturer's part or equivalent. Substitutes can result in violation of FCC rules. (00175a)

Entering SETUP

See E in Figure 47. With the CB on, press CB to enter SETUP. The LCD displays SETUP in the upper half and the CB channel appears in the lower half.

The other audio source is muted in SETUP so that only the CB can be heard when the CB breaks squelch. This aids setting of squelch threshold, and volume as well as bass and treble adjustments.

To exit SETUP, press and release the MODE SEL switch.

NOTE

SETUP cannot be exited while the squelch is broken and the receiver does not retain the exit command. Press the SQ switch forward (+) to unbreak squelch or wait for the transmission/reception to end.

After exiting SETUP with the CB still active, re-enter SETUP by pressing and quickly releasing CB.

Selecting a Channel

In SETUP, use the MODE SEL switch to select a CB channel. Press and release MODE SEL UP or DN to switch channels one at a time.

If the MODE SEL switch is held up or down, tuning continuously wraps around the ends of the channels.

See B in Figure 47. When squelch is broken, the channel number is visible in the lower half of the LCD. If the squelch is not broken and the another source is playing, the channel number is displayed in the upper half of the LCD.

⚠WARNING

Set CB channel, squelch threshold and volume before riding to minimize adjustments on the road. Distractions can lead to loss of control, resulting in death or serious injury. (00089a)

Adjusting Squelch

The CB signal is passed to the speakers or headsets only if signal strength exceeds the threshold set with the squelch control switch (PTT / +/SQ/-). When CB signals exceed the threshold, they are said to “break squelch.”

Refer to Table 23. To lower the threshold to process the weakest CB signals, press SQ -, or rearward.

To raise the threshold to process stronger signals, press SQ + or forward.

See O in Figure 47. In the LCD, a dashed line changes length with the setting.

Table 23. Squelch Control Switch

SQ (-) REARWARD	SQ (+) FORWARD
More signals	Fewer signals
More noise	Less noise
More static	Less static
Unwanted signals	Better sound quality

Transmitting

To transmit, press and hold the PTT switch. Transmission is over the CB channel displayed in the LCD. To end transmission, release PTT.

Adjusting Volume

Refer to Table 24. To adjust volume of the CB in the speakers or headset, Press AUDIO up (+) to raise the volume or down (-) to lower the volume. CB volume is adjustable when squelch is broken except when the SPKR switch is in the center position and an overlay audio source is playing.

A dashed line that changes length with the volume setting is displayed.

CAUTION

Operating the CB radio without an antenna or with a broken antenna cable can result in damage to the transmitter circuitry. (00176a)

CB Range

Maximum transmission range can only be expected under stable weather conditions in flat, open country.

Weather: In times of atmospheric disturbances, such as rain, snow, or even sunspots, the CBs range can be reduced.

Terrain: Buildings, hills, valleys or any elevated objects or depressions that either block or create a longer path between transmitter and receiver will reduce or disrupt communications.

Obstructions: Transmissions may be cut off under a viaduct or inside a tunnel or parking garage.

NOTE

The CB transmitter is the most powerful allowed under Federal law, but since there is no large steel area to create a ground plane, it may not transmit as strongly as when mounted in a car or truck.

LO•DX Button

LO: The local (LO) position reduces the sensitivity of the CB receiver allowing quieter operation which may result in a lack of available signals.

DX: The distant (DX) position increases the sensitivity of the receiver to pick up weak signals. This may mean more noise and unwanted signals.

NOTE

Even with the LO•DX on LO and the squelch closed, maintain a minimum of 20 feet (6.1 meters) from any transmitting motorcycle. At shorter distances, the signal is too strong and results in sound distortion.

AUDIO ROUTING AND MIXING

Refer to Table 24. Whether audio is routed to the headsets, speakers or both depends on the speaker (SPKR) control switch and the INT and CB buttons on the receiver.

A single audio source routed to headset or speaker can be controlled with the riders AUDIO switch or the passenger VOL switch.

NOTE

The passenger volume control switch affects only the passenger headset. The handlebar mounted audio control switch is the master volume control, and used in conjunction with the fader, affects both the rider and passenger speaker volume.

Overlay Function

When any audio source is being played into the speakers and/or headset while the intercom and/or CB is active, the rider or passenger can adjust the volume of only one audio source.

Example: When the radio is playing in the headsets and at the same time the passenger begins to speak over the intercom, the rider can use the AUDIO switch to lower the volume of the radio in order to hear the passenger. The intercom volume will stay at the same level even though the radio volume is lowered.

Refer to Table 24. The source whose volume can be adjusted is called the “Overlay.” The overlay source is the dominant source in the LCD.

Table 24. Audio Routing and Mixing Combinations

AUDIO ROUTING COMBINATIONS			VOLUME CONTROL
SPEAKER CONTROL SWITCH	**AUDIO SOURCE(S)**	**AUDIO OUT**	**AUDIO +/- or VOL +/-**
Off or Forward (Headsets)	Music*	Headsets	Music*
	CB	Headsets	CB (During reception or SETUP)
	Intercom	Headsets	Intercom (Only in SETUP)
	Intercom & Music*	Both in headsets	Music overlay**
	CB & Music*	CB in the headsets (Music is muted during CB reception)	CB (During reception or SETUP)
	Intercom & CB	Both in the headsets (Music is muted during CB reception)	CB Overlay**

Table 24. Audio Routing and Mixing Combinations

AUDIO ROUTING COMBINATIONS			VOLUME CONTROL
Center (Speakers and Headsets)	Music*	Speakers	Music*
	CB	Headsets	CB (During reception or SETUP)
	Intercom	Headsets	Intercom (Only in SETUP)
	Intercom & Music*	Intercom in the headsets Music* in the speakers	Music* overlay**
	CB & Music*	CB in the headsets Music* in the speakers	Music* overlay**
	Intercom & CB	Both in the headsets (Music is MUTED during CB reception)	CB overlay**
On or Rearward (Speakers)	Music*	Speakers	Music*
	CB	Speakers	CB (During reception or SETUP)
	Intercom	Headsets	Intercom (Only in SETUP)
	Intercom & Music*	Intercom in the headsets. Music in the speakers	Music overlay**
	CB & Music*	CB in the speakers (When squelch is broken)	CB
	Intercom & CB	Intercom in the headsets (CB in the speakers MUTED during CB reception)	CB overlay**
* Music = Radio, CD player, or auxiliary (AUX) audio source ** Overlay = The source whose volume can be adjusted			

TROUBLESHOOTING

Operational Troubleshooting

Refer to Table 25. Use the following table to identify rider or passenger control settings that prevent intended operation.

NOTE

See the Touring Models ELECTRICAL DIAGNOSTIC MANUAL for all SYSTEM DIAGNOSIS and ELECTRICAL TROUBLESHOOTING information.

CAUTION

There are no serviceable parts inside the unit; leave all servicing to qualified service personnel. Disassembly of the unit could result in equipment damage and/or equipment malfunction. (00172a)

⚠WARNING

Do not disassemble unit. Laser radiation is present if disc player is disassembled and the interlock fails or is defeated. Exposure to laser radiation could lead to death or serious injury. (00087a)

Table 25. Operational Troubleshooting

THIS...	CAN PREVENT THIS....
Squelch broken	Fairing music
	Headset music
	Passenger speaker music
Squelch unbroken	CB audio
CB off or low volume	CB audio
Front or rear PTT on	Fairing music
	Headset music
	Passenger speaker music
	CB audio
Handlebar volume low	Fairing music
	Headset music
	Passenger speaker music
Passenger headset volume low	Passenger headset music and CB audio
Fairing SPKR back to speaker	Headset music and headset CB audio
Fairing SPKR forward to headset	Fairing music and CB audio
INT off	Voice communications (Unless PTT is pressed)

Radio Fuses

If it is necessary to replace the radio fuses, follow the fuse replacement procedures in this manual or see your Harley-Davidson dealer for service.

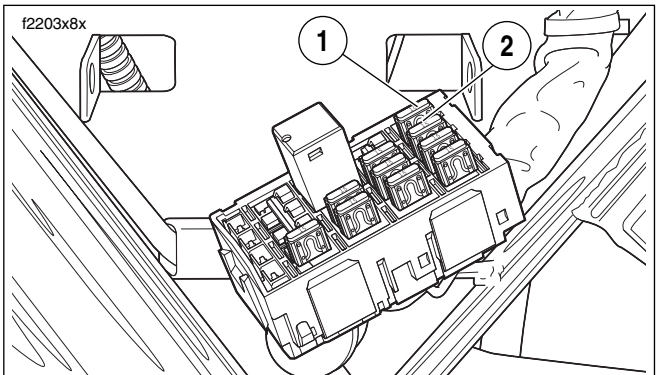
See Figure 56. Radio fuses are located in the fuse block under the left side cover.

- The 10 amp fuse allows power to the radio through activation of an internal relay.
- The 15 amp fuse provides direct and continuous power to the radio memory and time-of-day clock, and when the internal relay is activated, feeds the main circuits of the radio as well.

Remove the radio fuses and inspect the element. Replace the fuse if the element is burned or broken. Automotive type ATO fuses are used.

NOTE

See Figure 56. Spare fuses (10 amp and 15 amp) can be found in the fuse block cover.



1. Radio memory 15 amp

2. Radio power 10 amp

Figure 56. Fuse Block

Table 26. AM Bands

	DOMESTIC	INTERNATIONAL		JAPANESE
	AM BAND	MW	LW	MW
Tuning Range	530-1700 kHz	522-1629 kHz	155-281 kHz	522-1629 kHz
20 dB S/N Sensitivity	15 uV Typ.	15uV Typ.	35uV Typ.	15uV Typ.
Image Rejection	55 dB minimum	55 dB minimum	55 dB minimum	55 dB minimum
If Rejection	60 dB minimum	60 dB minimum	55 dB minimum	60 dB minimum
Bandwidth (– 6 dB)	6 kHz (+4, -2)	6 kHz (+4, -2)	6 kHz (+4, -2)	6 kHz (+4, -2)
Strong Signal Distortion (Input 2V)	5%	5%	5%	5%
S/N Ratio, Large Signal	45 dB minimum	45 dB minimum	40 dB minimum	45 dB minimum

Table 27. FM Bands

	DOMESTIC	DOMESTIC (WB)	INTERNATIONAL	JAPANESE
Tuning Range	88.1-107.9 MHz	162.400-162.550 MHZ	87.5-108MHZ	76.1-89.9 MHZ
Limiting Sensitivity (3 dB)	1.8 uV Typ. @ 75 ohms	1.5 uV Typ. @ 75 ohms	1.8 uV Typ. @ 75 ohms	1.8 uV Typ. @ 75 ohms
Quieting Sensitivity (30 dB)	1.5 uV Typ. @ 75 ohms	1.5 uV Typ. @ 75 ohms	1.5 uV Typ. @ 75 ohms	1.5 uV Typ. @ 75 ohms
Spurious Signal Rejection	75 dB minimum	60 dB minimum	75 dB minimum	75 dB minimum
Image Rejection	50 dB minimum	35 dB minimum	50 dB minimum	50 dB minimum
IF Rejection	75 dB	80 dB	75 dB	75 dB
AFC PLL Circuit	Receiver always on station frequency	Receiver always on station frequency	Receiver always on station frequency	Receiver always on station frequency
Audio Frequency Response	30-15,000 Hz	550-1,700 Hz	30-15,000 Hz	30-15,000 Hz
Bass Boost	11 DB @ 100 HZ		11 DB @ 100 HZ	11 DB @ 100 HZ
Treble Boost	10 dB @ 10 kHz		10 dB @ 10 kHz	10 dB @ 10 kHz
Stereo Separation	35 dB @ 1 kHz		35 dB @ 1 kHz	35 dB @ 1 kHz
High Blend Separation	Less than 4 dB @ 10 uV		Less than 4 dB @ 10 uV	Less than 4 dB @ 10 uV

Table 28. CD Player

ALL VERSIONS	
THD	0.2% nominal
S/N	85 dB nominal
Frequency response	20 Hz- 20 KHz
Digital filter	8x oversampling

Table 29. One Watt Distortion (1 kHz at Audio Output)

ALL VERSIONS	
FM (input)	less than 0.5% THD
AM (input)	less than 0.5% THD
WB (input)	less than 2.0% THD

Table 30. CB Transceiver

	DOMESTIC AND AUSTRALIA (AM)	INTERNATIONAL (FM)
Receiver		
Tuning range	26.965-27.405 MHz	26.965-27.405 MHz
Sensitivity	1.0 uV (10 dB S/N)	0.5 uV (20 dB S/N)
Transmitter		
Tuning range	26.965-27.405 MHz	26.965-27.405 MHz
Power output	4.0 Watts max.	4.0 Watts max.

BASIC SECURITY SYSTEM OPERATION

The security system provides security and immobilization functions. The security system will disable the starter and the ignition or EFI system. Additional functions include the ability to flash all four turn signals and sound a siren (if purchased as an option) if a theft attempt is detected.

Conditions that activate the security alarm when the system is armed include:

- Detecting vehicle movement.
- Detecting tampering of the ignition/headlamp key switch circuit.
- Detecting tampering of the security lamp circuit.
- Detecting that a battery disconnect has occurred while armed. (Activates siren only if P&A siren is installed.)

Security System Options

The following configurations are available on the security system unit:

- Alarm sensitivity.
- Auto-arming feature.
- Storage mode.

Factory settings for the security system include:

- Medium motion alarm sensitivity.
- Key fob arming mode.
- Storage mode set to 20 days.

FCC REGULATIONS

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada rules.

Operation is subject to the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

Arming The System

There are two methods to arm the security system:

- **Remote-arming**
  See Figure 57. Owners may enable security alarm and immobilization functions with a remote, personally carried transmitter. This transmitter is referred to as a key fob within this document.
- **Auto-arming**
  Arms the security system within 30 seconds after IGNITION switch is turned OFF. To enable auto-arming see Using Auto-arming below.

NOTES

- *The vehicle cannot be armed with the engine running or the ignition ON.*
- *International vehicles are configured for auto-arming. This cannot be changed.*

Using Key Fob

See Figure 57. Hold down the key fob button until the system responds with two turn signal flashes and two chirps from optional siren. To assign a key fob to a motorcycle, refer to Table 34.

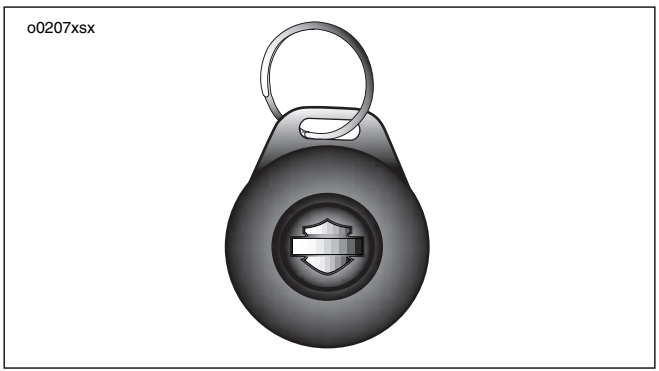


Figure 57. Key Fob

Using Auto-arming

Auto-arming causes the security system to automatically arm itself (without the use of the key fob) within 30 seconds after the ignition key is turned OFF. During this period, the security lamp stays on solid to indicate auto-arming is starting up. The vehicle may be moved during these 30 seconds without triggering the alarm. However, any motion after that period will trigger the security alarm. Upon expiration of the auto-arming period, the turn signals flash twice, the security lamp begins to flash and the siren (if installed) chirps twice.

To set the auto-arming selection, refer to Table 36.

Disarming The System

There are two ways to disarm the system:

- **Remote disarming**
  See Figure 57. Owners may disable security alarm and immobilization functions with a remote, personally carried transmitter. This transmitter is referred to as a key fob within this document.
- **Personal code**
  If a key fob is not available, the security system allows the rider to disable the security alarm and immobilization functions if the rider knows the previously entered personal code.

NOTE

Do not forget to enter a personal code for security system vehicles. If a code is not assigned and the key fob is lost or damaged while the vehicle is armed, the security system module must be replaced. For personal code setup refer to Table 35.

Using Key Fob to Disarm The System:

See Figure 57. Quickly press the key fob button twice. The system will respond with one turn signal flash.

NOTES

- ***Disarming function may require practice.*** *The key fob button must be pressed twice within 1.5 seconds to send the disarm command. The action is very similar to double-clicking a computer mouse. Light quick taps work best; very hard or very slow taps are less likely to work.*
- *If the system is remotely disarmed (with the key fob) but the ignition key is not turned ON within 30 seconds, the system will rearm itself when auto-arming is enabled.*

Using Personal Code Disarming:

Enter the five digit personal code you have chosen using the left and right turn signal switches. For complete procedure refer to Table 31. To create a personal code, refer to Table 35.

NOTE

If you make an error while disarming the security system using the personal code, the alarm will activate for 30 seconds after the last digit is entered. After a failed attempt, the security lamp will flash once every second for 10 minutes. During this time, the vehicle will not accept any attempt to enter a personal code.

BATTERY DISCONNECTS AND CONFIGURING

After reconnecting the vehicle battery, the security system will not enter the configuration mode on the first attempt. Therefore, after all battery reconnects, the configuration sequence must be modified as follows.

1. Set run switch to **OFF**, cycle ignition key **ON**-OFF-**ON**-OFF-**ON** and press left turn signal switch **twice**.

   Wait for one to three confirmation flashes of the turn signals and then set ignition key switch to **OFF**.

2. Repeat step listed above.

Continue with configuration sequence listed.

Table 31. Entering A Personal Code To Disarm Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
NOTE: *The **left** turn signal switch is used for code number entry and the **right** turn signal is used as the "enter" key.*			
1	Know your 5 digit personal code		
2	Turn **IGN** switch quickly to **ACC**		
3	Hold **both** turn switches in until confirmation	Security lamp blinks at fast rate	
4	Enter first digit of code (**a**) by pressing **left** turn switch **a times**		
5	Press **right** turn switch **1 time**		Serves as enter key for first digit
6	Enter second digit of code (**b**) by pressing **left** turn switch **b times**		
7	Press **right** turn switch **1 time**		Serves as enter key for second digit
8	Enter third digit of code (**c**) by pressing **left** turn switch **c times**		
9	Press **right** turn switch **1 time**		Serves as enter key for third digit
10	Enter fourth digit of code (**d**) by pressing **left** turn switch **d times**		
11	Press **right** turn switch **1 time**		Serves as enter key for fourth digit
12	Enter fifth digit of code (**e**) by pressing **left** turn switch **e times**		
13	Press **right** turn switch **1 time**	Security lamp stops blinking	System is disarmed. You may use the vehicle or program another key fob

Security Status Lamp

See Figure 58. A lamp within the speedometer face tells the rider if the system is armed or disarmed.

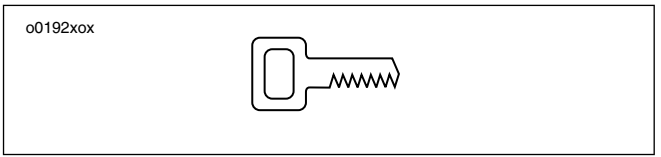


Figure 58. Security System Icon

Table 32. Security Lamp Status

SECURITY STATUS LAMP	MODE
Does **not** flash.	No security system (TSSM), security system not armed or storage mode active.
Flashes every second.	10 minute time-out after failed personal code entry attempt.
Flashes every 2 seconds.	Security system armed.
Flashes 3 times a second.	Personal code entry mode.
Stays ON solid with ignition key OFF.	Auto-arming is started up. You have 30 seconds before system armed.
Stays ON solid with ignition key ON.	If solid for more than 8 seconds after key is ON, a current trouble code is present.

Transport Mode

It is possible to arm the security system without enabling the motion detector for one ignition cycle. This allows the vehicle to be moved in an immobilized state for transport.

The transport mode is used for moving the vehicle or transporting on a trailer with the security system armed and without tripping the alarm. When the vehicle is in the transport mode, the security system does not respond to motion detection.

1. To exit the transport mode, use the key fob to disarm the vehicle.
2. To enter the transport mode, refer to Table 33.

NOTE

Transport mode is especially useful when working on international vehicles or vehicles configured to auto arming. If it is not used, the alarm will activate under many typical service activities.

Table 33. Transport Mode

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Turn **IGN** key **ON**		
2	Press and hold **key fob** button until confirmation is received	3 flashes turn signals & indicators	
3	Turn **IGN** key OFF		
4	Press and hold **key fob** button until confirmation is received	3 flashes turn signals & indicators	The vehicle can be moved without tripping the alarm

SECURITY SYSTEM CUSTOM SETUP

Key Fob Assignment

Refer to Table 34. The key fobs on security system motorcycles must be set so they will operate the alarm system on the vehicle. This assignment must be completed with no pauses greater than 10 seconds between steps. Turn the ignition OFF after both key fobs have been assigned. The programming mode will also exit after 60 seconds has elapsed without detecting any key fob sign up messages or turn signal activity.

General

The following steps allow for the customization of your security system using system features.

Two key fobs should be assigned to the security system. The first successful attempt to program a key fob will disable all previously assigned key fobs. If a second key fob is to be programmed, it must be done in the same programming sequence as the initial key fob.

To assign a key fob to a motorcycle, refer to Table 34.

Table 34. Key Fob Assignment

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Turn **IGN** key **ON**-OFF-**ON**-OFF-**ON**		
2	Press **left** turn switch **2 times** and release	2-3 flashes turn signals & indicators depending on vehicle configuration (See BATTERY DISCONNECTS AND CONFIGURING section)	2 flashes - North American/ Domestic configuration security system 3 flashes - international configuration security system
3	Press **right** turn switch **1 time** and release	1 flash turn signals & indicators	
4	Press **left** turn switch **1 time** and release	2 flashes turn signals & indicators	
5	Press and hold **key fob** button until confirmation is received	2 flashes turn signals & indicators	This may take 10-25 seconds
6	If you have two key fobs, press and hold button on second **key fob** until confirmation is received	2 flashes turn signals & indicators	
7	Turn **IGN** key OFF		

Personal Code

Creating Code for the First Time

The personal code consists of five digits entered using the left and right turn signal switches. Each digit can be any number from 1-9. The personal code is intended to be used to disarm the vehicle in case the key fob is not functioning.

Record your personal code on the card(s) provided in the rear of the Owner's Manual. Carry one for reference in your wallet when riding.

To set a personal code on a motorcycle with no code previously installed, refer to Table 35. The procedure listed uses 3-1-3-1-3 as the sample personal code.

NOTE

For better security, do not use 3-1-3-1-3 as a personal code. It is shown as an example only.

Decide what five digit code the owner would like to use. The code will be programmed using the turn signal switches and key fob. Record your personal code on the card(s) provided in the rear of the Owner's Manual. Carry one for reference in your wallet when riding.

- When programming the personal code, the security lamp flashes to provide feedback when entering each digit.
- The number of security lamp flashes corresponds to the number currently selected for a given digit. Therefore, the lamp may flash 1-9 times depending on the number entered.
- The odometer also reads out the code.
- Press the left turn switch one time to increment each digit of the code.
- Quickly press the key fob button twice to advance to the next digit of the code.

NOTE

The programming mode exits upon turning the key switch to OFF or if no turn signal switch/key fob button activity occurs for 60 seconds. No data is saved for partial configuration attempts of a first time entry.

Modifying Existing Codes

If a code was previously entered, the lamp will flash the equivalent digit. Each additional press of the left turn switch will increment the digit.

- To advance from 5 to 6, press and release the left turn switch 1 time.
- To advance from 8 to 2, press and release the left turn switch 3 times (9-1-2).

