

TOURING MODELS

2007 HARLEY-DAVIDSON® INTERNATIONAL OWNER'S MANUAL

2007 HARLEY-DAVIDSON® TOURING-BEDIENUNGSANLEITUNG

MANUEL DU PROPRIÉTAIRE DES MODÈLES
TOURING 2007 HARLEY-DAVIDSON®

MANUAL DEL PROPIETARIO DE LOS MODELOS
TOURING 2007 DE HARLEY-DAVIDSON®

MANUALE D'USO MODELLI TOURING 2007 HARLEY-DAVIDSON®

MANUAL DO PROPRIETÁRIO DOS MODELOS
TOURING 2007 DA HARLEY-DAVIDSON®

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SAFE OPERATING RULES: TOURING MODELS

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 RIDING TIPS booklet 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.
- 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

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 OPERATION, Break-in Riding Rules.
- 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

We recommend that you obtain information and formal training in the correct motorcycle riding technique.

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

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 Table 36. 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 your Harley-Davidson service manual for proper torque values.
- Aftermarket fasteners may not have the specific property requirements to perform properly.

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 80 km/h (50 mi/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 130 km/h (80 mi/h). Failure to follow this warning could result in death or serious injury. (00015a)

WARNING

Do not exceed the motorcycle's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Rating (GAWR). Exceeding these weight ratings can affect stability and handling, which could result in death or serious injury. (00016e)

- 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.
- GAWR is the maximum amount of weight that can be safely carried on each axle.
- The GVWR and GAWR are shown on the information plate located on the frame steering head.

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. (00018b)

CAUTION

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. 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. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

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)

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

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 30.5 meters (100 feet) before reaching the turning point. Move over to the centerline of the street (unless local rules require otherwise), slow down, enter the intersection of the street and then turn carefully to the left.
- Never anticipate a traffic light. When a change is indicated from GO to STOP (or vice versa) in the traffic control

systems at intersections, 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's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Rating (GAWR). Exceeding these weight ratings can affect stability and handling, which could result in death or serious injury. (00016e)

- 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.
- GAWR is the maximum amount of weight that can be safely carried on each axle.
- The GVWR and GAWR are shown on the information plate which is located on the frame down tube.

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. (00018b)

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.
- 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.
- 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 maximum specified load in each saddlebag.
- Luggage racks are designed for lightweight items. Do not overload racks.
- Be sure cargo is secure and will not shift while riding and 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 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)

NOISE CONTROL SYSTEM

Tampering

Owners are warned that removal or replacement of any noise control system component may be prohibited by law. This prohibition applies prior to vehicle sale or delivery to the ultimate purchaser. Use of a vehicle on which noise control system components have been removed or rendered inoperative may also be prohibited by law.

VEHICLE IDENTIFICATION NUMBER: TOURING MODELS

The full 17-digit serial or Vehicle Identification Number (V.I.N.) is stamped on the right side of the frame backbone at the rear of the frame behind the steering head. A label bearing the V.I.N. code is also affixed to the left side of the frame behind the steering head.

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.

om00883a

1 HD 1 FC 4 1 3 7 Y 111000

1. Market designation (1 character)
2. Manufacturer (2 characters)
3. Motorcycle type (1 character)
4. Model (2 characters)
5. Engine type (1 character)
6. Introduction date (1 character)
7. V.I.N. check digit (1 character)
8. Model year (1 character)
9. Assembly plant (1 character)
10. Sequential number (6 characters)

Figure 1. Harley-Davidson Vehicle Identification Number (V.I.N.): 2007 Touring Models

Table 1. 2007 Harley-Davidson Touring V.I.N. Breakdown

POSITION	DESCRIPTION	POSSIBLE VALUES
1	Market designation	1=Originally manufactured for sale within the United States 5=Originally manufactured for sale outside of the United States
2	Manufacturer	HD=Harley-Davidson
3	Motorcycle type	1=Heavyweight motorcycle
4	Model	See model V.I.N. table
5	Engine type	4=1584 cm ³ fuel injected
6	Introduction date	1=Regular 2=Mid-year 3=California/regular 4=Cosmetic changes 5=California/cosmetic changes 6=California/mid-year
7	V.I.N. check digit	Can be 0-9 or X
8	Model year	7=2007
9	Assembly plant	Y=York, PA USA K=Kansas City, MO USA
10	Sequential number	Varies

Table 2. 2007 Touring V.I.N. Model Codes

CODE	MODEL	CODE	MODEL	CODE	MODEL
FB	FLHR Road King®	FC	FLHTCU Ultra Classic® Electra Glide®	FF	FLHTC Electra Glide® Classic
FG	FLHTCU Ultra Classic® Electra Glide® with sidecar	FL	FLHTCU Ultra Classic® Electra Glide® Shrine	FR	FLHRC Road King® Classic
FS	FLTR Road Glide®	FV	FLHT Electra Glide® Standard	FW	FLHR Road King® Shrine
FY	FLHRS Road King® Custom	KB	FLHX Street Glide™		

LABELS

Refer to Table 3 for safety and maintenance labels which were on the vehicle when new. If removed, replacement labels may be purchased for your motorcycle.

Table 3. Labels: Touring Models

PART NO.	DESCRIPTION	LOCATION
29127-95B	General warnings	Top of air cleaner cover
15368-01A	Battery warning	Under seat, right side of frame
14148-86	Highway bar warning	On front of highway bar below center mount
72468-07	Fuse block label	Under right side cover on fuse block

IDENTIFICATION

Label No.	Description	Location
1	General warnings	Top of air cleaner cover
2	Battery warning	Under seat, right side of frame
3	Highway bar warning	On front of highway bar below center mount
4	Fuse block label	Under right side cover on fuse block
5	Engine type	Engine area
6	Production date	Production date
7	V.I.N. model code	V.I.N. model code
8	Model year	Model year
9	Assembly plant	Assembly plant
10	Sequential number	Sequential number

SPECIFICATIONS: 2007 TOURING MODELS

Table 4. Engine: 2007 Touring Models

ITEM	SPECIFICATION	
Number of cylinders	2	
Type	4-cycle, 45 degree V-Type, air cooled	
Compression ratio	9.2-1	
Bore	95.25 mm	3.75 in.
Stroke	111.13 mm	4.38 in.
Displacement	1584 cm ³	96 in. ³
Torque	126 N·m @ 3000 RPM	93 ft-lbs @ 3000 RPM

Table 5. Transmission: 2007 Touring Models

TRANSMISSION	SPECIFICATION
Type	Constant mesh, foot shift
Speeds	6 forward

Table 6. Ignition System: 2007 Touring Models

COMPONENT	SPECIFICATION	
Ignition timing	Not adjustable	
Battery	12 volt, 28 amp/hr, sealed and maintenance free	
Spark plug type	HD-6R12	
Spark plug size	12 mm	
Spark plug gap	0.97-1.09 mm	0.038-0.043 in.
Spark plug torque	16.3-24.4 N·m	12-18 ft-lbs

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.

Table 7. Sprocket Teeth: 2007 Touring Models

DRIVE	ITEM	NUMBER OF TEETH
Primary	Engine	34
	Clutch	46
Final	Transmission	32
	Rear wheel	66*

*64 teeth on Japanese models

Table 8. Capacities: 2007 Touring Models

ITEM	LITERS	U.S.
Fuel tank (total)	18.9	5.0 gal
Oil tank with filter	3.8	4.0 qt.
Transmission (approximate)	0.95	32.0 oz.
Primary chaincase (approximate)	1.33	45.0 oz.

Table 9. Gear Ratios: 2007 Touring Models

GEAR	RATIO	
	DOMESTIC AND INTERNATIONAL	JAPANESE MODELS
1st Gear	9.312	9.030
2nd Gear	6.421	6.226
3rd Gear	4.774	4.630
4th Gear	3.926	3.807
5th Gear	3.279	3.179
6th Gear	2.790	2.706

NOTE

Gross Vehicle Weight Rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding Gross Axle Weight Ratings (GAWR) are listed on a label located on the left side of the motorcycle on the lower front downtube.

Table 10. Weights: 2007 FLHT, FLHTC/U, FLTR and FLHX

ITEM	FLHT		FLHTC		FLHTCU		FLTR		FLHX	
	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.
Weight as shipped from factory	335	738	356	784	367	808	345	761	333	733
GVWR	571.6	1259	571.6	1259	571.6	1259	571.6	1259	571.6	1259
GAWR front	227	500	227	500	227	500	227	500	227	500
GAWR rear	375	827	375	827	375	827	375	827	375	827

Table 11. Weights: 2007 FLHR, FLHRC and FLHRS

ITEM	FLHR		FLHRC		FLHRS	
	kg	lb.	kg	lb.	kg	lb.
Weight as shipped from factory	335	737	332	732	330	720
GVWR	571.6	1259	571.6	1259	571.6	1259
GAWR front	227	500	227	500	227	500
GAWR rear	375	827	375	827	375	827

Table 12. Dimensions: 2007 FLHT, FLHTC/U, FLTR and FLHX

ITEM	FLHT		FLHTC		FLHTCU		FLTR		FLHX	
	mm	in.								
Wheel base	1612.9	63.5	1612.9	63.5	1612.9	63.5	1612.9	63.5	1612.9	63.5
Overall length (Tour-Pak in rearmost position)	2380.0	93.7	2476.5	97.5	2497.0	98.3	2380.0	93.7	2400.3	94.5
Overall width	990.6	39.0	990.6	39.0	990.6	39.0	909.3	35.8	993.1	39.1
Road clearance	129.5	5.1	129.5	5.1	129.5	5.1	129.5	5.1	119.4	4.7
Overall height	1549.4	61.0	1549.4	61.0	1549.4	61.0	1397	55.0	1325.9	52.2
Saddle height laden*	693.4	27.3	693.4	27.3	693.4	27.3	683.3	26.9	668.0	26.3

*With 81.6 kg (180 lb.) rider on seat

Table 13. Dimensions: 2007 FLHR, FLHRC and FLHRS

ITEM	FLHR		FLHRC		FLHRS	
	mm	in.	mm	in.	mm	in.
Wheel base	1612.9	63.5	1612.9	63.5	1612.9	63.5
Overall length	2380.0	93.7	2380.0	93.7	2380.0	93.7
Overall width	876.3	34.5	876.3	34.5	1000.8	39.4
Road clearance	129.5	5.1	129.5	5.1	119.4	4.7
Overall height	1399.5	55.1	1399.5	55.1	1178.6	46.4
Saddle height laden*	693.4	27.3	683.3	26.9	662.9	26.1

*With 81.6 kg (180 lb.) rider on seat

Table 14. Tire Pressures: 2007 Touring Models

MODEL	LOAD	TIRE PRESSURE (COLD)			
		FRONT		REAR	
		kPa	psi	kPa	psi
All	Solo rider	248	36	248	36
	Rider and passenger	248	36	276	40

2007 vehicles use Dunlop Harley-Davidson tires only.

Table 15. Tire Sizes: 2007 Touring Models

MODEL	MOUNT	SIZE	NUMBER
All	front	16 in.	D402F MT90B16
All	rear	16 in.	D402 MU85B16

Table 16. Bulb Chart: 2007 Touring Models

LAMP	DESCRIPTION (ALL LAMPS 12 VOLT)	BULBS REQUIRED	CURRENT DRAW AMPERAGE	HARLEY-DAVIDSON PART NUMBER
Headlamp	FLHT/C/U, FLHR, FLHX	1	4.58/5.0	68329-03
	FLTR	2	4.58/5.0	68329-03
	Position lamp international	1	0.32	53438-92
Tail and stop lamp	Tail lamp	1	0.59	68167-04
	Stop lamp	1	2.10	68167-04
	Tail lamp international	1	0.59	68167-04
	Stop lamp international	1	2.10	68167-04
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
Additional lighting	Tour-Pak side lamps FLHTCU*	N/A	0.14 0.14	53788-06 (right side) 53789-06 (left side)
	Fender tip lamps	2	0.30	53439-79
	License plate lamp international	1	0.37	53436-97
	License plate lamp FLHX domestic	2	0.35	52441-95
	Auxiliary lamps	2	2.1	68453-05
	Auxiliary lamps international	2	2.7	68851-98
Instrument panel lamps FLHT/C/U FLHR/C/S FLTR FLHX	High beam indicator	Instrument panel is illuminated with LEDs. Replace entire assembly upon failure.		
	Oil pressure indicator			
	Neutral indicator			
	Turn signal indicator			
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	N/A	N/A	N/A
Gauge lamps FLHT/C/U FLTR FLHX	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 temperature gauge FLHT/C/U	1	0.24	67445-00
	Fuel gauge	1	0.24	67445-00
Items with *	Illuminated with LEDs. Replace entire assembly upon failure.			

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 0.8 mm (1/32 in.) 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)

See SPECIFICATIONS, Specifications: 2007 Touring Models for tire pressures and sizes.

GASOLINE BLENDS

Your motorcycle was designed to get the best performance and efficiency using unleaded gasoline. Most gasoline is 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 is recommended you operate your motorcycle on straight unleaded gasoline.

FUEL

Refer to Table 17. Always use a good quality unleaded gasoline. Octane ratings are usually found on the pump.

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)

Modern service station pumps dispense a high flow of gasoline into a motorcycle fuel tank making air entrapment and pressurization a possibility.

Table 17. Octane Ratings

SPECIFICATION	RATING
Pump Octane (R+M)/2	91 (95 RON)

CATALYTIC CONVERTERS

All international (HDI) and destination Japan model 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)

Some features explained are unique to certain models. These features may be available as accessories for your Harley-Davidson motorcycle. See a Harley-Davidson dealer for a complete list of accessories that will fit your specific motorcycle.

IGNITION/HEADLAMP KEY SWITCH: TOURING MODELS

LOW VISIBILITY

The automatic-on headlamp feature provides increased visibility of the rider to other motorists. Be sure headlamp is on at all times. Poor visibility of rider to other motorists can result in death or serious injury. (00030b)

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 **Fig. 2**. The ignition/headlamp key switch controls electrical systems of the motorcycle.

SECURITY

Lock 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)

CAUTION

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

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. (00154a)

1. To remove the key from the ignition on FLHR models, push the key in and turn it counterclockwise.
2. To remove the key from the ignition on FLHT models, push the key in and turn clockwise.
3. Remove the key.

NOTES

- Harley-Davidson recommends removing key from ignition/fork lock before operating motorcycle. If you do not remove key, it can fall out during operation.
- 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.

Table 18. Ignition/Headlamp Switch Positions: 2007 Touring Models

Model	Switch	Position	Description
FLHT FLTR FLTRU	Key Lock	LOCK	Locks the switch in either the FORK LOCK or ACCESS switch position. Remove the key for security.
		UNLOCK	Unlocks the switch. Unlocked, the switch can be rotated to any of the 4 positions. To prevent loss when riding, remove the key.
		FORK LOCK	Insert the key, rotate the switch to FORK LOCK and press the switch down. Turn the key to LOCK and the fork is locked. To unlock the fork, insert and rotate the key to UNLOCK and the switch will pop up.
		OFF	When switch is in OFF position, the ignition, lamps and accessories are off.
		IGNITION	When the switch is in the IGNITION position, the motorcycle can be started and all lamps and accessories will operate.
FLHR FLHC FLHRS	Switch	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.
		ACCESSORY	Accessories are on. Hazard warning flashers can be left on. Instrument lamps are on. Brake lamp and horn can be activated.
		IGNITION	Ignition, lamps and accessories are on.*

*International models have an additional function: Position lamp and tail lamp are also on.

GENERAL: CONTROLS AND INDICATORS

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)

Some features explained are unique to certain models. These features may be available as accessories for your Harley-Davidson motorcycle. See a Harley-Davidson dealer for a complete list of accessories that will fit your specific motorcycle.

IGNITION/HEADLAMP KEY SWITCH: TOURING MODELS

WARNING

The automatic-on headlamp feature provides increased visibility of the rider to other motorists. Be sure headlamp is on at all times. Poor visibility of rider to other motorists can result in death or serious injury. (00030b)

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 2. 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. To remove the key from the ignition on FLHR models, push the key in and turn it counterclockwise.
2. To remove the key from the ignition on FLHT models, push the key in and turn clockwise.
3. Remove the key.

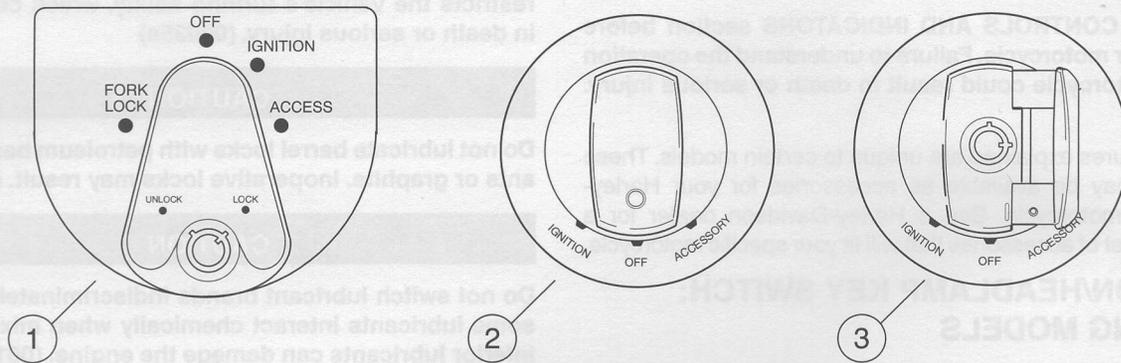
NOTES

- Harley-Davidson recommends removing key from ignition/fork lock before operating motorcycle. If you do not remove key, it can fall out during operation.
- 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.

Table 18. Ignition/Headlamp Switch Positions: 2007 Touring Models

MODEL	FUNCTION	LABEL	OPERATION
FLHT FLHTC FLHTCU FLTR FLHX	Key Lock	LOCK	Locks the switch in either the FORK LOCK or ACCESS switch position. Remove the key for security.
		UNLOCK	Unlocks the switch. Unlocked, the switch can be rotated to any of the 4 positions. To prevent loss when riding, remove the key.
	Switch	FORK LOCK	Insert the key, rotate the switch to FORK LOCK and press the switch down. Turn the key to LOCK and the fork is locked. To unlock the fork, insert and rotate the key to UNLOCK and the switch will pop up.
		OFF	When switch is in OFF position, the ignition, lamps and accessories are off.
		IGNITION	When the switch is in the IGNITION position, the motorcycle can be started and all lamps and accessories will operate.
FLHR FLHRC FLHRS	Switch		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.
		ACCESSORY	Accessories are on. Hazard warning flashers can be left on. Instrument lamps are on. Brake lamp and horn can be activated.*
		IGNITION	Ignition, lamps and accessories are on.*

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



1. All except FLHR models
2. All FLHR models (cover shown closed)
3. All FLHR models (cover shown open)

Figure 2. Ignition/Headlamp Key Switch: Touring Models

HAND CONTROLS: BASIC OPERATION

Electric Starter Switch

NOTE

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

See Figure 3. The electric starter switch is located on the right handlebar control group. See OPERATION, 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 2. Turn ignition/headlamp key switch to ON and push the START switch to operate starter motor.

Engine OFF/RUN Switch

See Figure 3. The engine off/run switch (7) turns the ignition power ON or OFF. The engine off/run switch is located on the right handlebar control. Push the top portion of the engine off/run switch to turn off ignition power and shut the engine off. Push the bottom portion of the engine off/run switch to turn on ignition power.

NOTES

- The engine off/run switch must be in the ON position to start or operate the engine.
 - The engine off/run switch should be used to shut the engine off.
1. To shut the engine off, push the top of the off/run switch to the ignition OFF position.
 2. See Figure 2. Turn the ignition key to the OFF position to turn the ignition power completely OFF.

Throttle Control Grip

See Figure 3. The throttle control grip (9) is located on the right handlebar control and is operated with the right hand.

To reduce rider fatigue on long trips, a spring loaded throttle friction adjustment screw (10) is located at the bottom of the throttle grip clamp on non-cruise equipped models.

1. Slowly turn throttle control grip clockwise (toward the front of the bike) to close the throttle (decelerate).
2. Slowly turn throttle control grip counterclockwise (toward rear of bike) to open the throttle (accelerate).

⚠ WARNING

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

3. 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.

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)

The clutch hand lever (1) is located on the left handlebar and is operated with the fingers of the left hand.

1. Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch.
2. Shift to first gear using the gear shifter lever. See CONTROLS AND INDICATORS, Gear Shift Lever: Touring Models.
3. Slowly release the clutch hand lever to engage clutch.

A clutch switch is incorporated into the left handlebar switch assembly. It enables the rider to start the vehicle in any gear (or in neutral) as long as the clutch lever is pulled in. If the clutch is not disengaged, the vehicle will not start.

Horn Switch

The horn is operated by pushing on the horn switch (2) located on the left handlebar control group.

Headlamp Dimmer Switch

The headlamp dimmer switch (3) is located on the left handlebar. The switch has two positions to activate the headlamps high or low beams.

- Press the top of the headlamp dimmer beam switch to activate the high beam.
- Press the bottom of the headlamp dimmer switch to return to the low beam.

See Figure 4. The (blue) high beam indicator lamp will illuminate when the high beam is on.

Turn Signal Switches

See Figure 3. Each handlebar control group contains a turn signal switch.

- The right turn signal switch (11) operates the right front and right rear flashing lamps.
- The left turn signal switch (4) operates the left front and left rear flashing lamps.

NOTE

Front turn signal lamps also function as running lamps (except International models).

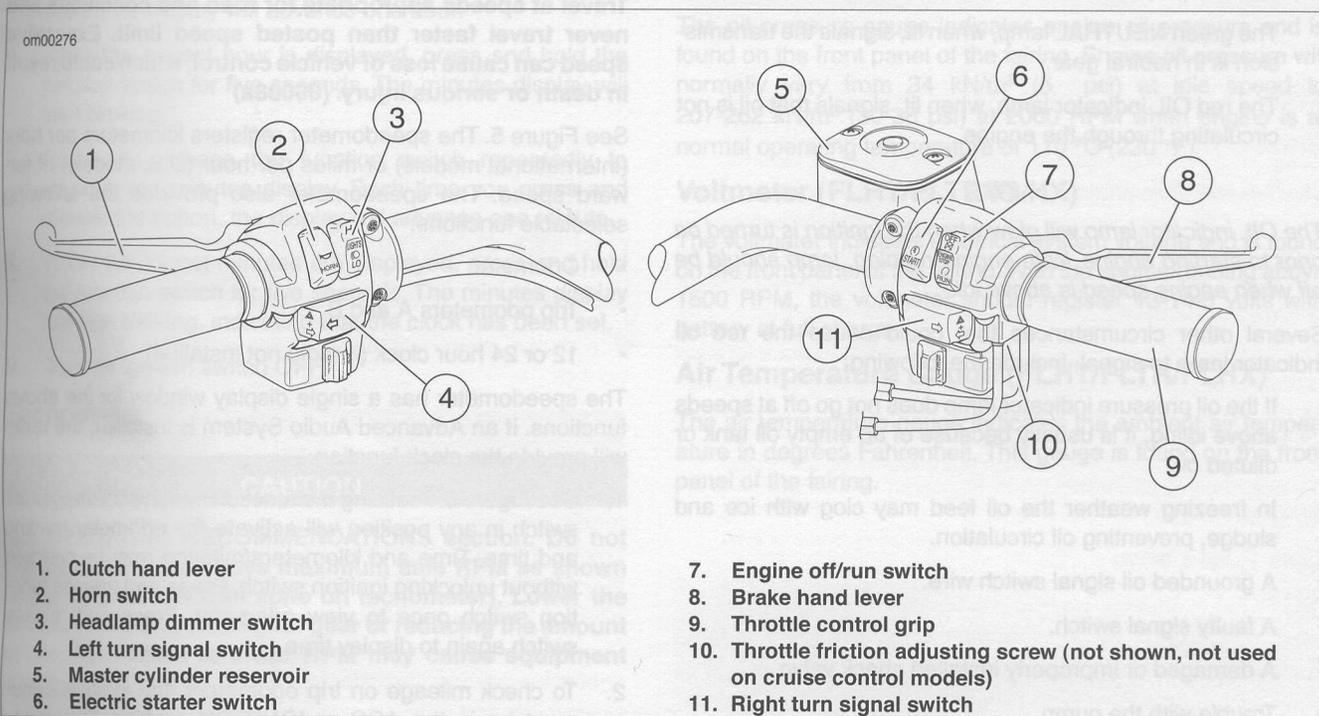


Figure 3. Basic Handlebar Controls: FLHRCI Shown (typical)

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 signals will flash.

NOTES

- If you are signaling to turn in one direction and you depress the switch for the opposite turn signal, the first signal is cancelled 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

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. Turn the ignition key OFF 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

See Figure 4. 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 will glow when the ignition is turned on prior to starting engine. With engine running, lamp should be off when engine speed is above idle.