Table 35. Programming A Personal Code

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
NOTE: *For better security, do **not** use 3-1-3-1-3 as a personal code. It is shown as an example only.*			
1	Set **RUN/OFF** switch to **OFF**		Verify that security lamp is **not** blinking (vehicle is disarmed)
2	Turn **IGN** key **ON**-OFF-**ON**-OFF-**ON**		
3	Press **left** turn switch **2 times** and release	1-3 flashes turn signals & indicators depending on vehicle configuration (See BATTERY DISCONNECTS AND CONFIGURING section)	1 flash - Worldwide TSSM, no security 2 flashes - North American/Domestic configuration security system 3 flashes - international configuration security system
4	Quickly press **key fob** button **2 times** and release	1 flash turn signals & indicators	Vehicle is in personal code entry mode
5	Press **left** turn switch **1 time** and release	None if no code entered 1-9 flashes if code previously entered and odometer read out	A lack of confirmation flashes indicates no digit is entered

Table 35. Programming A Personal Code

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
6	In this example, you will press and release three times If code previously entered, count flashes for number and then press and release **left** turn switch to advance through the digits	Security lamp flashes to indicate each digit selected Digit will display on odometer and odometer read out In this example, the lamp will flash 3 times	You've selected 3 as a number for the first digit
7	Quickly press **key fob** button **2 times** and release	2 flashes turn signals & indicators	You've confirmed 3 as a number for the first digit and have advanced to entering the second digit
8	Press **left** turn switch **1 time** and release	None if no code entered 1-9 flashes if code previously entered and odometer read out	A lack of confirmation flashes indicates no digit is entered
9	In this example, you will perform this step one time If code previously entered, count flashes for number and then press and release **left** turn switch to advance through the digits	Security lamp flashes to indicate each digit selected Digit will display on odometer and odometer read out In this example, the lamp will flash 1 time	You've selected 1 as a number for the second digit
10	Quickly press **key fob** button **2 times** and release	3 flashes turn signals & indicators	You've confirmed 1 as a number for the second digit and have advanced to entering the third digit

Table 35. Programming A Personal Code

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
11	Press **left** turn switch **1 time** and release	None if no code entered 1-9 flashes if code previously entered and odometer read out	A lack of confirmation flashes indicates no digit is entered
12	In this example, you will repeat this step three times If code previously entered, count flashes for number and then press and release **left** turn switch to advance through the digits	Security lamp flashes to indicate each digit selected Digit will display on odometer and odometer read out In this example, the lamp will flash 3 times	You've selected 3 as a number for the third digit
13	Quickly press **key fob** button **2 times** and release	4 flashes turn signals & indicators	You've confirmed 3 as a number for the third digit and have advanced to entering the fourth digit
14	Press **left** turn switch **1 time** and release	None if no code entered 1-9 flashes if code previously entered and odometer read out	A lack of confirmation flashes indicates no digit is entered
15	In this example, you will perform this step one time If code previously entered, count flashes for number and then press and release **left** turn switch to advance through the digits	Security lamp flashes to indicate each digit selected Digit will display on odometer and odometer read out In this example, the lamp will flash 1 time	You've selected 1 as a number for the fourth digit

Table 35. Programming A Personal Code

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
16	Quickly press **key fob** button **2 times** and release	5 flashes turn signals & indicators	You've confirmed 1 as a number for the fourth digit and have advanced to entering the fifth digit
17	Press **left** turn switch **1 time** and release	None if no code entered 1-9 flashes if code previously entered and odometer read out	A lack of confirmation flashes indicates no digit is entered
18	In this example, you will repeat this step three times If code previously entered, count flashes for number and then press and release **left** turn switch to advance through the digits	Security lamp flashes to indicate each digit selected Digit will display on odometer and odometer read out In this example, the lamp will flash 3 times	You've selected 3 as a number for the fifth digit
19	Quickly press **key fob** button **2 times** and release	1 flashes turn signals & indicators	You've confirmed 3 as a number for the fifth digit and have gone back to the first digit
20	Turn **IGN** key OFF		
21	Write down code in owner's manual		
22	Arm the security system and attempt to disarm using personal code entry.		

Enable Auto-Arming Selection

The security system allows remote arming via the key fob at anytime. However, if the system is remotely disarmed (with the key fob) but the ignition key is not turned ON within 30 seconds, the system will rearm itself when auto-arming is enabled.

To set the auto-arming selection, refer to Table 36.

NOTE

Auto-arming configuration cannot be altered on international vehicles.

Table 36. Auto-arming Configuration (Cannot be changed on International Vehicles)

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Turn **IGN** key **ON**-OFF-**ON**-OFF-**ON**		
2	Press **left** turn switch **2 times** and release	2 or 3 flashes turn signals & indicators depending on vehicle configuration (See BATTERY DISCONNECTS AND CONFIGURING section)	2 flashes-North American/Domestic configuration security system 3 flashes-international configuration security system
3	Press and hold **key fob** button until confirmation is received	1 flash turn signals & indicators	
4	Press and hold **key fob** button until confirmation is received	2 flashes turn signals & indicators	
5	Press **left** turn switch **1 time** and release	Turn signals & indicators flash to indicate the current option selected	1 flash - auto-arming disabled 2 flashes - auto-arming enabled
6	Press and release **left** turn switch to advance through options	Turn signals & indicators flash to indicate the new option selected	1 flash - auto-arming disabled 2 flashes - auto-arming enabled
7	Turn **IGN** key **OFF**		

Alarm Sensitivity

The tamper warning has four sensitivity settings:

- Extremely low.
- Low.
- Medium. (factory setting)
- High.

The selection chosen controls the sensitivity of the security system in regard to short disturbances of the vehicle (i.e. someone bumps into the vehicle).

To set alarm sensitivity, refer to Table 37.

Table 37. Alarm Sensitivity Adjustment

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Turn **IGN** key **ON**-OFF-**ON**-OFF-**ON**		
2	Press **left** turn switch **2 times** and release	2 or 3 flashes turn signals & indicators depending on vehicle configuration (See BATTERY DISCONNECTS AND CONFIGURING section)	2 flashes-North American/Domestic configuration security system 3 flashes-international configuration security system
3	Press and hold **key fob** button until confirmation is received	1 flash turn signals & indicators	
4	Press **left** turn switch **1 time** and release	Turn signals & indicators flash to indicate the current option selected	1 flash- extremely low 2 flashes- low sensitivity 3 flashes- medium sensitivity 4 flashes- high sensitivity
5	Press and release **left** turn switch to advance through options	Turn signals & indicators flash to indicate the new option selected	1 flash- extremely low 2 flashes- low sensitivity 3 flashes- medium sensitivity 4 flashes- high sensitivity
6	Turn **IGN** key OFF		

Storage Mode Configuration

The security system has a special mode for long term storage. This mode prevents the security system from discharging the battery after a period of days (20, 60, 90 or infinite) without any ignition key switch activity.

- The factory setting is 20 days.
- If the security system is set to infinite, the system will not go into storage mode. In this case, the customer must use a trickle charger to keep the battery from discharging after 60 days of storage.
- Vehicles will enter storage mode whether the security system is armed or disarmed.

In storage mode, all alarm functions are suspended and the receiver is shut down and will not respond to the key fob. The vehicle is immobilized because the starter motor and Ignition/EFI controllers are disabled. When the storage mode is entered, the security lamp stops flashing to conserve power.

To wake up the security system from storage mode, the ignition key must be turned ON. This will trigger the alarm if the system was previously armed. You must use the key fob or personal code to disarm the system and stop the alarm.

If the ignition is switched from ON-OFF quickly, then the security system will wake-up without activating the alarm.

To set the storage mode preferences, refer to Table 38.

Disabling the Security System

Refer to Table 31. Disarm the security system using the key fob or personal code. At this point, the security fuse may be removed or battery disconnected.

Table 38. Storage Mode Configuration

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Turn **IGN** key **ON**-OFF-**ON**-OFF-**ON**		
2	Press **left** turn switch **2 times** and release	2 or 3 flashes turn signals & indicators depending on vehicle configuration (See BATTERY DISCONNECTS AND CONFIGURING section)	2 flashes-North American/ Domestic configuration security system 3 flashes-international configuration security system
3	Press and hold **key fob** button until confirmation is received	1 flash turn signals & indicators	
4	Release and then hold **key fob** button until confirmation is received	2 flashes turn signals & indicators	
5	Release and then hold **key fob** button until confirmation is received	3 flashes turn signals & indicators	
6	Press **left** turn switch **1 time** and release	Turn signals & indicators flash to indicate the current option selected	1 flash- 20 days (Factory setting) 2 flashes- 60 days 3 flashes- 90 days 4 flashes- Infinite
7	Press **left** turn switch to advance through options	Turn signals & indicators flash to indicate the new option selected	1 flash- 20 days (Factory setting) 2 flashes- 60 days 3 flashes- 90 days 4 flashes- Infinite
8	Turn **IGN** key OFF		

SIDECAR CONFIGURATION

⚠WARNING

Only Touring Harley-Davidson Motorcycles are suitable for sidecar use. Consult a Harley-Davidson dealer. Use of motorcycles other than Touring models with sidecars could result in death or serious injury. (00040a)

CAUTION

Before operating your motorcycle with sidecar attached, a Harley-Davidson dealer install a Bank Angle Switch kit. The TSM/TSSM will not function properly if not switched to sidecar operation. (00234a)

On motorcycles with a sidecar, the TSM and TSSM/security system must be switched from the factory solo vehicle setting to the sidecar setting. Consult your dealer for complete details.

If a sidecar is permanently removed from the motorcycle, the TSM and TSSM/security system must be reconfigured. Consult your SIDECAR SERVICE MANUAL (Part No. 99485-04) for complete details.

SECURITY SYSTEM MAINTENANCE

Key Fob Battery Replacement

NOTE

Replace the key fob battery every 2 years.

1. Place a thin blade between the 2 halves of the key fob case and slowly turn to open.
2. See Figure 60. Remove the old battery and discard.

NOTE

Dispose of old battery in accordance with local regulations.

3. Install a **new** battery (Panasonic® 2032 or equivalent) with the positive (+) side down.
4. Verify the button rubber is fully seated.
5. Close the case by aligning the two halves and snap together.
6. While standing next to the motorcycle, press and hold the key fob button for 10-15 seconds until the security system responds with two turn signal flashes/siren chirps.

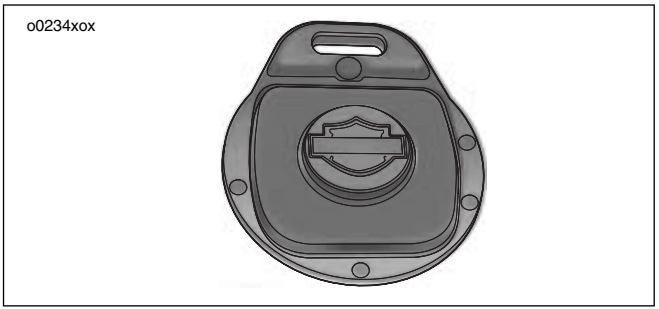
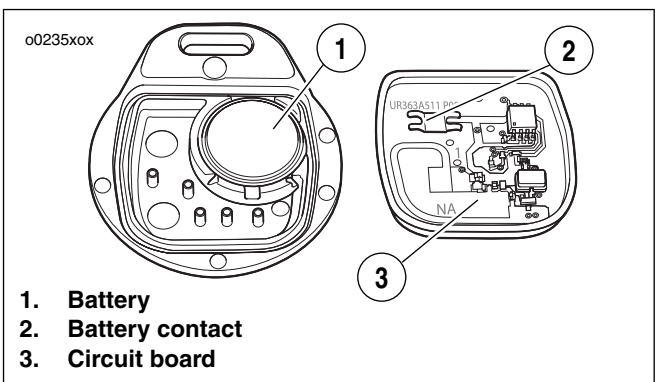


Figure 59. Key Fob Open Case (Front)



1. **Battery**
2. **Battery contact**
3. **Circuit board**

Figure 60. Key Fob Battery Replacement

7.

TROUBLESHOOTING

If the key fob button has been pressed numerous times while away from the vehicle, the key fob may fall out of synchronization with the security system. If this happens, the security system might fail to recognize the key fobs commands.

To solve this problem, press and hold the key fob button for 10-15 seconds until the security system responds with two turn signal flashes. After confirmation, you may resume normal key fob operation.

Siren Diagnostics

- See If the siren is armed and the internal siren battery is dead, shorted, disconnected, or has been charging for a period longer than 24 hours, the siren will respond with three chirps on arming instead of two.
- The internal siren battery may not charge if the vehicle's battery is less than 12.5 volts.
- If the siren does not chirp, two or three times, on a valid arming command from the security system, the siren is either not connected, not working, or the siren wiring was opened or shorted while the siren was disarmed.
- If the siren enters the self-driven mode where it is powered from the siren internal 9 volt battery, the turn signal lamps may or may not alternately flash. If the security system activates the siren, the turn signal lamps will alternately flash. If the siren has been armed and a security event occurs, and the siren is in self-driven mode, the siren will alarm for 20-30 seconds and then turn off for 5-10 seconds. This alarm cycle will be repeated ten times if the siren is in the self-driven mode.

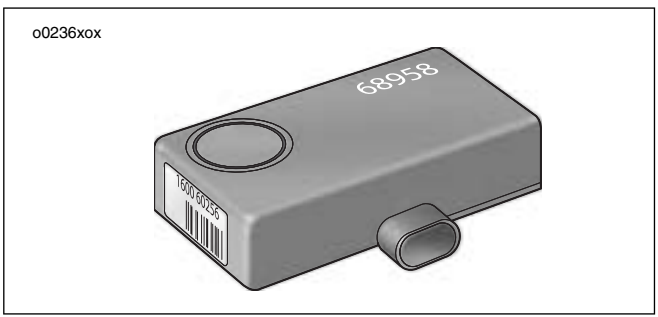


Figure 61. Siren

OPERATING RECOMMENDATIONS

CAUTION

Do not run the engine at extremely high RPM with clutch disengaged or transmission in neutral. Running an engine at high RPM can result in engine damage. (00177a)

- The maximum recommended safe engine speed is 5500 RPM.
- Do not idle engine unnecessarily for more than a few minutes with motorcycle standing still.

CAUTION

Do not exceed the maximum safe RPM specified below under any conditions. Exceeding the maximum safe engine RPM can result in equipment damage. (00248a)

NOTE

The maximum recommended engine speed for FLT/FLH model motorcycles is 5500 RPM.

CAUTION

Air cooled engines require air movement over the cylinders and heads to maintain proper operating temperature. Extended periods of idling or parade duty can overheat the engine, resulting in serious engine damage. (00178a)

An engine running long distances at high speed must be given closer than ordinary attention to avoid overheating and possible engine damage.

This applies particularly to a motorcycle equipped with windshield and fairing.

NOTE

Have the engine checked regularly and keep it well tuned. This applies particularly to a motorcycle equipped with windshield and fairing.

⚠WARNING

When riding on wet roads, brake efficiency and traction are greatly reduced. Failure to use care when braking, accelerating or turning on wet roads can cause loss of control, which could result in death or serious injury. (00041a)

NOTE

When descending upon a long, steep grade, downshift and use engine compression together with intermittent application of both brakes to slow the motorcycle.

⚠WARNING

Continuous use of brake causes overheating and reduced efficiency, which could result in death or serious injury. (00042a)

CAUTION

Do not coast for long distances with the engine off. The transmission is properly lubricated only when the engine is running. Coasting long distances can result in transmission damage. (00180a)

⚠WARNING

Do not tow a disabled motorcycle. Towing can adversely affect stability and handling, which could result in death or serious injury. (00017a)

BREAK-IN: THE FIRST 500 MILES (800 KM)

The sound design, quality materials and workmanship that are built into your new Harley-Davidson will give you optimum performance right from the start.

To allow your engine to seat in its critical parts, we recommend for the first 500 miles (800 km), you observe the riding rules provided below. Adherence to these recommendations will help to assure good future durability and performance.

1. Riding the first 50 miles (80 km), avoid operating at any steady engine speed for long distances. Keep the engine speed below 3000 RPM in any gear. Do not lug the engine in higher gears by running or accelerating at very low RPM. Do not exceed mph for each gear as noted below.

GEAR	1st	2nd	3rd	4th	5th
MPH/KPH	22/35	32/51	45/72	57/92	70/113

2. Up to 500 miles (800 km), avoid operating at any steady engine speed for long distances. Engine speed up to 3500 RPM in any gear is permissible. Do not exceed mph for each gear as noted below.

GEAR	1st	2nd	3rd	4th	5th
MPH/KPH	25/41	37/60	52/84	66/106	80/129

- Avoid fast starts at wide open throttle and drive slowly until the engine has warmed up.

PRERIDE CHECKLIST

⚠WARNING

Read the CONTROLS AND INDICATORS section before riding your motorcycle. Failure to understand the operation of the motorcycle could result in death or serious injury. (00043a)

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

Avoid spills. Slowly remove filler cap. Do not fill above bottom of filler neck insert, leaving air space for fuel expansion. Secure filler cap after refueling. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00028a)

⚠WARNING

Use care when refueling. Pressurized air in fuel tank can force gasoline to escape through filler tube. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00029a)

⚠WARNING

Stop the engine when refueling or servicing the fuel system. Do not smoke or allow open flame or sparks near gasoline. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00002a)

CAUTION

Do not spill fuel onto the motorcycle while refueling. Immediately wipe up fuel spills on your motorcycle. Fuel can cause damage to painted surfaces. (00147a)

2. Adjust mirrors to proper riding positions.
3. See MAINTENANCE AND LUBRICATION, Checking Oil Level section. Check oil tank oil level.
4. Check controls to be sure they are operating properly; operate the front and rear brakes, throttle, clutch and shifter.
5. Check steering for smoothness by turning the handlebars through the full operating range.

⚠WARNING

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00014a)

6. See SPECIFICATIONS, Tire Data. Check tire condition and pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability. Adhere to tire specifications for correct inflation pressures to use.
7. Check all electrical equipment and switches including the stop lamp turn signals and horn for proper operation.
8. Check for any fuel, oil or hydraulic fluid leaks.
9. Check rear belt adjustment.
10. Service your motorcycle as necessary.

STARTING THE ENGINE

⚠WARNING

Shift transmission to neutral before starting engine to prevent accidental movement, which could result in death or serious injury. (00044a)

CAUTION

The engine should be allowed to run slowly for 15-30 seconds. This will allow the engine to warm up and let oil reach all surfaces needing lubrication. Failure to comply can result in engine damage. (00181a)

NOTE

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

Refer to Table 41. Use recommended oil for extended or expected temperatures.

If you read this section and still have questions about the correct operation of your motorcycle, talk to your authorized Harley-Davidson dealer.

C.V. Carburetors

NOTES

- *C.V. carburetors have an enrichener circuit that will cause the engine to idle at approximately 2000 RPM with the engine at normal operating temperature and the enrichener knob pulled fully-out.*
- *The increase in idle speed is intended to alert the rider that the engine is warmed up to normal operating temperature and the enrichener knob should be pushed all the way in.*
- *Continuing to use the enrichener when the engine is at full operating temperature WILL CAUSE FOULED SPARK PLUGS.*

CAUTION

Pay close attention to the vehicle's warm-up time. Either excessive or insufficient use of the enrichener may cause poor performance, erratic idle, poor fuel economy, spark plug fouling and equipment damage. (00164a)

NOTE

The following starting and operating instructions for all Harley-Davidson motorcycles are recommendations. They may be modified for individual vehicles.

Cool Engine

Outside Temperature Cooler Than 60˚ F (16˚ C)

1. See Figure 26. Turn the fuel valve to the ON position.
2. See Figure 18. BE SURE THROTTLE IS CLOSED.
3. See Figure 23. Pull enrichener knob to full-out position.
4. See Figure 16. Turn the ignition/headlamp key switch ON and press starter switch to operate the electric starter.
5. Raise jiffy stand.
6. See Figure 23. After initial 15-30 second warm-up, ride for 3 minutes or 2 miles (3.2 km) with enrichener knob in full-out position.
7. After 3 minutes or 2 miles (3.2 km), push the enrichener knob in to the 1/2 way position. Ride 2 minutes or 2 miles (3.2 km).
8. After 2 minutes or 2 miles (3.2 km), push the enrichener knob fully-in.

NOTE

If outside temperature is cooler than 20˚ F (-6˚ C) (it may be necessary to roll the throttle 2 or 3 times.

Outside Temperature Warmer Than 60˚ F (16˚ C)

See Figure 26. Turn the fuel valve to the ON position. BE SURE THROTTLE IS CLOSED.

1. See Figure 23. Pull enrichener knob to full-out position.

2. See Figure 16. Turn the ignition/headlamp key switch on and press starter switch to operate the electric starter.
3. Raise jiffy stand.
4. After initial 15-30 second warm-up, ride for 1 minute or 1/2 mile (0.8 km) with enrichener knob in full-out position.
5. After 1 minute or 1/2 mile (0.8 km), push the enrichener knob in to the 1/2 way position. Ride 1 minute or a 1/2 mile (0.8 km).
6. After 1 minute or 1/2 mile (0.8 km), push the enrichener knob fully-in.

Warm Or Hot Engine

See Figure 26. Turn the fuel valve to the ON position.

1. See Figure 18. Open throttle 1/8-1/4 turn.
2. See Figure 16. Turn on ignition/headlamp key switch and operate electric starter. DO NOT USE ENRICHENER.
3. Raise jiffy stand.

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, push enrichener knob in all the way, turn ignition on and operate starter with throttle wide open. Do NOT pump the throttle while turning the engine over.

Sequential Port Fuel Injected Engine

General

There are some differences between a carbureted Harley-Davidson and a fuel injected Harley-Davidson. The sequential port fuel injection system simplifies the starting procedure, compared to carbureted Harley-Davidsons.

Do not roll the throttle before starting. Rolling the throttle before starting the motorcycle is unnecessary.

There is no choke or enrichener on a fuel injected Harley-Davidson. The engine management system handles starting and running the engine at all temperatures and conditions.

There is no fuel valve.

If the sound system is not on, you may occasionally hear a slight fuel pump purr, as the fuel pump operates to maintain the proper pressure in the fuel lines.

Starting

1. Turn Ignition/headlamp key switch knob to IGNITION position. Do not roll the throttle.

NOTE

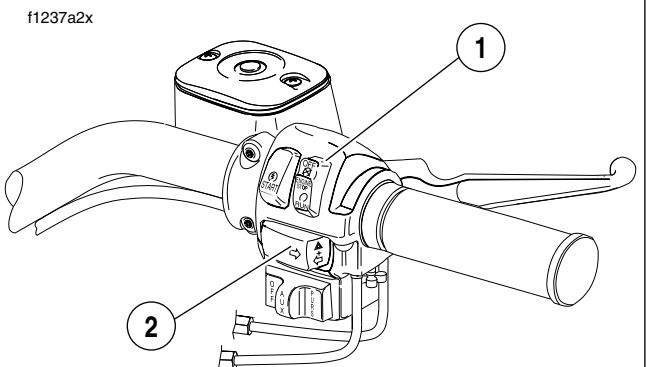
The engine lamp will light for approximately 4 seconds and you will hear the fuel pump purr for approximately 2 seconds as it operates to fill the fuel lines with gasoline.

2. Turn the off/run switch to RUN position.

3. Press the starter button to start the motorcycle.
4. When the engine has started, you can operate your motorcycle as you normally would.

NOTE

If the fuel tank becomes completely dry, it may take a few seconds longer to start the motorcycle after filling the tank. It will not be necessary to take any extraordinary measures before starting the motorcycle.



1. Engine stop switch
2. Engine start switch

Figure 62. Right Handlebar Controls

STOPPING THE ENGINE

1. See Figure 18. Stop the engine by turning OFF the engine stop switch on right handlebar.
2. See Figure 16. Turn OFF the ignition/headlamp key switch. If the engine should be stalled or stopped in any way, turn off the key switch at once to prevent battery discharge.
3. See Figure 26. Turn the fuel valve to the OFF position if applicable.

SHIFTING GEARS

CAUTION

The clutch must be fully disengaged before attempting a gear shift. Failure to fully engage the clutch can result in equipment damage. (00182a)

NOTE

Always start motorcycle engine in neutral. Always start motorcycle from first gear when the engine is running.

1. Sit upright on the motorcycle and keep the engine idling.
2. See Figure 17. Pull the clutch hand lever in against handlebar grip to fully disengage clutch.
3. Push the foot shifter lever down firmly, but gently, to end of its travel and engage first gear.

To start moving with motorcycle upright and engine idling:

See Figure 17. Release the clutch hand lever slowly to engage the clutch and at the same time, open throttle gradually.

Engage second gear after the motorcycle has run a few yards, as follows:

1. Close the throttle.
2. Disengage the clutch.
3. Lift the gear shifter pedal up to the end of its travel and release.
4. Engage the clutch and operate the throttle gradually.

- Repeat the same operation to engage third, fourth, and fifth gears.
- To shift to lower gears, reverse the movement of the gear shifter lever.
- Disengage the clutch completely before each gear change.
- Partially close the throttle so the engine will not drag when clutch is again engaged.

NOTE

By lifting the toe gear shifter lever up, a higher gear is engaged; by pushing the toe gear shifter lever down, a lower gear is engaged. When stopping, operate gear shift until you reach neutral. Neutral is 1/2 stroke up from first gear.

5. See Figure 63. Gear shift pattern is first gear down; next four gears up.

⚠WARNING

Do not downshift at speeds higher than those listed in the Changing Gear Speeds table. Shifting to lower gears when speed is too high can cause the rear wheel to lose traction and lead to loss of vehicle control, which could result in death or serious injury. (00045a)

CAUTION

Shift to neutral before stopping engine. Shifting mechanism can be damaged by shifting gears while engine is stopped. (00183a)

NOTE

Always start motorcycle engine in neutral. Always start motorcycle from first gear when the engine is running.

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 the engine accelerates as soon as the clutch lever is pulled.

For recommended upshift points, refer to Table 39. For recommended downshift points, refer to Table 40.

NOTE

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

Table 39. Changing Gear Speeds-Upshift (Accelerate)

GEAR CHANGE	MPH	km/h
First to second	15	25
Second to third	25	40
Third to fourth	35	55
Fourth to fifth	45	70

Table 40. Changing Gear Speeds-Downshift (Decelerate)

GEAR CHANGE	MPH	km/h
Fifth to fourth	40	65
Fourth to third	30	50
Third to second	20	30
Second to first	10	15

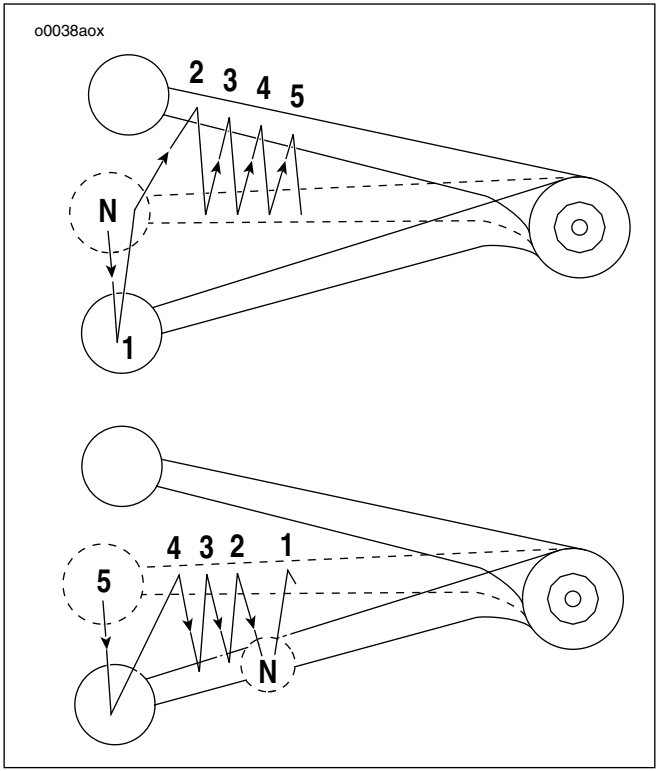


Figure 63. Toe Foot Shifter Lever

SAFE OPERATING MAINTENANCE

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

⚠WARNING

Perform the service and maintenance operations as indicated in the regular service interval table. Lack of regular maintenance at the recommended intervals can affect the safe operation of your motorcycle, which could result in death or serious injury. (00010a)

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 and primary chain for proper tension.
3. Brakes, steering and throttle for responsiveness.
4. Brake fluid level and condition. Hydraulic lines and fittings for leaks. Also, check brake pads and discs for wear.
5. Cables for fraying or crimping and free operation.
6. Engine oil, primary chain case and transmission fluid levels.
7. Wheel spoke tightness, if applicable.
8. Headlamp, tail lamp, brake lamp and directional lamp operation.

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.

Refer to Table 52. After a new motorcycle has been ridden its first 1000 miles (1600 km), it should be taken to the dealer from whom it was purchased for initial service operations. In addition, take the motorcycle to your Harley-Davidson dealer for more complete servicing as soon as it is convenient.

ENGINE LUBRICATION

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

CAUTION

Do not switch lubricant brands indiscriminately because some lubricants interact chemically when mixed. Use of inferior lubricants can damage the engine. (00184a)

Refer to Table 41. If it is necessary to add oil and H-D oil is not available, use an oil certified for diesel engines.

Acceptable diesel engine oil designations include:

- CF-4
- CG-4
- CH-4
- CI-4

The preferred viscosities for the diesel engine oils, in descending order are:

- 20W50
- 15W40
- 10W40

At the first opportunity, see a Harley-Davidson dealer to change back to 100 percent Harley-Davidson oil.

Table 41. Recommended Engine Oils

HARLEY-DAVIDSON TYPE	VISCOSITY	HARLEY-DAVIDSON RATING	LOWEST AMBIENT TEMPERATURE	COLD WEATHER STARTS BELOW 50˚ F (10˚ C)
HD Multi-grade	SAE 10W40	HD 360	Below 40˚ F (4˚ C)	Excellent
HD Multi-grade	SAE 20W50	HD 360	Above 40˚ F (4˚ C)	Good
HD Regular heavy	SAE 50	HD 360	Above 60˚ F (16˚ C)	Poor
HD Extra heavy	SAE 60	HD 360	Above 80˚ F (27˚ C)	Poor

CHECKING OIL LEVEL

CAUTION

Oil level cannot be accurately measured on a cold engine. For preride inspection, with motorcycle leaning on jiffy stand on level ground, oil should register on dipstick between arrows when engine is cold. Do not add oil to bring the level to the FULL mark on a COLD engine. (00185a)

For dipstick location, see Figure 64.

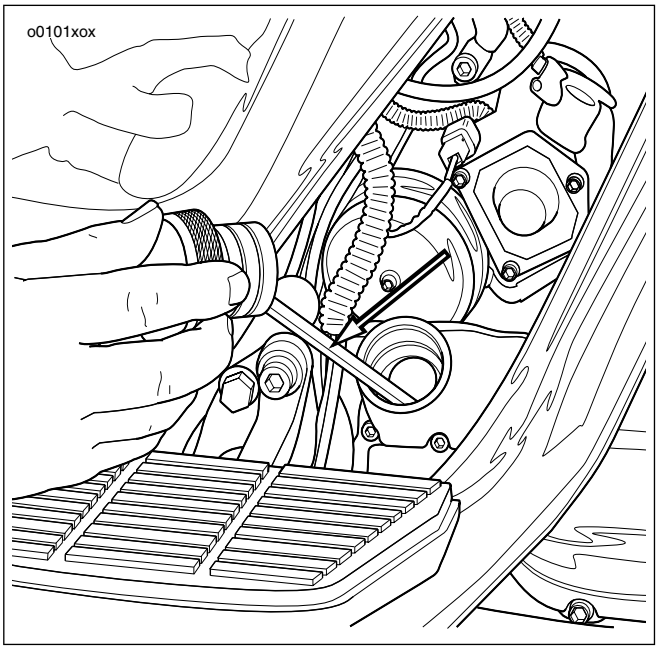


Figure 64. Dipstick Location

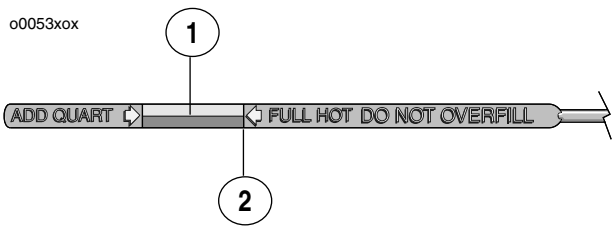
Oil Level COLD Check

Perform engine oil level **COLD CHECK** as follows:

1. See Figure 65. For preride inspection with the vehicle resting on the jiffy stand on level ground, wipe off the dipstick. Insert it back into the oil pan with the plug pushed completely into the fill spout.
2. Remove the dipstick and verify the level of the oil. The correct oil level should register between the two marks on the dipstick.

NOTE

If oil level is at or below the lower arrow, add only enough oil to bring the level to the middle *of the two marks on the dipstick.*



1. Cold check level
2. Hot check level

Figure 65. Engine Oil Level

Oil Level HOT Check

Perform engine oil level **HOT CHECK** as follows:

1. Ride motorcycle until engine is at normal operating temperature.
2. With the vehicle resting on the jiffy stand on level ground, allow engine to idle for 1-2 minutes. Turn engine off.
3. Remove and wipe off the dipstick. Insert it back with the plug pushed completely into the fill spout.
4. Remove the dipstick and note the level of the oil. Add only enough oil to bring the level to the FULL mark on the dipstick. **Do not overfill**.

- Refer to Table 41. Use only recommended oil specified in ENGINE LUBRICATION section.

5. Start engine and carefully check for oil leaks around drain plug and oil filter.

Engine oil level should be checked only when engine is at normal operating temperature.

NOTE

The engine will require a longer warm up period in colder weather.

CAUTION

Do not allow hot oil level to fall below Add/Fill mark on dipstick. Doing so can result in equipment damage and/or equipment malfunction. (00189a)

CAUTION

Do not overfill oil tank. Doing so can result in oil carry-over to the air cleaner leading to equipment damage and/or equipment malfunction. (00190a)

- Check engine oil supply at each complete fuel refill.
- Refer to Table 52. Oil should be changed at specified intervals in normal service at warm or moderate temperatures.
- Oil change intervals should be shorter in cold weather. See MAINTENANCE AND LUBRICATION, Winter Lubrication.

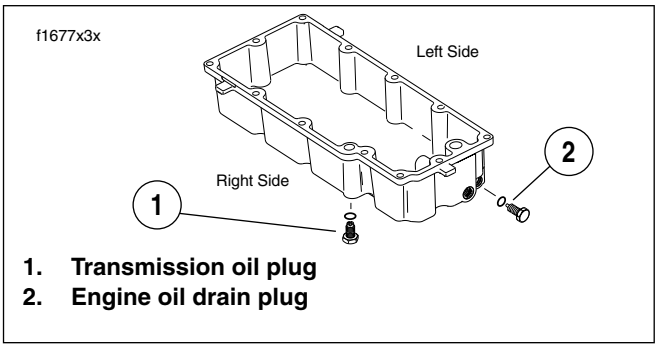
CHANGING OIL AND OIL FILTER

CAUTION

Do not switch lubricant brands indiscriminately because some lubricants interact chemically when mixed. Use of inferior lubricants can damage the engine. (00184a)

Twin Cam 88 equipped vehicles require the premium oil filter (Part No. 63798-99 Chrome or Part No. 63731-99 Black).

- Check engine oil supply at each complete fuel refill.
- Refer to Table 52. Oil should be changed after the first 1000 miles (1600 km) for a new engine, and at regular intervals in normal service at warm or moderate temperatures.
- Oil change intervals should be shorter in cold weather or severe operating conditions. See MAINTENANCE AND LUBRICATION, Winter Lubrication.



1. **Transmission oil plug**
2. **Engine oil drain plug**

Figure 66. Oil Pan Plug Locations

1. Ride motorcycle until engine is warmed up to normal operating temperature. Turn engine off.
2. Locate oil filler plug/dipstick on right side of vehicle at top of transmission case. To remove the oil filler plug, pull steadily while moving plug back and forth.
3. Locate oil drain plug at front left side of the oil pan. Remove the oil drain plug. Do not remove Allen plug. Allow oil to drain completely.
4. Inspect the oil drain plug o-ring for cuts, tears or signs of deterioration. Replace as necessary.

⚠WARNING

Check that no lubricant gets on rear tire, wheel or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047a)

CAUTION

Use Harley-Davidson OIL FILTER WRENCH for filter removal. This tool can prevent damage to crankshaft position sensor and/or sensor cable. (00192a)

5. See Figure 67. Remove the oil filter using the OIL FILTER WRENCH (Part No. HD-42311 or Part No. HD-44062). The tool allows easy removal of the oil filter without risk of damage to the crankshaft position sensor or cable.
6. Place the jaws of the wrench over the oil filter with the tool oriented vertically. Using a 3/8 inch drive with a 4 inch extension, turn wrench in a counterclockwise direction. Do not use with air tools.
7. Clean the oil filter mount flange of any old gasket material.

NOTE

Dispose of oil and oil filter in accordance with local regulations.

8. See Figure 68. Lubricate gasket with clean engine oil and install **new** oil filter on filter mount. Hand tighten oil filter 1/2-3/4 turn after gasket first contacts filter mounting surface. Do not use OIL FILTER WRENCH (Part No. HD-42311) for oil filter installation.

NOTE

Use of the Premium 10 micron synthetic media oil filter is highly recommended. Part No. 63798-99 Chrome or 63731-99 Black.

9. Install engine oil drain plug and tighten to 14-21 ft-lbs (19.0-28.5 Nm).
10. Refer to Table 41. With vehicle resting on jiffy stand, initially add 3.5 quarts (3.3 liters) engine oil. Use the proper grade of oil for the lowest temperature expected before the next oil change.

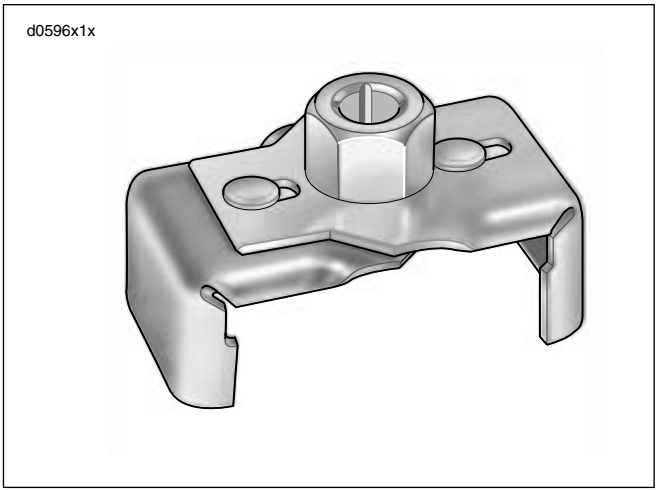


Figure 67. Oil Filter Wrench (Part No. HD-42311) or optional (Part No. HD-44062, not shown)

11. Check engine oil level using **COLD CHECK** procedure.
12. Start engine and carefully check for oil leaks around drain plug and oil filter.
13. Check engine oil level using **HOT CHECK** procedure.

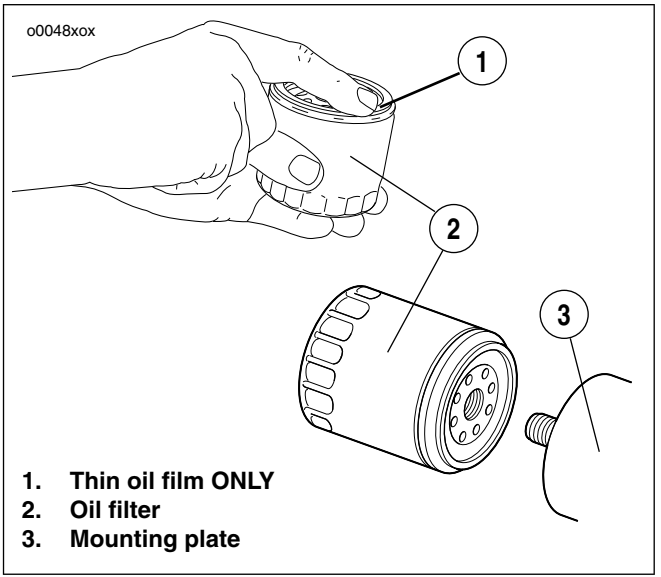


Figure 68. Applying Thin Oil Film

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 the 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.

A moderately driven engine, making only short runs 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.

NOTES

- *During winter the oil change interval should be shorter than normal for all engines. 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 further below freezing the temperature drops, the shorter the oil change interval should be.*

For correct oil viscosity refer to Table 41.

TRANSMISSION LUBRICATION

The transmission lubricant level should be checked monthly.

Refer to Table 52. The transmission should be drained and refilled with fresh lubricant at specified intervals.

NOTE

When checking the transmission lubricant level, motorcycle should be standing STRAIGHT UP, not leaning on the jiffy stand. Keep motorcycle upright for a short period of time to equalize lubricant level in the transmission compartments.

Check Lubricant Level

1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. When the engine reaches normal operating temperature, turn the engine off and position motorcycle STRAIGHT UP and LEVEL.
3. See Figure 69. Remove the threaded filler plug/dipstick.
4. Wipe off filler plug/dipstick. Place in filler hole and remove. (Dipstick should rest on lip of filler.) Do not screw in. Lubricant level should be at the F(ULL) mark on the plug/dipstick when removed.

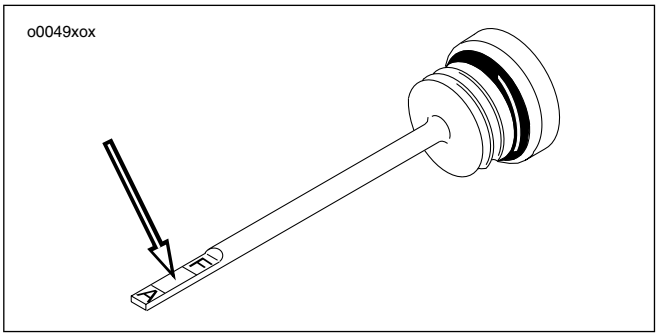


Figure 69. Transmission Filler Plug/Dipstick Lubricant Level

NOTE

Lubricant level should be between the two marks on the dipstick.

⚠WARNING

Check that no lubricant gets on rear tire, wheel or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047a)

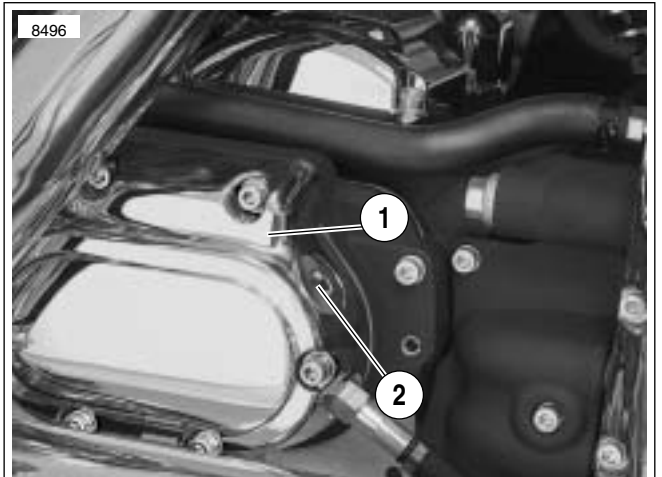
CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

5. Add lubricant, if necessary. Do not overfill or leakage may occur. When filling the transmission, use Harley-Davidson TRANSMISSION LUBRICANT (Part No. 99892-84 quart or Part No. 99891-84 gallon).The transmission fluid capacity is approximately 24 ounces (0.71 liters).
6. Inspect o-ring for tears or damage. Replace if required. Wipe any foreign material from plug.
7. Install threaded filler plug/dipstick and tighten to 25-75 **in-lbs** (2.8-8.5 Nm).

Changing Transmission Fluid

1. See Figure 70. Remove the threaded check/filler plug.
2. See Figure 66. Remove transmission drain plug from the right side of the oil pan and drain lubricant into a suitable container.



1. Clutch release cover
2. Filler plug

Figure 70. Transmission Lubricant Check/Filler

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

⚠WARNING

Check that no lubricant gets on rear tire, wheel or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047a)

NOTE

Dispose of transmission lubricant in accordance with local regulations.

3. Inspect o-ring for tears or damage on the drain plug. Replace if required. Wipe any foreign material from plug.
4. Install drain plug and tighten to 14-21 ft-lbs (19.0-28.5 Nm). Fill the transmission with 20-24 oz. (591.5-709.8 ml) of Harley-Davidson TRANSMISSION LUBRICANT (Part No. 99892-84 quart or Part No. 99891-84 gallon).

NOTE

Do not overfill or leakage may occur. The transmission fluid capacity is approximately 24 ounces (0.71 liters).

5. Install threaded filler/check plug and tighten clockwise to 25-75 **in-lbs** (2.8-8.5 Nm).
6. Start engine and carefully check for oil leaks around drain plug.

PRIMARY CHAINCASE LUBRICATION

Lubrication is a major factor in the performance and service life of the primary drive components. Use appropriate Harley-Davidson chaincase lubricant for all operating temperatures.

NOTE

For model specific information regarding the primary chaincase capacity, refer to the appropriate Service Manual or see your Harley-Davidson dealer.

CHAINCASE LUBRICANT

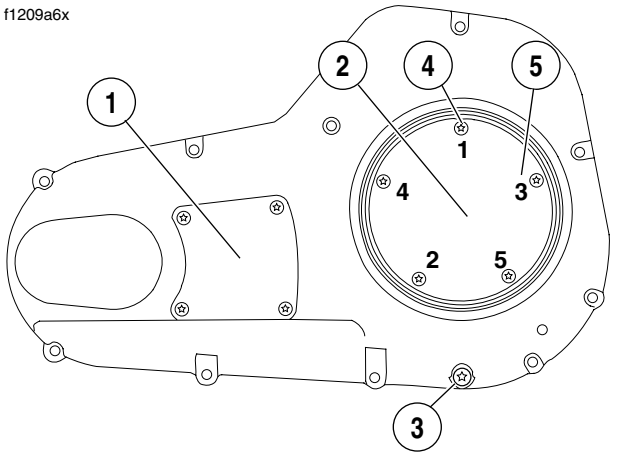
Refer to Table 52. The chaincase lubricant should be drained and refilled with fresh lubricant at specified intervals.

NOTE

When checking the chaincase lubricant, motorcycle should be standing STRAIGHT UP, not leaning on the jiffy stand. Keep motorcycle upright for a short period of time to equalize lubricant level in the chaincase compartment.

Checking Lubricant

1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. When the engine reaches normal operating temperature, turn the engine off and position motorcycle STRAIGHT UP and LEVEL.
3. See Figure 71. Remove five screws (4) (with captive washers) to free clutch inspection cover (2) from primary chaincase cover.



1. **Primary chain inspection cover**
2. **Clutch inspection cover**
3. **Drain plug 36-60 in. lbs (4.1-6.8 Nm)**
4. **Screws with captive washers**
5. **Clutch cover torque sequence**

Figure 71. Primary Chaincase Cover

CAUTION

If lubricant is not thoroughly removed from both the o-ring and groove, compression of the o-ring during installation of the clutch inspection cover can cause lubricant to be squeezed to the outboard side of the ring groove, resulting in some temporary weepage around the inspection cover. (00201a)

4. Remove quad-ring from groove in primary chaincase cover. Wipe all lubricant from the quad-ring and inspect for cuts, tears or signs of deterioration. Replace as necessary.
5. See Figure 72. With the vehicle standing upright, not leaning on the jiffy stand, the lubricant level must be visible in the bottom of the chaincase and must not be any higher than the diaphragm spring.
6. Pour the proper amount and type of primary chaincase lubricant in through the clutch inspection cover opening, if required.
7. Wipe all lubricant from the quad-ring groove. Install quad-ring in primary chaincase cover.

CAUTION

Do not overfill the primary chaincase with lubricant. Overfilling can cause rough clutch engagement, incomplete disengagement, clutch drag and/or difficulty in finding neutral at engine idle. (00199a)

NOTE

Use Harley-Davidson PRIMARY CHAINCASE LUBRICANT (Part No. 99887-84 quart or Part No. 99886-84 gallon).

8. Place quad-ring in chaincase cover and install clutch inspection cover.
9. Attach clutch inspection cover using five screws (with captive washers). Tighten to 84-108 **in-lbs** (9.5-12.2 Nm). Follow torque sequence shown in Figure 71.

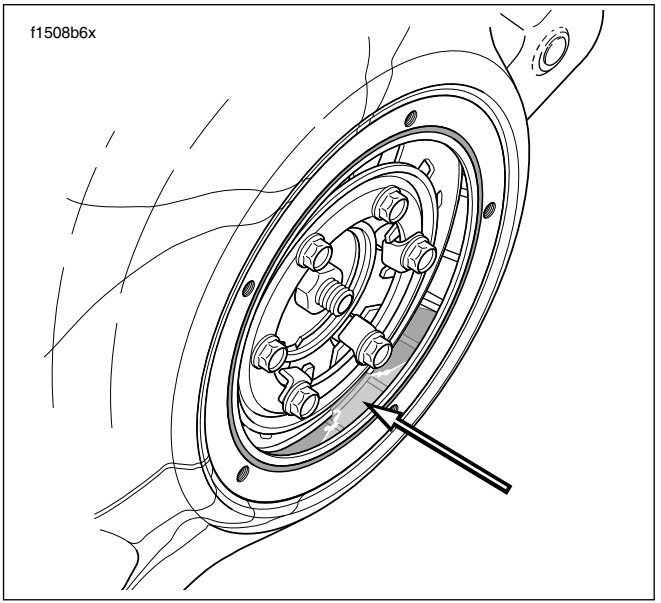


Figure 72. Lubricant With Motorcycle Upright

Changing Chaincase Lubricant

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. See Figure 71. Remove magnetic drain plug (3) at bottom of primary chaincase cover. Drain lubricant into suitable container.