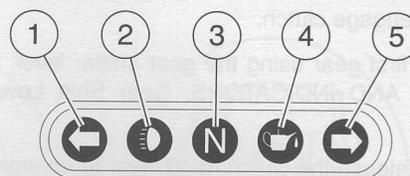
Several other circumstances that could cause the red oil indicator lamp to signal, include the following:

- If the oil pressure indicator lamp does not go off at speeds above idling, it is usually because of an empty oil tank or diluted oil.
- In freezing weather the oil feed may clog with ice and sludge, preventing oil circulation.
- A grounded oil signal switch wire.
- A faulty signal switch.
- A damaged or improperly installed check valve.
- Trouble with the pump.

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)

om00081



1. Left turn
2. High beam
3. Neutral
4. Oil
5. Right turn

Figure 4. Indicator Lamps

INSTRUMENTS: TOURING MODELS

Speedometer

! 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)

See Figure 5. The speedometer registers kilometers per hour (international models) or miles per hour (U.S. models) of forward speed. The speedometer also provides the following selectable functions:

- Odometer
- Trip odometers A and B
- 12 or 24 hour clock (if radio not installed)

The speedometer has a single display window for the above functions. If an Advanced Audio System is installed, the radio will provide the clock function.

1. See Figure 5. Pressing the function switch with the ignition switch in any position will activate the odometer reading and time. Time and kilometers/mileage may be checked without unlocking ignition switch. Press and release function switch once to view odometer. Press and release switch again to display time.
2. To check mileage on trip odometers, the ignition switch must be in the ACC or IGNITION position. Press and release the function switch until the desired trip odometer reading is displayed. An A or B in the upper left of the display window identifies trip odometers.
3. To reset or zero trip odometers, have desired (A or B) odometer in display window. Press function switch and hold switch for 2-3 seconds. The trip odometer will be reset to zero.
4. Repeat the previous step if you wish to zero both trip odometers.

Setting Clock

If the motorcycle is equipped with an Advanced Audio System, see the Advanced Audio System section in this manual to set the clock in the radio.

1. Turn the ignition switch to ACC or IGNITION.
2. See Figure 5. Press function switch until time (hour and minutes) is displayed. Press and hold the function switch for five seconds or until 12HR begins to blink in the speedometer display window. Release the button.
3. Press and release the function switch once to advance to a blinking 24HR or military style time display. Each time you press and release the button, the display will switch between 12HR and 24HR.
4. When the desired time style is displayed, press and hold the function switch for five seconds. The display will switch to the time display with the hours blinking.

NOTE

There is no AM or PM time setting required. So when correct hour is reached, press and hold function switch to advance to minute setting.

5. Press and release the function switch repeatedly to advance the hours. Each time you press and release the switch, the display will advance one hour.
6. When the correct hour is displayed, press and hold the function switch for five seconds. The minutes display will start blinking.
7. Press and release the function switch repeatedly to advance the minutes display. Each time you press and release the button, the display will advance one minute.
8. When the correct minutes are displayed, press and hold the function switch for five seconds. The minutes display will stop blinking, indicating that the clock has been set.
9. Turn the ignition switch OFF.

Tachometer

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)

See Figure 5. The tachometer measures the engine speed in revolutions per minute (RPM).

Tip Indicator Lamp

WARNING

If tip occurs, check all controls for proper operation. Restricted control movement can adversely affect the performance of the brakes, clutch or ability to shift, which could result in loss of vehicle control and death or serious injury. (00350a)

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.

Fuel Gauge

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.

Oil Pressure Gauge (FLHT/FLTR/FLHX)

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 34 kN/m² (5 psi) at idle speed to 207-262 kN/m² (30-38 psi) at 2000 RPM when engine is at normal operating temperature of 110 °C (230 °F).

Voltmeter (FLHT/FLTR/FLHX)

The voltmeter 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 (FLHT/FLTR/FLHX)

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

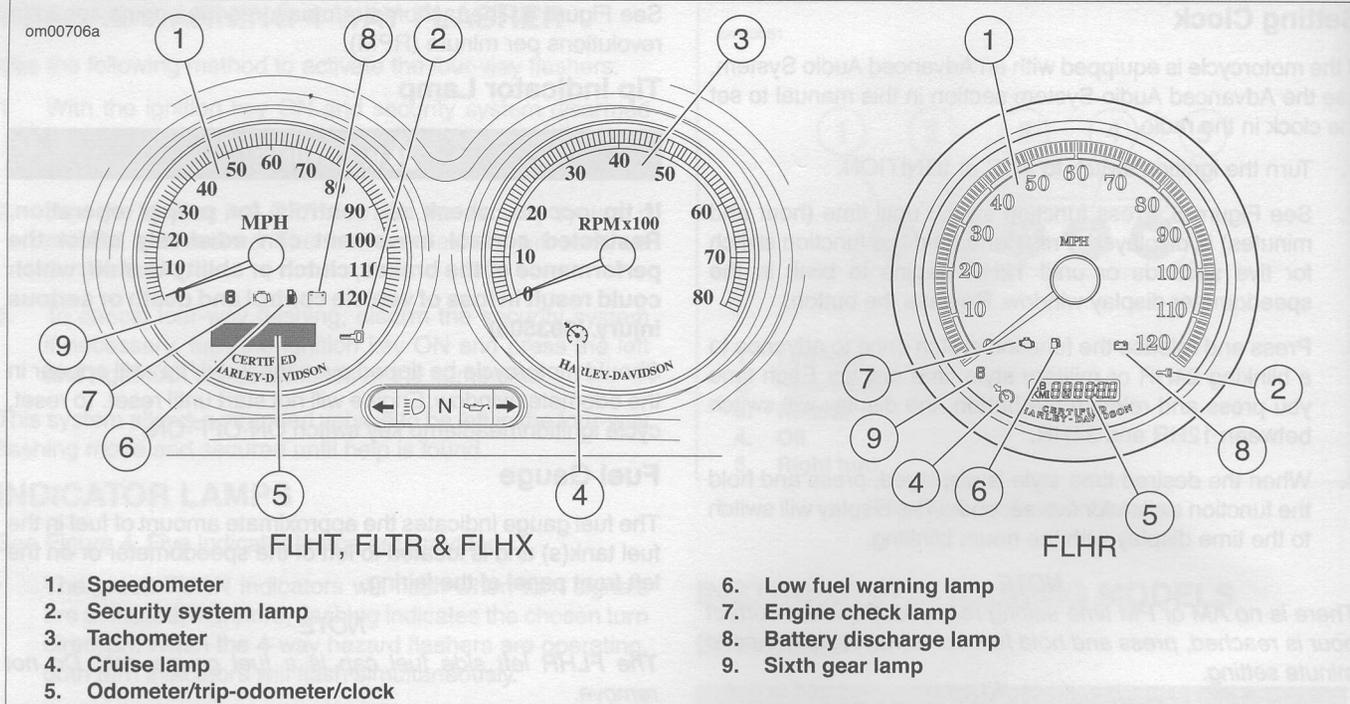


Figure 5. Indicator Lamps: Touring Models

INDICATOR LAMPS: TOURING MODELS

Engine Check Lamp

See Figure 5. The engine check lamp is located near the lower left side of the speedometer (FLHT models) face or lower center of the speedometer (FLHR models) face. 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 a Harley-Davidson dealer.

Low Fuel Lamp

See Figure 5. The low fuel lamp is located in the speedometer face, lower center by check engine lamp. The low fuel lamp illuminates to indicate that you have approximately 3.8 liters (1 gallon) of gasoline left in the tank. The low fuel lamp color is amber.

Cruise Control Equipped Models

See Figure 5. Cruise control equipped models feature two additional indicator lamps.

- An orange lamp on the cruise control switch which indicates the cruise control is ON or OFF.
- A green lamp on the tachometer (speedometer for FLHR models) face indicates the cruise control is SET or NOT SET.

NOTE

Touring Models are either equipped with cruise control or are cruise control ready. See a Harley-Davidson dealer for more information.

CRUISE CONTROL: TOURING MODELS

Operating 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 6. A fairing cap cruise control switch 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 orange to indicate the cruise control is ON. If the orange icon does NOT come on, the system is NOT ON. You cannot SET cruise speed, see your dealer.

See Figure 7. RESUME/SET switch located in the right handlebar control group.

The RESUME/SET switch controls several system functions, including set, resume, accelerate and decelerate.

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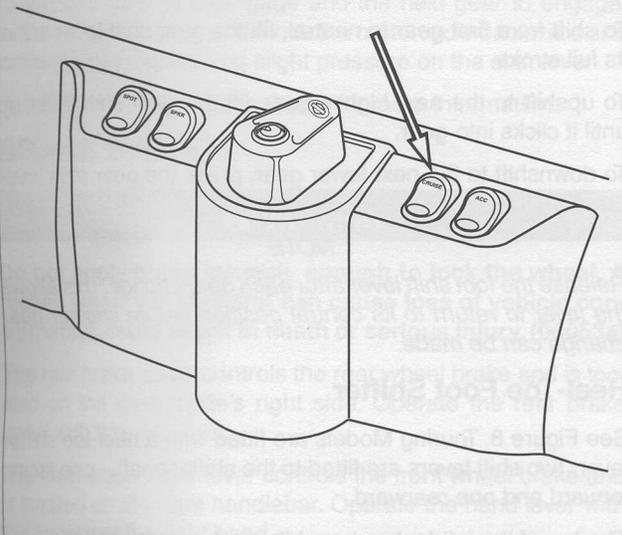


Figure 6. Cruise Control Fairing Cap Switch

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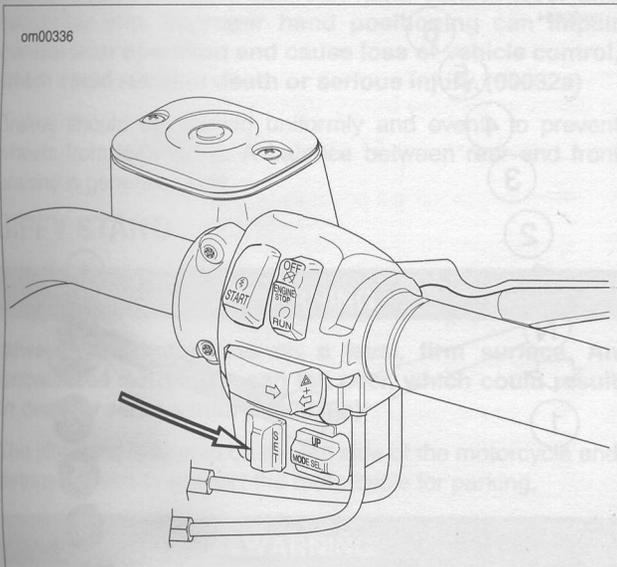


Figure 7. RESUME/SET Switch

CRUISE CONTROL OPERATION

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 48 km/h (30 mi/h) or above 137 km/h (85 mi/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 16 km/h (10 mi/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.

Engaging Cruise Control

1. See Figure 5. Turn the cruise control switch to the ON position. The orange icon on the cruise gauge face will light when activated.
2. With the motorcycle traveling at the desired cruise speed of 48-137 km/h (30-85 mi/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.

Disengaging Cruise Control

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

1. Front and/or rear brake is applied.
2. Throttle is rolled back or closed, thereby actuating idle cable roll-off (disengage) switch.
3. Motorcycle clutch is disengaged (module senses too great an increase in RPM).
4. Vehicle speed is out of the operating range.

NOTE

Rolling on the throttle more than 16 km/h (10 mi/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 orange. The orange 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 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 24 km/h (15 mi/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 1.6 km/h (1 mi/h).
2. Pressing and holding the RESUME/SET switch at RESUME will cause the system to continue to increase speed in increments of approximately 1.6 km/h (1 mi/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 1.6 km/h (1 mi/h).
2. Pressing and holding the RESUME/SET switch at SET will cause the system to continue to reduce speed in increments of approximately 1.6 km/h (1 mi/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 orange 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 48 km/h (30 mi/h) or above 137 km/h (85).
- Throttle cables are too tight. See dealer.
- Brake lamps are on constantly. See dealer.

GEAR SHIFT LEVER: TOURING MODELS

Location

CAUTION

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

The gear shift lever is located on the left side of the motorcycle and is operated with the left foot. The gear shift lever shifts the six-speed transmission from one gear to the next.

Shift Pattern

See Figure 8. The shift pattern is sequential with first gear down and five gears up.

The transmission is shifted into first gear from neutral by pressing the shift lever down until it clicks into gear.

Neutral is located between first and second gear. The green neutral indicator lamp on the dash will illuminate when the transmission is in neutral.

To shift from first gear to neutral, lift the gear shift lever 1/2 of its full stroke.

To upshift to the next higher gear, lift the gear shift lever up until it clicks into gear.

To downshift to the next lower gear, press the gear shift lever down until it clicks into gear.

NOTE

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.

Heel-Toe Foot Shifter

See Figure 8. Touring Models are fitted with a heel-toe shifter lever. Two shift levers are fitted to the shifter shaft – one facing forward and one rearward.

The toe of the left foot can upshift or downshift using the front shift lever. However, the rider has the option of upshifting with the heel on the rear facing shift lever.

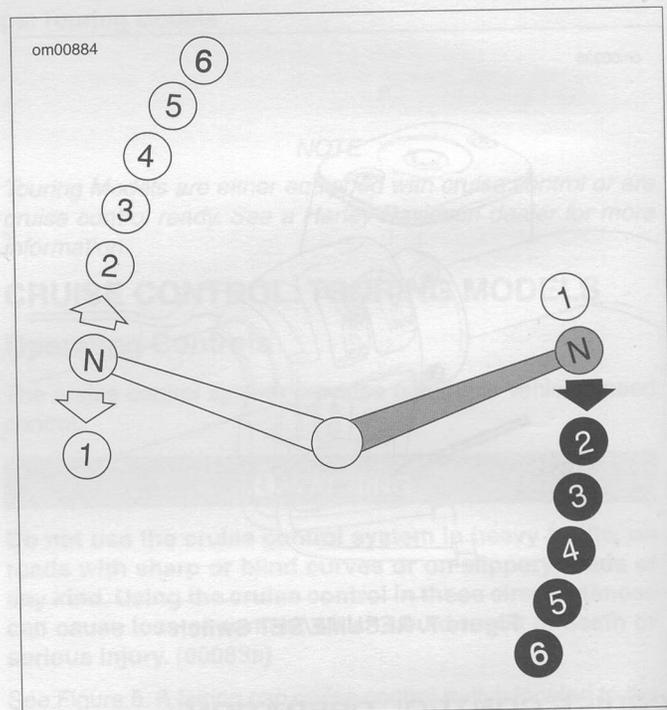


Figure 8. Shift Pattern: 6-Speed Touring Models

Shifting While Stopped

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)

When the motorcycle is standing still in first gear with the engine off or in neutral with the engine running, the transmission may not shift gears. Because the rear wheel and drive

belt are not turning, the transmission gear teeth and engagement dogs can not line up.

To get one gear to disengage and the next gear to engage, pull the clutch lever in and move the motorcycle backward and forward while maintaining slight pressure on the shift lever.

See OPERATION, Shifting Gears for more information.

BRAKE SYSTEM

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)

The rear brake pedal controls the rear wheel brake and is located on the motorcycle's right side. Operate the rear brake pedal with the right foot.

The front brake hand lever controls the front wheel brake and is located on the right handlebar. Operate the hand lever with the fingers of the right hand.

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)

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

JIFFY STAND

WARNING

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

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

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)

REAR VIEW 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)

Your vehicle is equipped with two convex rear view mirrors.

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 they actually are.

- Use caution when judging the size or relative distance of objects seen in rear view mirrors.
- Always adjust the rear view mirrors to clearly reflect the area behind the motorcycle before riding.

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 FILLER CAP: TOURING MODELS

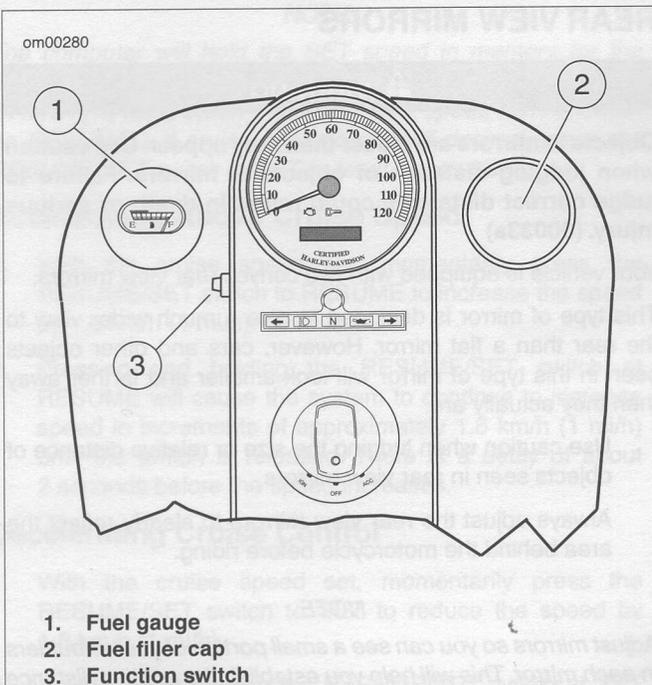
To open, turn fuel filler cap counterclockwise and lift up. To close, turn fuel filler cap clockwise until it clicks. The ratchet action of the cap prevents overtightening.

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.

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.*
- *See Figure 9. 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 9. 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 cosmetic surfaces. (00147b)

CAUTION

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

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)

FORK LOCK: TOURING MODELS**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)

NOTE

Do not force the switch into the locked position or switch damage can occur.

See Figure 10. 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.

NOTE

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

Using the fork lock immediately after parking your motorcycle will discourage unauthorized use or theft when parking your motorcycle. For fork lock detail, refer to Table 18.

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)

To Lock Fork on FLHR/C/S Models

1. Turn fork to full left position.
2. See Figure 10. Insert key and turn key counterclockwise to lock.
3. Remove key.

To Lock Fork on FLHT/FLTR/FLHX Models

1. Turn fork to full left position.
2. See Figure 2. Turn switch knob to fork lock and push knob down.
3. Turn key to lock and remove key.

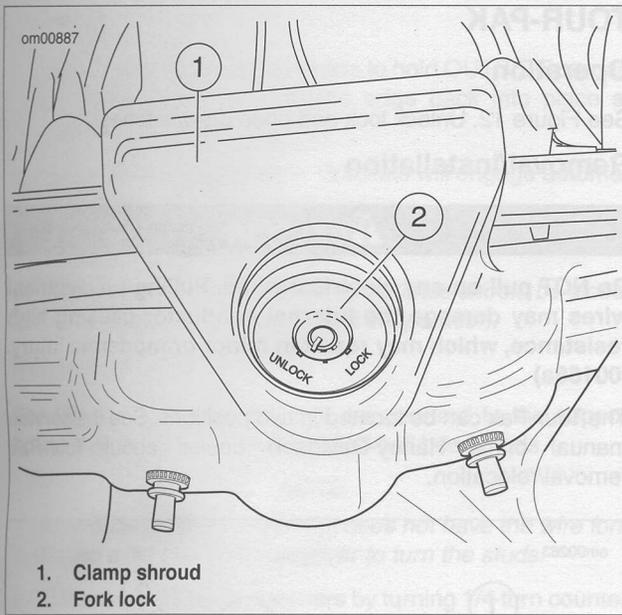


Figure 10. Fork Lock: FLHR/C/S

REAR AIR SUSPENSION

General

See Figure 11. All models feature air-adjustable rear suspension. Air pressure in the rear shocks may be adjusted to suit load requirements, riding style and personal comfort.

- For FLHR/C, FLHT/C/U and FLTR models with standard shocks, refer to Table 19.
- For FLHRS and FLHX models with low profile shocks, refer to Table 20.

NOTE

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

Table 19. Standard Rear Suspension Recommended Air Pressure: FLHR/C, FLHT/C/U and FLTR

SHOCK LOAD	TOTAL WEIGHT		PRESSURE	
	kg	lb.	kPa	psi
Solo rider	0-68	up to 150	0	0
Solo rider	68-91	150-200	0-69	0-10
Solo rider	91-113	200-250	35-103	5-15
Rider with passenger weight of	0-68	up to 150	69-103	10-15
Rider with passenger weight of	0-91	up to 200	138-172	20-25
Maximum GVWR	see label		138-241	20-35

Table 20. Low Profile Rear Suspension Recommended Air Pressures: FLHRS and FLHX

SHOCK LOAD	TOTAL WEIGHT		PRESSURE	
	kg	lb.	kPa	psi
Solo rider	0-73	up to 160	0-35	0-5
Solo rider	73-91	160-200	0-69	0-10
Solo rider	91	over 200	35-69	5-10
Rider with passenger weight of	0-68	up to 150	138-207	20-30
Rider with passenger weight of	over 68	over 150	172-241	25-35
Maximum GVWR	see label		276-345	40-50

Adjusting Shock Pressure

See Figure 11. To adjust the rear shock air pressure, use an air pump to fill or release 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

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

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)

NOTES

- Do not exceed max GVWR or GAWR.
- **ON FLHRS AND FLHX MODELS:** Always clear the line by adding 21-35 kPa (3-5 psi) before releasing air from the pump's valve, but do not exceed 345 kPa (50 psi).
- **ON ALL BUT FLHRS AND FLHX MODELS:** Always clear the line by adding 21-35 kPa (3-5 psi) before releasing air from the pump's valve, but do not exceed 241 kPa (35 psi).

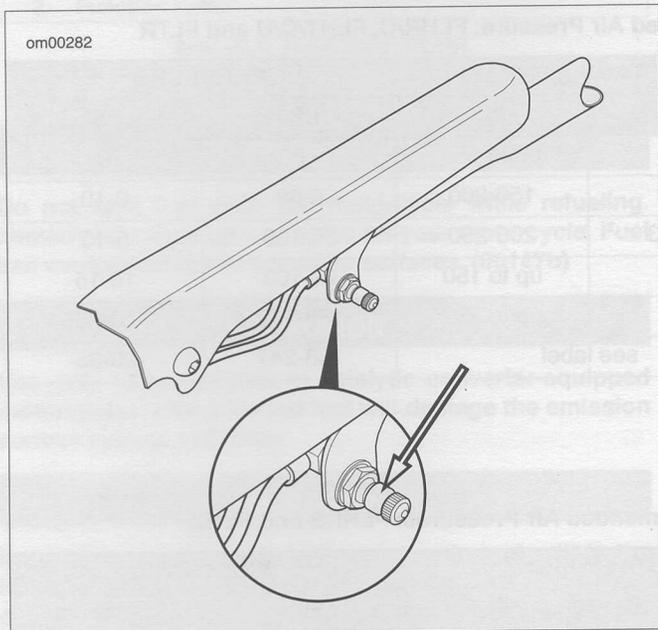


Figure 11. Rear Air Suspension Air Valve

LUGGAGE

WARNING

Do not exceed the motorcycle's Gross Vehicle Weight Rating (GVWR) or Gross Axle Weight Rating (GAWR). Exceeding these weight ratings can affect stability and handling, which could result in death or serious injury. (00016e)

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.

GAWR is the maximum amount of weight that can be safely carried on each axle.

The GVWR and GAWR is shown on the information plate, located on the frame steering head.

TOUR-PAK

Operation

See Figure 12. Unlock lock and open draw catches.

Removal/Installation

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)

The Tour-Pak can be located in two positions. See the service manual or a Harley-Davidson dealer about Tour-Pak removal/relocation.

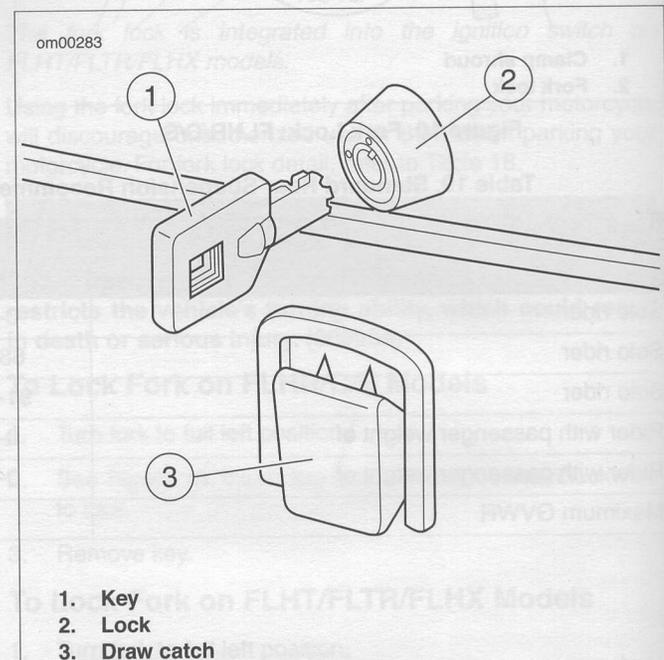


Figure 12. Tour-Pak Lock and Draw Catch

SADDLEBAGS: FLHR/FLHT/FLHX/FLTR

Opening

1. See Figure 13. 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.

NOTE

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

Closing

1. See Figure 13. 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 14. 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 counter-clockwise.
2. Remove saddlebag.