NOTE

Dispose of chaincase lubricant in accordance with local regulations.

3. Remove five screws (4) (with captive washers) to free clutch inspection cover (2) from primary chaincase cover.
4. Remove quad-ring from groove in primary chaincase cover. Wipe all lubricant from quad-ring and inspect for cuts, tears or signs of deterioration. Replace as necessary.
5. Clean drain plug. Remove debris from magnet and inspect o-ring for cuts tears or signs of deterioration. Replace as necessary. Install drain plug and tighten to 36-60 **in-lbs** (3.4-6.8 Nm). If plug has accumulated excess debris, inspect the condition of chaincase components.

CAUTION

If lubricant is not thoroughly removed from both the o-ring and groove, compression of the o-ring during installation of the clutch inspection cover can cause lubricant to be squeezed to the outboard side of the ring groove, resulting in some temporary weepage around the inspection cover. (00201a)

6. Pour approximately 32 oz. (946.35 ml) of primary chaincase lubricant in through the clutch inspection cover opening.
7. See Figure 73. With the vehicle standing upright, not leaning on the jiffy stand, the lubricant level must not be higher than the spring.
8. Wipe all lubricant from the quad-ring groove. Install quad-ring in primary chaincase cover.

CAUTION

Do not overfill the primary chaincase with lubricant. Overfilling can cause rough clutch engagement, incomplete disengagement, clutch drag and/or difficulty in finding neutral at engine idle. (00199a)

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

⚠WARNING

Check that no lubricant gets on rear tire, wheel or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047a)

NOTE

Use only Harley-Davidson PRIMARY CHAINCASE LUBRICANT (Part No. 99887-84 quart or Part No. 99886-84 gallon).

9. Place quad-ring in chaincase cover and install clutch inspection cover.
10. Attach clutch inspection cover using five screws (with captive washers). Tighten to 84-108 **in-lbs** (9.5-12.2 Nm). Alternately tighten the screws following the torque sequence shown in Figure 71.

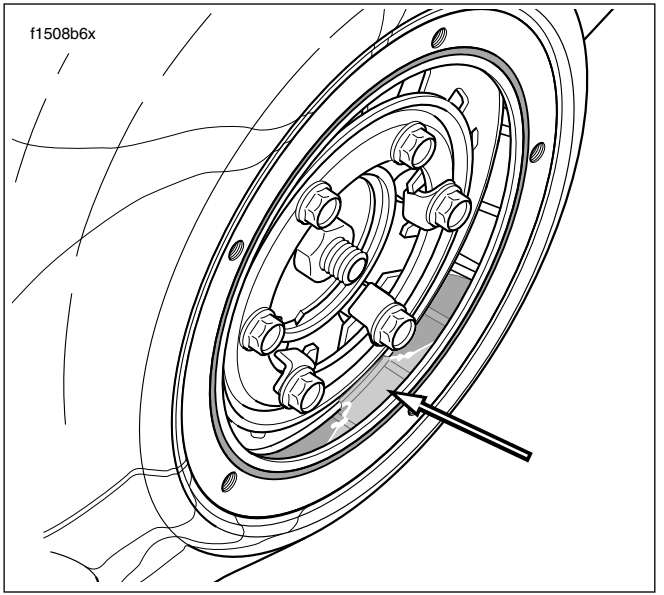


Figure 73. Lubricant Inspection With Motorcycle Upright

PRIMARY CHAIN ADJUSTMENT

Refer to Table 52. Primary (front) chain adjustment should be inspected specified intervals and serviced as necessary.

NOTE

If the chain is allowed to run loose, it will cause the motorcycle to jerk when running at low speed, and chain and sprockets will wear excessively. If this happens, see your Harley-Davidson dealer or proceed as follows:

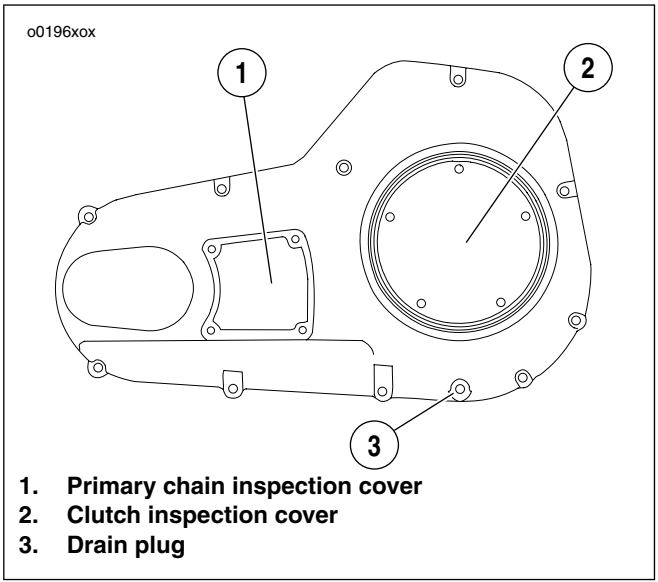
If chain tension adjustment is required, proceed as follows:

1. Remove seat. See SEAT, Removal section.

⚠WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

2. Unthread bolt and remove battery negative cable (black) from battery negative (-) terminal.
3. See Figure 74. On the left side of the vehicle, remove the T27 TORX screws to free the primary chain inspection cover from the primary chaincase cover.
4. Check the primary chain tension. Push on the upper strand to verify that it has free up and down movement midway between the engine compensating sprocket (front) and the clutch sprocket (rear).
5. Refer to Table 42. Measure the free play to be sure that it falls within the ranges specified for a hot or cold engine.



1. **Primary chain inspection cover**
2. **Clutch inspection cover**
3. **Drain plug**

Figure 74. Primary Chaincase Cover

6. If the chain is too tight or too loose, then adjustment is necessary. Proceed as follows:

1. See Figure 75. Locate the chain tensioner assembly and loosen the top center nut a maximum of two turns.
2. Refer to Table 42. Raise or lower the chain tensioner assembly as necessary to obtain the specified free play.

NOTES

- *As chains stretch and wear, they run tighter at one spot than another. Always adjust the free play at the tightest spot in the chain.*
- *Replace the primary chain if it is worn to the point where it cannot be properly adjusted.*

CAUTION

Do not adjust the primary chain tighter than specified. Running chain too tight will result in excessive wear. (00202a)

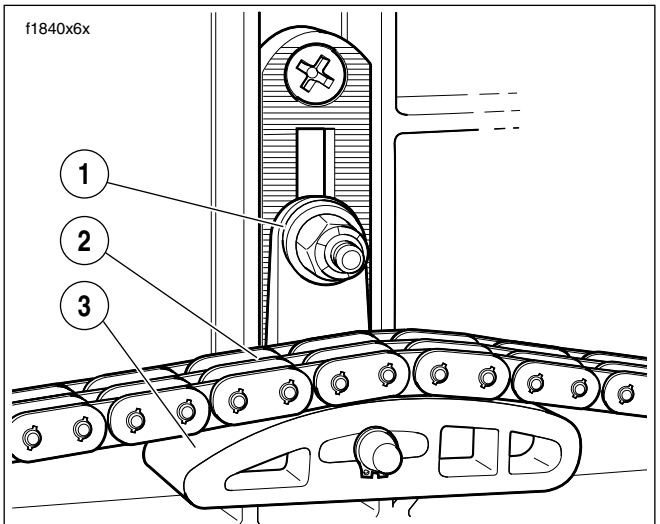
NOTE

Allowing the chain to run loose will cause the motorcycle to jerk when running at low speed resulting in excessive chain and sprocket wear.

3. Tighten the top center nut of the chain tensioner assembly to 21-29 ft-lbs (28.5-39.3 Nm).
4. Using a **new** gasket, position the primary chain inspection cover in the primary chaincase cover. Install four screws and tighten to 84-108 **in-lbs**. (374-480 Nm).

Table 42. Primary Chain Adjustment

FREE PLAY	INCHES	MILLIMETERS
COLD engine	5/8-7/8	15.9-22.2
HOT engine	3/8-5/8	9.5-15.9



1. **Top center nut**
2. **Primary chain**
3. **Adjuster shoe**

Figure 75. Chain Tensioner Assembly, Top Center Nut

REAR DRIVE BELT

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

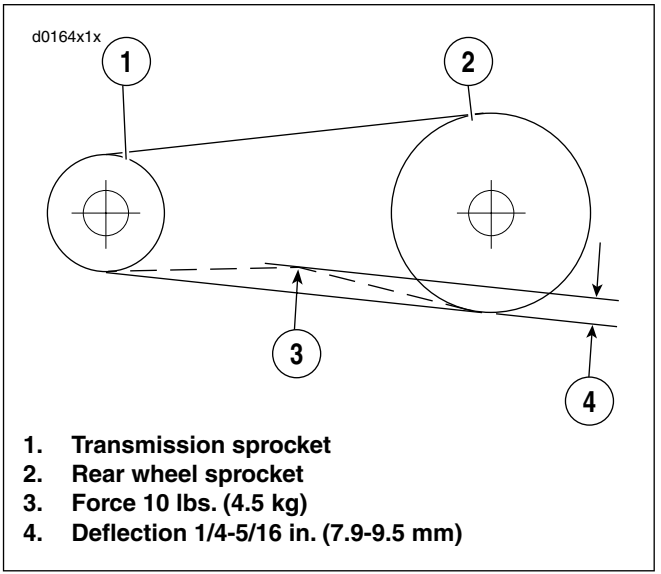
Belt tension is set at the factory and should be checked after the first 1000 miles (1600 km) and at regular intervals thereafter.

See Figure 76. With the rear wheel on the ground and vehicle on jiffy stand, use the BELT TENSION GAUGE (Part No. HD-35381-3) to apply 10 lbs. (4.5 kg) of force at the midpoint of the bottom belt strand. Belt deflection should be 1/4-5/16 in. (6.3-7.9 mm) at the loosest spot at room temperature with transmission in neutral. If belt tension adjustment is necessary, see your Harley-Davidson dealer or follow the instructions given in the applicable Service Manual.

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

⚠WARNING

Be sure wheel and brake caliper are aligned. Riding with a misaligned wheel or brake caliper can cause the brake disc to bind and lead to loss of control, which could result in death or serious injury. (00050a)



1. **Transmission sprocket**
2. **Rear wheel sprocket**
3. **Force 10 lbs. (4.5 kg)**
4. **Deflection 1/4-5/16 in. (7.9-9.5 mm)**

Figure 76. Check Belt Deflection

CHASSIS LUBRICATION

Greasing

CAUTION

Do not switch lubricant brands indiscriminately because some lubricants interact chemically when mixed. Use of inferior lubricants can damage the engine. (00184a)

1. Use recommended special purpose grease for steering head bearings (Part No. 99857-97).
2. Refer to Table 52. Remove and lubricate handlebar throttle control grip sleeve with fresh graphite at regular intervals.
3. Lubricate throttle control cables and clutch control cable. Lubricate front brake hand lever and clutch control hand lever with 94968-85TV.
4. Lubricate the steering head bearings at regular intervals. Disassemble and pack the steering head bearings with fresh grease at specified intervals.
5. Lubricate the jiffy stand mechanism with LOCTITE Aerosol Anti-Seize at regular intervals.

NOTE

For model specific information regarding the chassis lubrication, refer to the appropriate Service Manual or see your Harley-Davidson dealer.

OIL APPLICATIONS

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

FRONT FORK

Refer to Table 52. If fork does not appear to be working properly or an appreciable amount of oil leakage should develop, see your Harley-Davidson dealer. If there is insufficient oil in either side of fork, the damping action will be incorrect.

FUEL STRAINER (CARBURETED ONLY)

See Figure 26. Refer to Table 52. A screen type fuel strainer is located on top of the supply valve inside the fuel tank. Screen should be inspected/cleaned at regular intervals. Check the fuel valve, lines and fittings for leakage as part of the preride inspection.

CLUTCH

CAUTION

The clutch control cable must be oiled and adjusted periodically to compensate for lining wear. See Service Interval Table. Failure to oil and adjust the clutch control cable can result in equipment damage. (00203a)

The need for attention to clutch and controls will be indicated by the clutch slipping under load, or dragging when released. In this situation, the control cable adjustment should be the first thing to be checked. See your Harley-Davidson dealer for proper service.

HYDRAULIC LIFTERS

Lifters 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 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 because of dirt in the oil supply passages leading to the lifter units. See your Harley-Davidson dealer for service.

FRONT FORK BEARINGS

⚠WARNING

Adjustments to front fork bearings should be performed by a Harley-Davidson dealer. Improperly adjusted bearings can adversely affect handling and stability, which could result in death or serious injury. (00051a)

Refer to Table 52. Check front fork for proper bearing adjustment at specified intervals. Bearings should be lubricated at the grease fitting at regular intervals at the grease fitting. With motorcycle front end raised off the floor, be 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 according to Service Manual procedure, if necessary.

REAR FORK PIVOT SHAFT

The tightness of the rear fork pivot shaft fastener should be checked at specified intervals.

NOTE

For model specific information regarding the rear fork pivot shaft, refer to the appropriate Service Manual or see your Harley-Davidson dealer.

BRAKES

⚠WARNING

Inspect brake pads for wear at service maintenance intervals. If you ride under adverse conditions (steep hills, heavy traffic, etc.), inspect more frequently. Excessively worn brake pads can lead to brake failure, which could result in death or serious injury. (00052a)

1. Refer to Table 52. Check brake pads and brake discs for wear at regular intervals.
2. Check the fluid level in the master cylinder reservoirs at regular intervals.

⚠WARNING

Always replace brake pads in complete sets for correct and safe brake operation. Improper brake operation could result in death or serious injury. (00111a)

NOTE

Use only D.O.T. 5 SILICONE HYDRAULIC BRAKE FLUID (Part No. 99902-77) approved for brake system use and available from your Harley-Davidson dealer.

⚠CAUTION

Direct contact of D.O.T. 5 brake fluid with eyes can cause eye irritation, swelling, and redness. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 5 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00144a)

Harley-Davidson has provided your new motorcycle with the optimum brake pad friction material available. It is selected to give the best performance possible under dry, wet and high operating temperature conditions. It exceeds all regulatory requirements currently in effect. However, during some braking conditions you may experience noise. This is normal for this friction material.

⚠WARNING

Brakes are a critical safety component. Contact a Harley-Davidson dealer for brake repair or replacement. Improperly serviced brakes can adversely affect brake performance, which could result in death or serious injury. (00054a)

Visual inspection of brake pads can be made without removing the caliper. View the lower area of each caliper with a flashlight.

⚠WARNING

Perform routine scheduled brake maintenance. Lack of maintenance at recommended intervals can adversely affect brake performance, which could result in death or serious injury. (00055a)

NOTES

- *If the brake pad friction material is 0.04 in. (1.02 mm) thick or less, the pads must be replaced immediately.*
- *Always replace brake pads in pairs.*
- *The rear brake outer pad on all models can be measured from the caliper bracket side using a thin plastic 6.0 in. (152.4 mm) rule. Place the rule against the brake disc through the space alongside the caliper.*
- *The surface of the brake pad backing plate should measure 0.04 in. (1.02 mm) or more away from the brake disc.*

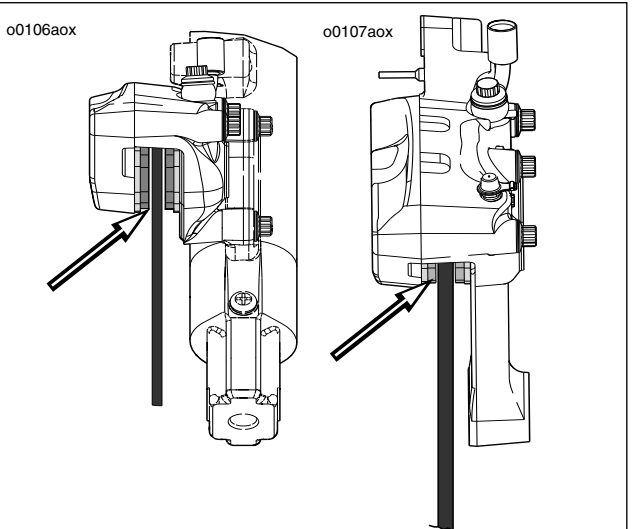


Figure 77. Brake Pads

TIRES

⚠WARNING

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00014a)

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

⚠WARNING

Match tires, tubes, air valves and caps to the correct wheel rim. Contact a Harley-Davidson dealer. Mismatching can result in damage to the tire bead, allow tire slippage on the rim or cause tire failure, which could result in death or serious injury. (00023a)

- 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.
- Same as original equipment tires should be used. Other tires may not fit correctly, could adversely affect handling, and may be hazardous to use.

⚠WARNING

Tires are a critical safety component. Contact a Harley-Davidson dealer for tire repair or replacement. Improper tire service can adversely affect stability and handling, which could result in death or serious injury. (00057a)

⚠WARNING

Replace punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the demounted tire by a Harley-Davidson dealer. Speed should NOT exceed 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 80 mph (130 km/h). Failure to follow this warning could result in death or serious injury. (00015a)

⚠WARNING

Striking an object, such as a curb, can cause internal tire damage. If an object is struck, remove and inspect both the inside and outside of the tire. A damaged tire can adversely affect stability and handling, which could result in death or serious injury. (00058a)

TIRE REPLACEMENT

See Figure 78. Tread wear indicator bars will appear on tire tread surfaces when 1/32 in. (0.8 mm) or less of tire tread remains. Arrows on tire sidewalls pinpoint location of wear bar indicators. Always replace tires before they reach the tread wear indicator bars 1/32 in. (0.8 mm) tread pattern depth remaining.

⚠WARNING

Harley-Davidson tires are equipped with wear bars that run horizontally across the tread. When wear bars become visible and only 1/32 in. (0.8 mm) tread depth remains, replace tire immediately. Using a worn tire can adversely affect stability and handling, which could result in death or serious injury. Use only Dunlop Harley-Davidson replacement tires. (00090a)

New tires are needed if any of the following conditions exist.

1. Tread wear indicator bars become visible on the tread surfaces.
2. Tire cords or fabric become visible through cracked sidewalls, snags or deep cuts.
3. A bump, bulge or split in the tire.
4. Puncture, cut or other damage to the tire that cannot be repaired.

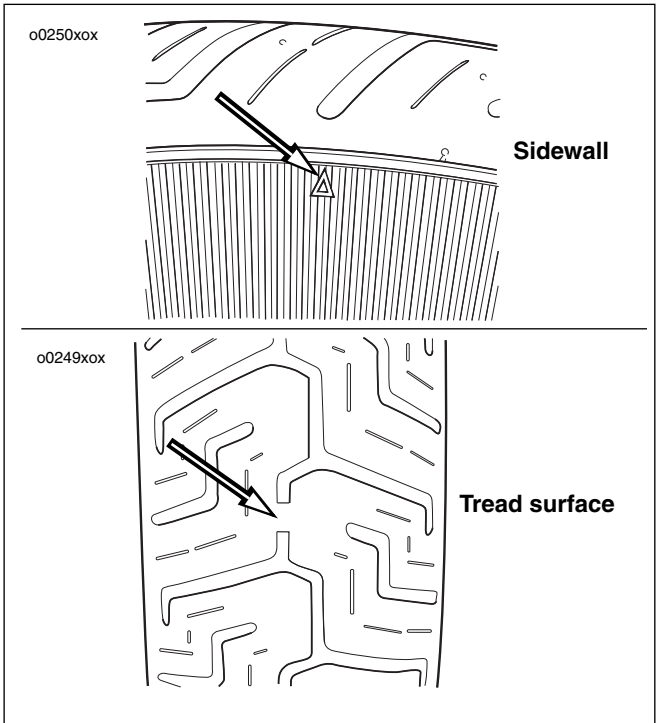


Figure 78. Tread Wear Indicators FLT/FLH Models

VEHICLE ALIGNMENT

Refer to Table 52. The stabilizer links and engine mounts should be checked for wear at regular intervals.

Vehicle alignment is important. Vehicle stability is adversely affected if wheels are out of alignment. Major alignment of the front and rear wheel is partially controlled by one or two stabilizer links. One at the top of the engine and one at the front of the engine.

⚠WARNING

Do not change stabilizer link adjustment. Changing adjustment can adversely affect stability, which could result in death or serious injury. (00059a)

See your Harley-Davidson dealer for this service.

Vehicle alignment should be checked by dealer after major disassembly or diagnostic procedure.

⚠WARNING

Only a Harley-Davidson dealer should perform vehicle alignment. Improper alignment can adversely affect stability and handling, which could result in death or serious injury. (00060a)

SHOCK ABSORBERS

Refer to Table 52. Shock absorbers and rubber bushings should be inspected for leaks and bushing deterioration at specified intervals.

SPARK PLUGS

Refer to Table 52. Check the spark plugs at regular intervals.

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 any electrical wires. Pulling on electrical wires may damage the internal conductor causing high resistance, which may result in minor or moderate injury. (00168a)

Before installing spark plugs, the gap should be checked and adjusted if necessary to 0.038-0.043 in. (0.97-1.09 mm).

Use H-D 6R12 spark plugs in your motorcycle.

Spark plugs must be tightened to the torque specified for proper heat transfer. Tighten spark plugs to 12-18 ft-lbs (16.27-24.40 Nm) per spark plug.

NOTE

If a torque wrench is not available, tighten plugs finger tight; then tighten an additional one quarter turn with a spark plug wrench.

IGNITION

The engines in these motorcycles 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.

NOTES

- *The ignition control unit monitors engine load; in certain transient load conditions (as the throttle is opened) the timing changes from normal to fully advanced. At this point, the operator can sometimes hear a noise that is similar to pre-ignition detonation.*
- *This noise should not be confused with detonation, which can be stopped by the use of a higher grade fuel. It is caused by the instant pressure rise in the combustion chambers as the spark advances rapidly. This noise doesn't affect engine performance.*

CARBURETOR

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

Refer to Table 52. Carburetor controls include throttle, enrichener and idle speed adjusting screw. Operation should be checked and adjusted at specified intervals. Enrichener tension should be inspected at regular intervals.

CAUTION

Operation at higher altitudes (approximately 4000 ft. (1200 meters) elevation) can require carburetor modifications for best engine performance. See a Harley-Davidson dealer for these adjustments. Failure to do so could result in equipment damage. (00206a)

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

AIR CLEANER

See Figure 79. The engine air cleaner is a paper/wire mesh air filter element.

Remove air cleaner cover and inspect filter element at regular intervals, more often under dusty conditions.

The paper/wire mesh air filter element should be washed in luke warm water with a mild detergent.

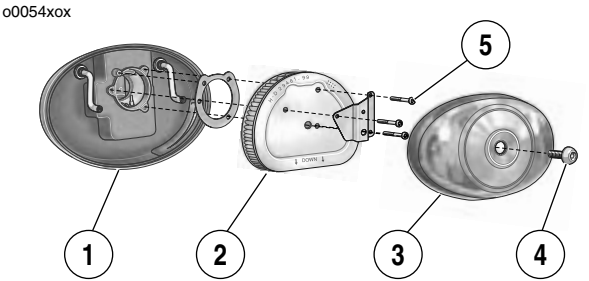
⚠WARNING

Compressed air can pierce the skin and flying debris from compressed air could cause serious eye injury. Wear safety glasses when working with compressed air. Never use your hand to check for air leaks or to determine air flow rates. (00061a)

- Allow filter to either air dry or blow it dry, from the inside, with low pressure air 32 psi maximum (221 kPa).
- Do not use an air cleaner filter oil on the Harley-Davidson paper/wire mesh air filter element.

CAUTION

Install air filter before running engine. Failure to do so can draw debris into the engine and could result in engine damage. (00207a)



1. **Backplate**
2. **Filter element**
3. **Cover**
4. **Cover screw, 36-60 in-lbs (4.07-6.78 Nm)**
5. **Screws, T27 Torx, 20-40 in-lbs (2.26-4.52 Nm)**

Figure 79. Air Cleaner

HEADLAMP

The headlamps are replaceable quartz halogen bulb type.

NOTE

See the appropriate service manual for more details

CAUTION

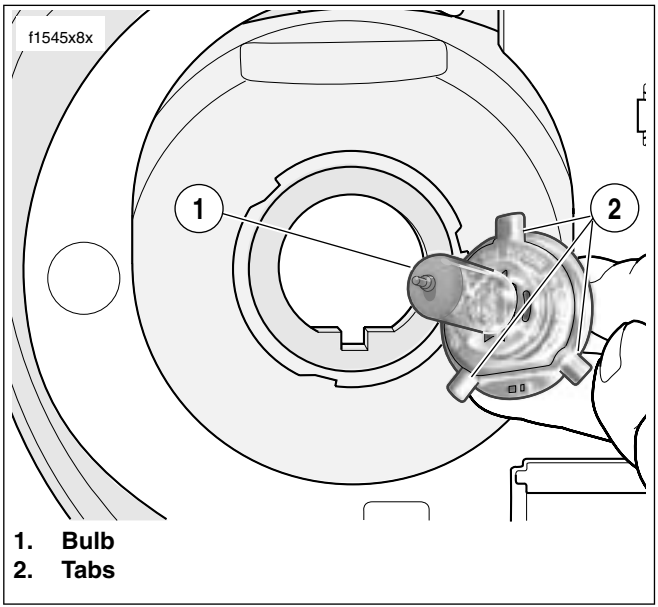
When replacement is required, use only the specified sealed beam unit or bulb, available from a Harley-Davidson dealer. An improper wattage sealed beam or bulb, can cause charging system problems. (00209a)

CAUTION

Never touch the quartz bulb. Fingerprints will etch the glass and decrease bulb life. Grab the bulb with paper or a clean, dry cloth. Failure to do so could result in bulb damage. (00210a)

WARNING

Handle bulb carefully and wear eye protection. Bulb contains Halogen gas under pressure, which, if not handled carefully, could cause serious eye injury. (00062a)



1. **Bulb**
2. **Tabs**

Figure 80. Headlamp Bulb (FLHR/FLHT)

Check headlamp beam for proper height and lateral alignment.

FLHT, FLHR HEADLAMP ADJUSTMENT

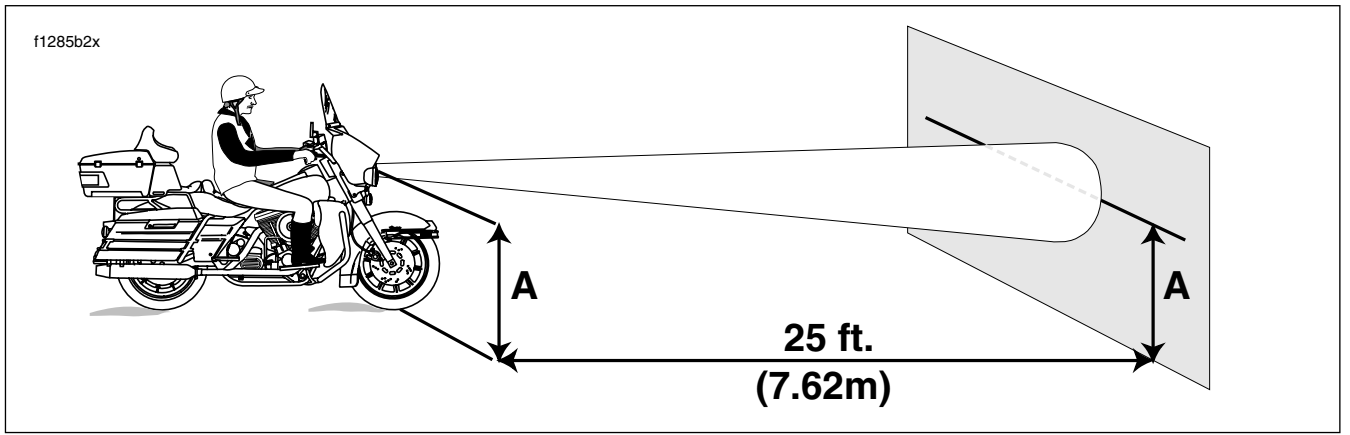


Figure 81. Check Headlamp Alignment

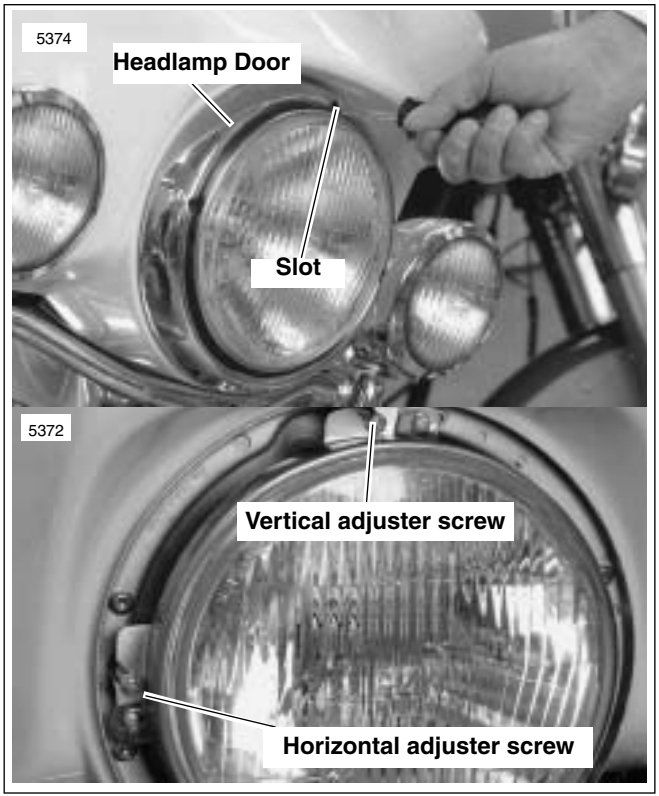


Figure 82. Adjust Headlamp Alignment FLHR (FLHT/C/U Model Shown)

⚠WARNING

The automatic-on headlamp feature provides increased visibility for riders. Be sure headlamp is on at all times. Low visibility of rider can result in death or serious injury. (00030a)

1. Verify correct front and rear tire inflation pressure.
2. Place the motorcycle on a level floor or pavement in an area with minimum light.
3. See Figure 81. Point the front of the motorcycle toward a screen or wall which is 25 feet (7.62 m) from where patch of front tire contacts floor (i.e. - directly below front axle).
4. See Figure 81. Draw a horizontal line on screen or wall (dimension “A”) that is exactly the same height above the floor as the headlamp center.
5. Have a person whose weight is roughly the same as that of the principal rider sit on the motorcycle seat. The weight of the rider will compress the vehicle suspension slightly.
6. Stand the motorcycle upright with both tires resting on the floor and with the front wheel held in straight alignment (directly forward).
7. Turn the ignition/headlamp key switch to IGNITION. Set the Light Switch on the left handlebar to Hi(gh) beam.

8. Check the light beam for proper height alignment. The center of the main beam of light should be even with the horizontal line on the screen or wall.
9. Check the light beam for proper lateral alignment. The main beam of light should be directed straight ahead (i.e., equal area of light to right and left of center).

NOTE

The headlamp adjustment can be performed without removing the headlamp door (chrome ring).

10. If the headlamp alignment requires adjustment, use slots in headlamp door to insert Phillips screw driver between headlamp housing and rubber gasket. Turn the vertical adjuster screw as necessary to adjust the headlamp vertically. Turn the horizontal adjuster screw to adjust the headlamp horizontally. See Figure 82.

FLTR HEADLAMP ADJUSTMENT

Check headlamp beam for proper height and lateral alignment.

⚠WARNING

The automatic-on headlamp feature provides increased visibility for riders. Be sure headlamp is on at all times. Low visibility of rider can result in death or serious injury. (00030a)

1. Verify correct front and rear tire inflation pressure.
2. Place the motorcycle on a level floor or pavement in an area with minimum light.
3. See Figure 81. Point the front of the motorcycle toward a screen or wall which is 25 feet (7.62 m) from where patch of front tire contacts floor (i.e. - directly below front axle).
4. Draw a horizontal line on screen or wall that is exactly the same height above the floor as the headlamp center.
5. Have a person whose weight is roughly the same as that of the principal rider sit on the motorcycle seat. The weight of the rider will compress the vehicle suspension slightly.
6. Stand the motorcycle upright with both tires resting on the floor and with the front wheel held in straight alignment (directly forward).

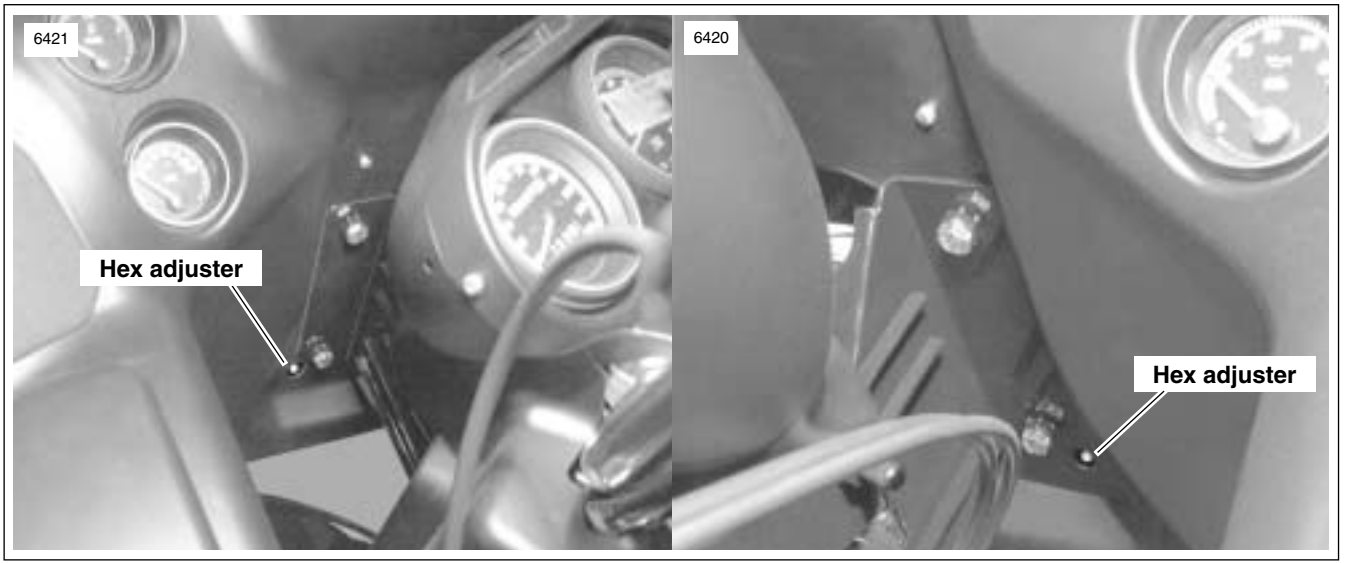


Figure 83. Headlamp Adjustment (FLTR)

7. Turn the Ignition/headlamp key switch to IGNITION. Set the Light Switch on the left handlebar to Hi(gh) beam.
8. Check the light beam for proper height alignment. The center of the main beam of light should be even with the horizontal line on the screen or wall.
9. Check the light beam for proper lateral alignment. The main beam of light should be directed straight ahead (i.e., equal area of light to right and left of center).
10. See Figure 83. Locate the hex adjusters near the bottom edge of the inner fairing. Turning the adjusters causes the double headlamp housing to pivot around its upper mount.

11. Using a 4.5 mm, 1/4 inch drive socket (Snap-On TMM4.5) and flexible driver (Snap-On TM62B), adjust the headlamp horizontally by turning either the left or right side adjuster. Turn both adjusters equally to adjust the headlamp vertically. Adjuster rotation moves the headlamp beam as follows.

Table 43. FLTR Hex Adjuster Rotation

HEX ADJUSTER	ROTATION	BEAM MOVEMENT
Left Only	Clockwise	To the Right
Right Only	Counterclockwise	
Left Only	Counterclockwise	To the Left
Right Only	Clockwise	
Left and Right Equally	Clockwise	Upward
Left and Right Equally	Counterclockwise	Downward

ALTERNATOR CHARGING RATE AND VOLTAGE REGULATOR

The alternator output is controlled and changed to direct current by the voltage regulator located at the front of the engine. The voltage regulator increases the charging rate when battery is low and lamps are lit, decreases the charging rate when lamps are lit and battery charge is up.

CAUTION

It is possible to overload your motorcycle's charging system by adding too many electrical accessories. If your combined electrical accessories consume more electrical current than your vehicle's charging system can produce, the electrical consumption can discharge the battery and cause vehicle electrical system damage. See a Harley-Davidson dealer for advice about the amount of current consumed by additional electrical accessories, or for necessary wiring changes. (00211a)

NOTES

- *This unit requires no interval attention. If any electrical system trouble is experienced that might be traceable to the alternator or voltage regulator, or if the battery lamp comes on, the motorcycle should be taken to your Harley-Davidson dealer who has the necessary electrical testing equipment to give the required attention.*
- *For model specific information regarding the voltage regulator, refer to the appropriate Service Manual or see your Harley-Davidson dealer.*

BATTERY

General

See Figure 84. All Harley-Davidson batteries are permanently sealed, maintenance-free, valve regulated lead/calcium and sulfuric acid batteries. The batteries are shipped pre-charged and ready to be put into service. Do not attempt to open these batteries for any reason.

The battery is located under the motorcycle seat.

⚠WARNING

Battery posts, terminals and related accessories contain lead and lead components, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling. (00019a)

⚠WARNING

Batteries contain sulfuric acid, which could cause severe burns to eyes and skin. Wear a protective face shield, rubberized gloves and protective clothing when working with batteries. KEEP BATTERIES AWAY FROM CHILDREN. (00063a)

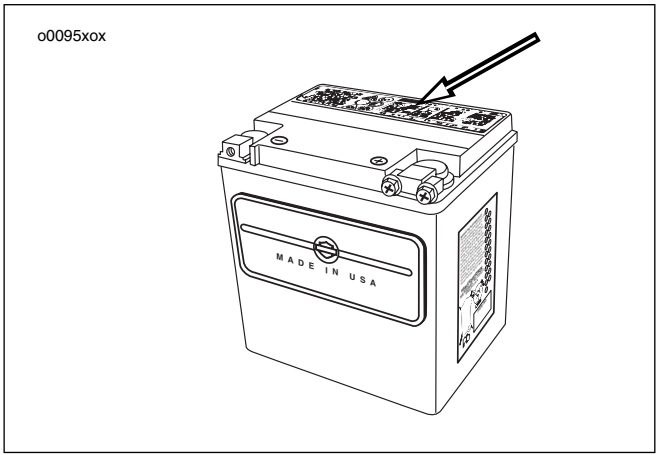


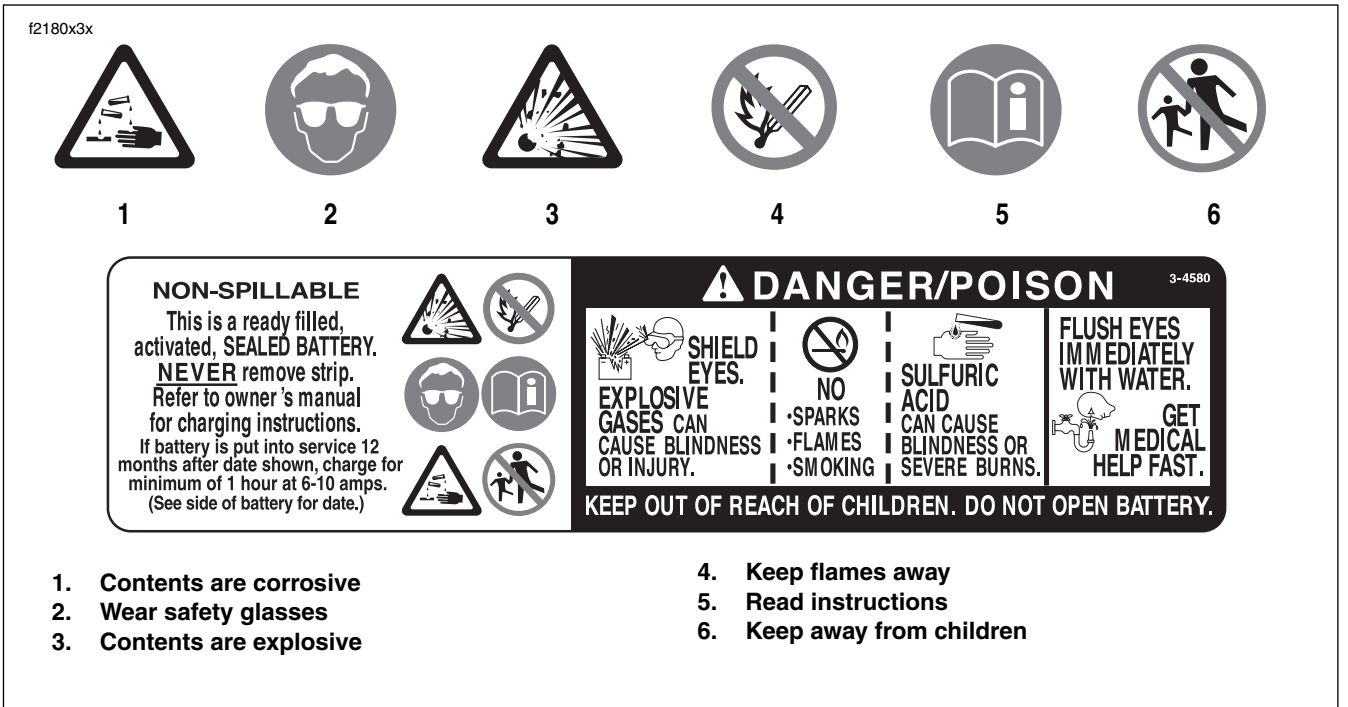
Figure 84. Battery Warning Label Location

Table 44. Battery Electrolyte Antidote

EXTERNAL	Flush with water.
INTERNAL	Drink large quantities of milk or water, followed by milk of magnesia, vegetable oil, or beaten eggs. Call doctor immediately.
EYES	Flush eyes with water, and get immediate medical attention.

⚠WARNING

Never remove warning label attached to top of battery. Failure to read and understand all precautions contained in warning, could result in death or serious injury. (00064a)



1. **Contents are corrosive**
2. **Wear safety glasses**
3. **Contents are explosive**
4. **Keep flames away**
5. **Read instructions**
6. **Keep away from children**

Figure 85. Battery Warning Label

BATTERY TESTING

Voltmeter Test

Before you can test your battery you must read the section containing information about seat removal and inspection.

Refer to Table 45. The voltmeter test provides a general indicator of battery condition. Check the voltage of the battery to verify that it is in a 100% fully charged condition. If the open circuit (disconnected) voltage reading is below 12.6V, charge the battery and then re-check the voltage after the battery has set for one to two hours.

Table 45. Voltmeter Test

READING (VOLTS)	% OF CHARGE
12.8	100
12.6	75
12.3	50
12.0	25
11.8	0

BATTERY DISCONNECTION AND REMOVAL

Before you can inspect or disconnect your battery you must read the section containing information about seat removal.

⚠WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

1. Unthread bolt and remove battery negative cable (black) from battery negative (-) terminal.
2. Unthread bolt and remove battery positive cable (red) from battery positive (+) terminal.
3. Loosen bolt to move lip of hold-down clamp off edge of battery.
4. Remove battery from battery box.

CLEANING AND INSPECTION

Battery top must be clean and dry. Dirt and electrolyte on top of the battery can cause battery to self-discharge.

1. Clean battery top with a solution of baking soda (sodium bicarbonate) and water (5 teaspoons baking soda per quart or liter of water).
2. When the solution stops bubbling, rinse off the battery with clean water.
3. Clean cable connectors and battery terminals using a wire brush or sandpaper. Remove any oxidation.
4. Inspect the battery screws, clamps and cables for breakage, loose connections and corrosion. Clean clamps.
5. Check the battery posts for melting or damage caused by overtightening.
6. Inspect the battery for discoloration, raised top or a warped or distorted case, which might indicate that the battery has been frozen, overheated or overcharged.
7. Inspect the battery case for cracks or leaks.

BATTERY CHARGING

Safety Precautions

Never charge a battery without first reviewing the instructions for the charger being used. In addition to the manufacturer's instructions, follow these general safety precautions:

- **Always wear proper eye, face and hand protection.**
- **Always charge batteries in a well-ventilated area.**
- **Turn the charger OFF before connecting the leads to the battery to avoid dangerous sparks.**
- **Never try to charge a visibly damaged or frozen battery.**
- **Connect the charger leads to the battery; red positive (+) lead to the positive (+) terminal and black negative (–) lead to the negative (–) terminal. If the battery is still in the vehicle, connect the negative lead to the chassis ground. Be sure that the ignition and all electrical accessories are turned off.**
- **Make sure that the charger leads to the battery are not broken, frayed or loose.**
- **If the battery becomes hot, or if violent gassing or spewing of electrolyte occurs, reduce the charging rate or turn off the charger temporarily.**
- **Always turn the charger OFF before removing charger leads from the battery to avoid dangerous sparks.**

Charging Battery

Charge the battery if any of the following conditions exist:

- Vehicle lamps appear dim.
- Electric starter sounds weak.
- Battery has not been used for an extended period of time.

⚠WARNING

Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well-ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. KEEP BATTERIES AWAY FROM CHILDREN. (00065a)

1. See BATTERY TESTING section. Perform a voltmeter test to determine the state of charge. If battery needs to be charged, proceed to step 2.

CAUTION

Remove battery from motorcycle before charging. Electrolyte leakage will damage motorcycle parts. (00213a)

2. See DISCONNECTION AND REMOVAL section.
3. Remove the battery from the motorcycle.
4. Place the battery on a level surface.

⚠WARNING

Unplug or turn OFF battery charger before connecting charger cables to battery. Connecting cables with charger ON can cause a spark and battery explosion, which could result in death or serious injury. (00066a)

CAUTION

Do not reverse the charger connections described in the following steps or the charging system of the motorcycle could be damaged. (00214a)

5. Connect the red battery charger lead to the positive (+) terminal of the battery.
6. Connect the black battery charger lead to the negative (-) terminal of the battery.

NOTE

If the battery is still in the vehicle, connect the negative (-) lead to the chassis ground. Be sure that the ignition and all electrical accessories are turned off.

7. Refer to Table 46. Step away from the battery and turn on the charger.

⚠WARNING

Unplug or turn OFF battery charger before disconnecting charger cables from battery. Disconnecting clamps with charger ON can cause a spark and battery explosion, which could result in death or serious injury. (00067a)

8. After the battery is fully charged, disconnect the black battery charger lead to the negative (-) terminal of the battery.
9. Disconnect the red battery charger lead to the positive (+) terminal of the battery.
10. Mark the charging date on the battery.

Table 46. 28 Amp Hour Battery Charging Rates/Times

READING (VOLTS)	% OF CHARGE	3 AMP CHARGER	6 AMP CHARGER	10 AMP CHARGER	20 AMP CHARGER
12.8	100	-	-	-	-
12.6	75	2.5 hours	1.25 hours	45 minutes	25 minutes
12.3	50	5 hours	2.5 hours	1.5 hours	50 minutes
12.0	25	7.5 hours	3.75 hours	2.25 hours	70 minutes
11.8	0	10 hours	5 hours	3 hours	1.5 hours

NOTES

- *The figures listed above assume that the battery is charging at room temperature. If warmer than room temperature, use a slightly shorter charging time. If colder, use a slightly longer charging time.*
- *The use of constant current chargers to charge sealed maintenance-free batteries is not recommended. Any overcharge will cause dry-out and premature battery failure. If a constant current charger is the only type available, do not exceed the charge times listed above and do not continue charging the battery if it gets hot. When charging, never exceed 15 volts for more than 30 minutes.*

BATTERY INSTALLATION AND CONNECTION

CAUTION

Connect the cables to the correct battery terminals. Failure to do so could result in damage to the motorcycle electrical system. (00215a)

⚠WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

⚠WARNING

Do not allow positive (+) battery cable to contact ground with negative (-) cable connected. Resulting sparks can cause a battery explosion, which could result in death or serious injury. (00069a)

1. Place the fully charged battery into the battery box, terminal side forward.

CAUTION

Do not over-tighten bolts on battery terminals. Use recommended torque values. Over-tightening battery terminal bolts could result in damage to battery terminals. (00216a)

2. Insert bolt through battery positive cable (+) (red) into threaded hole of battery positive (+) terminal.
3. Tighten bolt to 60-96 **in-lbs** (6.8-10.8 Nm).
4. Insert bolt through battery negative cable (black) into threaded hole of battery negative (-) terminal.
5. Tighten bolt to 60-96 **in-lbs** (6.8-10.8 Nm).