Installing

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

1. See Figure 14. Fasten studs by pushing into support bracket fasteners and turning 1/4 turn clockwise.
2. Check that studs are securely fastened.

Adjustments

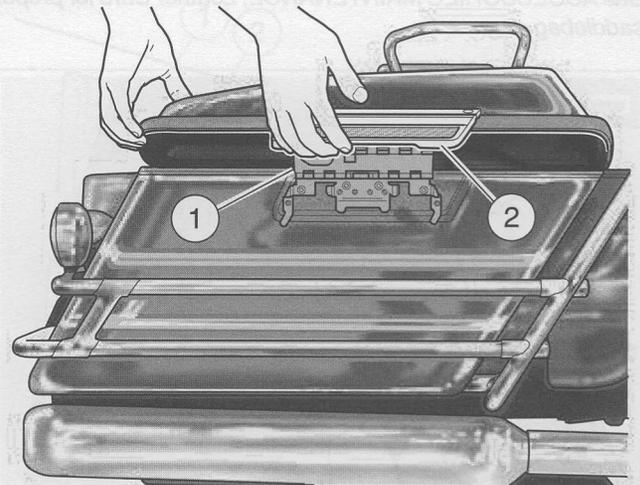
If the latches become loose, you can adjust the latch fingers.

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)

1. Bend the fingers until they firmly engage the hinge.
2. See ACCESSORIES MAINTENANCE, Miscellaneous Lubrication for lubrication details.

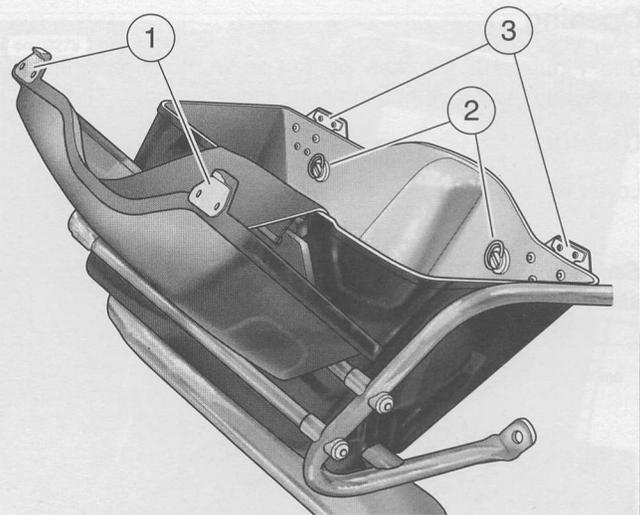
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1. Hinge
2. Latch

Figure 13. Saddlebags: FLHT/FLTR

om00285



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

Figure 14. Bail Head Studs

SADDLEBAGS: FLHRC

Opening

See Figure 15. 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

See *ACCESSORIES MAINTENANCE, Leather Care* for proper saddlebag care.

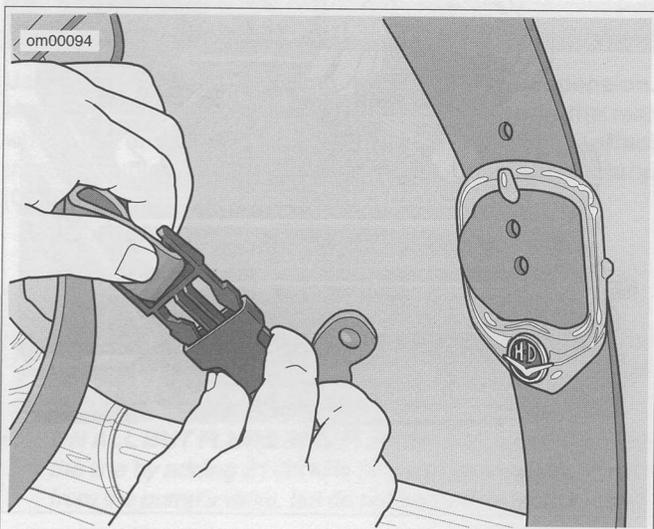


Figure 15. Saddlebag Quick Disconnect

SADDLEBAGS: FLHRS

Opening

See Figure 16. Depress button on front inboard side of saddlebag and while holding button in, raise lid.

Closing

Lower lid until latch assembly fastens.

NOTE

See *ACCESSORIES MAINTENANCE, Leather Care* for proper saddlebag care.

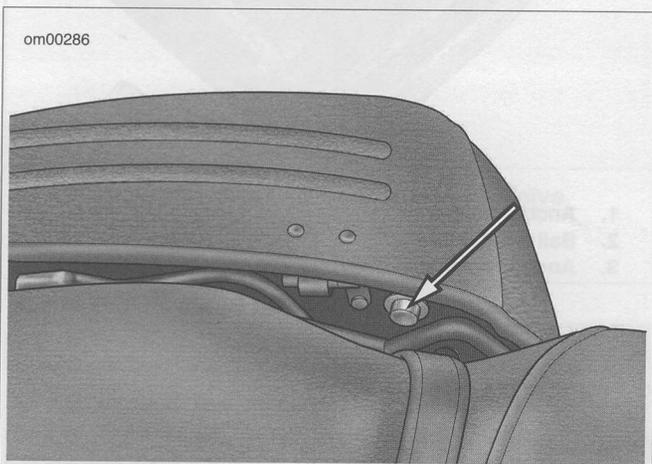


Figure 16. Open Saddlebag: FLHRS

WINDSHIELD: FLHR/C

Removal

1. See Figure 17. 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.

NOTE

For proper windshield maintenance, see *ACCESSORIES MAINTENANCE, Windshields*.

Installation

1. See Figure 17. 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.

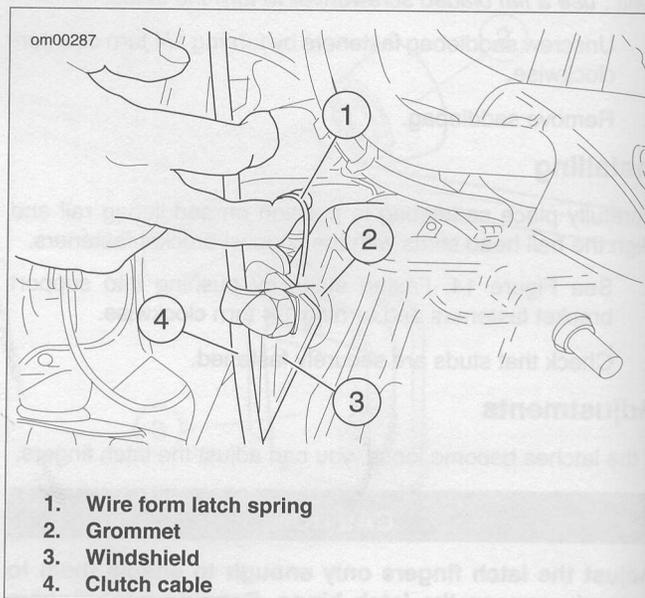


Figure 17. Windshield: FLHR/C

AIR DEFLECTORS: FLHTCU

Removal

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.

WARNING

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

1. See Figure 18. To detach the deflectors, remove the three thumb screws.
2. Store thumb screws and deflectors in Tour-Pak.

NOTE

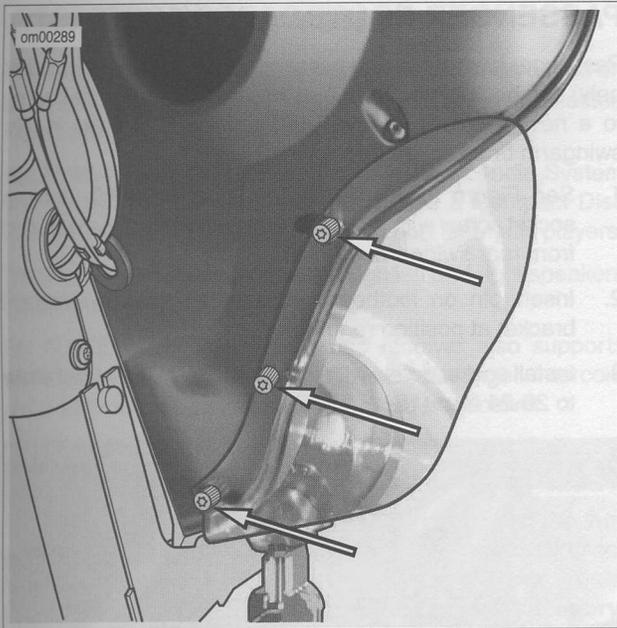


Figure 18. Air Deflector Thumb Screws

ACCESSORY SWITCH

See Figure 19. 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 20. There is an accessory connector located under the seat that can be activated with the ACC switch. See a Harley-Davidson dealer for possible uses.

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)

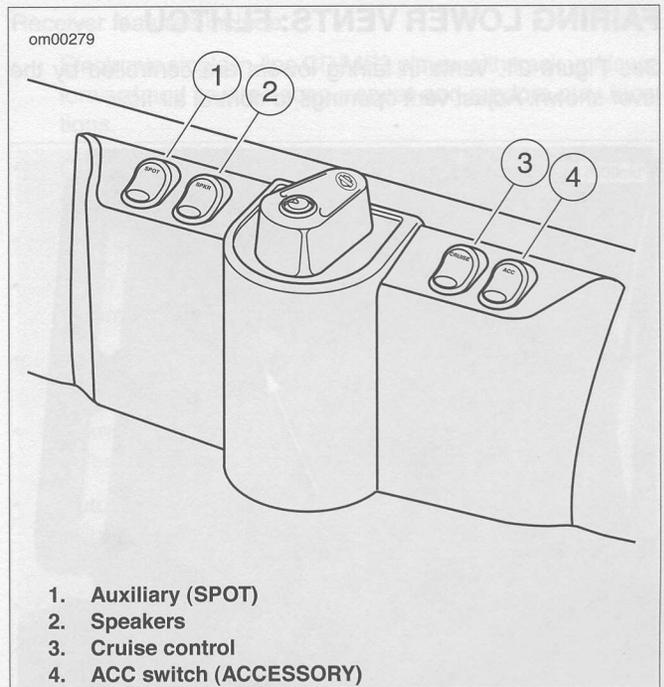


Figure 19. Switch Indicators

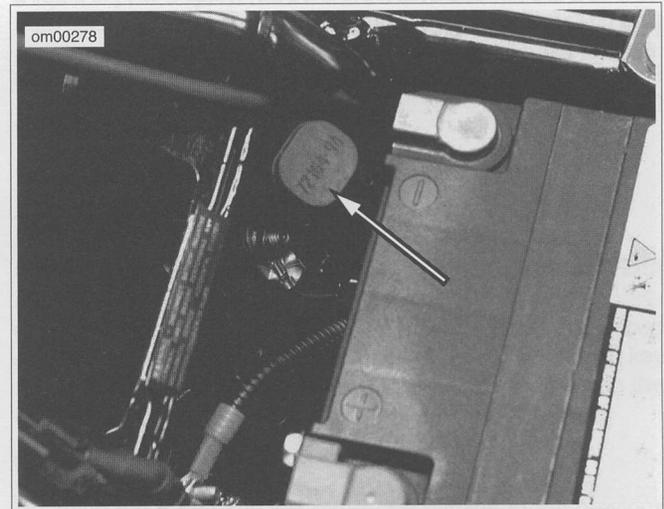


Figure 20. Accessory Connector

AUXILIARY LAMPS: FLHT AND FLHR/C

See Figure 19. Use the auxiliary lamp switch (1) to turn ON the auxiliary lamps as required.

NOTES

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

FAIRING LOWER VENTS: FLHTCU

See Figure 21. Vents in fairing lowers are controlled by the lever shown. Adjust vent openings to control air flow.

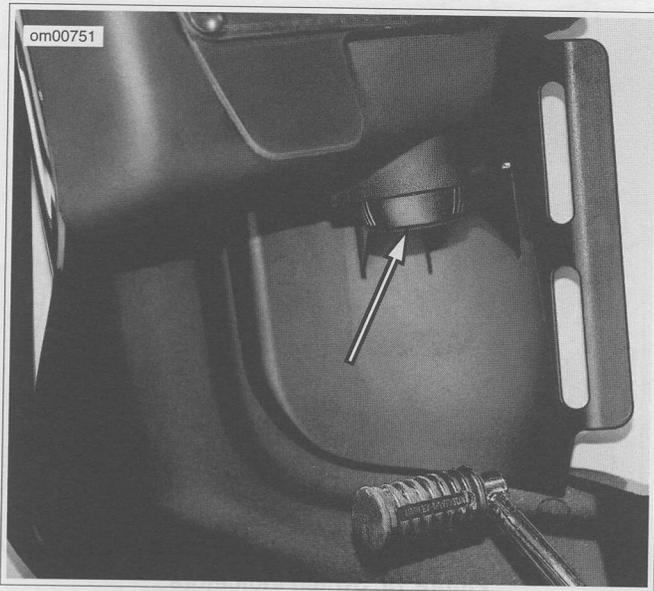


Figure 21. Fairing Lower Vent Control

RIDER FOOTBOARDS

Rider footboards are adjustable. See a Harley-Davidson dealer for adjustment.

PASSENGER FOOTBOARDS/FOOTRESTS

Passenger footboards and passenger footrests (FLHRS models only) can be adjusted to one of three positions. Before moving to a new position, remove plastic plugs from holes in rear swingarm brackets as necessary.

1. See Figure 22 for all models except FLHRS. Remove socket screw with lockwasher to remove footboard bracket from rear swingarm bracket.
2. Insert pin on footboard bracket into hole in swingarm bracket at position required.
3. Install socket screw with lockwasher. Tighten socket screw to 20-24 N·m (15-18 ft-lbs).



Figure 22. Passenger Footboards: All Except FLHRS/FLHX

ADVANCED AUDIO SYSTEM

The Advanced Audio System by Harman/Kardon® is based on an electronic unit mounted inside the front fairing of selected Harley-Davidson Touring models.

For FLHX, FLHTC, and FLTR: The Advanced Audio System is a multi-band radio receiver that includes a Compact Disc (CD)/MP3 player and an auxiliary (AUX) port for media players.

The receiver is stereo and plays through left and right speakers mounted in the rider fairing.

For FLHTCU: The Advanced Audio receiver also supports additional passenger speakers, a rider/passenger intercom and a 40 channel Citizen Band (CB) radio transceiver.

⚠ 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

The Advanced Audio System stereo receiver is a radio (3 band maximum) with a full function Compact Disc (CD)/MP3 player and an auxiliary (AUX) input.

Auxiliary audio devices can play through the receiver's amplifier and speakers when connected to the **AUX** input port. Auxiliary devices include MP3 players, cassette players, and mini-disc players.

Receiver features include:

- Electronic single in-line CD/MP3 player with track up/down, forward and reverse scan, repeat and random play functions.
- CD/CDR/CDRW compatibility. Double-sided CDs will not play in this unit.
- MPEG 2.5 Level III (MP3) file format compatibility.
- More than 10 hours of MP3 music – 150 MP3 songs (10 albums) on one 650MB disc.
- Anti-skip protection (>40 second memory and mechanical dampers).
- Remote controls for frequency tuning, band change, CD select, volume, and bass/treble/fader mixing.
- Automatic Volume Control (AVC) – automatically adjusts volume to compensate for ambient noise due to motorcycle speed.
- Time-of-day clock.
- Weather band frequencies displayed as NOAA channel numbers (active on North American units only).

FRONT PANEL CONTROLS

See Figure 23. The front panel consists of a set of pushbuttons, a liquid crystal display, (LCD), a protective door for the Compact Disc (CD/MP3) slot and a covered input port for auxiliary (AUX) players. Six of the pushbuttons are "soft keys" whose function will change with the display.

ON

Press **ON** to turn the receiver on and off.

1, 2, 3, 4, 5/Left Arrow

For the stereo receiver, the soft keys, **1, 2, 3, 4, and 5/Left Arrow**, are used to store and then recall a selected radio frequency (pre-sets). When combined with any of the Advanced Audio System accessories, the function of any active soft key for that accessory will be displayed next to the soft key in the LCD display.

6

Pressing the **6** soft key will return the display to the previous menu. For **CB** and **Intercom Setup**, the function of the **6** soft key will be displayed in the LCD next to the **6** soft key.

5/Left, Up, Down, Right Arrows

The **5/Left, Up, Down, and Right Arrow** soft keys are used for radio band frequency tuning, Bass and Treble mixing, Fader and Volume. They are also used to scroll and highlight a selection in a list. For an Advanced Audio System accessory module, the arrow keys are active when arrows appear in the display.

OK

With a menu or list item highlighted, press the **OK** pushbutton to confirm the selection and initiate the function.

COM

Active on the FLHTCU or on motorcycles equipped the Advanced Audio System CB accessory, **COM** is the Citizen Band (CB) setup button. See **ADVANCED AUDIO SYSTEM, CB Operation**. Press the **COM** pushbutton to display the CB Setup menu.

HARLEY-DAVIDSON SMART SECURITY SYSTEM

Components

See Figure 35. The Harley-Davidson Smart Security System (H-DSSS) consists of a Hands-Free Security Module (HFSM) (1) and a Hands-Free Antenna (2) mounted on the motorcycle, and a Hands-Free Fob **carried** by the rider/passenger.

After parking the motorcycle, turn the ignition key to OFF and the Smart Security System will automatically **arm** within five seconds. While armed, the starter and ignition are disabled and the rider may leave the motorcycle knowing that the module will activate an alarm if someone tampers with the ignition or attempts to move the motorcycle.

If the fob is present, the module will automatically **disarm** when the ignition key is turned to IGNITION or ACCESS.

NOTE

Do not relocate the module or the antenna on the motorcycle.

Options

Several options are available for the Harley-Davidson Smart Security System from the Harley-Davidson Genuine Motor Accessories and Motor Parts catalog. Options include:

- Smart Siren and Smart Siren II.
- Security Pager and Security Pager Receiver II.
- Replacement Fobs.

See a Harley-Davidson dealer for details.

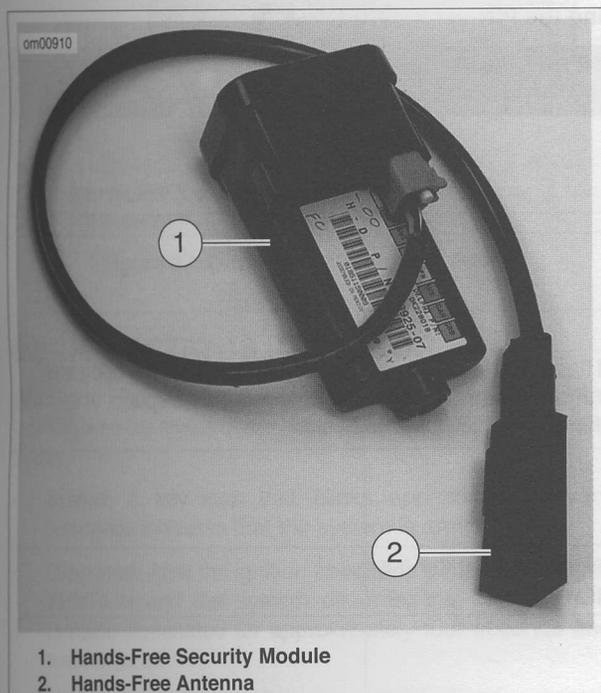


Figure 35. Security Module w/Antenna

FCC REGULATIONS

FCC ID: L2C0027TR IC ID: 3432A-0027TR

FCC ID: L2C0028TR IC ID: 3432A-0028TR

This device complies with Part 15 of the FCC Rules and with RSS-210 of Industry Canada rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

WARNING: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

HANDS-FREE FOB

Fob Assignment

See Figure 36. Hands-Free Fobs are electronically assigned to the Harley-Davidson Smart Security System by a Harley-Davidson dealer so that the module can recognize a fob's unique signal. Only two fobs can be assigned to the module at any one time.

Replacement fobs can be purchased from a dealership but can only be assigned to the motorcycle by a trained Harley-Davidson technician.

NOTES

- *The reusable label found on the fob packaging lists the serial number of the fob. For reference, fix the label to a blank "NOTES" page in the Owner's Manual.*
- *The serial number of the fob is also found on the inside of the fob. See HANDS-FREE SECURITY MODULE, Fob Battery.*
- *The module will arm only if the fob has been assigned by a Harley-Davidson dealer and a Personal Identification Number (PIN) has been entered in the system. The PIN should be recorded on the Personal Information page in the front of this Owner's Manual and on the removable wallet card.*
- *Should the rider misplace the fob or if the fob fails, the rider can refer to the wallet card and use the PIN to manually disarm the system. Refer to HANDS-FREE SECURITY MODULE, Arming and Disarming and HANDS-FREE SECURITY MODULE, Troubleshooting.*
- *The PIN can easily be changed by the rider at any time. Refer to HANDS-FREE SECURITY MODULE, Personal Identification Number (PIN).*

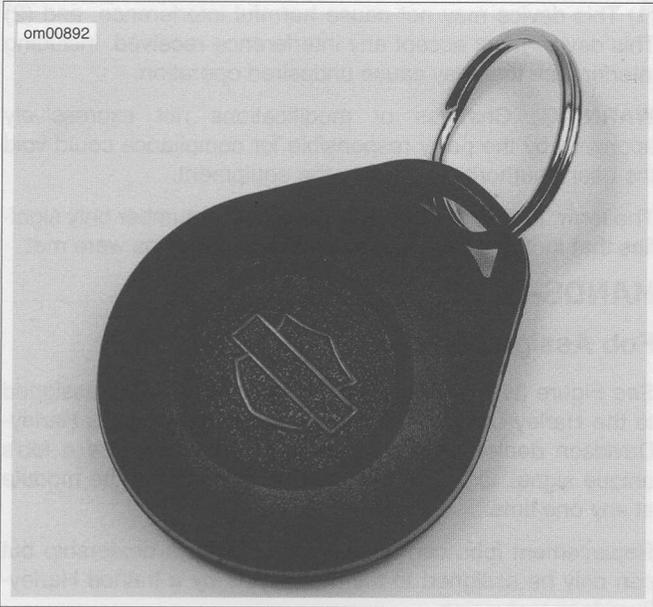


Figure 36. Hands-Free Fob: Smart Security System

Riding with a Fob

- Always carry the fob when riding, loading, fueling, moving, parking or servicing the motorcycle. Carry the fob in a convenient pocket.
- Do not leave the fob attached to the handlebars or store the fob in a saddlebag or Tour-Pak®. Unintentionally

leaving the fob with the motorcycle when it's parked prevents the system from activating the alarm.

- Do not ride with the fob stored in a metal case or with the fob closer than 76 mm (3.0 in.) to a cell phone, PDA, display or other electronic device. Any electromagnetic interference may prevent the fob from disarming the system.
- For added security, always lock the fork and remove the ignition key when parked. If the fob is within range and the motorcycle is unlocked, tampering with the motorcycle will not activate the alarm.

PERSONAL IDENTIFICATION NUMBER (PIN)

The Personal Identification Number (PIN) is a number that can be used to disarm the Harley-Davidson Smart Security System in case an assigned fob is misplaced, fails or if the fob and module cannot communicate because of electromagnetic interference.

A PIN is a five-digit number (1-9, no zeros).

Changing the PIN

To maintain security, the rider can change the PIN at any time. Refer to Table 26.

Table 26. Changing the PIN

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	Select a 5-digit (1 thru 9) PIN and record on the wallet card from Owner's Manual.		
2	With an assigned fob present, turn IGN key IGNITION – OFF – IGNITION – OFF – IGNITION .		
3	Press left turn signal switch 3 times .		
4	Press right turn signal switch 1 time and release.	Turn signals will flash 3 times. Current PIN will appear in odometer. The first digit will be flashing.	See figure showing the odometer window with PIN display.
5	Enter first digit (a) of new PIN by pressing left turn signal switch a times.		
6	Press right turn signal switch 1 time and release.	The new digit (a) will replace the current in odometer window.	
7	Enter second digit (b) of new PIN by pressing left turn signal switch b times.		
8	Press right turn signal switch 1 time and release.	The new digit (b) will replace the current in odometer window.	
9	Enter third digit (c) of new PIN by pressing left turn signal switch c times.		
10	Press right turn switch 1 time and release.	The new digit (c) will replace the current in odometer window.	

Table 26. Changing the PIN

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
11	Enter fourth digit (d) of new PIN by pressing left turn signal switch d times.		
12	Press right turn switch 1 time and release.	The new digit (d) will replace the current in odometer window.	
13	Enter fifth digit (e) of new PIN by pressing left turn signal switch e times.		
14	Press right turn switch 1 time and release.	The new digit (e) will replace the current in odometer window.	
15	Before the module rearms, turn the ignition key to OFF .	The odometer will return to mileage.	Turning the ignition key to OFF stores the new PIN in the module.

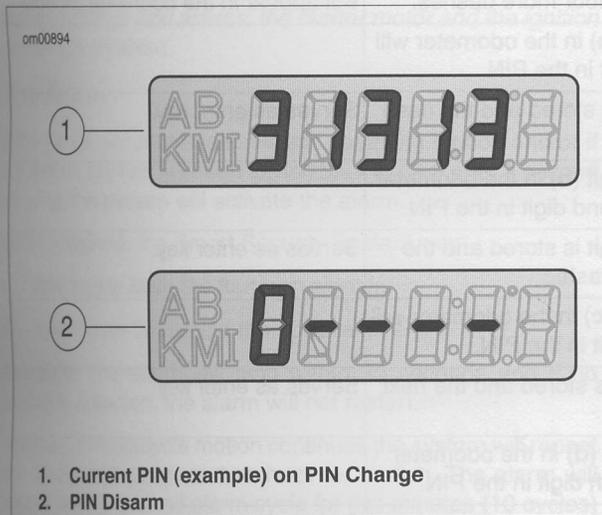


Figure 37. Odometer Windows – PIN

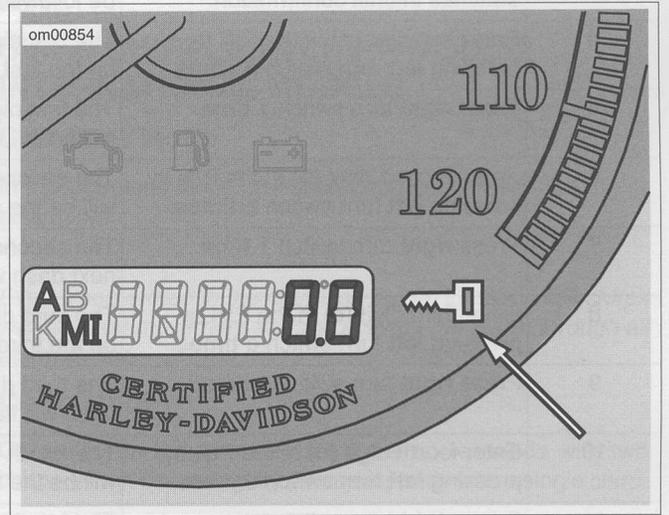


Figure 38. Security Status Indicator

SECURITY STATUS INDICATOR

See Figure 38. The illuminated key icon in the speedometer face indicates the status of the Harley-Davidson Smart Security System.

- **Armed:** A key icon that blinks approximately every 3 seconds indicates that the system is armed.
- **Disarmed:** After the ignition/headlamp switch is turned to IGNITION and the system disarms, the key icon will remain illuminated for approximately four seconds and then turns off.
- **Service:** A key icon that remains illuminated longer than four seconds indicates that service of the module is required.

ARMING AND DISARMING

Arming

When the motorcycle is parked and the ignition key is turned to OFF, the Harley-Davidson Smart Security System arms automatically within five seconds if no motion is detected. Even when the fob is present, the system will arm.

On arming, the turn signals will flash twice and the optional siren will chirp twice. While armed, the key icon in the speedometer face will flash every three seconds.

NOTE

International Models: The HFSM must be in the Chirp Mode for the siren to chirp on arming or on disarming. See HANDS-FREE SECURITY MODULE, Siren Chirpless/Chirp Modes: International Models.

Disarming

Once disarmed, the rider may ride or move the motorcycle for parking, storage or service without setting off the alarm.

Fob: An armed Smart Security System is automatically disarmed when the ignition key is turned to IGNITION with the fob present.

When the module disarms, the optional siren will chirp once and the key icon will illuminate for a solid four seconds and then turn off.

NOTE

Any motion, like lifting the motorcycle up off of its jiffy stand, or turning the ignition key to IGNITION and the module will

electronically “poll” for the presence of the fob. If the fob is present, the system disarms.

Personal Identification Number (PIN): If the fob is misplaced or if the present fob fails to communicate with the module, the system can be disarmed with the Personal Identification Number (PIN).

Disarming with a PIN

Do not turn handlebars, straddle seat or lift motorcycle off the jiffy stand. During a PIN disarm, if the Smart Security System detects motorcycle motion the system will activate the alarm.

Table 27. Entering a PIN to Disarm Harley-Davidson Smart Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	If necessary, verify the current 5-digit PIN.		Should be recorded on wallet card.
2	Turn ignition key to IGNITION .		
3	Quickly (within 2 seconds of turning ignition key) hold both turn signal switches in until confirmation.	Key icon flashes at fast rate. In the odometer window, a flashing dash will be followed by four more dashes.	See figure showing the odometer window with PIN display. Five dashes will appear in the odometer window.
4	Enter first digit (a) in the PIN by pressing left turn switch a times .	The first digit (a) in the odometer will be the first digit in the PIN.	
5	Press right turn switch 1 time .	The first digit is stored and the dash will flash.	Serves as enter key.
6	Enter second digit (b) in the PIN by pressing left turn switch b times .	The second digit (b) in the odometer will be the second digit in the PIN.	
7	Press right turn switch 1 time .	The second digit is stored and the next dash will flash.	Serves as enter key.
8	Enter third digit (c) in the PIN by pressing left turn switch c times .	The third digit (c) in the odometer will be the third digit in the PIN.	
9	Press right turn switch 1 time .	The third digit is stored and the next dash will flash.	Serves as enter key.
10	Enter fourth digit (d) in the PIN by pressing left turn switch d times .	The fourth digit (d) in the odometer will be the fourth digit in the PIN.	
11	Press right turn switch 1 time .	The fourth digit is stored and the next dash will flash.	Serves as enter key.
12	Enter fifth digit (e) in the PIN by pressing left turn switch e times .	The fifth digit (e) in the odometer will be the fifth digit in the PIN.	
13	Press right turn switch 1 time .	The fifth digit is stored. The key icon stops blinking.	Smart Security System is disarmed.

NOTES

- At any time during a PIN disarm, if the fob is brought within range of the motorcycle, the Smart Security System will disarm when the module receives the coded signal from the fob.
- If a mistake is made while entering PIN, wait two minutes before another disarming attempt.
- The Smart Security System will remain disarmed until the ignition key is turned to OFF.

Hazard Warning 4-Way Flasher

If it should be necessary to leave a motorcycle parked along side a roadway, the hazard warning four-way flashers can be turned ON and the Smart Security System armed.

To arm the H-DSSS with the Hazard Warning 4-Way Flashers ON

1. Turn ignition key to ACCESS.
2. Simultaneously press both left and right turn signal switches to turn the four-way flashers ON.
3. Turn the ignition key to OFF to arm the Smart Security System.

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To Turn Hazard Warning 4-Way Flashers OFF

1. Turn ignition key to IGNITION.
2. Simultaneously press the left and right turn signal switches.

ALARM

Warnings

Once armed, if the motorcycle is moved or lifted up off of its jiffy stand or if the ignition key is turned to IGNITION and the fob is not present, the alarm will warn the operator with three alternate flashes of the turn signals and a chirp of the optional siren.

Within four seconds, if the motorcycle is back on its jiffy stand and no further motion is detected and/or the ignition key is turned to OFF, the module will remain armed without activating the alarm.

If the motorcycle motion continues or the ignition key is not turned back to OFF, the module will issue a second warning four seconds after the first.

NOTE

During warnings and alarms, the starter motor and the ignition circuits are disabled.

The Alarm

If the Smart Security System is still detecting motion and/or if the ignition key has not been turned back to OFF after a second warning, the system will activate the alarm.

When activated, the Smart Security System will:

- Alternately flash the four turn signals.
- See Figure 39. Sound the optional siren.

Duration: The alarm will stop within 30 seconds and if no motion is detected, the alarm will not restart.

However, if motorcycle motion continues the system will repeat the 30 second alarm and recheck for motion. The alarm will repeat this 30 second alarm cycle for five minutes (10 cycles) or until the alarm is deactivated.

NOTE

The alarm will also activate the LED, vibration or audible modes of a Harley-Davidson Security Pager. A pager can operate either in silent or in combination with an optional Smart Siren. The range of a pager can be up to 0.8 km (0.5 mile). See a Harley-Davidson dealer for details.

om00102



Figure 39. Optional Smart Siren

Deactivate the Alarm

Key Fob: Bring the fob to the motorcycle. After the module identifies that the fob is present, the system will terminate the alarm.

SIREN CHIRPLESS/CHIRP MODES: INTERNATIONAL MODELS

Chirpless Mode

In the Chirpless Mode, the siren does not chirp on arming or disarming.

NOTE

Even when armed in the chirpless mode, the siren still chirps warnings on movement and will activate the alarm through all alarm cycles.

Chirp Mode

On arming in the Chirp Mode, the siren responds with two chirps. When disarming, the siren responds with a single chirp.

Switching Modes

Cycling quickly through arming and disarming twice will switch the system from either the chirpless or the chirp mode to its opposite.

1. With the fob present, the ignition key ON and the system disarmed, turn the ignition key OFF.
2. When the system arms (2 flashes of turn signals), immediately turn the ignition key back ON.
3. When the system disarms (1 flash of the turn signals), immediately turn the ignition key OFF.
4. When the system arms (2 flashes of turn signals), immediately turn the ignition key ON and wait for the system to arm.

TRANSPORT MODE

In the transport mode, the Harley-Davidson Smart Security System is armed but the motion detectors are inactive. The motorcycle can be transported on a trailer or moved in storage without activating the alarm while the starter and ignition remain disabled.

To Enter Transport Mode

1. With the fob present, turn the ignition key to IGNITION.
2. Rock the engine OFF/RUN switch to OFF.
3. With an assigned fob within range, turn the ignition key from OFF to ACCESS.
4. Simultaneously, press both the left and right turn signal switches. The turn signals will flash once.
5. Turn the ignition key to OFF to arm the system. The turn signals will flash three times as the system arms in the transport mode.

To Exit the Transport Mode

With a fob present, turn the ignition key to IGNITION and the engine OFF/RUN switch to RUN. The system exits the transport mode when the OFF/RUN switch is in RUN.

STORAGE AND SERVICE DEPARTMENTS

Long Term Parking

To maintain arming, store the fob beyond the range of the module. If the motorcycle is to be moved while parked, have the fob present.

If the motorcycle will not be operated for several months, such as during the winter season, follow the Owner's Manual instructions for storage. Refer to MAINTENANCE AND LUBRICATION, Motorcycle Storage.

Service Departments

When the motorcycle is to be left at a Harley-Davidson dealer, there are two options:

1. Leave an assigned fob with the dealer.
2. To maintain possession of the fob, ask the dealer to disable the module for service (service mode) before leaving the dealership.

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, have a Harley-Davidson dealer install a Bank Angle Switch kit. The TSM/HFSM will not function properly if not switched to sidecar operation. (00486c)

On motorcycles with a sidecar, the turn signal module (TSM) or the Hands-Free Security Module (HFSM) must be switched from the factory solo vehicle setting to the sidecar setting. Consult a Harley-Davidson dealer for complete details.

If a sidecar is permanently removed from the motorcycle, the TSM or the HFSM must be reconfigured. Refer to the SIDECAR SERVICE MANUAL for complete details.

FOB BATTERY

Replacing the Battery

Replace the key fob battery every year.

1. See Figure 40. Slowly turn a thin blade in the thumbnail slot (1) on the side of the fob to separate the two halves.
2. Remove the battery (2) and discard.

NOTE

Dispose of the old battery in accordance with local regulations.

3. Install a **new** battery (Panasonic 2032 or equivalent) with the positive (+) side down.
4. Align the two halves of the fob and snap together.

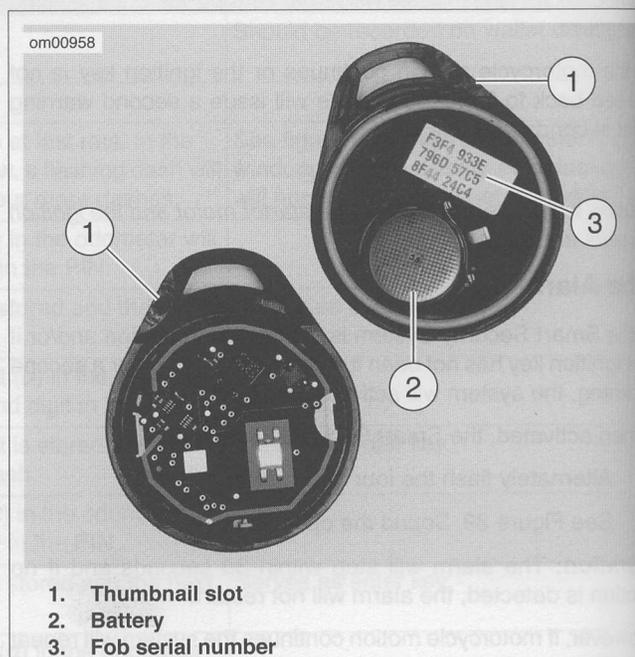


Figure 40. Hands-Free Fob Battery

POWER DISCONNECTS

Optional Siren

On a power disconnect, to prevent the module from actuating the optional siren:

1. Verify that the fob is present.
2. Turn the ignition key to IGNITION.
3. Pull the maxi-fuse from its holder or disconnect the battery.

TROUBLESHOOTING

Key Icon

If the system key icon stays illuminated while riding, see a Harley-Davidson dealer.

Fob

With the fob present, if the Smart Security System continues to actuate warnings and alarms, one of the following can be the cause:

1. **Electromagnetic Interference:** Other electronic devices, power lines, or other electromagnetic sources can cause the Smart Security System to operate inconsistently.
 - a. Verify that the fob is not in a metal enclosure or within 76 mm (3.0 in.) of any other electronic devices.
 - b. Place the fob on the seat and turn the ignition key to IGNITION. After the module disarms, return the fob to a convenient location.
 - c. Move motorcycle at least 5 m (15 feet) from the spot of interference.
2. **Discharged Fob Battery:** Use the PIN to disarm the module. Replace the battery. Refer to HANDS-FREE SECURITY MODULE, Fob Battery.
3. **A Damaged Fob:** Use the PIN to disarm the motorcycle. Replacement fobs are available for purchase at a Harley-Davidson dealer.

Siren

- If the siren does not chirp two or three times on a valid arming command from the security module, the siren is

either in the Chirpless Mode, not connected, not working, or the siren wiring was opened or shorted while the siren was disarmed.

- 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 enters the self-driven mode where it is powered from the siren's internal 9 volt battery, the turn signal lamps may or may not alternately flash. If the security module 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 to 30 seconds and then turn off for 5 to 10 seconds. This alarm cycle will be repeated ten times if the siren is in the self-driven mode.

2. Up to 500 kilometers (500 miles), vary the engine speed and avoid operating at any steady engine speed for long periods. Engine speed up to 5000 RPM is generally permissible.
3. Drive slowly and avoid fast starts at wide open throttle until the engine has warmed up.
4. Avoid lugging the engine by re-running the engine at very low speeds in higher gears.
5. Avoid hard braking. New brakes need to be broken-in by moderate use for the first 500 kilometers (200 miles).

PRE-RIDING 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.

⚠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)

⚠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)

OPERATING RECOMMENDATIONS: TOURING MODELS

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 wind-shield and fairing.

NOTE

Have the engine checked regularly and keep it well tuned.

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 RIDING RULES

The First 800 kilometers (500 miles)

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 wear in its critical parts, we recommend that you observe the riding rules provided below for the first 800 kilometers (500 miles). Adherence to these suggestions will help to assure good future durability and performance.

1. During the first 80 kilometers (50 miles) of riding, keep the engine speed below 4000 RPM in any gear. Do not lug the engine by running or accelerating at very low RPM, or by running at high RPM longer than needed for shifting or passing.
2. Up to 800 kilometers (500 miles), vary the engine speed and avoid operating at any steady engine speed for long periods. Engine speed up to 5000 RPM in any gear is permissible.
3. Drive slowly and avoid fast starts at wide open throttle until the engine has warmed up.
4. Avoid lugging the engine by not running the engine at very low speeds in higher gears.
5. Avoid hard braking. New brakes need to be broken-in by moderate use for the first 300 kilometers (200 miles).

PRE-RIDING 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.

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)

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)

1. Verify fuel is present in tank and add fuel if required.
2. Adjust mirrors to proper riding positions.
3. Verify oil is present in oil tank.
4. Check controls to make sure they operate properly. Operate the front and rear brakes, throttle, clutch and shifter. All controls should operate freely without binding.
5. Check steering for proper operation by turning the handlebars through the full operating range. Handlebars should turn smoothly without binding.

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. Check tire condition and pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability. Refer to tire specifications for correct inflation pressure to use.

WARNING

Be sure headlamp, tail and stop lamp and turn signals are operating properly before riding. Poor visibility of rider to other motorists can result in death or serious injury. (00478b)

7. Check all electrical equipment and switches including the headlamp, stop lamp, turn signals and horn for proper operation.
8. Check for any fuel, oil or hydraulic fluid leaks.
9. Check secondary belt for wear or damage.
10. Service your motorcycle as necessary.

STARTING THE ENGINE

General

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)

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

Starting

WARNING

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

1. Turn ignition/headlamp key switch 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. See Figure 41. Turn the off/run switch to RUN position.
3. Squeeze the clutch lever in against the handgrip.

NOTE

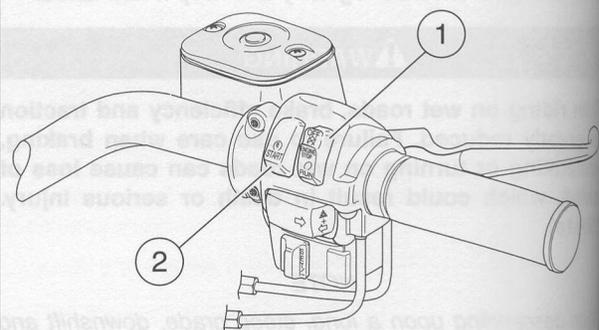
To activate the starting system, the clutch interlock circuitry requires the clutch be disengaged, clutch lever pulled in against left handgrip, and/or the transmission be shifted to the neutral position (green neutral lamp lit).

4. Press the starter button to start the motorcycle.
5. When the engine has started, you can operate your motorcycle as you normally would after raising the jockey stand.

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.

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1. Engine off/run switch
2. Engine start switch

Figure 41. Right Handlebar Controls: Touring Models (typical)

ENGINE IDLE TEMPERATURE MANAGEMENT SYSTEM

For those riders who frequently find themselves in riding conditions where the vehicle is subjected to prolonged idle conditions, an optional dealer enabled engine calibration is available. This calibration offers limited rear cylinder cooling with the vehicle stopped while the engine is left at idle. This option is available for original equipment engine calibrations only. See your dealer for details.

STOPPING THE ENGINE

1. Stop the engine by turning OFF the engine stop switch on right handlebar.
2. Turn OFF the ignition/headlamp key switch. If the engine should be stalled or stopped in any way, turn off the ignition/headlamp key switch at once to prevent battery discharge.

SHIFTING GEARS

Getting Started

CAUTION

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

The shift pattern is first gear down, next five gears up.

NOTE

Always start engine with transmission in neutral. Always start motorcycle forward motion in first gear.

1. With motorcycle engine running and jiffy stand retracted, pull the clutch hand lever in against handlebar grip to fully disengage clutch.
2. Press the foot shift lever down to end of its travel and release. The transmission is now in first gear.
3. To start forward motion, ease out the clutch lever slowly and at the same time, open throttle gradually.

Upshift (Acceleration)

Refer to Table 28. Engage second gear after the motorcycle has reached at the appropriate shifting speed.

Table 28. Upshift (Acceleration) Gear Speeds

GEAR CHANGE	km/h	mi/h
First to second	25	15
Second to third	40	25
Third to fourth	55	35
Fourth to fifth	70	45
Fifth to sixth	85	55

1. Close the throttle.
2. Disengage the clutch (pull clutch lever in).
3. See Figure 42. Lift the gear shift lever up to the end of its travel and release.
4. Ease out the clutch lever and gradually open the throttle.

5. Repeat the previous steps to engage third, fourth, fifth, and sixth gears.

NOTES

- Disengage the clutch completely before each gear change.
- Partially close the throttle so the engine will not drag when clutch is again engaged (clutch lever released).

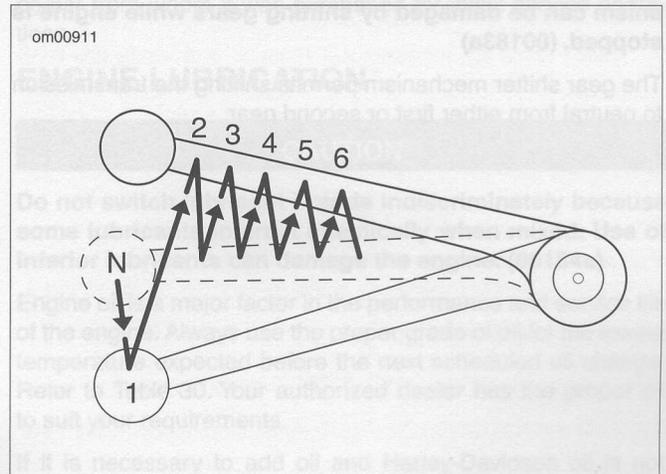


Figure 42. Shifting Sequence: Upshift

Downshift (Deceleration)

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)

Gear shift pattern is first gear down; next five gears up. Refer to Table 29 for shifting speeds.

Table 29. Downshift (Deceleration) Gear Speeds

GEAR CHANGE	km/h	mi/h
Sixth to fifth	80	50
Fifth to fourth	65	40
Fourth to third	50	30
Third to second	30	20
Second to first	15	10

NOTE

The shifting points shown in the tables are recommendations. Vehicle owners may determine that their own individual shifting patterns may differ than those stated and are additionally appropriate for individual riding styles.

See Figure 43. 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 released.

Figure 44. Engine Oil Filler Cap

NOTES

- Disengage the clutch completely before each gear change.
- Partially close the throttle so the engine will not drag when clutch is again engaged (clutch lever released).

CAUTION

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

The gear shifter mechanism permits shifting the transmission to neutral from either first or second gear.

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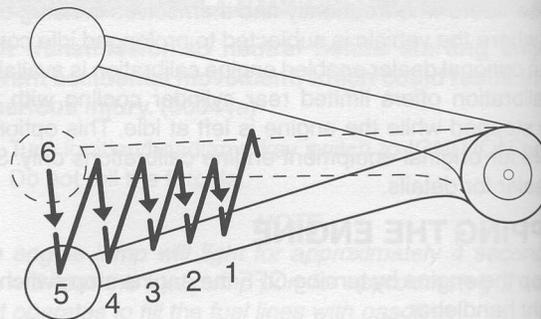


Figure 43. Shifting Sequence: Downshift

To activate the starting system, the clutch must be disengaged. To start the engine, the clutch must be disengaged before attempting to start the engine. The clutch must be disengaged before attempting to start the engine. The clutch must be disengaged before attempting to start the engine.

CAUTION
The clutch must be fully disengaged before attempting to start the engine. Failure to fully disengage the clutch can result in engine damage. (00183a)

NOTE
If the clutch becomes loose, it may cause the engine to stall. To prevent this, the clutch must be adjusted. Refer to the specifications for correct adjustment.

When the clutch lever is pulled down to the end of its travel, the transmission is now in first gear. The clutch lever must be held in this position until the engine is started.

When the clutch lever is released, the engine will stall. To prevent this, the clutch must be disengaged before attempting to start the engine.

When the clutch lever is pulled down to the end of its travel, the transmission is now in first gear. The clutch lever must be held in this position until the engine is started.

When the clutch lever is released, the engine will stall. To prevent this, the clutch must be disengaged before attempting to start the engine.

Shift (Acceleration) Gear Speeds	1	2	3	4	5	6
1	15	25	35	45	55	65
2	20	30	40	50	60	70

When the clutch lever is pulled down to the end of its travel, the transmission is now in first gear. The clutch lever must be held in this position until the engine is started.

When the clutch lever is released, the engine will stall. To prevent this, the clutch must be disengaged before attempting to start the engine.

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SAFE OPERATING MAINTENANCE

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 creates a safe motorcycle. A careful check of certain equipment must be made after periods of storage. Also, frequently inspect the motorcycle between the regular service intervals to determine if additional maintenance is necessary.

Check the following items:

1. Tires for correct pressure, abrasions or cuts.
2. Belt and primary chain for proper tension, wear or damage.
3. Brakes, steering and throttle for responsiveness and freedom from binding.
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 and primary chaincase/transmission fluid levels.
7. Headlamp, tail lamp, brake lamp and turn signals for proper 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 36. After a new motorcycle has been ridden its first 1600 kilometers (1000 miles), it should be taken to the dealer from whom it was purchased for initial service operations.

ENGINE LUBRICATION

CAUTION

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

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. Refer to Table 30. Your authorized dealer has the proper oil to suit your requirements.

If it is necessary to add oil and Harley-Davidson oil is not available, use an oil certified for diesel engines. Acceptable diesel engine oil designations include: CF-4, CG-4, CH-4 and CI-4.

The preferred viscosities for the diesel engine oils in descending order are: 20W50, 15W40 and 10W40.