CAUTION

Keep battery clean and lightly coat terminals with petroleum jelly to prevent corrosion. Failure to do so could result in damage to battery terminals. (00217a)

6. Apply a light coat of petroleum jelly or corrosion retardant material to both battery terminals.
7. Rotate the hold-down clamp so that the lip (with rubber pad) rests on the edge of the battery.
8. Tighten the clamp bolt to 15-20 ft-lbs (20.3-27.1 Nm).

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

9. Install seat.

BATTERY STORAGE

CAUTION

Turn engine over a few times to be sure there is no oil in the crankcase and that all oil has been pumped back into the oil tank. Stop engine and re-check oil level. Failure to do so can result in engine damage. (00071a)

CAUTION

Do not allow battery to completely discharge. The electrolyte in a discharged battery will freeze. The more discharged a battery is, the more easily it can freeze and crack the battery case. (00218a)

See BATTERY CHARGING section. If the motorcycle will not be operated for several months, such as during the winter season, remove the battery from the motorcycle and fully charge.

See Figure 86. Self-discharge is a normal condition and occurs continuously at a rate that depends on the ambient temperature and the battery's state of charge.

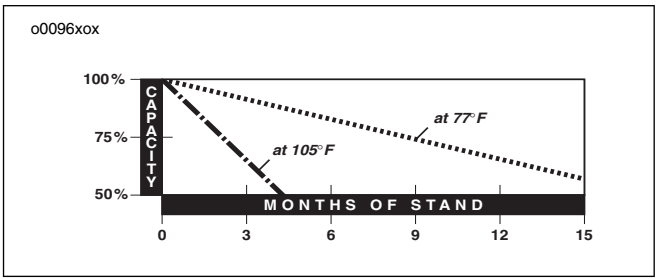


Figure 86. Effect of Temperature on Battery Self-Discharging Rate

- Batteries discharge at a faster rate at higher ambient temperatures.
- To reduce the self-discharge rate, store battery in a cool (not freezing), dry place.
- Charge the battery every month if stored at temperatures below 60˚ F. (16˚ C).
- Charge the battery more frequently if stored in a warm area above 60˚ F. (16˚ C).

NOTE

The H-D Battery Tender Jr. Automatic Battery Charger (Part No. HD-94654-98 for U.S. only) may be used to maintain battery charge for extended periods of time without risk of overcharging or boiling.

When returning a battery to service after storage, refer to the instructions in the BATTERY CHARGING section.

CAUTION

Do not trickle charge battery more than 24 hours at a time. Doing so could result in battery damage. (00219a)

JUMP-STARTING PROCEDURE

Harley-Davidson does not recommend jump-starting a motorcycle. However, there may be circumstances when it is necessary to do so. Therefore, we suggest jump-starting be performed as follows:

⚠WARNING

Be sure jumper cables touch only appropriate battery terminals or ground. Allowing jumper cables to touch each other can result in sparks and a battery explosion, which could result in death or serious injury. (00072a)

NOTE

This procedure presumes the BOOSTER battery is in another vehicle.

CAUTION

Harley-Davidson motorcycles have a 12 Volt battery. Be sure the booster vehicle has a 12 Volt system. Failure to do so could result in vehicle damage. (00220a)

1. Turn off **ALL** unnecessary lamps and accessories.

Positive Cable

2. See Figure 87. Connect one end of a jumper cable to the DISCHARGED battery positive (+) terminal.
3. Connect the other end of the same cable to the BOOSTER battery positive (+) terminal.

Negative Cable

4. Connect one end of a jumper cable to the BOOSTER battery negative (-) terminal.

⚠WARNING

Do not connect negative (-) cable to or near the discharged battery negative (-) terminal. Doing so could cause a spark and explosion, which could result in death or serious injury. (00073a)

CAUTION

Do not connect the negative (-) cable to painted or chrome parts. Doing so could result in discoloration at the attachment point. (00221a)

5. Connect other end of the same cable to a **power train ground**, (away from the DISCHARGED battery).
6. Start motorcycle.
7. Disconnect cables in reverse order of steps 2, 3, 4, 5. That is: steps 5, 4, 3, 2.

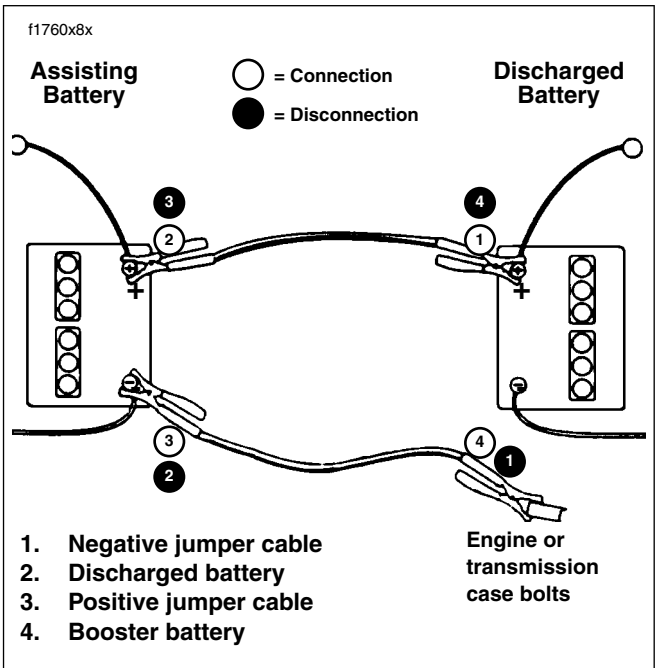


Figure 87. Jump Start Cable Connections

FUSES

All Touring models have fuses located under left side cover.

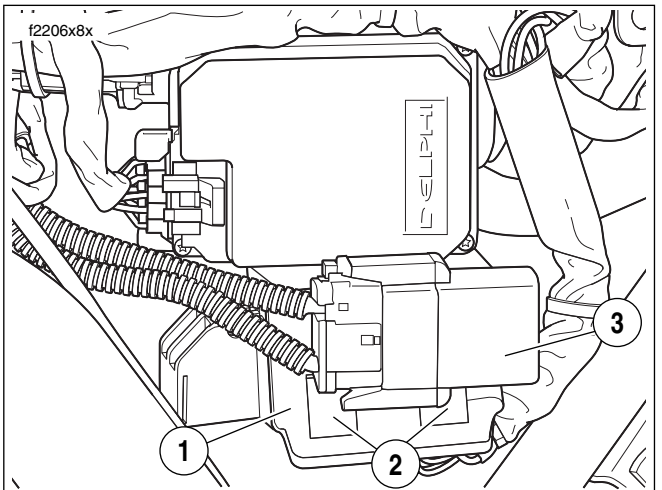
CAUTION

Do not skip any steps for fuse replacement. Skipping fuse replacement steps can result in damage to the sound system and/or other motorcycle systems. (00223a)

FUSE REPLACEMENT

Saddlebag/Side Cover Removal

1. See Figure 16. Place the ignition/headlamp key switch in the OFF position.
2. Remove saddlebag.
3. See Figure 88. Gently pull side cover from frame downtubes (no tools required).



1. **Fuse block**
2. **Tabs**
3. **Maxi-fuse holder**

Figure 88. Left Side Cover Removed

System Fuses

1. Remove left saddlebag and side cover.
2. To remove of maxi-fuse holder from cover, slide rearward to disengage.
3. Pull fuse blocks from tabs on mounting panel. Tabs on panel fit into slots on each side of fuse block cover.
4. To remove cover, raise latches slightly to disengage tabs on fuse blocks
5. See Figure 90. Remove fuse and inspect the element.

CAUTION

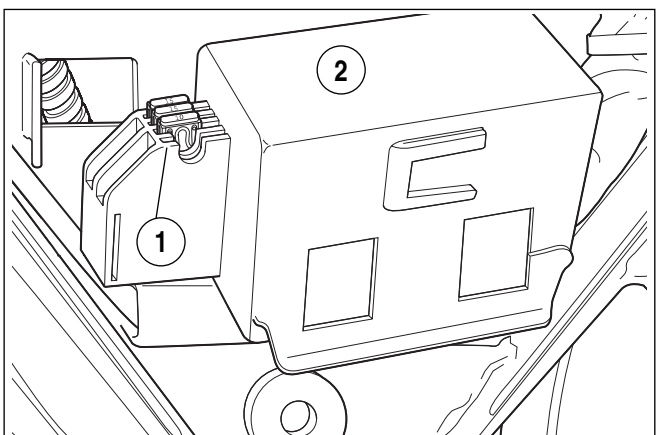
Always use replacement fuses that are of the correct type and amperage rating. Use of incorrect fuses can result in damage to electrical systems. (00222a)

6. Replace the fuse if the element is burned or broken.

NOTES

- *Automotive type ATO fuses are used for replacements. Two spare fuses can be found in the fuse block.*
- *See Figure 90. The fuse labeled security provides basic turn signal functionality on vehicles without a factory-installed security system. Do not remove this fuse or use it as a replacement fuse for other systems.*

7. Slide cover over fuse blocks until latches fully engage tabs on blocks.
8. Slide fuse blocks into position on mounting panel.
9. Tabs on panel fit into slots on each side of fuse block cover.
10. Install maxi-fuse holder to the main fuse block.
11. Install left sidecover and saddlebag.

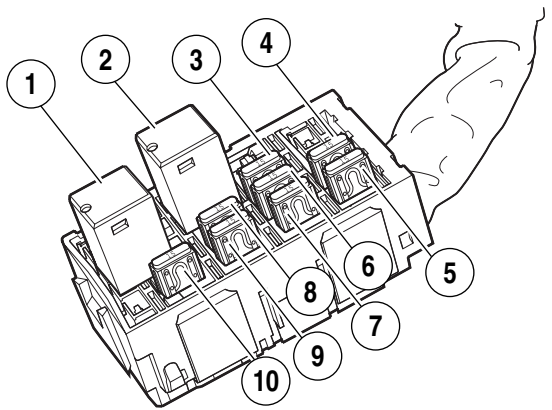


1. Spare fuse holder
2. Fuse block cover

Figure 89. Spare Fuse Holder

f2210x8x

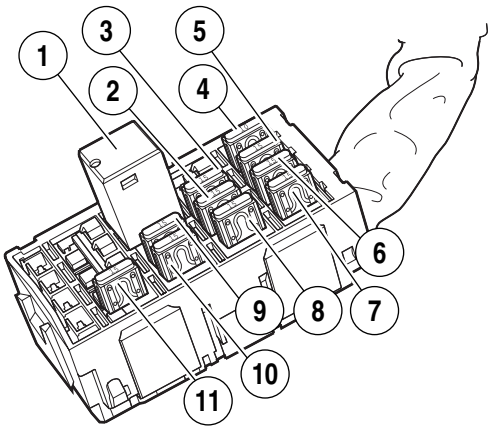
FLHR/C/S



1. Starter relay
2. Brake lamp relay
3. Battery
4. Brakes/cruise
5. Instruments
6. Accessory
7. Lighting
8. P&A
9. Ignition
10. Headlamp

f2204x8x

FLTR,FLHT/C/U



1. Brake lamp relay
2. Accessory
3. Battery
4. Radio power*
5. Radio memory*
6. Brakes/cruise
7. Instruments
8. Lighting
9. P&A
10. Ignition
11. Headlamp

* if equipped

Figure 90. Fuse Blocks (Under Left Side Cover)

EFI Fuses

Removal

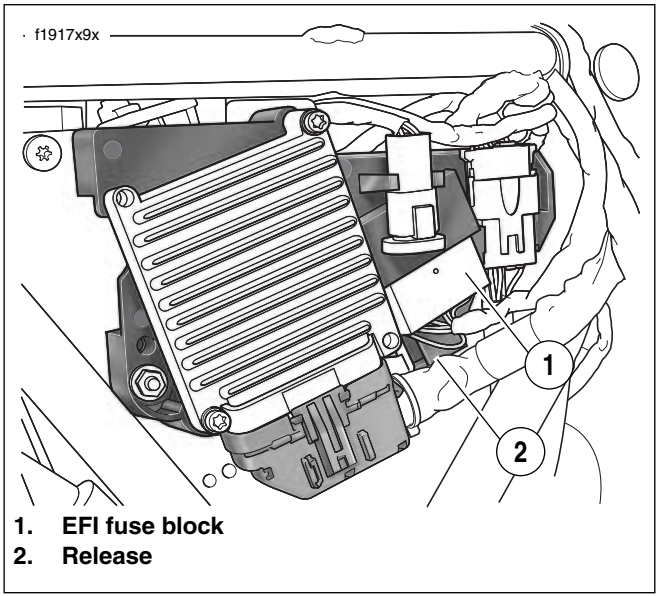
1. Remove right saddlebag and side cover.
2. Gently pull side cover from frame downtubes (no tools required).
3. See Figure 91. Locate painted white dot on inboard side of fuse block. Pressing on dot, gently tug on conduit to release tabs on fuse block from slots in bracket.
4. See Figure 92. Pull fuses from slots in fuse block and inspect for damage. Replace fuse if the element is burned or broken. automotive type ATO fuses are used.

NOTE

One extra 15 amp fuse is located in the EFI fuse block.

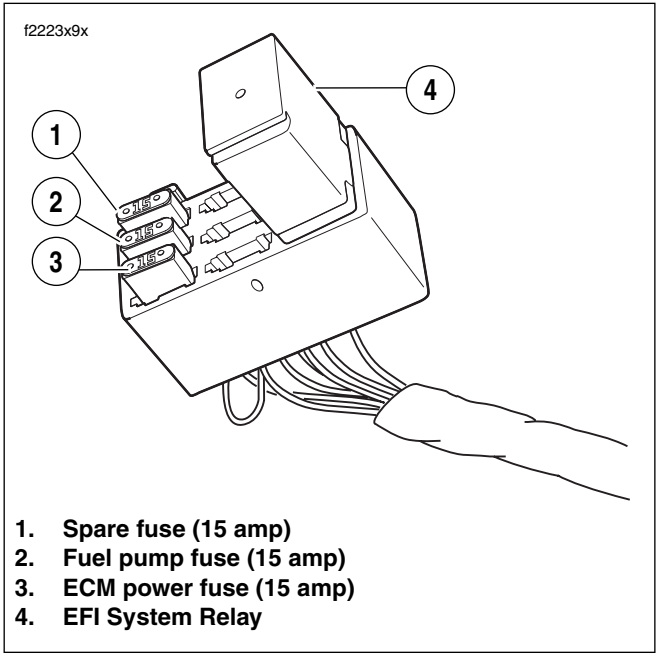
Installation

1. See Figure 92. Insert fuse in the appropriate slot.
2. Engage tabs on fuse block with slots in bracket. Slide fuse block up into cavity. Gently tug on conduit to verify that fuse block is locked in place.



1. EFI fuse block
2. Release

Figure 91. Electrical Bracket Assembly (Right Side Cover for EFI Models)



1. **Spare fuse (15 amp)**
2. **Fuel pump fuse (15 amp)**
3. **ECM power fuse (15 amp)**
4. **EFI System Relay**

Figure 92. EFI Fuse Block

Saddlebag/Side Cover Installation

1. Align barbed studs in side cover with grommets in frame downtubes and push firmly into place (no tools required).
2. Position saddlebag on vehicle.
3. Place flat washers on bail head studs.
4. Insert stud through holes in saddlebag and front mounting bracket.
5. When groove on stud engages wire form of spring plate on inboard side of bracket, turn stud clockwise a full 1/4 turn until it snaps in place.
6. Install rear bail head stud in the same manner.

MAXI-FUSE OR MAIN FUSE

All models have a 40 amp fuse to protect the electrical components.

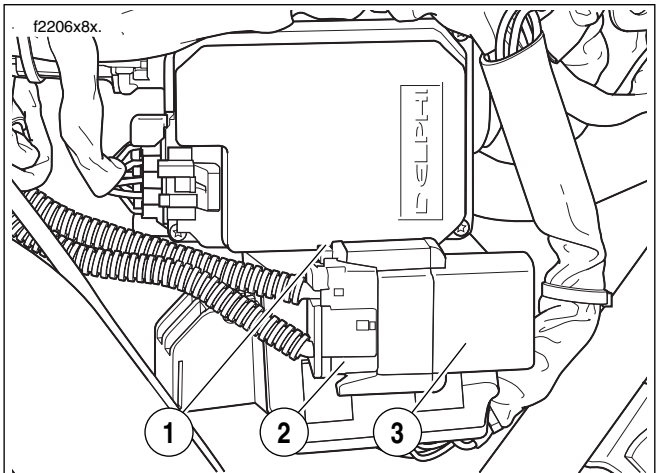
For electrical problems, it is best to see your Harley-Davidson dealer who has necessary parts and equipment to perform electrical services.

Removal

1. Remove left side saddlebag.
2. Gently pull side cover from frame downtubes (no tools required).
3. Depress latches on maxi-fuse holder and then slide cover rearward to disengage tongue from groove in fuse block cover.
4. See Figure 94. Pull maxi-fuse from holder.

Installation

1. Insert maxi-fuse into holder.
2. Slide cover forward to engage tongue in groove of fuse block cover and then insert maxi-fuse holder into cover until latches engage.
3. Align barbed studs in side cover with grommets in frame downtubes and push firmly into place (no tools required).
4. Install left side saddlebag.



1. **Latches**
2. **Fuse holder**
3. **Cover**

Figure 93. Fuse Box Cover and Maxi-Fuse

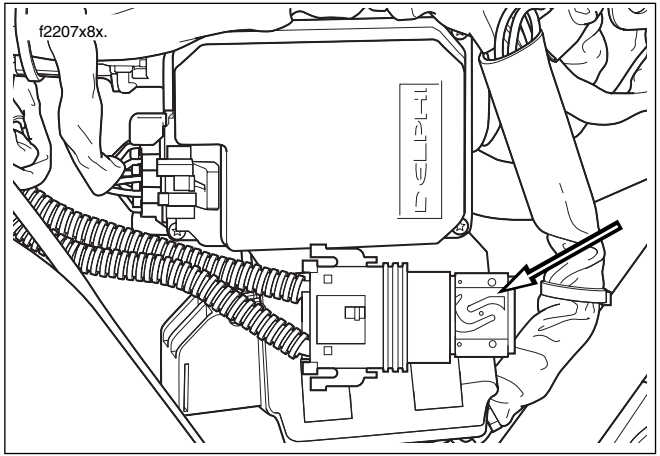


Figure 94. Maxi-Fuse Assembly

NOTE

Removal of the maxi-fuse will disable all systems except the starter motor/solenoid.

REPLACING THE MAXI-FUSE

All Touring models have a main fuse to protect the motorcycle wiring. This 40-amp maxi-fuse provides main battery power to the motorcycle. It is located in a fuse holder under the left side cover.

1. Remove left saddlebag assembly.
1. See Figure 94. Remove the left side cover.
2. Remove maxi-fuse assembly from fuse block.
3. Remove fuse holder from maxi-fuse cover.
4. Grasp the fuse holder in one hand, the plastic body of the maxi-fuse in the other, and pull the maxi-fuse straight out of the fuse holder.
5. Insert the prongs of the new maxi-fuse in fuse holder slots. Push maxi-fuse firmly down into the fuse holder.
6. Insert maxi-fuse holder in maxi-fuse cover.
7. Attach maxi-fuse assembly to fuse block.
8. Replace the left side cover.
9. Replace left saddlebag assembly.

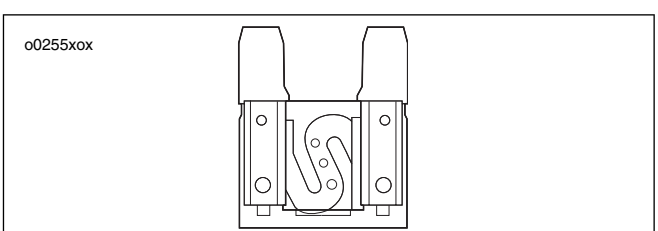


Figure 95. 40 Amp Maxi-Fuse

SEAT (FLHT)

Removal

1. Detach seat mounting bracket from top of rear fender by removing mounting fastener.
2. See Figure 96. Push seat rearward to free tongue (1) at front of seat from slot in frame backbone.
3. Detach seat from frame.

Installation

1. See Figure 97. Place seat on frame backbone.
2. See Figure 96. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone.
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket.
4. Install fastener.

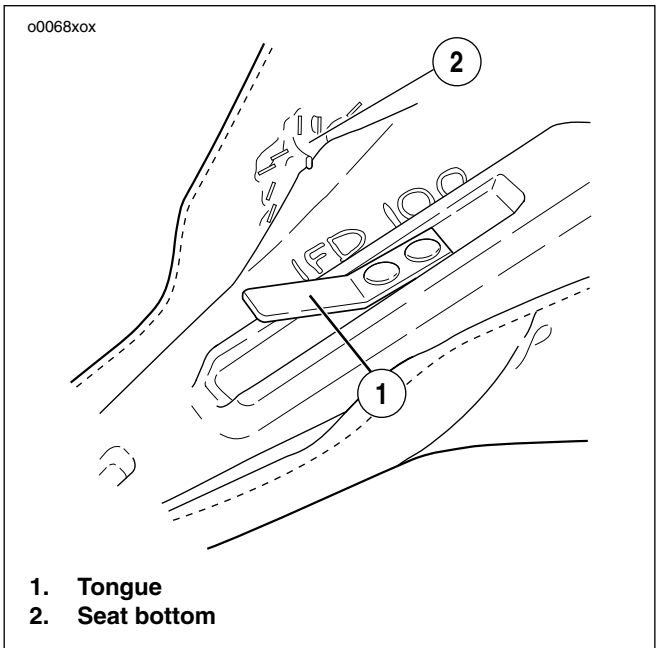
NOTE

If the seat retention nut is damaged or lost, see service manual for instructions.

⚠WARNING

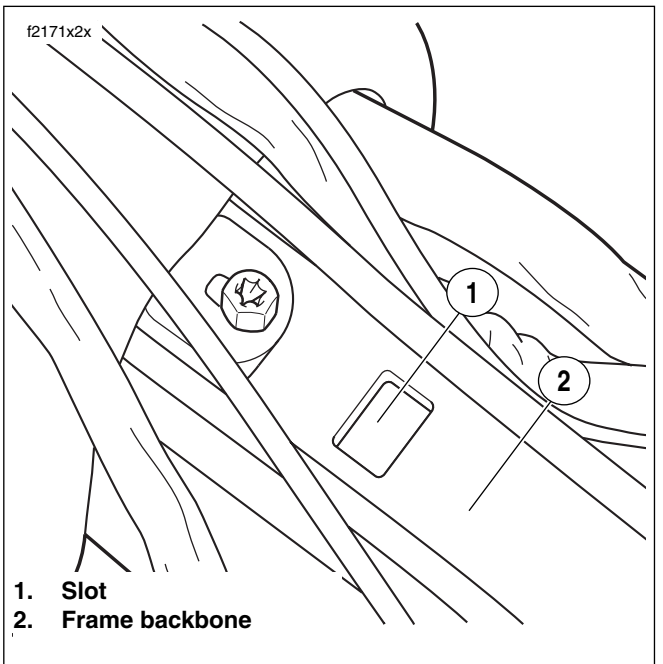
After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

5. Install seat.
6. Pull up on seat to verify that it is properly secured.



1. Tongue
2. Seat bottom

Figure 96. Seat Tongue (FLHT/FLTR)



1. Slot
2. Frame backbone

Figure 97. Seat Mounting Slot (FLHT/FLTR)

Seat (FLHTC/U)

Removal

1. See Tour-Pak Operation section. Open Tour-Pak to move passenger seat backrest out of the way.

NOTE

The Tour-Pak must be positioned to the rear to gain access to the seat mounting bracket screw. If the Tour-Pak is in the forward position, remove Tour-Pak and install in rearward position.

2. Detach seat mounting bracket from top of rear fender by removing seat mounting fastener.
3. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
4. See Figure 96. While pushing seat forward, raise rear of seat until bracket clears top of Tour-Pak. Push seat rearward slightly to free tongue at front of seat from slot in frame backbone.
5. Detach seat from frame.

Installation

1. See Figure 96. Place seat on frame backbone.
2. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
3. While raising rear of seat approximately 3 in. (76.2 mm), use other hand to firmly push front of seat downward and rearward until tongue engages slot in frame backbone.
4. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket.
5. Install fastener.

NOTE

If the seat retention nut is damaged or lost, see service manual for instructions.