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

Table 30. Recommended Engine Oils

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

CHECKING OIL LEVEL: TOURING MODELS

CAUTION

Oil level cannot be accurately measured on a cold engine. For pre-ride 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 44.

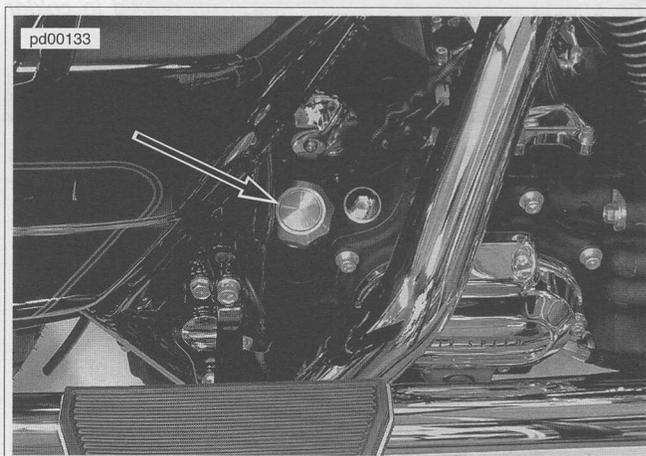


Figure 44. Engine Oil Filler Cap

Oil Level Cold Check

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

1. For pre-ride inspection, place vehicle on level ground and rest the vehicle on its jiffy stand (unless sidecar is attached).
2. Turn filler plug/dipstick counterclockwise. Remove and wipe off the dipstick. Insert the dipstick back into the oil pan with the plug screwed completely into the fill spout.
3. See Figure 45. Remove the dipstick and verify the level of the oil. The correct oil level should register between the two marks on the dipstick. If sidecar is attached, check oil level using the opposite side of dipstick as shown in Figure 46.

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.

Oil Level Hot Check

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

1. Ride motorcycle until engine is at normal operating temperature.
2. Place vehicle on level ground and rest the vehicle on its jiffy stand (unless sidecar is attached). Allow engine to idle for 1-2 minutes. Turn engine off.
3. Turn filler plug/dipstick counterclockwise. Remove and wipe off the dipstick. Insert it back with the plug screwed completely into the fill spout.
4. See Figure 45. Remove the dipstick and note the level of the oil. If sidecar is attached, check oil level using the opposite side of dipstick as shown in Figure 46. Add only enough oil to bring the level to the FULL mark on the dipstick. Do not overfill.

NOTE

Refer to Table 30. Use only recommended oil specified in MAINTENANCE AND LUBRICATION, Engine Lubrication.

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 carryover 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 36. Oil should be changed at specified 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.

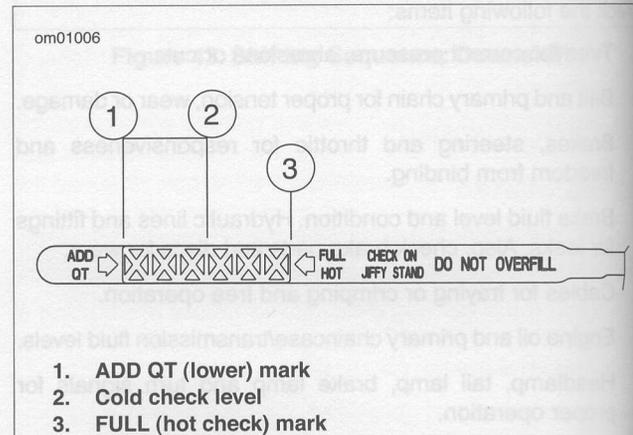


Figure 45. Engine Oil Dipstick

NOTES

- The engine oil dipstick has different markings on its two sides. Figure 45 shows the engine oil level when the motorcycle is on its jiffy stand. Figure 46 shows the engine oil level with a sidecar attached (motorcycle upright).
- For cold check level, do not exceed the midpoint (2) when filling with oil.

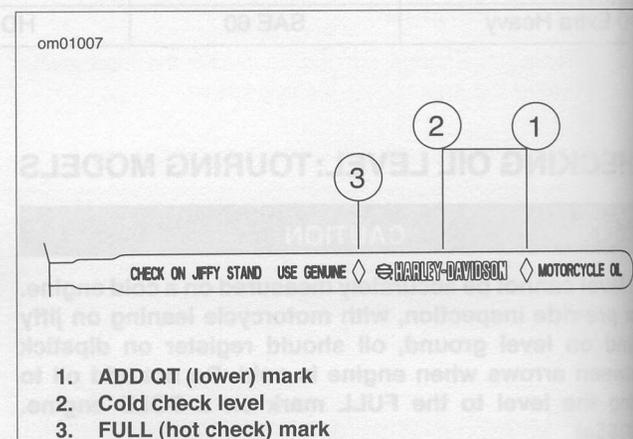


Figure 46. Engine Oil Dipstick (Sidecar Use)

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CHANGING OIL AND OIL FILTER: TOURING MODELS

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

Refer to Table 36. Oil should be changed after the first 1600 kilometers (1000 miles) for a new engine and at regular intervals in normal service at warm or moderate temperatures.

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. Turn filler plug/dipstick counterclockwise to remove.
3. See Figure 47. 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.

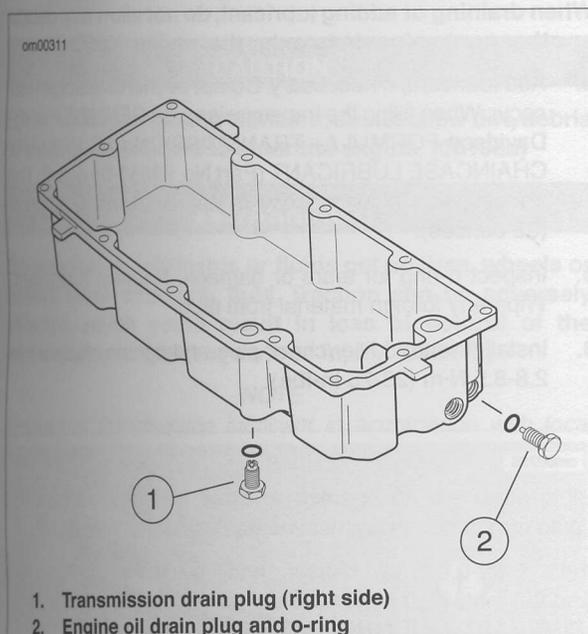


Figure 47. Oil Pan: Touring Models

4. Inspect the oil drain plug o-ring for cuts, tears or signs of deterioration. Replace as necessary.

WARNING

Be sure that no lubricants or fluids get on tires, wheels 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. (00047d)

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 48. 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 49. 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 5 micron synthetic media oil filter is highly recommended. Order Chrome (Part No. 63798-99A) or Black (Part No. 63731-99A).

9. Install engine oil drain plug and tighten to 19.0-28.5 N·m (14-21 ft-lbs).
10. Refer to Table 30. With vehicle resting on jiffy stand, initially add 3.3 liters (3.5 quarts) engine oil. Use the proper grade of oil for the lowest temperature expected before the next oil change.
11. Verify proper oil level. See MAINTENANCE AND LUBRICATION, Checking Oil Level: Touring Models.
 - a. Check engine oil level using **COLD CHECK** procedure.
 - b. Start engine and carefully check for oil leaks around drain plug and oil filter.
 - c. Check engine oil level using **HOT CHECK** procedure.

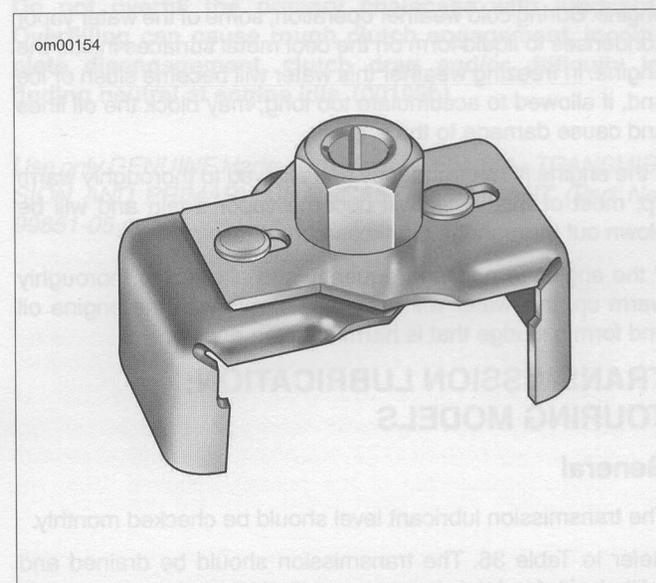
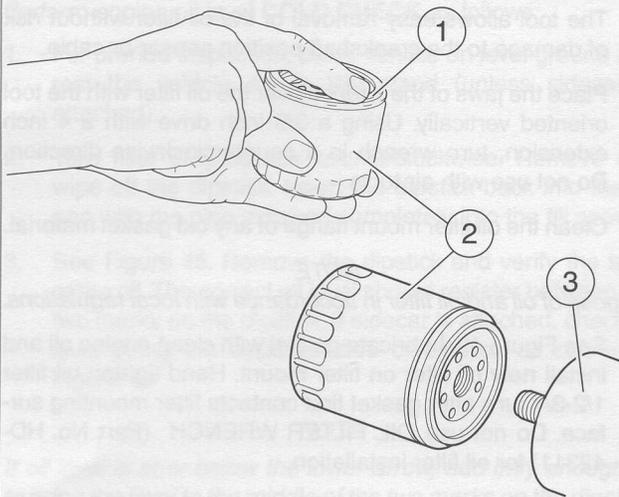


Figure 48. Oil Filter Wrench (Part No. HD-42311)



1. Thin oil film ONLY
2. Oil filter
3. Mounting plate

Figure 49. Applying Thin Oil Film

WINTER LUBRICATION

In colder climates, the engine oil should be changed often. If motorcycle is used frequently for short trips, less than 24 kilometers (15 miles), in ambient temperatures below 16° C (60 °F), oil change intervals should be reduced to 2400 kilometers (1500 miles). Motorcycles used only for short runs must have a thorough tank flush-out before **new** oil is put in. See an authorized dealer.

NOTE

The further below freezing the temperature drops, the shorter the oil change interval should be.

Water vapor is a normal by-product of combustion in any engine. During cold weather operation, some of the water vapor condenses to liquid form on the cool metal surfaces inside the engine. 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.

If the engine is run frequently and allowed to thoroughly warm up, most of this water will become vapor again and will be blown out through the crankcase breather.

If the engine is not run frequently and allowed to thoroughly warm up, this water will accumulate, mix with the engine oil and form a sludge that is harmful to the engine.

TRANSMISSION LUBRICATION: TOURING MODELS

General

The transmission lubricant level should be checked monthly.

Refer to Table 36. The transmission should be drained and refilled with fresh lubricant at specified intervals.

NOTE

When checking the transmission lubricant level, motorcycle should be leaning on the jiffy stand. Allow a short period of

time to equalize lubricant level in the transmission compartments.

Check Lubricant Level

1. Park motorcycle on its jiffy stand.
2. See Figure 50. Remove the threaded filler plug/dipstick.
3. 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 between the full and low marks on the plug/dipstick when removed.

NOTE

Lubricant level should be between the two marks on the dipstick.

WARNING

Be sure that no lubricants or fluids get on tires, wheels 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. (00047d)

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

4. Add lubricant, if necessary. Do not overfill or leakage may occur. When filling the transmission, use GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart). The transmission fluid capacity is approximately 0.95 liters (32 ounces).
5. Inspect o-ring for tears or damage. Replace if required. Wipe any foreign material from plug.
6. Install threaded filler/check plug and tighten clockwise to 2.8-8.5 N·m (25-75 in-lbs).

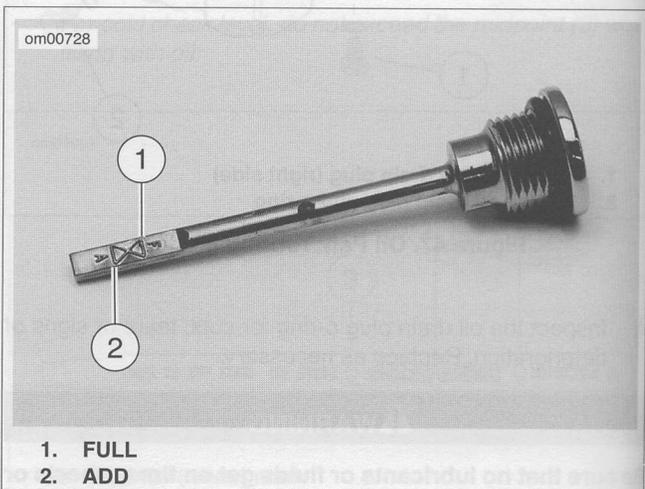


Figure 50. Transmission Filler Plug/Dipstick Lubricant Level

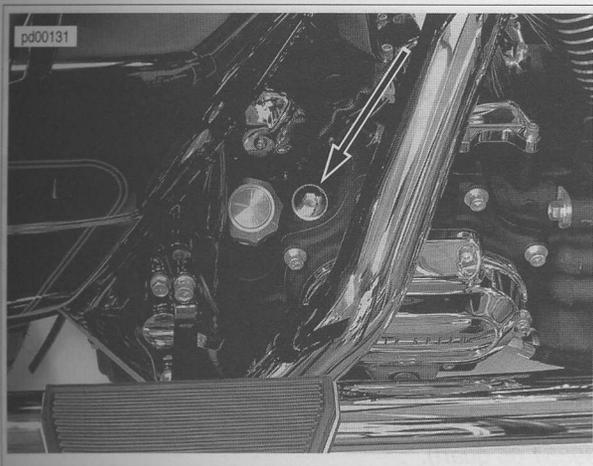


Figure 51. Transmission Filler Plug/Dipstick Location

Changing Transmission Fluid

1. See Figure 51. Remove the threaded check/filler plug.
2. See Figure 47. Remove transmission drain plug from the right side of the oil pan and drain lubricant into a suitable container.

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

WARNING

Be sure that no lubricants or fluids get on tires, wheels 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. (00047d)

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 19.0-28.5 N·m (14-21 ft-lbs). Fill the transmission with 0.95 liters (32 oz.) of GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart).

NOTE

Do not overfill or leakage may occur. The transmission fluid capacity is approximately 0.95 liters (32 ounces).

5. Install threaded filler/check plug and tighten clockwise to 2.8-8.5 N·m (25-75 in-lbs).
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 clutch components. Use the 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 a Harley-Davidson dealer.

CHAINCASE LUBRICANT: TOURING MODELS

General

Refer to Table 36. 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.

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 52. Remove five screws (2) (with captive washers) to free clutch inspection cover (1) from primary chaincase cover.
4. Remove gasket and discard.
5. Pour the proper amount and type of primary chaincase lubricant in through the clutch inspection cover opening, if required.
6. Refer to procedure in Changing Chaincase Lubricant to install gasket and clutch inspection cover.

CAUTION

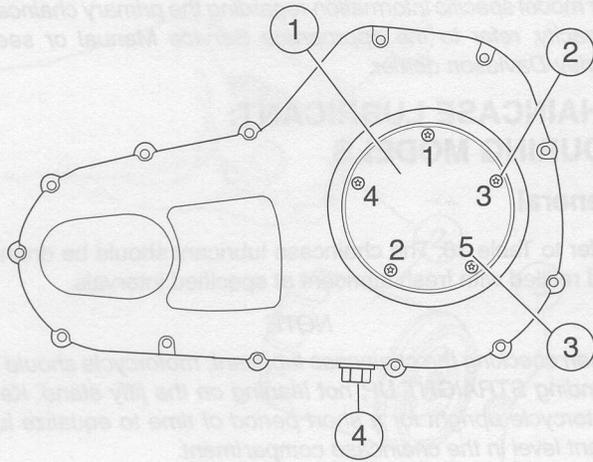
Do not overfill the primary chaincase with lubricant. Overfilling can cause rough clutch engagement, incomplete disengagement, clutch drag and/or difficulty in finding neutral at engine idle. (00199b)

NOTE

Use only GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart).

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. (00199b)



1. Clutch inspection cover
2. Screws with captive washer
3. Clutch cover torque sequence
4. Drain plug 19.0-28.5 N·m (14-21 ft-lbs)

Figure 52. Primary Chaincase Cover

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 52 and Figure 54. Remove magnetic drain plug at bottom of primary chaincase cover. Drain lubricant into suitable container.

NOTE

Dispose of chaincase lubricant in accordance with local regulations.

3. See Figure 53. Remove five screws (with captive washers) to free clutch inspection cover from primary chaincase cover.
4. 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 19.0-28.5 N·m (14-21 ft-lbs). If plug has accumulated excess debris, inspect the condition of chaincase components.
5. Pour the appropriate amount of GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart) in through the clutch inspection cover opening. A wet primary change will require 1177 mL (38 oz.). A dry fill after complete disassembly of the primary requires 1330 mL (45 oz.).

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. (00199b)

CAUTION

When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

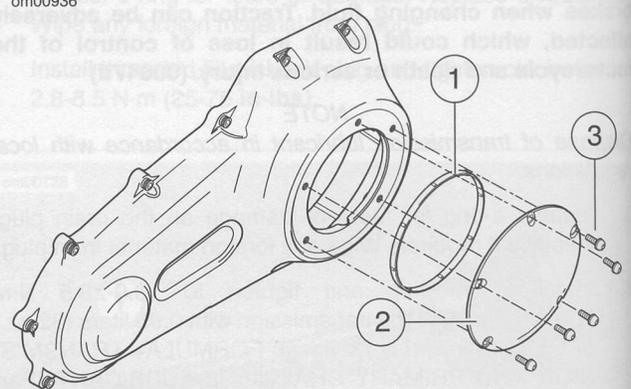
WARNING

Be sure that no lubricants or fluids get on tires, wheels 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. (00047d)

NOTE

Use only GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart).

6. Install clutch inspection cover and new gasket as follows:
 - a. Thoroughly wipe all lubricant from the cover mounting surface and groove in chaincase.
 - b. Position gasket in groove in primary chaincase cover and press each of the nubs on gasket into the groove. The nubs will retain the seal in position.
 - c. Insert screw (with captive washer) through clutch inspection cover and thread it into the top cover screw hole.
 - d. Start the remaining four screws (with captive washers).
 - e. Tighten screws to 9.5-12.2 N·m (84-108 in-lbs). Follow torque sequence shown in Figure 52.



1. Gasket
2. Clutch inspection cover
3. Screws with captive washer

Figure 53. Clutch Cover

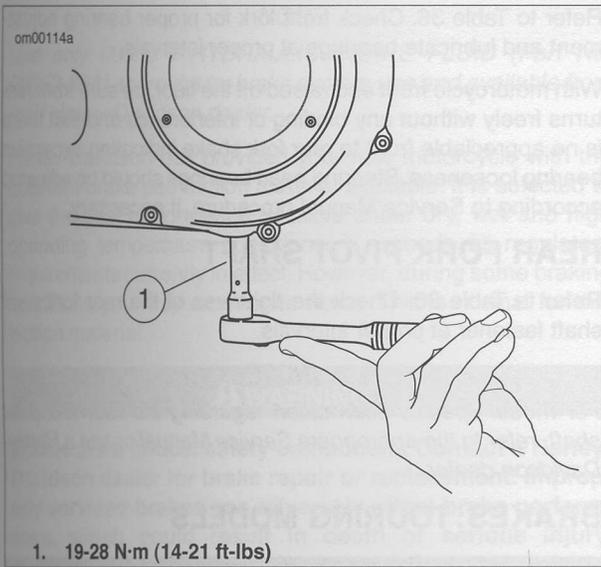


Figure 54. Removal/Installation of Chaincase Drain Plug

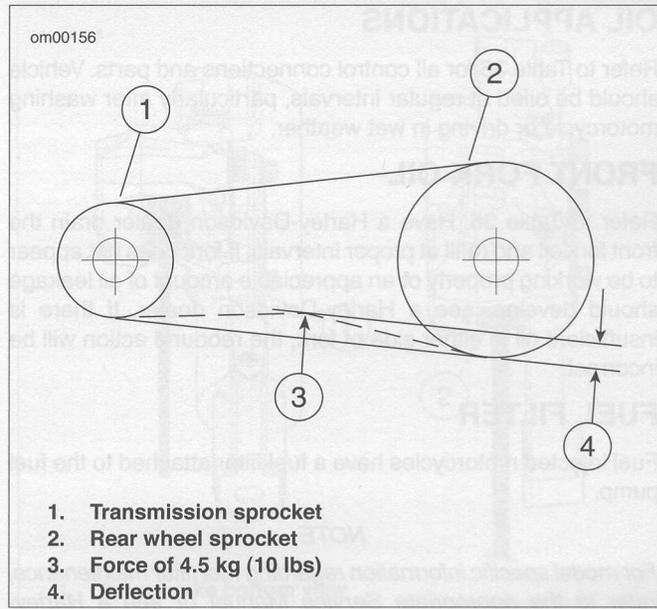


Figure 55. Check Belt Deflection

REAR DRIVE BELT: TOURING MODELS

General

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.

Refer to Table 36. Belt tension is set at the factory and should be checked after the first 1600 kilometers (1000 miles) and at proper intervals thereafter.

Checking Deflection

See Figure 55. Check belt deflection at the loosest spot in the belt with the transmission in neutral and the motorcycle at ambient temperature. With 69 kPa (10 psi) in the rear shocks and the motorcycle on its jiffy stand, use the BELT TENSION GAUGE (Part No. HD-35381) to apply 4.5 kg (10 lbs.) of force at the midpoint of the bottom belt strand.

Belt deflection should be within specification as shown in Table 31. If belt tension adjustment is necessary, see a Harley-Davidson dealer or follow the instructions given in the applicable Service Manual.

⚠ 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)

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

Table 31. Belt Deflection: 2007 Touring Models

MODELS	MILLIMETERS	INCHES
FLHT, FLHR, FLHTCU, FLHTC, FLHRC, FLTR	9.6-11.1	3/8-7/16
FLHRS, FLHX	6.4-7.9	1/4-5/16

CHASSIS LUBRICATION

Refer to Table 36 for all maintenance schedules.

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. Use a multipurpose chassis grease for other applications.
2. Remove and lubricate handlebar throttle control grip sleeve with fresh graphite at proper intervals.
3. Lubricate throttle control cables and clutch control cable at proper intervals.
4. Lubricate front brake hand lever and clutch control hand lever only if necessary.
5. Inspect rear fork pivot shaft bearings.
6. Pack the steering head bearings with fresh grease at proper intervals.
7. Lubricate the jiffy stand mechanism with LOCTITE AEROSOL ANTI-SEIZE at proper intervals.

NOTE

For model specific information regarding the chassis lubrication, refer to the appropriate Service Manual or see a Harley-Davidson dealer.

OIL APPLICATIONS

Refer to Table 36 for all control connections and parts. Vehicle should be oiled at regular intervals, particularly after washing motorcycle or driving in wet weather.

FRONT FORK OIL

Refer to Table 36. Have a Harley-Davidson dealer drain the front fork oil and refill at proper intervals. If fork does not appear to be working properly or an appreciable amount of oil leakage should develop, see a Harley-Davidson dealer. If there is insufficient oil in either side of fork, the rebound action will be incorrect.

FUEL FILTER

Fuel injected motorcycles have a fuel filter attached to the fuel pump.

NOTE

For model specific information regarding fuel filter maintenance, refer to the appropriate Service Manual or see a Harley-Davidson dealer.

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, check the control cable adjustment first. See a Harley-Davidson dealer for proper service.

HYDRAULIC LIFTERS

The hydraulic lifters are self-adjusting. They automatically adjust length to compensate for engine expansion and valve mechanism wear. This keeps 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 the valve mechanism becomes abnormally noisy, other than for a short period immediately after engine is started, 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 a 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 36. Check front fork for proper bearing adjustment and lubricate bearings at proper intervals.

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

Refer to Table 36. Check the tightness of the rear fork pivot shaft fastener at proper intervals.

NOTE

For model specific information regarding the rear fork pivot shaft, refer to the appropriate Service Manual or see a Harley-Davidson dealer.

BRAKES: TOURING MODELS

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)

NOTES

- Master cylinder cover specifies correct brake fluid.
 - When adding or changing brake fluid, be sure to use only the type specified for your motorcycle.
 - Use only Harley-Davidson D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A).
 - Do not mix D.O.T. 4 with D.O.T. 5 brake fluid.
1. Refer to Table 36. Check brake pads and brake discs for wear at proper intervals.
 2. Check the fluid level in the master cylinder reservoirs at proper intervals.
 3. If level is low, clean dirt and debris from reservoir cover before removing.

CAUTION

D.O.T. 4 brake fluid will damage painted and body panel surfaces it comes in contact with. Always use caution and protect surfaces from spills whenever brake work is performed. Failure to comply can result in cosmetic damage. (00239b)

CAUTION

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. 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. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

4. Add D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A) if necessary.

NOTE

Use only D.O.T. 4 HYDRAULIC BRAKE FLUID (Part No. 99953-99A) approved for brake system use and available from your Harley-Davidson dealer.