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

6. Pull up on seat to verify that it is properly secured, front and rear.

Seat (FLHR)

Removal

1. See Figure 99. Detach passenger seat mounting bracket from top of rear fender by removing seat mounting fastener.
2. Slightly lift up back of passenger seat and carefully slide toward rear of vehicle to detach from front seat mounting bracket nuts.

NOTE

The FLHR seat can be converted to a solo seat by removal of the passenger section. When the solo seat configuration is desired, turn the passenger seat upside down and locate the chrome plug pressed into the seat frame hole.

3. See Figure 98. Remove the plug and press into the seat retention nut hole using finger pressure only.
4. Remove two nuts from studs to free front seat mounting bracket from rear fender.
5. See Figure 97. Push front seat rearward to free tongue from slot in frame backbone.

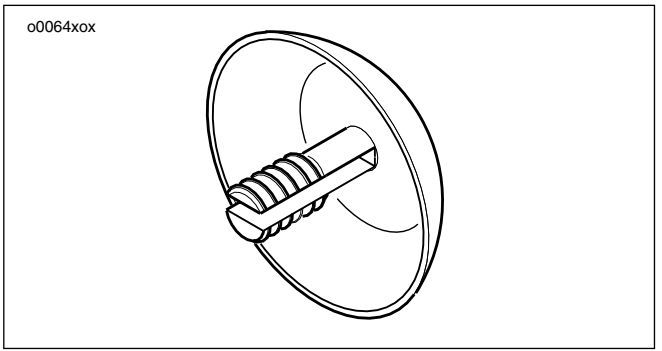


Figure 98. Seat Retention Nut Plug

Installation

1. Position front seat on frame with mounting bracket at rear.
2. See Figure 96. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone.
3. Push seat forward until studs are centered in slots of mounting bracket.
4. Install two nuts on studs to secure front seat mounting bracket to rear fender.
5. Position the seat strap.
6. Install passenger seat fitting slotted cuts on front bracket between the rounded caps and hex of the front seat mounting bracket nuts.
7. Push passenger seat forward until rear fender seat retention nut is centered in hole of rear mounting bracket.
8. Install fastener.

NOTE

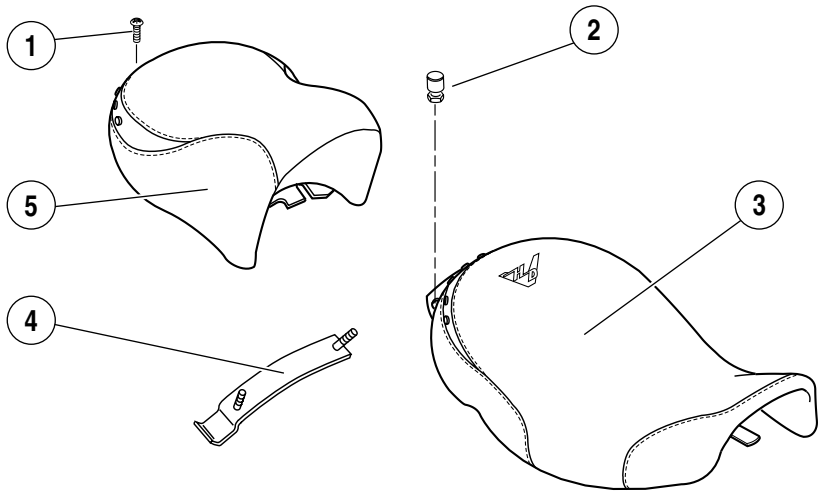
If the seat retention nut is damaged or lost, see service manual for instructions.

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

9. Pull up on front and rear seats to verify that they are properly secured.

o0070xox



1. **Screw**
2. **Nut**
3. **Front seat**
4. **Stud plate**
5. **Passenger seat**

Figure 99. Seat Assembly (FLHR)

Seat (FLHRC and FLHRS)

Removal

1. Remove saddlebag.
2. Remove fastener with flat washer. Then remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover.
3. See Figure 96. Using slots in seat, carefully pull passenger seat strap from seat.
4. Remove fastener to detach seat mounting bracket from top of rear fender.
5. Push seat rearward to free tongue at front of seat from slot in frame backbone.
6. Remove seat from frame.

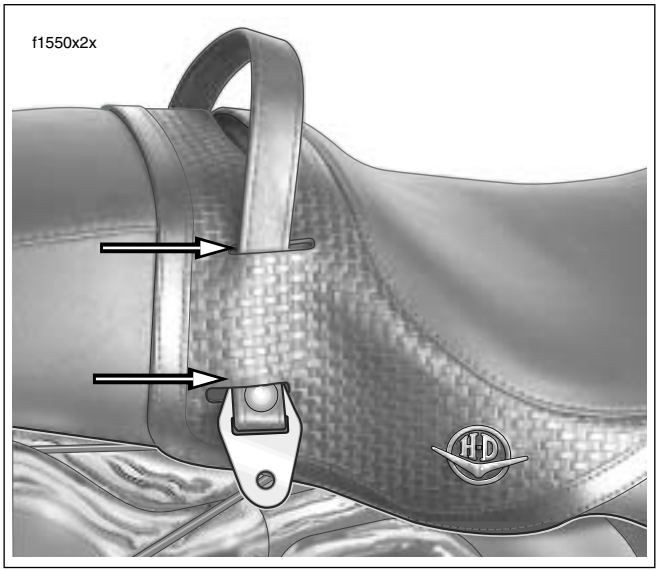


Figure 100. Strap Slots (FLHRC)

Installation

1. See Figure 96. Place seat on frame backbone.
2. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone.
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket.
4. Install fastener.

NOTE

If the seat retention nut is damaged or lost, see Seat Retention Nut Replacement in the appropriate service manual for instructions.

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

5. Pull up on seat to verify that it is properly secured, front and rear.
6. Using slots in seat, route free end of passenger seat strap to left side of vehicle. Insert bolt with flat washer through passenger seat strap and slotted hole of saddlebag front mounting bracket.
7. Insert bolt into forward hole in chrome frame tube cover. Snug saddlebag front mounting bracket bolt, but do not tighten.
8. Install saddlebag.

NOTE

If necessary, rotate saddlebag front mounting bracket to align spring plate with hole in saddlebag.

9. Tighten saddlebag front mounting bracket fastener.

Seat (FLTR)

Removal

CAUTION

Detach passenger seat strap before removing seat. Failure to do so can result in damage to rear fender paint. (00225a)

1. Remove saddlebag.
2. Remove fastener with flat washer. Then remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover.
3. Draw free end of passenger seat strap to opposite side of vehicle.
4. Detach seat mounting bracket from top of rear fender.
5. See Figure 96. Push seat rearward to free tongue at front of seat from slot in frame backbone.
6. Remove seat from frame.

Installation

1. Place seat on frame backbone.
2. See Figure 96. Firmly push front of seat downward and rearward until tongue engages slot in frame backbone.
3. Push seat forward until rear fender seat retention nut is centered in hole of mounting bracket.
4. Install fastener.
5. Install seat.

NOTE

If the seat retention nut is damaged or lost, see Seat Retention Nut Replacement in the appropriate service manual for instructions.

⚠WARNING

After installing seat, pull upward on front of seat to be sure it is in locked position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070a)

6. Pull up on seat to verify that it is properly secured, front and rear.
7. Draw free end of passenger seat strap to left side of vehicle.

8. Insert bolt with flat washer through passenger seat strap and slotted hole of saddlebag front mounting bracket. Insert bolt into forward hole in chrome frame tube cover.
9. Fasten saddlebag front mounting bracket bolt, but do not tighten.
10. Install saddlebag.

NOTE

If necessary, rotate saddlebag front mounting bracket to align spring plate with hole in saddlebag. Check that there is adequate clearance between saddlebag and side cover to prevent paint damage.

11. Tighten saddlebag front mounting bracket fastener.

PLACING MOTORCYCLE IN STORAGE

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

CAUTION

Proper storage is important for the trouble-free operation of your motorcycle. See your Owner's Manual for storage recommendations or see a Harley-Davidson dealer. Improper storage procedures can lead to equipment damage. (00046a)

⚠WARNING

Do not store motorcycle with gasoline in tank within the home or garage where open flames, pilot lights, sparks or electric motors are present. Gasoline is extremely flammable and highly explosive, which could result in death or serious injury. (00003a)

NOTE

Make a list of everything you do and fasten it to a hand grip. When you take the motorcycle out of storage, this list will be your reference/checklist to get your motorcycle in operating condition.

1. Warm motorcycle to operating temperature; change oil and filter.
2. Fill fuel tank and add a gasoline stabilizer. Use one of the commercially available gasoline stabilizers, following the manufacturer's instructions.
3. Run the engine until the gasoline stabilizer has had a chance to reach the carburetor float bowl/fuel injectors.
4. Turn fuel supply valve OFF.
5. Check belt, adjust if needed.
6. Check tire inflation. Adjust to proper inflation pressure.
7. Wash and wax painted and chrome surfaces. (See special care instructions for bags and accessories).
8. See BATTERY in this section for proper battery care. If motorcycle is to be stored with security system armed, it will be necessary to connect a Battery Tender to maintain battery charge. If security system will not be armed and a Battery Tender is not available, it is recommended that the 40 Amp maxi-fuse be removed. See REPLACING THE MAXI-FUSE.

⚠WARNING

Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. KEEP BATTERIES AWAY FROM CHILDREN. (00065a)

9. If motorcycle is to be covered, use a material such as light canvas, that will breathe. Plastic materials that do not breathe promote the formation of condensation.

REMOVAL FROM STORAGE

⚠WARNING

The clutch failing to disengage can cause loss of control, which could result in death or serious injury. Prior to starting after extended periods of storage, place transmission in gear and push vehicle back and forth several times to assure proper clutch disengagement. (00075a)

1. See BATTERY section for proper battery care. Charge and install battery.
2. Install maxi-fuse if removed.
3. Remove and inspect the spark plugs. Replace if necessary.
4. Clean the air cleaner element.
5. Check controls to be sure they are operating properly. Operate the front and rear brakes, throttle, clutch and shifter.
6. Check steering for smoothness by turning the handlebars through the full operating range.
7. Check tire pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability. Inspect sidewalls.
8. Check all electrical equipment and switches including the stop lamp, turn signals and horn for proper operation.
9. Check for any fuel, oil, or brake fluid leaks.

⚠WARNING

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00014a)

CAUTION

Turn engine over a few times to be sure there is no oil in the crankcase and that all oil has been pumped back into the oil tank. Stop engine and re-check oil level. Failure to do so can result in engine damage. (00071a)

10. Start the engine and run until it reaches normal operating temperature. Turn off engine.
11. Verify proper fluid levels at operating temperature.
12. Perform annual maintenance as specified in Table 52.

GENERAL MAINTENANCE

Chrome and aluminum parts must be maintained regularly to check that they retain their original shine and luster. Care should be taken to keep your new Harley-Davidson motorcycle cleaned and waxed 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 cleaning, polishing and waxing products.

Harley-Davidson recommends the following products:

- SUNWASH (Part No. 94659-98): for general cleaning/ washing of all surfaces.
- BUG REMOVER (Part No. 94657-98): for removing bugs from all surface finishes.
- HARLEY SPRAY CLEANER (Part No. 99817-99): all purpose cleaner and quick detailer for metal surfaces.
- HARLEY GLOSS™ (Part No. 94627-98): all purpose surface protectant provides UV protection and a gloss finish.

⚠WARNING

Observe warnings on labels of cleaning compounds. Failure to follow warnings could result in death or serious injury. (00076a)

⚠WARNING

Do not wash brake discs with cleaners containing chlorine or silicone. Cleaners containing chlorine and silicone can impair brake function, which could result in death or serious injury. (00077a)

⚠WARNING

Do not let the brakes, engine, mufflers or air cleaner to get wet when washing your motorcycle. Allowing these components to get too wet can adversely affect their performance, which could result in death or serious injury. Start engine immediately after washing, and make sure brakes and engine are operating properly before riding in traffic. (00078a)

LEATHER CARE

NOTE

Many Harley-Davidson accessories and seats are either made of leather or have leather inserts. Natural materials age differently and require different care than man-made materials. Seat covers and panels made of leather will gain character, such as wrinkles, with age. Leather is porous and organic and each leather product will settle into its own distinct form with use. Your leather product will mature into its own custom shape and style from the sun, rain and the miles. This maturing is natural and will enhance the custom quality of your Harley-Davidson motorcycle.

Leather must be periodically cleaned and treated to maintain its appearance and extend its life. Clean and treat leather once a season or more frequently under adverse conditions.

CAUTION

Do not use bleach or detergents containing bleach on saddlebags, seats, tank panels or painted surfaces. Doing so can result in equipment damage (00229a)

- Do not use ordinary soap to clean leather or fur. It could dry or remove the oils from the leather.
- Use ONLY a good quality saddle soap to clean leather. Be sure you rinse saddle soap off thoroughly before treating leather.
- Never try to dry leather quickly, using artificial means. Always let leather dry naturally, at room temperature.

1. Vacuum or blow dust off.
2. Thoroughly clean leather with a good quality saddle soap, following manufacturer's directions. Rinse thoroughly with clean sponge or cloth and water. Allow leather to dry.
3. Once leather is dry, treat with a good quality leather treatment, such as LEATHERCARE (Part No. 98261-91V).
4. Always allow leather to dry completely before using.

WHITEWALL TIRES

⚠WARNING

Be careful not to get the brakes wet when washing vehicle. Wet brake pads and/or discs can adversely affect brake performance, which could result in death or serious injury. (00079a)

Use Harley-Davidson® wheel and Tire Cleaner (Part No. 94658-98).

WHEEL CARE

⚠WARNING

Be careful not to get the brakes wet when washing vehicle. Wet brake pads and/or discs can adversely affect brake performance, which could result in death or serious injury. (00079a)

Some vehicle's wheels are aluminum and do not have a protective coating. Other vehicles have laced wheels with chrome plated rims and zinc plated spokes. Damage from harsh chemicals, acid based wheel cleaners, brake dust and lack of maintenance can occur. Regular washing and the use of a corrosion protectant will help to maintain their original appearance. Harley-Davidson® WHEEL AND TIRE CLEANER (Part No. 94658-98) is recommended for cleaning wheels and tires. Then use HARLEY GLOSS™ (Part No. 94627-98) to protect the wheel surfaces.

NOTES

- *To guard against pitting and corrosion, it is imperative that the wheels are cared for weekly according to the instructions above.*
- *Corrosion of these components is not considered to be a defect in materials or workmanship.*

Harley-Davidson recommends the following products:

- WHEEL AND TIRE CLEANER (Part No. 94658-98): cleaner/degreaser for wheels, tires and engine.
- HARLEY GLOSS™ (Part No. 94627-98): all purpose surface protection the provides UV protection and a gloss finish.

See your Harley-Davidson dealer for cleaning, polishing and waxing products.

WINDSHIELDS

CAUTION

Harley-Davidson windshields are made of Lexan®. Lexan is a more durable and distortion-resistant material than other types of motorcycle windshield material, but still requires attention and care to maintain. Failure to maintain Lexan properly can result in damage to the windshield. (00230a)

CAUTION

Do not use harsh chemicals including rain sheeting products on Harley-Davidson windshields. They can cause dulling or hazing. If you want to use a windshield protectant on your windshield, try Harley Glaze Polish and Sealant®. (00231a)

CAUTION

Do not use benzine, paint thinner, gasoline or any other type of harsh cleaner on the windshield. Doing so will damage the windshield surface. (00232a)

NOTES

- *To remove minor surface scratches use NOVUS® No. 2 SCRATCH REMOVER (Part No. 99836-94).*
- *Covering the windshield with a clean, wet cloth for approximately 15-20 minutes before washing will make dried bug removal easier.*

1. Use mild soap and warm water to wash the windshield.
2. Wipe dry with a soft, clean towel.

NOTE

To treat your Lexan windshield with water repellent use WINDSHIELD WATER REPELLENT TREATMENT (Part No. 99841-02.

LUBRICATE - HINGES, LATCHES, FUEL DOOR, TOUR-PAK SADDLEBAGS (IF APPLICABLE)

Lubricate the rub points of latches and hinges using either Lubit-8 Tufoil (Part No. 94968-85TV) or Tri-flow® as required.

See Figure 101. Lubricate the fingers on the saddlebag latches where they engage the hinge.

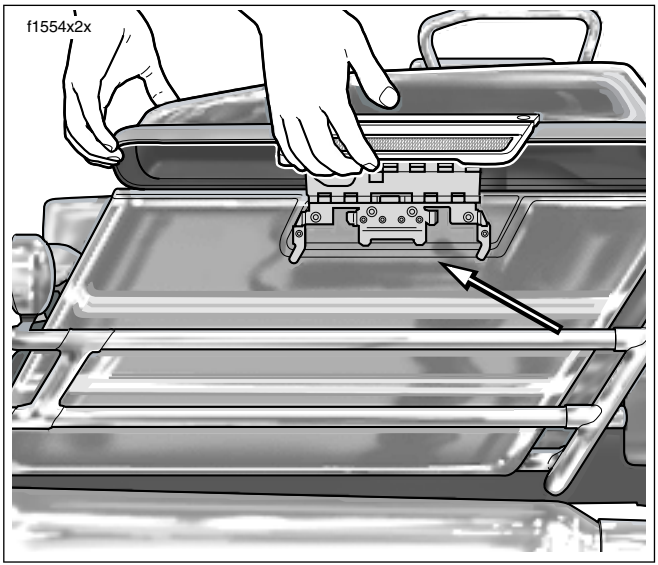


Figure 101. Saddlebag Latch (FLT)

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 trouble and should be carefully checked.

⚠WARNING

The troubleshooting section of the Owner's Manual is a guide to diagnose problems. Read the service manual before performing any work. Improper repair and/or maintenance could result in death or serious injury. (00080a)

NOTE

For troubleshooting EFI equipped engines, consult the appropriate service manual or 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* or clogged.
3. Fuel vacuum line disconnected.*****
4. Fuel filter clogged.
5. Discharged battery or loose or broken battery terminal connections.
6. Fouled spark plugs.
7. Spark plug cable connections loose or in bad condition and shorting.
8. Loose or corroded wire or cable connection(s) at coil or battery.
9. Engine flooded with fuel as a result of over-enrichening.*
10. Engine oil too heavy (winter operation).
11. Throttle held open when enrichener is used.*****
12. Fuel pump inoperative (If applicable).

Starts Hard

1. Spark plugs in bad condition, have improper gap, or are partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Battery nearly discharged.
4. Loose wire or cable connection(s) at one of the battery terminals or at coil.
5. Carburetor not adjusted correctly.*
6. Engine oil too heavy (winter operation).
7. Fuel tank vent plugged or fuel line closed off, restricting fuel flow.
8. Water or dirt in fuel system.
9. Fuel pump inoperative.**

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, filter or carburetor.
8. Fuel vent system plugged. See dealer.
9. One or more injectors fouled.**

A Spark Plug Fouls Repeatedly

1. Excessive enrichener use.*
2. Fuel mixture too rich.*
3. Incorrect spark plug.

Pre-ignition or Detonation (Knocks or Pings)

1. Incorrect fuel.
2. Incorrect spark plug for the kind of service.

* Carbureted ONLY
** EFI Models ONLY

Overheats

1. Insufficient oil supply or oil not circulating.
2. Heavy carbon deposit from lugging engine. See dealer.
3. Insufficient air flow over cylinder heads during extended periods of idling or parade duty.

Excessive Vibration

1. Stabilizer links worn or loose. See dealer.
2. Engine isolation 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. See dealer.
7. Front chain or links tight as a result of insufficient lubrication or belt badly worn.
8. Wheels and/or tires damaged. See dealer.
9. Vehicle not properly aligned. See dealer.

LUBRICATION SYSTEM

Oil Does Not Return to Oil Tank

1. Oil tank empty.
2. Restricted oil lines or fittings. See dealer.
3. Restricted oil filter. See dealer.
4. O-ring at oil pump return missing or cut.
5. Oil pump not properly aligned.

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.

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.

Alternator Charge Rate is Below Normal

1. Weak battery.
2. Excessive use of add-on accessories.
3. Loose or corroded connections.
4. Extensive periods of idling or low speed riding.

CARBURETOR

Carburetor Floods

1. Excessive rolling of hand throttle grip.

TRANSMISSION

Transmission Shifts Hard

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

Transmission Jumps Out of Gear

1. Shifter rod improperly adjusted. See dealer.
2. Shifter forks (inside transmission) improperly adjusted. See dealer.
3. Worn shifter dogs in transmission. See dealer.

Clutch Slips

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

Clutch Drags or Does Not Release

1. Clutch controls improperly adjusted. See dealer.
2. Insufficient clutch spring tension. See dealer.
3. Primary chaincase overfilled.
4. 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. See dealer.
6. Brake disc badly worn or warped. See dealer.
7. Brake fades because of heat build up. Excessive braking or brake pads dragging. See dealer.
8. Brake drags. Insufficient hand lever free play. See dealer.

WARRANTY AND MAINTENANCE

This Owner's Manual contains your new motorcycle warranty.

It is the owner's responsibility to follow the scheduled mileage intervals as specified; all of the specified maintenance services must be performed to keep your warranty valid.

1. Make an appointment with your Harley-Davidson dealer for inspection and service just before you have ridden 1000 miles (1600 km).
2. Bring this Owner's Manual with you when you visit your dealer to have your motorcycle inspected and serviced.
3. Have the dealer sign at the proper mileage interval. The records should be retained by the owner, as proof of proper maintenance.
4. Keep receipts covering any parts, service or maintenance performed. These records should be transferred to each subsequent owner.

⚠WARNING

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

Harley-Davidson dealerships are independently owned and operated and may sell parts and accessories that are not manufactured or approved by 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.

OWNER'S IDENTIFICATION CARD

See Figure 102. 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 Company.

Figure 102. Owner's Warranty Identification Card

The owner's identification card is a permanent record showing proof of ownership. It gives information necessary for you and your dealer to find information when obtaining parts and accessories, while expediting service.

- Keep this card in your possession; it is required by your Harley-Davidson dealer for any warranty service performed on your motorcycle.
- If you have questions regarding service or warranty, we recommend that you contact your Harley-Davidson dealer for service.

KEEPING IT ALL HARLEY-DAVIDSON

1. Keep your Harley-Davidson completely Harley-Davidson.
2. Insist that your dealer uses only Genuine replacement parts to keep your Harley-Davidson motorcycle and its warranty intact.

Exacting design and stringent testing ensure performance and warranty coverage. Again, insist on Genuine parts for your genuine Harley-Davidson motorcycle.

NOTE

Installing off-road or competition parts to enhance performance may void your new motorcycle warranty. See your Harley-Davidson dealer for details.

CAUTION

It is possible to overload your motorcycle's charging system by adding too many electrical accessories. If your combined electrical accessories consume more electrical current than your vehicle's charging system can produce, the electrical consumption can discharge the battery and cause vehicle electrical system damage. See a Harley-Davidson dealer for advice about the amount of current consumed by additional electrical accessories, or for necessary wiring changes. (00211a)

IMPORTANT MOVING INFORMATION

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. This is necessary in the event that the Company needs to contact the owner concerning information that could affect the safe operation of this motorcycle.

CALIFORNIA EVAPORATIVE EMISSION CONTROL

All new 2004 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.

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.

WARRANTY/SERVICE INFORMATION

Any authorized Harley-Davidson dealer is responsible for providing the warranty repair work on your motorcycle. If you have any questions regarding warranty obligations contact your selling dealer.

For normal service work or warranty work under the above conditions, you may obtain the name and location of your nearest U.S. Harley-Davidson dealer by calling 1-800-490-9635 (toll free), in any state except Alaska and Hawaii.

NOTE

The number shown above is accessible only with a touch-tone phone.

REPORTING SAFETY DEFECTS

Safety defects must be reported to the National Highway Traffic Safety Administration (NHTSA) and Harley-Davidson.

NHTSA STATEMENT

If you believe your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Harley-Davidson.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Harley-Davidson.

To contact NHTSA, you may choose to:

Table 47. NHTSA Contacts

PHONE	Call the Auto Safety Hot Line toll-free at 1-888-DASH-2DOT.
MAIL	National Highway Traffic Safety Administration Attn: Administrator 400 Seventh Street, S.W. Washington, D.C. 20590
WEB SITE	www.NHTSA.dot.gov

You can also obtain other information about motor vehicle safety from the hot line.