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)

See Figure 56. 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)

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)

NOTES

- If the brake pad friction material is 1.02 mm (0.04 in.) thick or less, the pads must be replaced immediately.
- Always replace brake pads in pairs.

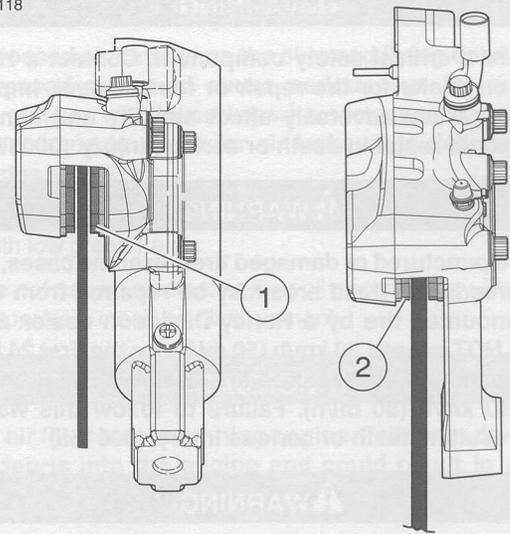
The rear brake outer pad on all models can be measured from the caliper bracket side using a thin plastic 152.4 mm (6.0 in.) rule. Place the rule against the brake disc through the space alongside the caliper.

The outer surface of the brake pad backing plate should measure 1.02 mm (0.04 in.) or more away from the brake disc.

NOTE

Replace pads if brake friction material (1) is 1.02 mm (0.04 in.) or less above the backing plate.

om00118



1. Front brake bottom view
2. Rear brake top view

Figure 56. Brake Friction Material

TIRES

See SPECIFICATIONS, Specifications: 2007 Touring Models for tire pressures and sizes.

- 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

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

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. Check before each trip if used occasionally.

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)

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 80 km/h (50 mi/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 130 km/h (80 mi/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

Inspection

⚠ WARNING

Harley-Davidson tires are equipped with wear bars that run horizontally across the tread. When wear bars become visible and only 0.8 mm (1/32 in.) 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)

See Figure 57. Arrows on tire sidewalls pinpoint location of wear bar indicators.

Tread wear indicator bars will appear on tire tread surfaces when 0.8 mm (1/32 in.) or less of tire tread remains. See Figure 58. Always replace tires before the tread wear indicator bars appear.

When To Replace Tires

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.

om00120

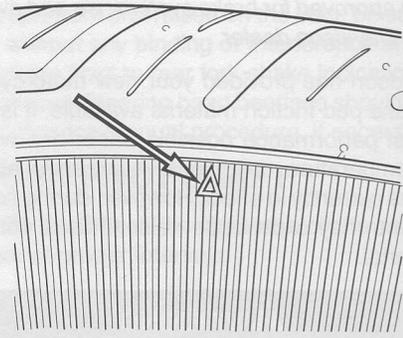


Figure 57. Tire Sidewall

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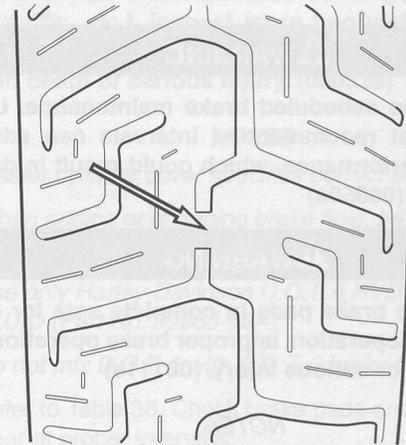


Figure 58. Tread Surface

VEHICLE ALIGNMENT

Isolation Mounted Engine Models

Refer to Table 36. Vehicle alignment should be checked at regular intervals. This includes whenever the rear wheel is removed and installed or when the rear drive belt is adjusted. The stabilizer links and engine mounts should be checked for wear according to Service Manual procedures at proper 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 stabilizer link at the top of the engine. See a Harley-Davidson dealer for this service.

⚠ WARNING

Do not change stabilizer link adjustment. Changing adjustment can adversely affect stability, which could result in death or serious injury. (00059a)

⚠ 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 36. Inspect shock absorbers and rubber bushings for leaks and bushing deterioration at proper intervals.

SPARK PLUGS

Refer to Table 36. Check the spark plugs at proper intervals.

⚠ 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)

Disconnect spark plug cables from plugs by pulling on the molded connector caps. To reconnect, simply snap-on spark plug cables to tops of spark plugs.

Refer to Table 6 before servicing spark plugs.

1. Check spark plug type. Only use those spark plugs specified for your model motorcycle.
2. Check spark plug gap against table specifications.
3. Always tighten to the proper torque. Spark plugs must be tightened to the torque specified for proper heat transfer.

NOTE

If a torque wrench is not available, tighten plugs finger tight and then tighten an additional one quarter turn with a spark plug wrench.

IGNITION

The engine in your motorcycle has been designed specifically to achieve optimum fuel economy within exhaust emission controls. Factory programmed ignition characteristics provide maximum engine performance and driveability.

AIR CLEANER

See Figure 59. The engine air cleaner is a paper/wire mesh air filter element.

Refer to Table 36. Remove air cleaner cover and inspect filter element at proper intervals. Under dusty conditions, inspect more often.

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.
- 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)

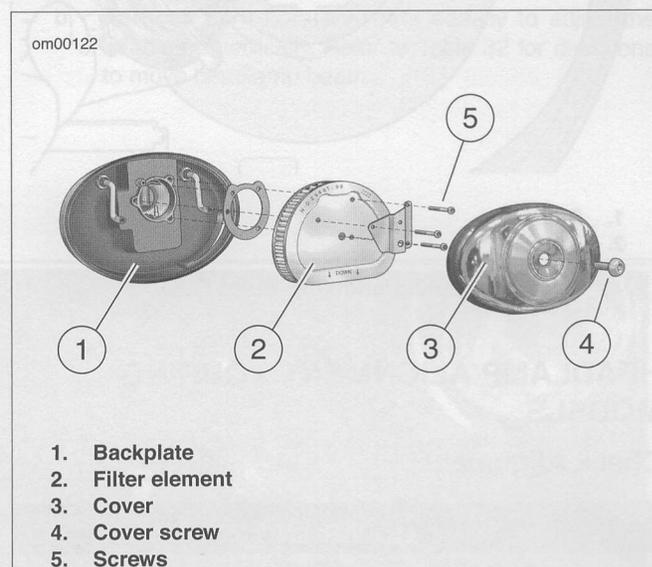


Figure 59. Air Cleaner: Twin Cam Models

HEADLAMP

See Figure 60. The headlamp assembly uses a replaceable quartz halogen bulb.

NOTE

Refer to Table 16 and see a 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 gas under pressure, which, if not handled carefully, could cause serious eye injury. (00062b)

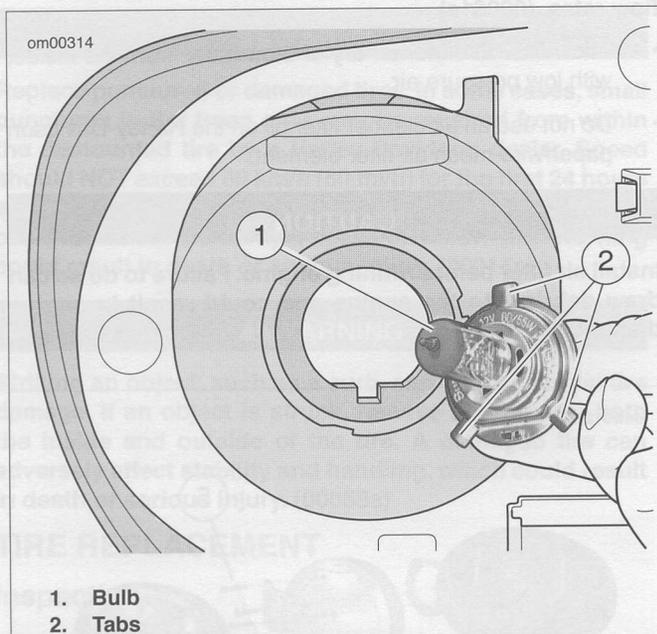


Figure 60. Headlamp Bulb: FLTR

HEADLAMP ALIGNMENT: TOURING MODELS

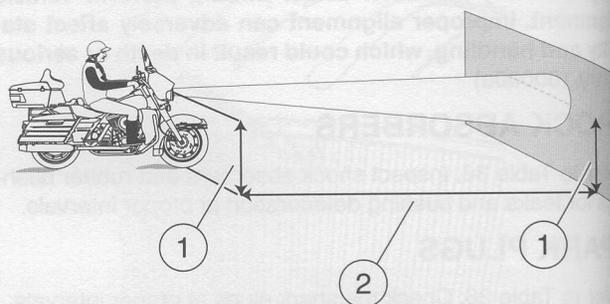
Check Alignment

WARNING

The automatic-on headlamp feature provides increased visibility of the rider to other motorists. Be sure headlamp is on at all times. Poor visibility of rider to other motorists can result in death or serious injury. (00030b)

1. Verify correct front and rear tire inflation pressure. Refer to Table 14.
2. Place the motorcycle on a level floor or pavement in an area with minimum light.
3. See Figure 61. Point the front of the motorcycle toward a screen or wall which is 7.6 meters (25 feet) from where patch of front tire contacts floor (i.e. – directly below front axle).
4. 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.

om00315

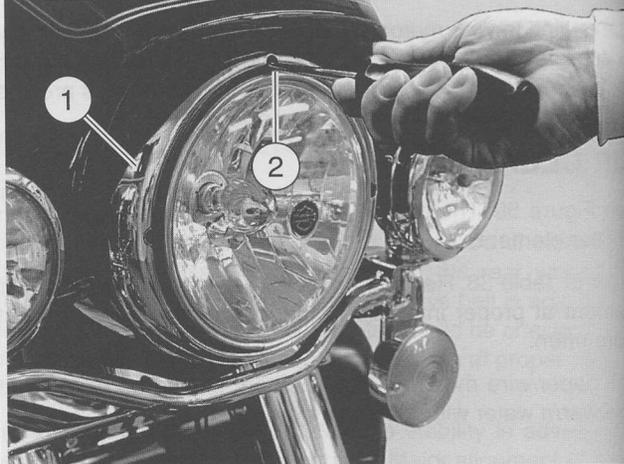


1. Distance to center of headlamp
2. 7.6 meters (25 feet)

Figure 61. Check Headlamp Alignment: Touring Models

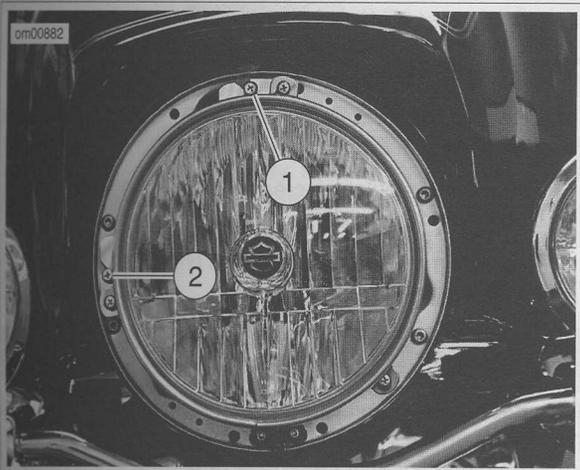
6. Stand the motorcycle upright with both tires resting on the floor and with the front wheel held in straight alignment (directly forward).
7. Turn the ignition/headlamp key switch to IGNITION. Rock the headlamp dimmer switch on the left handlebar to HI.
8. Verify and correct headlamp adjustment if necessary.
 - a. 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.
 - b. 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).

om00881



1. Headlamp door
2. Slot

Figure 62. Headlamp Door: 2007 Touring Models



1. Vertical adjusting screw
2. Horizontal adjusting screw

Figure 63. Headlamp Adjustment: FLHT, FLHX, FLHTC, FLHTCU, FLHR, FLHRS and FLHRC

Adjust FLHT/FLHR Headlamps

NOTE

Headlamp adjustment can be performed without removing the headlamp door (chrome ring).

1. See Figure 62. Insert Phillips screwdriver between headlamp housing and rubber gasket.
2. See Figure 63. Adjust beam.
 - a. **Horizontal:** Turn the vertical adjusting screw (1) to adjust headlamp vertically.
 - b. **Vertical:** Turn the horizontal adjusting screw (2) to adjust headlamp horizontally.

Adjust FLTR Headlamps

1. See Figure 64. Fit a 4.5 mm deep socket and a flexible driver to the hex adjusters near the bottom edge of the left and right inner fairing. The adjusters pivot the double headlamp housing around its upper mount.
2. Adjust the headlamp beam.
 - a. **Horizontal:** Turn the left or right adjuster to horizontally center the headlamp beam.
 - b. **Vertical:** Turn both adjusters equally to adjust the headlamp vertically. Refer to Table 32 for directions to move headlamp beam.



1. Hex adjuster

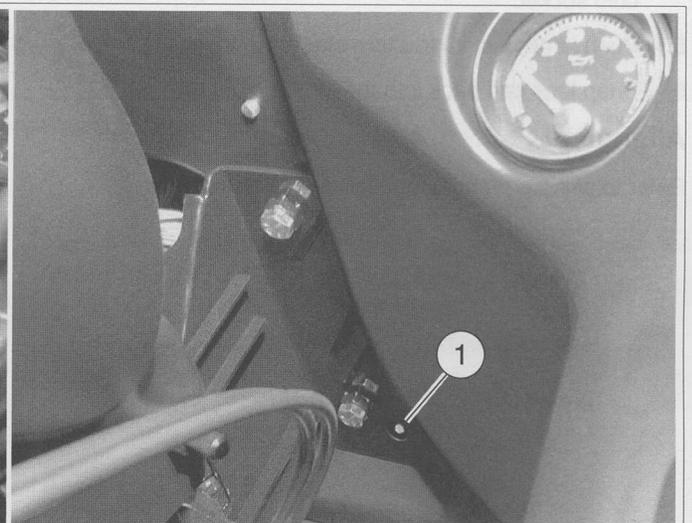


Figure 64. Headlamp Adjustment: FLTR

Table 32. 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

TURN SIGNAL BULBS: BULLET STYLE

Replacement

1. See Figure 65. To access the front or rear turn signal bulbs for replacement, locate a notch on the turn signal lens cap.
2. Insert a coin in the lens cap notch, and carefully twist until the lens cap pops out of the lamp housing.
3. Push in and twist the lamp bulb counterclockwise and pull lamp bulb out of the socket.
4. Orient index pins on **new** lamp bulb with pin guides inside bulb socket.
5. Push lamp bulb in and turn clockwise to lock in place.
6. Snap lens cap back into the lamp holder.

Alignment

Refer to service manual for alignment procedure.

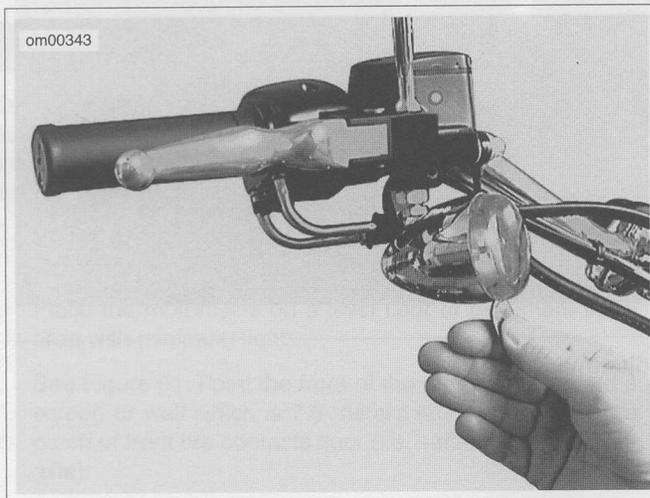


Figure 65. Lens Cap Notch

ALTERNATOR/VOLTAGE REGULATOR

Charging Rate

The alternator output is controlled and changed to direct current by the voltage regulator.

- The voltage regulator increases charging rate when battery is low or lamps are lit.
- The voltage regulator decreases charging rate when 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 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)

A battery voltage LED in the instruments will light up when voltage is either too low or too high.

NOTES

- This unit requires no interval attention. If any electrical system trouble is experienced that might be traceable to the alternator or voltage regulator, the motorcycle should be taken to a 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 a Harley-Davidson dealer.

BATTERY: GENERAL

Type

Your motorcycle uses a permanently sealed, maintenance-free, lead/calcium and sulfuric acid battery. All batteries are shipped precharged and ready to be put into service. Do not attempt to open the battery for any reason.

Table 33. Antidotes for Battery Acid

CONTACT	TREATMENT
External	Flush with water.
Internal	Drink large quantities of milk or water, followed by milk of magnesia, vegetable oil or beaten eggs. Get immediate medical attention.
Eyes	Flush with water. Get immediate medical attention.

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)

! 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)

! 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)



Figure 66. Battery Warning Label

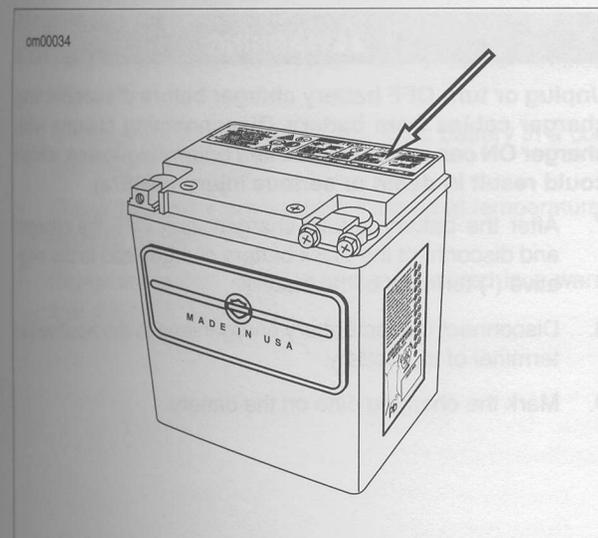


Figure 67. Battery Warning Label Location

Voltmeter Test

Refer to Table 34. The voltmeter test provides a general indicator of battery condition. Check the voltage of the battery to verify that it is in a 100 percent fully charged condition. If the open circuit (disconnected) voltage reading is below 12.6 V,

charge the battery and then re-check the voltage after the battery has set for one to two hours.

Table 34. Voltmeter Test

READING IN VOLTS	PERCENT OF CHARGE
12.7	100
12.6	75
12.3	50
12.0	25
11.8	0

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.
2. Clean cable connectors and battery terminals using a wire brush or fine grit sandpaper to remove any oxidation.
3. Inspect and clean the battery screws, clamps and cables. Check for breakage, loose connections and corrosion.
4. Check the battery posts for melting or damage caused by overtightening.

- Inspect the battery for discoloration, a raised top or a warped or distorted case. This might indicate that the battery has been frozen, overheated or overcharged.
- Inspect the battery case for cracks or leaks.

Charging

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.

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)

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)

- Perform a voltmeter test to determine the state of charge. If battery needs to be charged, proceed to the next step.

CAUTION

Remove battery from motorcycle before charging. Electrolyte leakage will damage motorcycle parts. (00213a)

- Remove the battery from the motorcycle. See MAINTENANCE AND LUBRICATION, Battery: Touring Models.
- 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)

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

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)

CAUTION

Do not reverse the charger connections described in the following steps or the charging system of the motorcycle could be damaged. (00214a)

NOTES

- The figures listed in the Amp-hour table 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 in Table 35 and do not continue charging the battery if it gets hot. When charging, never exceed 15 volts.
- Connect the red battery charger lead to positive (+) terminal of the battery.
 - Connect the black battery charger lead to negative (-) terminal of the battery.

NOTE

If the battery is still in the vehicle, connect the negative lead to the chassis ground. Make sure that the ignition and all electrical accessories are turned off.

- 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)

- After the battery is fully charged, turn OFF the charger and disconnect the black battery charger lead to the negative (-) terminal of the battery.
- Disconnect the red battery charger lead to the positive (+) terminal of the battery.
- Mark the charging date on the battery.

Table 35. 28 Amp-Hour Battery Charging Rate/Times

READING (VOLTS)	PERCENT OF CHARGE	3 AMP CHARGER	6 AMP CHARGER	10 AMP CHARGER	20 AMP CHARGER
12.7	100	—	—	—	—
12.6	75	2.5 hours	1.25 hours	45 minutes	25 minutes

Table 35. 28 Amp-Hour Battery Charging Rate/Times

READING (VOLTS)	PERCENT OF CHARGE	3 AMP CHARGER	6 AMP CHARGER	10 AMP CHARGER	20 AMP CHARGER
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

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)

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.

If the motorcycle is to be stored with the battery installed, it will be necessary to connect a battery tender to maintain charge. See an authorized dealer for more information.

Self-discharge is a normal condition and occurs continuously. The rate of self-discharge depends on the ambient temperature and the battery's state of charge.

- 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 16 °C (60 °F).
- Charge the battery more frequently if stored in a warm area above 16 °C (60 °F).

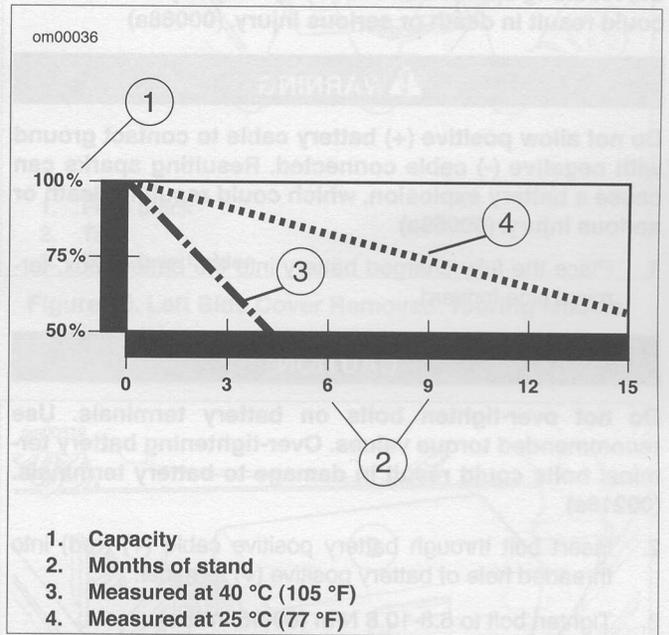


Figure 68. Effective Rate of Temperature on Battery Self-discharging Rate

BATTERY: TOURING MODELS

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.

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 6.8-10.8 N·m (60-96 in-lbs).
4. Insert bolt through battery negative cable (black) into threaded hole of battery negative (-) terminal.
5. Tighten bolt to 6.8-10.8 N·m (60-96 in-lbs).

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 20.3-27.1 N·m (15-20 ft-lbs).

! WARNING

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

9. Install seat.

JUMP STARTING

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)

! 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)

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)

NOTE

This procedure presumes the BOOSTER battery is in another vehicle.

1. Turn off all unnecessary lamps and accessories.

Positive Cable

2. See Figure 69. Connect one end of a jumper cable to the DISCHARGED battery positive (+) terminal (1).
3. Connect the other end of the same cable to the BOOSTER battery positive (+) terminal (2).

Negative Cable

! WARNING

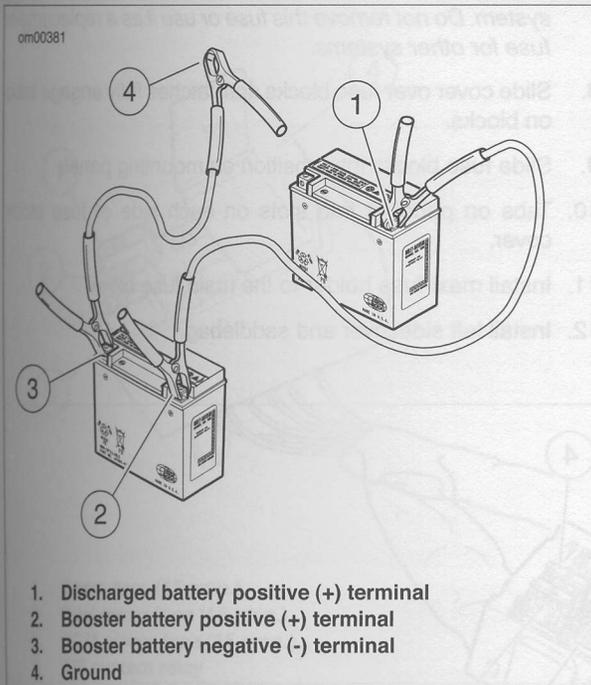
Do not connect negative (-) cable to or near the discharged battery negative (-) terminal. Doing so could cause a spark and explosion, which could result in death or serious injury. (00073a)

4. Connect one end of a jumper cable to the BOOSTER battery negative (-) terminal (3).

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 (4) to a safe 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.