OWNER TRANSFER NOTIFICATION FORM

When purchasing a pre-owned Harley-Davidson or Buell, we encourage you to submit an Owner Transfer Notification Form. It is critical that new owner information is communicated to Harley-Davidson. New owner information is required to be on file with Harley-Davidson to transfer an Extended Service Plan Contract. Harley-Davidson is also required by the National Traffic and Motor Vehicle Safety Act to notify all owners in the event of a recall. The form may be obtained at any Harley-Davidson dealer.

REQUIRED DOCUMENTATION FOR IMPORTED MOTORCYCLES

If a Harley-Davidson is imported into the United States, additional documentation is required to be eligible for the United States Manufacturer's Limited Warranty. A Harley-Davidson dealer can provide a form explaining the requirements.

Table 48. Harley-Davidson Limited Warranty (24 Months/Unlimited Mileage)

Harley-Davidson warrants to the first retail purchaser and transferees of any new 2004 Harley-Davidson motorcycle/sidecar that an authorized Harley-Davidson dealer will repair or replace without charge any parts found under normal use to be defective in factory materials or workmanship, and upon the following terms and conditions:	
DURATION	1. The duration of this limited warranty is twenty four months, measured from the date of initial retail purchase and delivery from an authorized Harley-Davidson dealer. Your dealer will submit an electronic Sales and Warranty Registration form to initiate your warranty. Harley-Davidson will then send you an Owner Warranty Identification Card. 2. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle/sidecar during the warranty period.
OWNER OBLIGATIONS	1. To obtain warranty service, return your motorcycle/sidecar at your expense within the warranty period to an authorized dealer. You may be required 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 normal business hours and as soon as possible, depending upon the workload of the dealer's service department 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, misused, altered outside of original factory specifications, improperly stored or used "off the highway", for racing or competition of any kind. 3. Which is not manufactured to comply with the laws of the market in which it is registered.
OTHER LIMITATIONS This warranty does not cover:	1. Parts and labor for normal maintenance as recommended in the Owner's Manual, or the replacement of parts due to normal wear and tear including such items as the following: tires, lubrication, oil and filter change, fuel system cleaning, battery maintenance, engine tune-up, spark plugs, light bulbs, brake, clutch and chain/belt adjustment (including chain replacement). 2. Seats, saddlebags, paint, chrome, or trim deterioration caused by ordinary wear and tear, exposure or improper maintenance. 3. Any cosmetic damage that has not been documented by the selling dealer prior to retail delivery, or authorized by the factory and/or its representatives.

Table 48. Harley-Davidson Limited Warranty (24 Months/Unlimited Mileage)

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. 4. 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 varies from state to state. 5. This warranty is a contract between you and the manufacturer. It is separate and apart from any warranty you may receive or purchase from the dealer. The dealer is not authorized to alter, modify, or in any way change the terms and conditions of this warranty. 6. Any warranty work or parts replacement authorized by the manufacturer will not preclude the manufacturer from later relying on any exclusion where applicable.
Harley-Davidson Motor Company. P.O. Box 653. Milwaukee, Wisconsin 53201, U.S.A.	

Table 49. Harley-Davidson Noise Control System Warranty

<table>
<tr><td colspan="2">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 Company warrants to the first owner and each subsequent owner that this 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 this 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.</td></tr>
<tr><td>The following items are not covered by the noise control system warranty</td><td>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.</td></tr>
<tr><td>Recommendations for required maintenance</td><td>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.</td></tr>
<tr><td colspan="2">Harley-Davidson Motor Company, P.O. Box 653 Milwaukee, Wisconsin 53201, U.S.A.</td></tr>
</table>

Table 50. Harley-Davidson Emission Control System Warranty

<table>
<tr><td colspan="2">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 Company warrants to the first owner and each subsequent owner that this 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 this 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.</td></tr>
<tr><td>The following items are not covered by the emission control system warranty</td><td>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.</td></tr>
<tr><td>Recommendations for required maintenance</td><td>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 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.</td></tr>
<tr><td colspan="2">Harley-Davidson Motor Company, P.O. Box 653 Milwaukee, Wisconsin 53201, U.S.A.</td></tr>
</table>

Table 51. Limited Radio Warranty

Harley-Davidson Motor Company warrants to the original purchaser and authorized transferees, that this Harley-Davidson radio will be free from factory defects in material and workmanship, under normal use and service, for a period of twenty four (24) months from date of purchase. This warranty does not cover defects or damage due to abuse, misuse or improper installation. To obtain warranty service, return your motorcycle/sidecar with sound system intact, at your expense, within the warranty period to the Selling dealer, or to any other authorized dealer if you have moved a long distance, or are touring a long distance. 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. The remedy for breach of this warranty is expressly limited to the repair or replacement, without charge for parts and labor, of any part that proves to be defective, and does not extend to liability for consequential damages, costs or expenses, including loss of time, inconvenience or loss of use of the vehicle, resulting from any part that proves to be defective. ANY IMPLIED WARRANTY RELATING TO THIS RADIO, INCLUDING WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO TWENTY FOUR (24) MONTHS. (Some states place limitations on the length of an implied warranty or on the exclusion of limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you.)

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.

NOTES

- *Refer to Table 52. Regular maintenance 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. Any alterations to the emission system components, such as the carburetor and exhaust system, may be in violation of Federal and State laws.*
- *Refer to Table 53. When servicing your motorcycle, bring this owner's manual to the dealership and complete information needed in the blank columns listed.*

⚠WARNING

Perform the service and maintenance operations as indicated in the regular service interval table. Lack of regular maintenance at the recommended intervals can affect the safe operation of your motorcycle, which could result in death or serious injury. (00010a)

⚠WARNING

If you operate your motorcycle under adverse conditions (severe cold, extreme heat, very dusty environment, very bad roads, through standing water, etc.), you should perform the regular maintenance intervals more frequently to ensure the safe operation of your motorcycle. Failure to maintain your motorcycle could result in death or serious injury. (00094a)

Table 52. Regular Service Intervals For Touring Models

ODOMETER READING SERVICE OPERATIONS (see chart code below)	10000 mi 16000 km	5000 mi 8000 km	10000 mi 16000 km	15000 mi 24000 km	20000 mi 32000 km	25000 mi 40000 km	30000 mi 48000 km	35000 mi 56000 km	40000 mi 64000 km	45000 mi 72000 km	50000 mi 80000 km
Change engine oil and filter and clean drain plug .	R	R	R	R	R	R	R	R	R	R	R
Inspect air cleaner, service as required.	I	I	I	I	I	I	I	I	I	I	I
Change primary chaincase lube and clean drain plug.	R	R	R	R	R	R	R	R	R	R	R
Check and adjust rear belt.	I	I	I	I	I	I	I	I	I	I	I
Adjust primary chain.	X	X	X	X	X	X	X	X	X	X	X
Clutch adjustment.	XL	XL	XL	XL	XL	XL	XL	XL	XL	XL	XL
Change transmission lube and clean drain plug.	R	R	R	R	R	R	R	R	R	R	R
Inspect brake pad linings and discs for wear.	I	I	I	I	I	I	I	I	I	I	I
Check brake fluid reservoir levels and condition.	I	I	I	I	I	I	I	I	I	I	I
Inspect oil lines and brake system for leaks.	I	I	I	I	I	I	I	I	I	I	I
Lubricate front brake hand lever, throttle control cables and clutch control cables, clutch control hand lever and rear brake pedal bushing (if applicable).	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL	IL
Lubricate jiffy stand.	L	L	L	L	L	L	L	L	L	L	L
Chart Codes: **I** - Inspect, & if necessary adjust, service or replace. **L**- Lubricate with specified lubricant.	**R**- Replace or change. **T**- Tighten to proper torque.				**A**- Adjust. **X**- Perform.			**D**- Disassemble (lube & inspect if required).			

Table 52. Regular Service Intervals For Touring Models

ODOMETER READING SERVICE OPERATIONS (see chart code below)	10000 mi 16000 km	5000 mi 8000 km	10000 mi 16000 km	15000 mi 24000 km	20000 mi 32000 km	25000 mi 40000 km	30000 mi 48000 km	35000 mi 56000 km	40000 mi 64000 km	45000 mi 72000 km	50000 mi 80000 km
Steering head bearings	L		L		L	I	L		L		D
Check, adjust operation of enrichener.	I	I	I	I	I	I	I	I	I	I	I
Inspect fuel valve, lines and fittings for leaks.	I	I	I	I	I	I	I	I	I	I	I
Fuel tank filter screen						X					X
Check operation of all electrical equipment & switches.	I	I	I	I	I	I	I	I	I	I	I
Check cruise control disengage switch & components.	I	I	I	I	I	I	I	I	I	I	I
Check battery and clean connections yearly.											
Change spark plugs.	I	I	R	I	R	I	R	I	R	I	R
Check tire pressure and inspect tread.	I	I	I	I	I	I	I	I	I	I	I
Check wheel spoke tightness.	I	I			I			I			I
Change front fork oil.											D
Check air suspension, pressure, operation and leakage.	I	I	I	I	I	I	I	I	I	I	I
Check stabilizer links and engine mounts.			I		I		I		I		I
Chart Codes: **I** - Inspect, & if necessary adjust, service or replace. **L**- Lubricate with specified lubricant.	**R**- Replace or change. **T**- Tighten to proper torque.				**A**- Adjust. **X**- Perform.			**D**- Disassemble (lube & inspect if required).			

Table 52. Regular Service Intervals For Touring Models

ODOMETER READING SERVICE OPERATIONS (see chart code below)	1000 mi 1600 km	5000 mi 8000 km	10000 mi 16000 km	15000 mi 24000 km	20000 mi 32000 km	25000 mi 40000 km	30000 mi 48000 km	35000 mi 56000 km	40000 mi 64000 km	45000 mi 72000 km	50000 mi 80000 km
Check tightness of all critical fasteners: hand controls, brake system, axle nuts, front fork components, riser and handle bar fasteners.	T		T		T		T		T		T
Inspect windshield bushings, (if applicable).			I		I		I		I		I
Lubricate hinges, latches - fuel door, tour-pak, saddlebags.	L	L	L	L	L	L	L	L	L	L	L
Check engine idle speed.	I	I	I	I	I	I	I	I	I	I	I
Road test.	X	X	X	X	X	X	X	X	X	X	X
Chart Codes: **I** - Inspect, & if necessary adjust, service or replace. **L**- Lubricate with specified lubricant.	**R**- Replace or change. **T**- Tighten to proper torque.				**A**- Adjust. **X**- Perform.			**D**- Disassemble (lube & inspect if required).			

Table 53. Owner's Maintenance Records

SERVICE MILE INTERVAL	DATE	DEALER NUMBER	DEALER SIGNATURE
1000 mi/1600 km			
5000 mi/8000 km			
10,000 mi/16,000 km			
15,000 mi/24,000 km			
20,000 mi/32,000 km			
25,000 mi/40,000 km			
30,000 mi/48,000 km			
35,000 mi/56,000 km			
40,000 mi/64,000 km			
45,000 mi/72,000 km			
50,000 mi/80,000 km			

SERVICE LITERATURE

For more detailed and complete technical and parts information, the following publications are available through your Harley-Davidson dealer. Order by part numbers below.

Table 54. Service Literature

DOCUMENT	PART NO.
Touring Models Service Manual	99483-04
Touring Models Electrical Diagnostics Manual	99497-04
Touring Models Parts Catalog	99456-04

Symbols

(AVC) Automatic volume control 97
(NHTSA) National Highway Traffic Safety Administration 243
(V.I.N.) Vehicle Identification Number 15
(VOX) voice activated 104

Numerics

4-way flasher, hazard warning 47

A

Accessories and cargo 12
Accessories maintenance
- Cleaning your motorcycle 227
- General maintenance 227
- Leather care 228
- Lubrication 231
- Wheel care 229
- Whitewall tires 228
- Windshields 230

Accessory and cargo guidelines 12
Accessory switch 52
Air cleaner 186
Air deflectors (ULTRA models) 77
Air suspension adjustment 67
Air suspension adjustments (FLHT/FLTR) 68
Air suspension, rear 68
Air temperature gauge 69
Alternator 193
Antidote
- Battery electrolyte 195

Automatic volume control (AVC) 97

B

Battery 194
- Charging 198, 199
- Charging rates/times 201
- Cleaning and inspection 198
- Disconnection and removal 197
- General 194
- Installation and connection 202
- Jump - starting procedure 205
- Safety precautions 198
- Storage 203
- Testing 197

Brakes, troubleshooting 237
Break-in-the first 500 miles (800 Km) 148
Bulb chart 39

C

C.V. carburetors 151

Capacities 32, 33
Fuel tank (reserve)* 33
Fuel tank (total) 33
Oil tank w/filter 33
Primary chaincase (approximate) 33
Transmission (approximate) 33
Carburetor 185
Cargo and accessories 12
Cargo and accessory guidelines 12
Cargo weight distribution 13
Carrying passengers 6
Catalytic converters 38
CB operation 111
CD operation 99
Checklist, preriding 149
Circuit breakers 212
Cleaning your motorcycle 227
Clock 69
Clutch 177
Clutch hand lever 59
Controls and indicators
Accessory switch 52
Air deflectors (ULTRA models) 77
Air suspension adjustment 67
Air temperature gauge 69
Clock 69
Clutch hand lever 59
Cruise control 54
Electric starter switch 46
Electronic speedometer 50
Engine stop switch 46
Fork lock 66
Fuel filler cap 64
Fuel gauge 65
Fuel supply valve 63
Gear shifter 60
Hazard warning 4-way flasher 47
Headlamp dimmer switch 46
Horn switch 46
Ignition/headlamp key switch 41
Indicator lamps 52
Indicator lamps - general 48
Jiffy stand 78
Luggage 70
Mirrors (convex) 62
Oil pressure gauge 69
Passenger seat (FLHR Road King) 76
Passing/Fog lamp switch 53
Saddlebag operation (FLHRC Road King Classic) 73
Saddlebag operation (FLHT/FLTR) 71
Sequential port fuel injection 59
Sound system controls 69
Speedometer/Odometer 49
Tachometer 49
Throttle control grip 57
Tour-Pak operation 70

Turn signal switch operation 47
Voltmeter 69
Windshield (FLHRC) 75
Cool engine starting 151
Cruise control 54
Accelerating above cruise speed 56
Controls 55
Deactivating cruise control 57
Deactivating/Disengaging cruise control 55
Decelerating cruise control 56
Theory of operation 54

D

Dimensions 31
Overall height 31
Overall length 31
Overall width 31
Road clearance 31
Saddle height 31
Wheel base 31

E

EFI fuses 210
Electric starter switch 46
Electrical equipment additions 13
Electrical system, troubleshooting 236
Engine speed, maximum 147
Engine stop switch 46
EPA noise regulations 242
Evaporative emission control system 241

F

FCC regulations, security system 124
Fob battery 143
Fork lock 66
Fuel filler cap 64
Fuel gauge 65
Fuel information 36
Fuel supply valve 63
Fuses 207
EFI 210
System 208

G

Gasoline blends 37
Gauge
Air temperature 69
Fuel 65
Oil pressure 69
Voltmeter 69
Gear shifter 60
Greasing, chassis 176

Gross vehicle weight rating (GVWR) 32

H

Hazard warning 4-way flasher 47
H-D factory security system
Battery disconnects and configuring 126
FCC regulations 124
Headlamp 187
Headlamp dimmer switch 46
Headsets and sockets 103
Horn switch 46
Hydraulic Lifters 178

I

Identification
Vehicle Identification Number (V.I.N.) 15
Ignition/headlamp key switch 41
Important moving information 241
Indicator lamps 48, 52
Intercom operation
Activating the intercom 109

J

Jiffy stand 78

K

Keeping it all Harley 241

L

Lamp
Engine check 52
Low fuel 59
Lamps, indicator 48
Leather care 228
Literature, service 254
Low fuel lamp 59
Lubrication
Chassis 176
Engine 158
Primary chaincase 167
Transmission 165
Winter 164
Lubrication system, troubleshooting 235
Luggage 70

M

Maintenance and lubrication
Air cleaner 186
Alternator charging rate and voltage regulator . 193
Battery charging 198

Battery cleaning and inspection 198
Battery disconnection and removal. 197
Battery installation and connection 202
Battery jump - starting procedure 205
Battery storage 203
Battery testing 197
Brakes. 179
Carburetor. 185
Chaincase lubricant 168
Changing oil and oil filter. 161
Chassis lubrication 176
Checking oil level 159
Circuit breakers. 212
Clutch 177
Engine lubrication 158
Front fork bearings 178
Front fork oil 177
Fuel strainer (carb only) 177
Fuses 207
Headlamp 187
Hydraulic lifters 178
Ignition 185
Maintenance 157
Oil applications 177
Placing motorcycle in storage. 224
Primary chain 173
Primary chaincase lubrication. 167
Rear drive belt. 175
Rear fork pivot shaft 178
Removal from storage 225
Safe operating maintenance 157
Seat (FLHR) 217
Seat (FLHRC/FLHRS) 220
Seat (FLHT/FLTR) 214
Seat (FLTR) 222
Shock absorbers 184
Spark plugs 184
Tires 181
Transmission lubrication. 165
Vehicle alignment. 183
Winter lubrication 164
Maxi-fuse, replacing 213
Mirrors (convex). 62
Model dimensions 31
Model weights 32
Motorcycle Safety Foundation® 5

N

National Highway Traffic Safety Administration (NHTSA) 243
NHTSA Statement
(24 Months/Unlimited Mileage) 243

O

Oil level COLD check 160

Oil level HOT check 160
Oil level, checking 159
Oil pressure gauge 69
Operation
Break-in-the first 500 miles (800 Km) 148
Operating recommendations 147
Preriding checklist 149
Shifting gears 154
Starting the engine 150
Stopping the engine 153
Overall height 31
Overall length 31
Overall width 31
Owner's identification card 240
Owner's maintenance records 253

P

Passenger seat (FLHR Road King) 76
Passing/Fog lamp switch (FLHT/FLTR & FLHRC models) 53
Placing motorcycle in storage 224
Premium sound system
AM verses FM reception 92
Audio routing and mixing 114
Overlay function 114
Automatic volume control 97
CB operation
Activating the CB 111
Adjusting squelch 112
Adjusting volume 112
CB range 113
Entering SETUP 111
LODX button 113
Selecting a channel 111
Transmitting 112
CD operation
auto load 99
BAD DISC error message 99
CD eject 100
Changing CD tracks 101
Fast advance and reverse 101
Handling CDs 102
Random play 101
Repeating tracks 101
Fairing control
SPKR switch 104
Front panel controls
AUX 86
CD door 86
LCD 85
Pushbuttons 81
Fuse replacement 119
Intercom operation
Adjusting passenger headset volume 110
Adjusting rider headset volume 110

Adjusting VOX sensitivity 109
Entering SETUP 109
Quiet ride feature 110
Left handlebar controls
+/AUDIO/- 86
PTT / +/SQ/- 89
Mixing bass and treble 96
Passenger controls
PTT / +/VOL/- switch 106
UP/MODE SEL/DN switch 106
Preset memory/tuning 96
Receiver operation
Setting Time-of-Day 91
Tuning-in a radio station 93
Turning receiver power On/Off 91
Right handlebar controls
UP/MODE SEL/DN switch 90
Selecting a frequency band 92
Sidecar controls
MOVE / +/TUNE/- switch 106
Sidecar speakers 106
VOL / PTT knob 108
Specifications 120
Stereo receiver 80
Troubleshooting 117
VOX microphones 104
Preriding checklist 149

R

Radio/Receiver operation 91
Rear fork pivot shaft 178
Regular service intervals 249, 250
Removing motorcycle from storage 225
Replacing the maxi-fuse 213
Rider and passenger speaker balance 105
Road clearance 31
Rules of the road 11, 12
Accessories and cargo 12
Rules of the road 11
Rules, safe operating 3

S

Saddlebag operation (FLHRC Road King Classic) . 73
Saddlebag operation (FLHRS) 74
Saddlebag operation (FLHT/FLTR) 71
Safety defects reporting 243
Safety first
Safe operating rules 3
Seat (FLHR) 217
Seat (FLHRC/FLHRS) 220
Seat (FLHT/FLTR) 214
Seat (FLTR) 222
Seat, passenger (FLHR Road King) 76
Security alarm and immobilization functions

Auto arming 125
Personal code disarming 126
Remote arming/disarming 125, 126
Security system functions
Security system options 123
Sequential port fuel injected engine 152
Sequential port fuel injection
Engine check lamp 59
Low fuel lamp 59
Service literature 254
Shifter, gear 60
Shifting gears 154
Shock absorbers 184
Spark plugs 184
Specifications
Bulb chart 39
Capacities 32
Catalytic converters 38
Dimensions 31
Fuel information 36
Gasoline blends 37
Tire data 35
Speedometer, electronic 50
Speedometer/Odometer 49
Starting a COLD engine 151
Stopping the engine 153
Storage mode configuration 142
Switch
Accessory 52
Electric starter 46
Engine stop 46
Headlamp dimmer 46
Horn 46
Ignition/headlamp key 41
Passing/Fog lamp
(FLHT/FLTR & FLHRC Models) 53
System fuses 208

T

Tachometer 49
Throttle control grip 57
Tip indicator lamp 50
Tire data 35
Tire pressure specifications 36
Tour-Pak operation 70
Transmission, troubleshooting 236
Trip-odometer 50
Troubleshooting
Brakes 237
Electrical system 236
Engine 233
General 233
Lubrication system 235
Transmission 236
Turn signal switch operation 47

Turning off cruise control 57

U

Using key fob
Arming the system 124
Disarming the system 125
Troubleshooting 145

V

Voltage regulator 193
Voltmeter 69
Voltmeter test 197
VOX microphones 104

W

Warm or hot engine starting 152
Warranties and responsibilities
California evaporative emission control 241
EPA noise regulations 242
Important moving information 241
Keeping it all Harley 241
NHTSA statement 243
Owner's identification card 240
Reporting safety defects 243
Warranty and maintenance 239
Warranty/Service information 242
Warranty/Service information 242
Web Site, Harley-Davidson ii
Weight (as shipped from factory) 32
Weights 32
Wheel care 229
Whitewall tires 228
Windshield 75
Windshields 230

j

Service/Transport Mode

- Set **RUN/OFF** switch to **OFF**
- Turn **IGN** key to **ON**
- Press and hold **key fob** button until confirmation is received
- Turn **IGN** to **OFF**
- Press and hold **key fob** button until confirmation is received

Harley-Davidson Motor Company
Service Communications
Milwaukee, WI 53201

Harley-Davidson®
Factory Security System

06/00

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Harley-Davidson Motor Company
Service Communications
Milwaukee, WI 53201

Harley-Davidson®
Factory Security System

06/00

Basic Security System Operation

To Arm the System

- Hold down the key fob button until the system responds with two turn signal flashes and two chirps from optional siren.

To Disarm the System

- Quickly press the key fob button twice. The system will respond with one turn signal flash.

Security System Personal Code

___ - ___ - ___ - ___ - ___

ex. **a - b - c - d - e**

- Set **RUN/OFF** switch to **OFF**
- Turn **IGN** key to **ACC**
- Hold **both** turn switches in until confirmation
- Enter first digit of code (a) by pressing **left** turn switch (**a**) **times**
- Press **right** turn switch **1 time**
- Enter second digit of code (**b**) by pressing **left** turn switch (**b**) **times**
- Press **right** turn switch **1 time**
- Enter third digit of code (**c**) by pressing **left** turn switch (**c**) **times**
- Press **right** turn switch **1 time**
- Enter fourth digit of code (**d**) by pressing **left** turn switch (**d**) **times**
- Press **right** turn switch **1 time**
- Enter fifth digit of code (**e**) by pressing **left** turn switch (**e**) **times**
- Press **right** turn switch **1 time**

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- Enter fifth digit of code (**e**) by pressing **left** turn switch (**e**) **times**
- Press **right** turn switch **1 time**

Important Information

If you move from your present address at any time after purchasing your new Harley-Davidson or if you sell it to anyone, please fill out the attached card and mail immediately. This will provide us with an accurate registration as required by Federal law.

Thank You!

VEHICLE V.I.N.:	CRANKCASE NO.:	
OWNER'S NAME:		
OLD ADDRESS:		APT. NO:
CITY:	STATE:	ZIP CODE:
DEALER NUMBER:	DELIVERY DATE:	
DEALER'S NAME:		
CITY:	STATE:	ZIP CODE:
MY NEW ADDRESS IS:		
NEW ADDRESS:		APT NO.:
CITY:	STATE:	ZIP CODE:
MY MOTORCYCLE SOLD TO:	DATE OF SALE:	
NEW OWNER'S NAME:		
ADDRESS:		APT. NO:
CITY:	STATE:	ZIP CODE:

Art Work