1. Discharged battery positive (+) terminal
2. Booster battery positive (+) terminal
3. Booster battery negative (-) terminal
4. Ground

Figure 69. Jump Start Cable Connections

ELECTRICAL PROTECTION: TOURING MODELS

System Fuse Removal

CAUTION

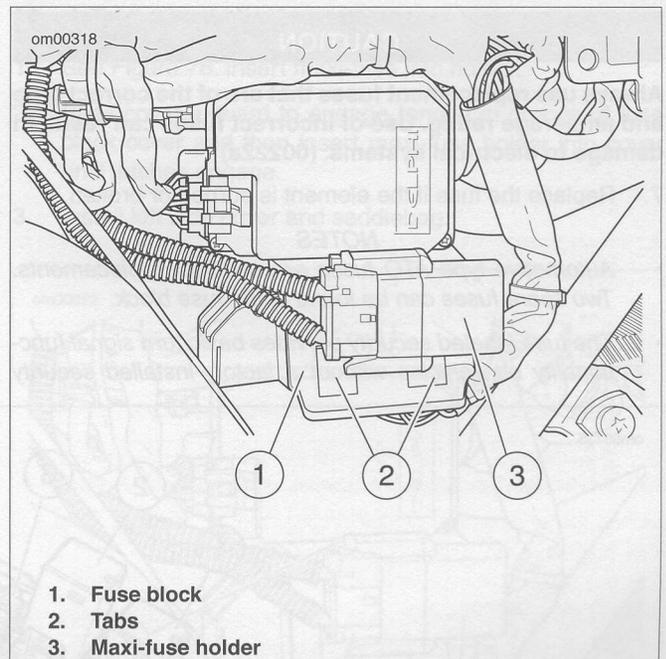
Do not skip any steps for fuse replacement. Skipping fuse replacement steps can result in damage to the sound system and/or other motorcycle systems. (00223a)

All Touring models have fuses located under left side cover.

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

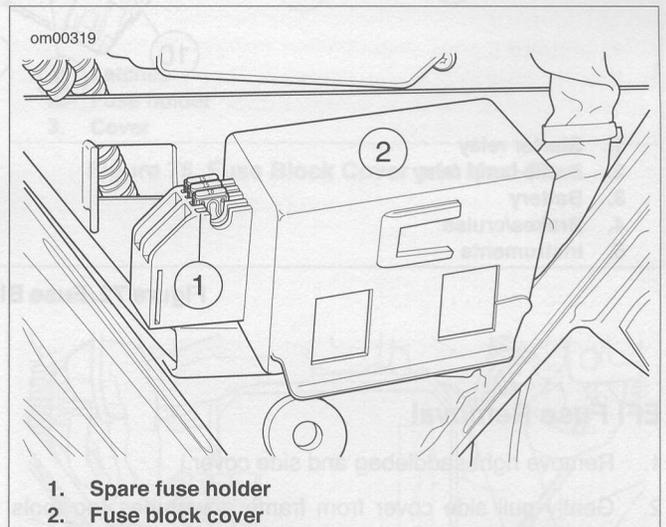
NOTE

See Figure 70. Removal of side covers during electrical service requires no tools. Gently pull side cover to remove. Align barbed studs on side cover with grommets in frame and push to install.



1. Fuse block
2. Tabs
3. Maxi-fuse holder

Figure 70. Left Side Cover Removed: Touring Models



1. Spare fuse holder
2. Fuse block cover

Figure 71. Spare Fuse Holder: Touring Models

1. Place the ignition/headlamp key switch in the OFF position.
2. Remove left saddlebag and side cover.
3. To remove of maxi-fuse holder from cover, slide rearward to disengage.
4. Pull fuse blocks from tabs on mounting panel. Tabs on panel fit into slots on each side of fuse block cover.
5. To remove cover, raise latches slightly to disengage tabs on fuse blocks.
6. 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)

7. Replace the fuse if the element is burned or broken.

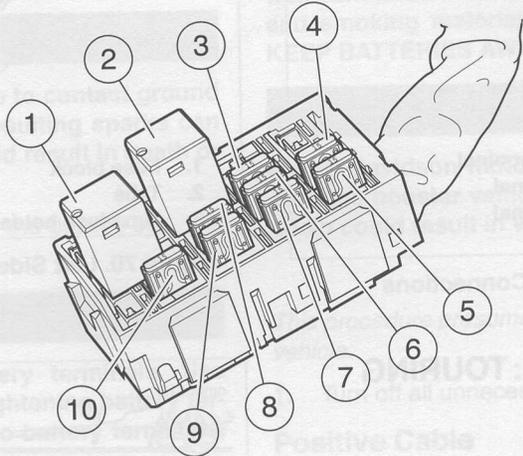
NOTES

- Automotive type ATO fuses are used for replacements. Two spare fuses can be found in the fuse block.
- 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.

8. Slide cover over fuse blocks until latches fully engage tabs on blocks.
9. Slide fuse blocks into position on mounting panel.
10. Tabs on panel fit into slots on each side of fuse block cover.
11. Install maxi-fuse holder to the main fuse block.
12. Install left sidecover and saddlebag.

om00735



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

Figure 72. Fuse Block: Touring Models

EFI Fuse Removal

1. Remove right saddlebag and side cover.
2. Gently pull side cover from frame downtubes (no tools required).
3. See Figure 73. 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 74. 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.

EFI Fuse Installation

1. See Figure 74. 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.

om00707

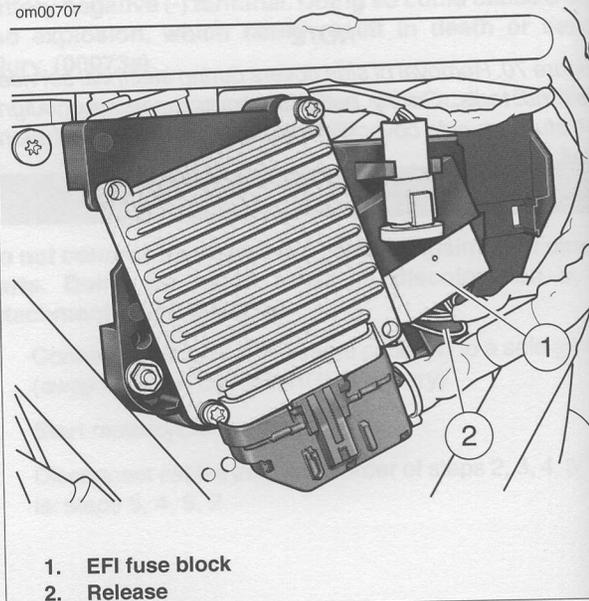
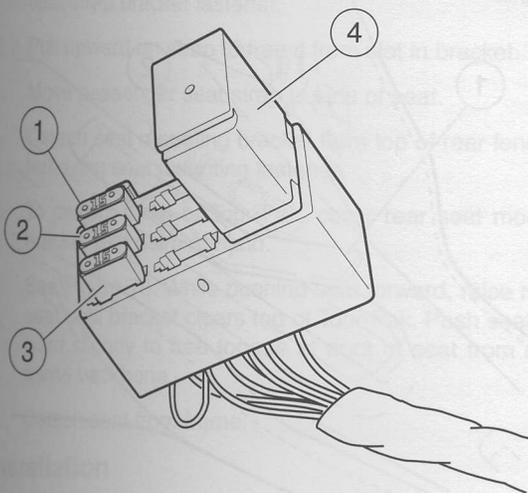


Figure 73. Electrical Bracket Assembly: Right Side

om00328



1. Spare fuse (15 amp.)
2. Fuel pump fuse (15 amp.)
3. ECM power fuse (15 amp.)
4. EFI system relay

Figure 74. EFI Fuse Block

Maxi-Fuse

See Figure 75. All models have a 40 amp fuse to protect the electrical components.

NOTE

Removal of the maxi-fuse will disable all systems except the starter motor/solenoid.

om00162

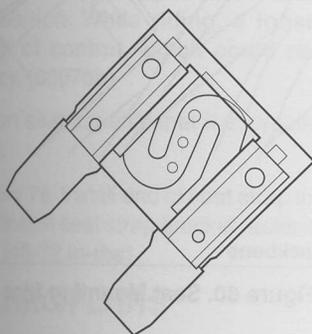


Figure 75. Maxi-Fuse

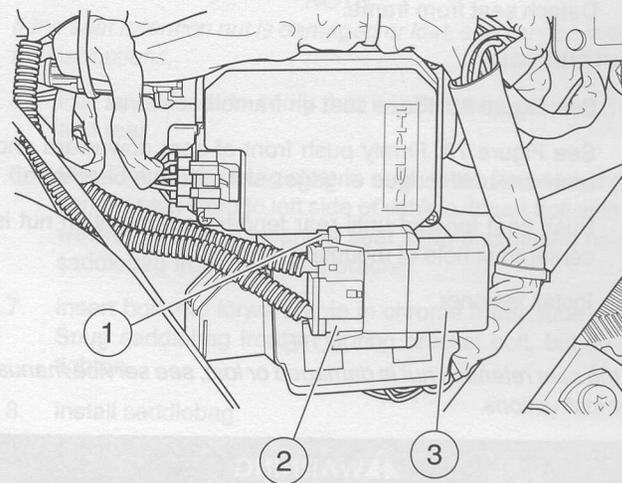
Maxi-Fuse Removal

1. Remove left saddlebag and side cover.
2. Depress latches on maxi-fuse holder and then slide cover rearward to disengage tongue from groove in fuse block cover.
3. See Figure 76. Pull maxi-fuse from holder.

Maxi-Fuse Installation

1. See Figure 76. 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. Install left side cover and saddlebag.

om00322



1. Latches
2. Fuse holder
3. Cover

Figure 76. Fuse Block Cover and Maxi-Fuse

om00323

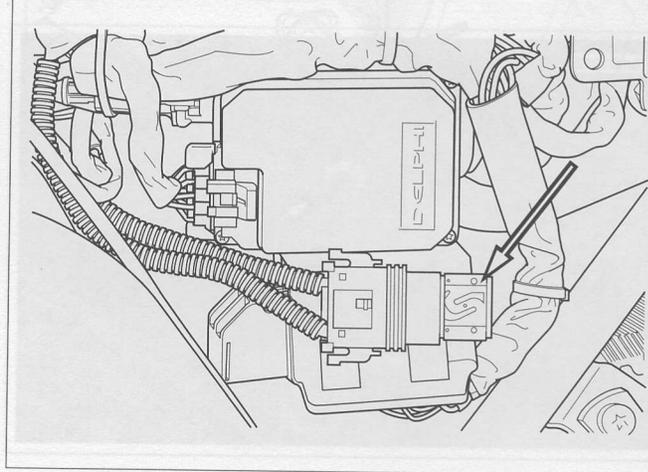


Figure 77. Maxi-Fuse Assembly

SEAT: FLHT

Removal

CAUTION

Detach passenger seat strap before removing seat. Failure to do so can result in damage to rear fender paint. (00225a)

1. See Figure 78. Open left saddlebag cover and remove fastener from seat strap bracket.
2. Pull upward on strap to free it from slot in bracket. Move passenger seat strap to side of seat.
3. Detach seat mounting bracket from top of rear fender by removing mounting fastener.
4. See Figure 79. Push seat rearward to free tongue (1) at front of seat from slot in frame backbone.
5. Detach seat from frame.

Installation

1. See Figure 80. Place seat on frame backbone.
2. See Figure 79. 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 seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

5. See Figure 78. Install end of seat strap in slot of seat strap bracket. Install seat strap bracket fastener. Tighten to 5.4-8.1 N·m (48-72 in-lbs).
6. Pull up on seat to verify that it is properly secured.

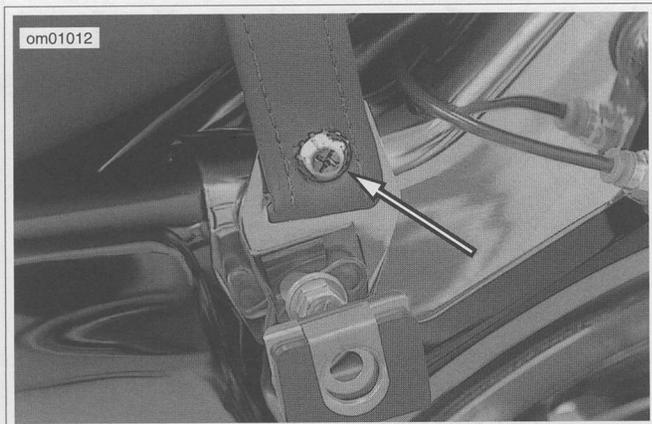


Figure 78. Seat Strap Bracket Screw (FLHT/C/U)

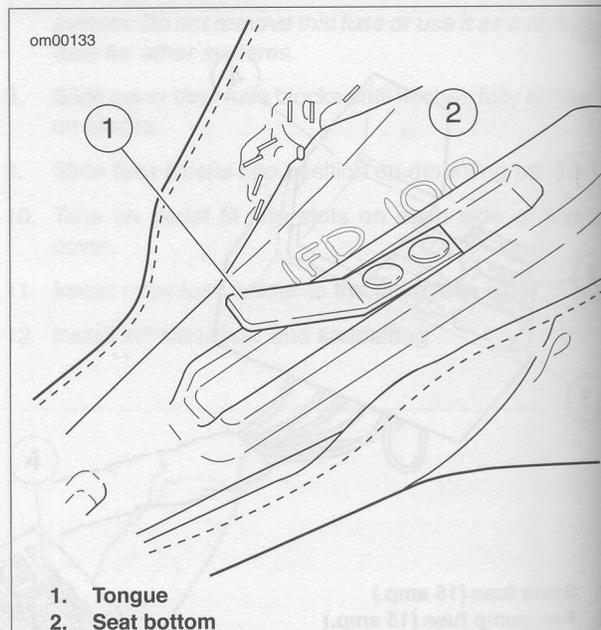


Figure 79. Seat Tongue

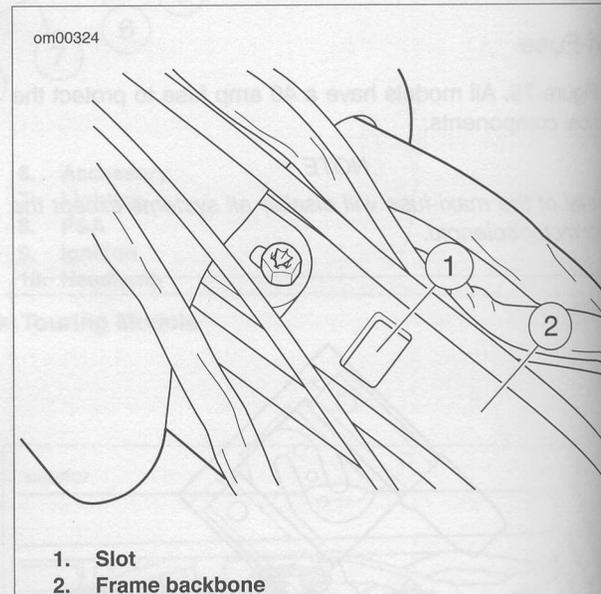


Figure 80. Seat Mounting Slot

SEAT: FLHTC/U

Removal

1. See CONTROLS AND INDICATORS, Tour-Pak. 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.

CAUTION

Detach passenger seat strap before removing seat. Failure to do so can result in damage to rear fender paint. (00225a)

2. See Figure 78. Open left saddlebag cover and remove seat strap bracket fastener.
3. Pull upward on strap to free it from slot in bracket.
4. Move passenger seat strap to side of seat.
5. Detach seat mounting bracket from top of rear fender by removing seat mounting fastener.
6. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
7. See Figure 79. 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.
8. Detach seat from frame.

Installation

1. See Figure 80. 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 76.2 mm (3 in.), 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 seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

6. Pull up on seat to verify that it is properly secured, front and rear.
7. See Figure 78. Install end of seat strap in slot of seat strap bracket. Install seat strap bracket fastener. Tighten to 5.4-8.1 N·m (48-72 in-lbs).

SEAT: FLHRC/FLHRS

Removal

1. Remove right saddlebag.
2. See Figure 81. Remove bracket bolt with the flat washer that secures seat strap and bracket. Then remove passenger seat strap and saddlebag front mounting bracket from chrome frame tube cover.
3. See Figure 82. 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.

Installation

1. See Figure 80. 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 service manual for instructions.

5. Pull up on seat to verify that it is properly secured, front and rear.
6. See Figure 82. 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.

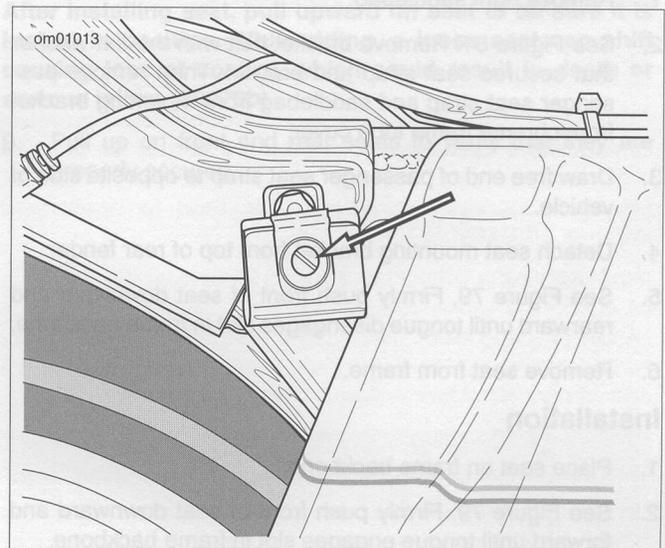


Figure 81. Front Saddle Bracket



Figure 82. Strap Slots: FLHRC

SEAT: FLTR/FLHX

Removal

CAUTION

Detach passenger seat strap before removing seat. Failure to do so can result in damage to rear fender paint. (00225a)

1. Remove right saddlebag.
2. See Figure 81. Remove bracket bolt with the flat washer that secures seat strap and bracket. 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 79. Firmly push front of seat downward and rearward until tongue disengages slot in frame backbone.
6. Remove seat from frame.

Installation

1. Place seat on frame backbone.
2. See Figure 79. Firmly push front of seat downward and forward 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 service manual for instructions.

WARNING

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

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.

SEAT AND PILLION: FLHR

NOTE

FLHR seat may be removed without removing seat strap.

Pillion Removal

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

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 83. 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.

Pillion 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.

WARNING

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

4. Verify seat is secure.

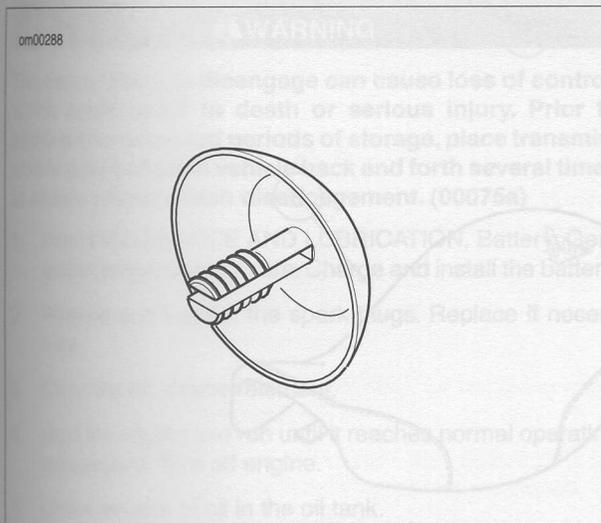


Figure 83. Seat Mounting Hole Plug

Seat Removal

1. See Figure 84. 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 83. 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 80. Push front seat rearward to free tongue from slot in frame backbone.

Seat Installation

1. Position front seat on frame with mounting bracket at rear.
2. See Figure 79. 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 seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

9. Pull up on front and rear seats to verify that they are properly secured.

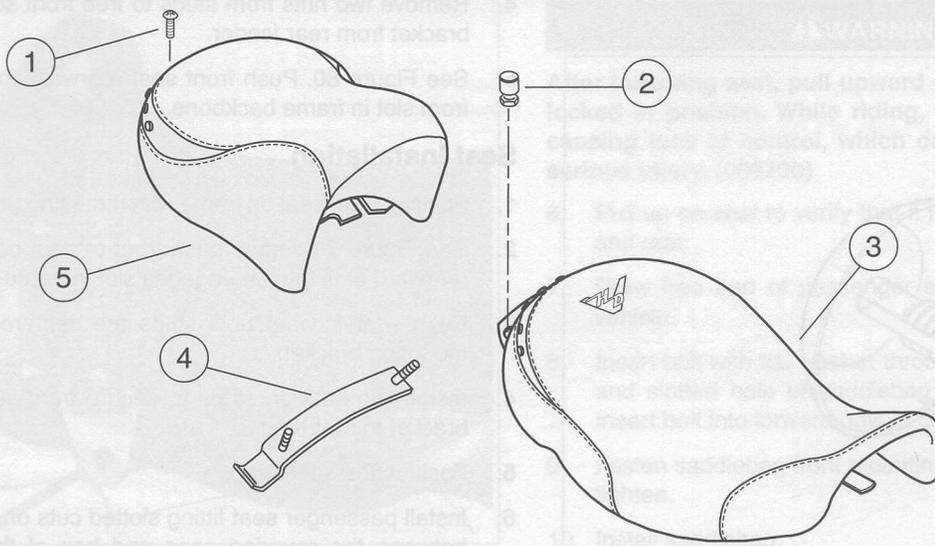
WARNING

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 label it to a hangtag. When you take the motorcycle out of storage, this list will be your reference to get your motorcycle in operating condition.

1. Fill fuel tank and add a gasoline stabilizer. Use one of the commercially available gasoline stabilizers and follow the manufacturer's instructions.



1. Screw
2. Nut
3. Front seat
4. Stud plate
5. Passenger seat

Figure 84. Seat Assembly: FLHR

MOTORCYCLE STORAGE

Placing Motorcycle in Storage

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)

If the motorcycle will not be operated for several months, such as during the winter season, there are several tasks which should be performed. These steps will protect parts against corrosion, preserve the battery and prevent the build-up of gum and varnish in the fuel system.

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 handgrip. When you take the motorcycle out of storage, this list will be your reference/checklist to get your motorcycle in operating condition.

1. Fill fuel tank and add a gasoline stabilizer. Use one of the commercially available gasoline stabilizers and follow the manufacturer's instructions.

2. Warm motorcycle to operating temperature. Change oil and turn engine over to circulate the new oil.
3. Check and adjust belt if necessary.
4. Check tire inflation. Adjust to proper inflation pressure.
5. To protect the vehicle's body panels, engine, chassis and wheels from corrosion, follow the cosmetic care procedures described in the Accessory Maintenance section of this owner's manual prior to storage.
6. Prepare battery for winter storage. See MAINTENANCE AND LUBRICATION, Battery: General.

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)

7. If the 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, either:
 - a. Disconnect negative battery cable.
 - b. Remove Maxi-fuse (if applicable).
8. 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.

Removing Motorcycle 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 MAINTENANCE AND LUBRICATION, Battery: General for proper battery care. Charge and install the battery.
2. Remove and inspect the spark plugs. Replace if necessary.
3. Clean the air cleaner element.
4. Start the engine and run until it reaches normal operating temperature. Turn off engine.
5. Check amount of oil in the oil tank.
6. Check the transmission lubricant level.
7. Check controls to be sure they are operating properly. Operate the front and rear brakes, throttle, clutch and shifter.

8. 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)

9. Check tire pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability.
10. Check all electrical equipment and switches including the stop lamp, turn signals and horn for proper operation.
11. Check for any fuel, oil or brake fluid leaks.

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)

Use a good quality, commercial whitewall cleaner and follow the manufacturer's directions.

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 faced wheels with chrome plated rims and zinc or chrome 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 protector 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

- It is imperative that the wheels are cared for weekly to guard against pitting and corrosion.
- 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 that provides UV protection and a gloss finish.

See a Harley-Davidson dealer for cleaning, polishing and waxing products.

GENERAL MAINTENANCE

Maintain chrome and aluminum regularly to check that they retain their original shine and luster. Take care 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. 98261-91).
 4. Always allow leather to dry completely before using.

WHITETALL TIRES

Use a good quality, commercial whitewall cleaner and follow the manufacturer's directions.

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 or chrome 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

1. Loss of broken wire.
- It is imperative that the wheels are cared for weekly to guard against pitting and corrosion.
 - 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 a Harley-Davidson dealer for cleaning, polishing and waxing products.

2. Transmission shifting mechanism needs adjustment. See dealer.

Transmission Jumps Out of Gear

1. Shifter rod improperly adjusted. See dealer.

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. 99836-94T).
 - 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).

MISCELLANEOUS LUBRICATION

Hinges, Latches, Etc.

Lubricate the rub points of latches and hinges using either Lubit-8 Tufoil (Part No. 94968-85TV) or Tri-flow as required.

Lubricate the fingers on the saddlebag latches where they engage the hinge.

Use a good quality commercial windshield cleaner and follow the manufacturer's directions.

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. (00078a)

Some vehicles' wheels are aluminum and do not have a protective coating. Other vehicles have wheels with chrome plated rims and zinc or chrome 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. 94858-98) is recommended for cleaning wheels and tires. Then use HARLEY GLOSS (Part No. 94627-98) to protect the wheel surfaces.

NOTES

It is imperative that the wheels are cared for weekly to guard against pitting and corrosion.

- 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. 94858-98) - cleans degreaser for wheels, tires and engine.
 - HARLEY GLOSS (Part No. 94627-98) - all purpose surface protection that provides UV protection and a gloss finish.

See a Harley-Davidson dealer for cleaning, polishing and waxing products.

NOTE

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 and panels made of leather will gain "character," such as wrinkles, with age. Leather is porous and organic and each product will settle into its own distinct form with use. The product will mature into its own custom shape and color over the sun, rain and the miles. This maturing is natural and enhances the custom quality of your Harley-Davidson motorcycle. Seats must be periodically cleaned and treated to maintain appearance and extend its life. Clean and treat leather once a month or more frequently under adverse conditions.

TROUBLESHOOTING: GENERAL

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)

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.

ENGINE: TOURING MODELS

Starter Does Not Operate or Does Not Turn Engine Over

1. Engine OFF/RUN switch in OFF position.
2. Ignition switch not ON.
3. Discharged battery or loose or corroded connections (solenoid chatters).
4. Clutch lever not squeezed against handlebar or transmission not in neutral.
5. Blown fuse.

Engine Turns Over But Does Not Start

1. Fuel tank empty.
2. Fuel filter clogged.
3. Discharged battery or loose or broken battery terminal connections.
4. Fouled spark plugs.
5. Spark plug cable connections loose or in bad condition and shorting.
6. Loose or corroded wire or cable connection(s) at coil or battery.
7. Fuel pump inoperative.
8. Blown fuse.

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. Engine oil too heavy (winter operation).
6. Water or dirt in fuel system.
7. 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.
8. Fuel vent system plugged. See dealer.
9. One or more injectors fouled.

A Spark Plug Fouls Repeatedly

1. Fuel mixture too rich.
2. Incorrect spark plug.

Pre-ignition or Detonation (Knocks or Pings)

1. Incorrect fuel.
2. Incorrect spark plug for the kind of service.

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. Rear fork pivot shaft nuts loose. See dealer.
2. Front engine mounting bolts loose. See dealer.
3. Engine to transmission mounting bolts loose. See dealer.
4. Broken frame. See dealer.
5. Front chain or links tight as a result of insufficient lubrication or belt badly worn.
6. Wheels and/or tires damaged. See dealer.
7. Vehicle not properly aligned. 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.

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. 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. Primary chaincase overfilled.
3. Clutch discs warped. See dealer.

Clutch Chatters

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

BRAKES

Brakes Do Not Hold Normally

1. Master cylinder low on fluid. See dealer.
2. Brake line contains air bubbles. See dealer.
3. Master or wheel cylinder piston worn. See dealer.
4. Brake pads contaminated with grease or oil. See dealer.
5. Brake pads badly worn. 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.

Hinges, Latches, Etc.

Lubricate the hinges on the saddlebags, handlebars, and the handgrips. Use a light oil or grease. (Part No. 94358-25TV)

Lubricate the hinges on the saddlebags, handlebars, and the handgrips. Use a light oil or grease. (Part No. 94358-25TV)

Lubricate the hinges on the saddlebags, handlebars, and the handgrips. Use a light oil or grease. (Part No. 94358-25TV)

The Engine Over But Does Not Start

Check the battery. If the battery is low, charge it. If the battery is empty, replace it.

Check the battery or loose or broken battery terminal connections.

Check the spark plugs.

Check the spark plug connections loose or in bad condition.

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

Check the spark plug wires or cable connections (at coil or distributor).

TROUBLESHOOTING

CAUTION

1. Heavy carbon deposits from the engine can build up on the spark plug electrodes. This can cause the spark plug to misfire. To prevent this, clean the spark plug electrodes regularly.
2. Insufficient air flow over cylinder heads during extended periods of idling or parade duty.

Excessive Vibration

1. Rear fork pivot shaft nuts loose. See dealer.
2. Front engine mounting bolts loose. See dealer.
3. Engine to transmission mounting bolts loose. See dealer.
4. Broken frame. See dealer.
5. Front chain or links tight as a result of insufficient lubrication or ball body worn.
6. Wheels and/or tires damaged. See dealer.
7. Vehicle not properly aligned. 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. Excessive periods of idling or low speed riding.

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.

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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 a Harley-Davidson dealer for inspection and service just before you have ridden 1600 kilometers (1000 miles).
2. Bring this Owner's Manual with you when you visit your dealer to have your motorcycle inspected and serviced.
3. Have the dealer technician 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.

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.

Exact 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 all or part of your new motorcycle warranty. See the

Harley-Davidson Limited Warranty in this manual or a 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 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)

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.

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.

OWNER TRANSFER IDENTIFICATION 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.

2. 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.
3. Any warranty work or parts replacement authorized by the manufacturer will not preclude the manufacturer from liability relying on any exclusion where applicable.

2007 HARLEY-DAVIDSON MOTORCYCLE LIMITED WARRANTY

24 Months/Unlimited kilometers

Harley-Davidson warrants for any new 2007 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. Such repair and replacement will be Harley-Davidson's sole obligation and the customer's sole remedy under this warranty.

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

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

TO THE FULLEST EXTENT ALLOWED BY LAW, HARLEY-DAVIDSON AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF USE, INCONVENIENCE, LOST TIME, COMMERCIAL LOSS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

The following terms and conditions apply to this warranty:

Duration

1. The duration of this limited warranty is twenty four months, starting from the earlier of (a) the date of initial retail purchase and delivery from an authorized Harley-Davidson dealer, or (b) the third anniversary of the last day of the model year of the motorcycle/sidecar. Your dealer will submit an electronic Sales and Warranty Registration form to initiate your warranty.
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's Obligations

To obtain warranty service, return your motorcycle/sidecar at your expense within the warranty period to an authorized dealer. 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.

Harley-Davidson Motor Company, P.O. Box 653, Milwaukee, Wisconsin 53201, U.S.A.

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, improperly stored, used "off the highway," or used 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.
4. Installing off-road or competition parts to enhance performance may void all or part of your new motorcycle warranty. See a Harley-Davidson dealer for details.

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, brake, clutch and chain/belt adjustment (including chain replacement).
2. Cosmetic concerns that arise as a result of owner abuse, lack of proper maintenance or environmental conditions (except concerns that result from defects in material or workmanship, which are covered by this warranty for the duration of the warranty period).
3. Any cosmetic condition existing at the time of retail delivery that has not been documented by the selling dealer prior to retail delivery.
4. Defects or damage to the motorcycle caused by alterations outside of Harley-Davidson factory specifications.

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. 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.
3. Any warranty work or parts replacement authorized by the manufacturer will not preclude the manufacturer from later relying on any exclusion where applicable.

REGULAR SERVICE INTERVALS

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

NOTES

- Refer to Table 36. 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 exhaust system, may be in violation of Federal and State laws.
- Refer to Table 37. 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 36. Regular Service Intervals: 2007 Touring Models

ITEM SERVICED	PROCEDURE	1600 km 1000 mi.	8000 km 5000 mi.	16,000 km 10,000 mi.	24,000 km 15,000 mi.	32,000 km 20,000 mi.	40,000 km 25,000 mi.	NOTES
Engine oil and filter	Replace	X	X	X	X	X	X	
Oil lines and brake system	Inspect for leaks	X	X	X	X	X	X	1
Air cleaner	Inspect, service as required	X	X	X	X	X	X	
Tires	Check pressure, inspect tread	X	X	X	X	X	X	
Wheel spokes	Check tightness	X	X			X		1
Primary chaincase lubricant	Replace	X		X		X		
Transmission lubricant	Replace	X				X		
Clutch	Check adjustment	X	X	X	X	X	X	1
Rear belt and sprockets	Inspect, adjust belt	X	X	X	X	X	X	1
Throttle, brake and clutch controls	Check, adjust and lubricate	X	X	X	X	X	X	1
Jiffy stand	Inspect and lubricate	X	X	X	X	X	X	1
Fuel lines and fittings	Inspect for leaks	X	X	X	X	X	X	1
Fuel tank filter	Replace						X	1
Brake fluid	Check levels and condition	X	X	X	X	X	X	4
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	
Spark plugs	Inspect	X	X	X	X		X	
	Replace					X		
Electrical equipment and switches	Check operation	X	X	X	X	X	X	
Front fork oil	Replace							1, 2
Steering head bearings	Lubricate	X		X		X		2
	Adjust						X	1
Air suspension	Check pressure, operation and leakage	X	X	X	X	X	X	1
Windshield bushings (if applicable)	Inspect			X		X		1
Cruise control	Inspect disengage switch and components	X	X	X	X	X	X	1
Fuel door, Tour-Pak, saddlebags	Lubricate hinges and latches	X	X	X	X	X	X	
Critical fasteners	Check tightness	X		X		X		1
Engine mounts and stabilizers	Inspect			X		X		1
Battery	Check battery and clean connections							3

Table 36. Regular Service Intervals: 2007 Touring Models

ITEM SERVICED	PROCEDURE	1600 km 1000 mi.	8000 km 5000 mi.	16,000 km 10,000 mi.	24,000 km 15,000 mi.	32,000 km 20,000 mi.	40,000 km 25,000 mi.	NOTES
Road test	Verify component and system functions	X	X	X	X	X	X	
NOTES:	1. Should be performed by an authorized Harley-Davidson dealer, unless you have the proper tools, service data and are mechanically qualified. 2. Disassemble, lubricate and inspect every 80,000 kilometers (50,000 miles). 3. Perform annually. 4. Change D.O.T. 4 and flush brake system every two years.							

Table 37. Owner's Maintenance Records

SERVICE MILE INTERVAL	DATE	DEALER NUMBER	TECHNICIAN NAME	TECHNICIAN SIGNATURE
1600 km (1000 mi)				
8000 km (5000 mi)				
16,000 km (10,000 mi)				
24,000 km (15,000 mi)				
32,000 km (20,000 mi)				
40,000 km (25,000 mi)				
48,000 km (30,000 mi)				
56,000 km (35,000 mi)				
64,000 km (40,000 mi)				
72,000 km (45,000 mi)				
80,000 km (50,000 mi)				

SERVICE LITERATURE

Refer to Table 38. Visit your Harley-Davidson dealer or go to www.harley-davidson.com to purchase a service or parts

manual for your motorcycle. Factory authorized manuals are the most complete and detailed source of information outside of your Harley-Davidson dealer.

Table 38. Service Literature: 2007 Touring Models

DOCUMENT	LANGUAGE	PART NUMBER
Service Manual	English	99483-07
Electrical Diagnostics Manual	English	99497-07
Service and Electrical Diagnostics Manual	French	99483-07F
Service and Electrical Diagnostics Manual	German	99483-07G
Service and Electrical Diagnostics Manual	Spanish	99483-07S
Service and Electrical Diagnostics Manual	Italian	99483-07I
Parts Catalog	English	99456-07
Sidecar Service Manual	English	99485-07



INSTRUCTIONS

-J00718

REV. 2006-01-12

FLHR WINDSHIELD KITS

GENERAL

Kit Number

57981-97, 57994-94, 57995-96, 57767-00, 58163-02, 58731-02, 58796-02 and 57807-04

Models

These kits fit 1994 and later FLHR model motorcycles.

Table 1. Models

Kits	Contents
57981-97	Low profile smoked windshield
57767-00	Low profile clear windshield
57994-94	Standard height clear windshield
57995-96	Tall clear windshield
58163-02	Road King wind deflector, dark, smoked
58731-02	Road King wind deflector, clear, international
58796-02	Road King wind deflector, dark smoked, 3 inches oversized
57807-04	Standard height clear windshield with flames

CAUTION

Do not use windshield bags with flamed windshields. Damage to graphics will occur. (00393f)

Kit Contents

See Figure 1 and Table 2, Figure 2 and Table 3.

INSTALLATION

1. Lower the windshield into position by carefully inserting the side brackets between the headlamp housing and the passing lamp supports until the bottom notches are seated on the lower grommets. Be sure that the notches on each bracket are firmly seated on a rubber grommet.
2. Standing at the front of the motorcycle, gently push the top of the windshield toward the rear until the upper notches fully engage the upper grommets.
3. Push down on the wireform latch springs so that they overhang the rubber grommets. If some adjustment is necessary, loosen the retaining bolts and rotate the latch springs into the proper position.

WARNING

Improper installation of accessories or loading of cargo can affect motorcycle stability and handling, which could result in death or serious injury. (00455b)

WARNING

Failure to provide adequate clearance between stationary and moving parts can cause loss of control, which could result in death or serious injury. (00378a)

NOTE

Inspect windshield upon completion of installation. Be sure windshield mounting does not restrict full left or full right movement of front fork assembly. If restriction does occur, adjust windshield as needed until proper clearance is obtained. Have experienced Harley-Davidson service personnel correct any problems before riding with this accessory installed.

NOTE

Check mounting hardware periodically. Never ride with loose mounts. A loose mounting causes extra stress on all other mounts, as well as the windshield itself, and could result in premature failure of components.

CARE AND CLEANING

NOTE

Sunlight reflections off of the inside curvature of a windshield can, at certain times of the day, cause extreme heat build-up on motorcycle instruments. Exercise care in parking. Park facing the sun, place an opaque object over the instruments, or adjust the windshield to avoid reflections.

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)

Do not clean Lexan® polycarbonate in hot sun or high temperature. Powdered, abrasive or alkaline cleanser will damage the windshield. Never scrape the windshield with a razor blade or other sharp instruments because permanent damage will result.

NOTES

Covering the windshield with a clean, wet cloth for about 15 minutes before washing will make dried bug removal easier.

Harley-Davidson Windshield Water Repellent Treatment Part Number 99841-01 is approved for use on Harley-Davidson Lexan® windshields.

SERVICE PARTS

NOTE

Typical windshield shown. Actual windshield may vary

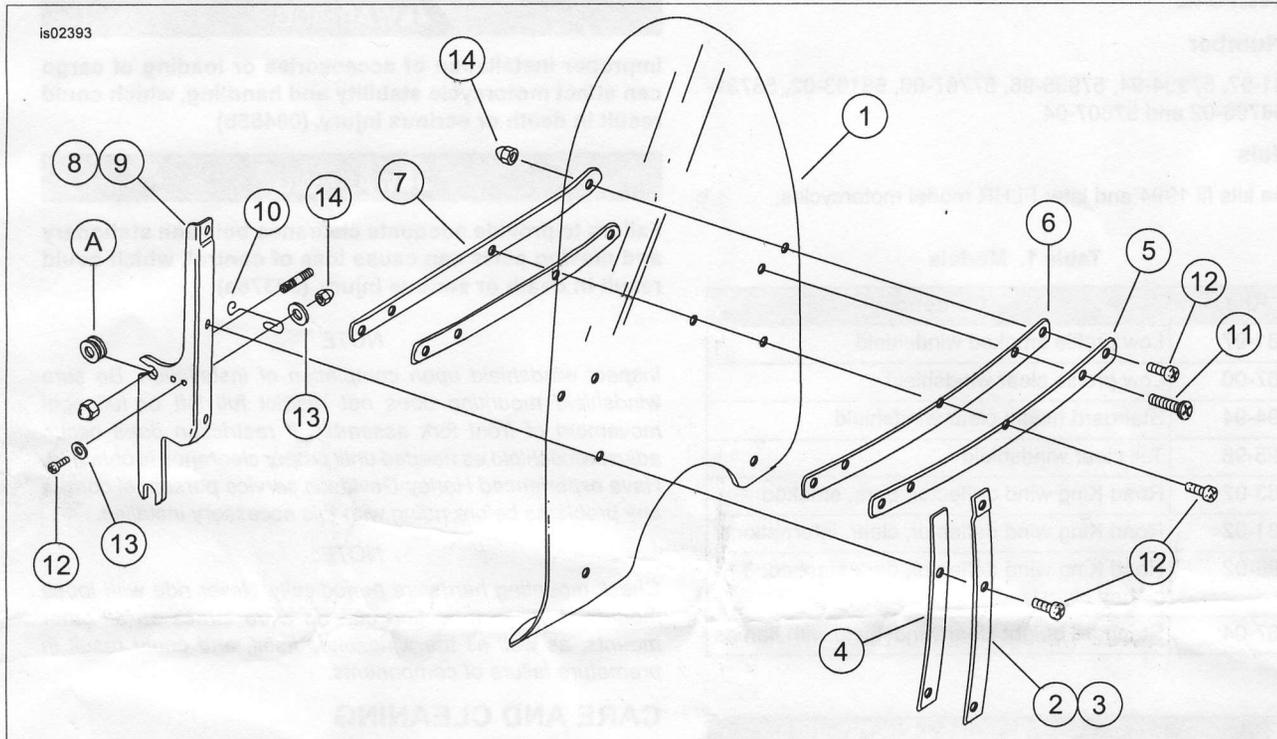


Figure 1. Service Parts: FLHR Windshield Kit

Table 2. Service Parts: FLHR Windshield Kit

Kits 57981-97, 57994-94, 57995-96, 57767-00, 57807-04					
Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Windshield, clear, 2 inches oversize	58433-96	7	Inner horizontal brace	53431-94
	Windshield, clear, standard	58193-94	8	RH bracket	58084-94
	Windshield, clear, 4 inches undersized	57768-00	9	LH bracket	58088-94
	Windshield, smoked, 4 inches undersized	58195-94	10	Spring latches (2)	38722-94
	Windshield, clear with flames	57809-04	11	Panhead Torx screws (2)	2452
2	Outer RH vertical brace	58406-75A	12	Panhead Torx screws (2)	2452
3	Outer LH vertical brace	58408-75A	13	Plain washers (8)	6119
4	Outer vertical brace tape (2)	58417-77	14	Acorn nuts (13)	7651
5	Outer horizontal brace	58428-94	Reference items:		
6	Horizontal brace tape (2)	58416-77A	A	Rubber grommet	

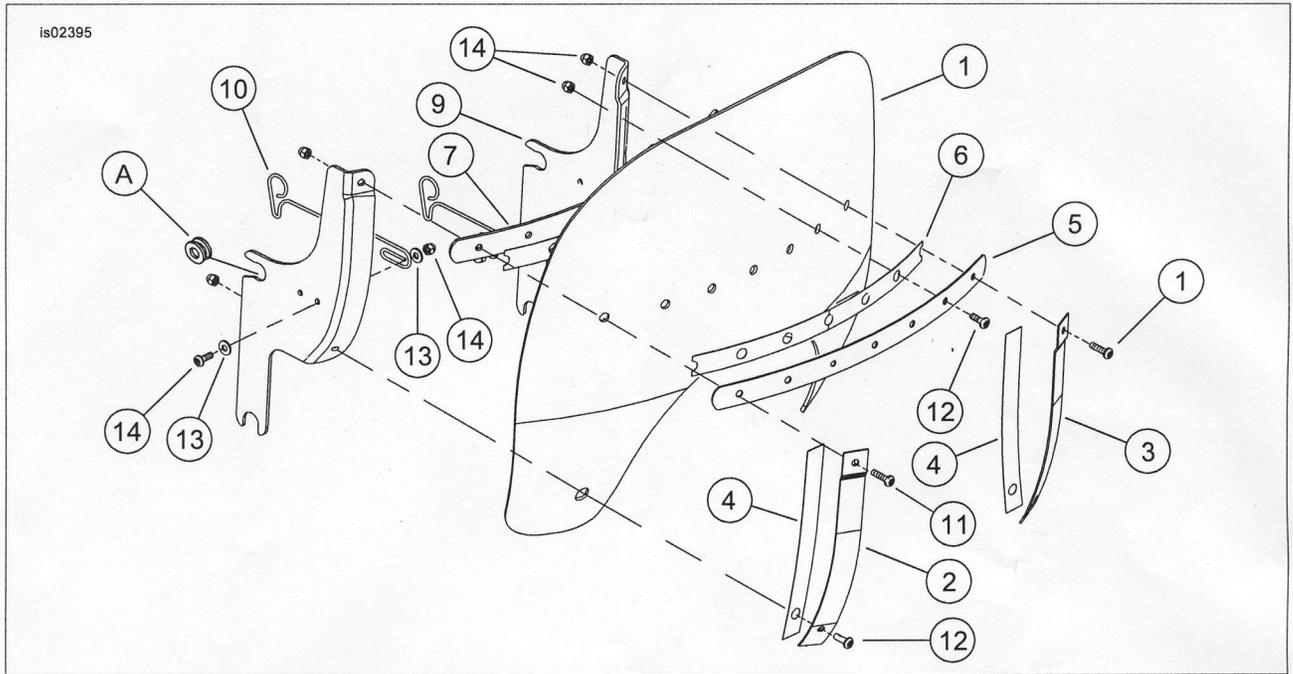


Figure 2. Service Parts: Wind Deflector

Table 3. Service Parts: Wind Deflector

Kits 58163-02, 58731-02, 58796-02					
Item	Description (Quantity)	Part Number	Item	Description (Quantity)	Part Number
1	Wind deflector, smoked	58906-02	8	RH bracket	58542-02
	Wind deflector, clear, international	58908-02	9	LH bracket	58543-02
	Wind deflector, smoked, 3 inch oversized	58799-02	10	Spring latches (2)	38722-94
2	Outer RH vertical brace	58674-02	11	Panhead Torx screws (2)	2452
3	Outer LH vertical brace	58677-02	12	Panhead Torx screws (11)	2921
4	Outer vertical brace tape (2)	58664-02	13	Plain washers (8)	6119
5	Outer horizontal brace	58476-02	14	Acorn nuts (13)	7651
6	Horizontal brace tape (2)	58573-02	Reference items:		
7	Inner horizontal brace	58462-02	A	Rubber grommet	



INSTRUCTIONS

-J02876

REV. 03-03-2003

Kit Number 58221-04

WINDSHIELD MOUNTING HARDWARE KIT

General

This kit fits all 2004 and later FLHRS/I model motorcycles.

This kit contains the following items:

ITEM	DESCRIPTION/ QUANTITY	PART NO.
1	Stud, double ended, 5/16-18 (4)	3265A
2	Bushing (4)	67621-94
3	Acorn nut, keps, 5/16-18 (Chrome) (4)	7992

Installation

1. Using a T-40 TORX drive head, remove the upper left-side chrome button-head fork screw and chrome flat washer and discard.
2. See Figure 1. Obtain a double-ended stud (1) and chrome acorn nut (3) from the kit. Thread the nut onto the NON lock patch side of the stud and hand tighten.

NOTE

Position the clamp so the clutch cable is to the rear of the stud.

3. Slide the clutch cable clamp (4), along with the cable, into position on the stud as shown. Assemble a bushing (2) from the kit onto the stud threads.
4. Insert the lock patch side of the stud through the headlamp nacelle and into the upper fork bracket. Tighten the acorn nut and stud to 15-20 ft-lbs (20-27 Nm).

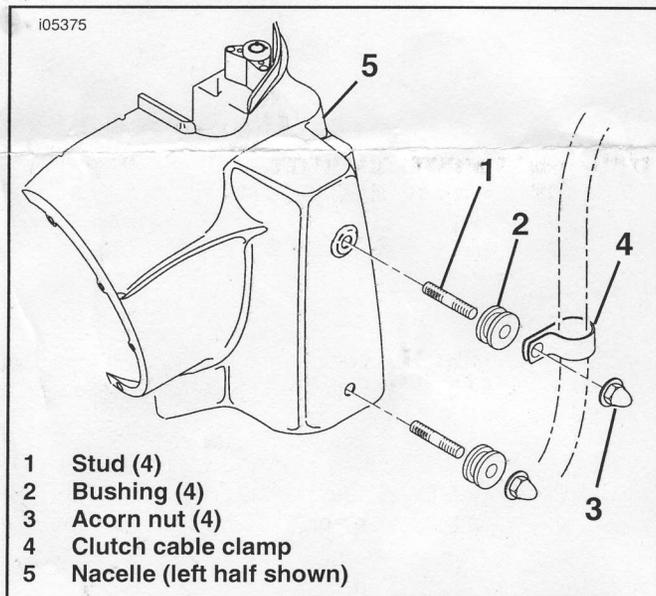


Figure 1. Windshield Mounting Hardware Installation

5. Continue, one at a time, replacing the three remaining chrome button-head fork screws and flat washers with the studs, bushings and chrome acorn nuts from the kit. Tighten to 15-20 ft-lbs (20-27 Nm).

SERVICE BULLETIN



M-1128

November 14, 2002

New Password Learn Procedures

Purpose

Some problems have been experienced with the Password Learn procedure after ECM or TSSM module replacement. The following tables have improved procedures.

Motorcycles Affected

All motorcycles equipped with Delphi electronic fuel injection.

- 2001 and newer Softail models
- 2002 and newer VRSCA models
- 2002 and newer Touring models

Required Dealer Action

Use Table 1 for setting TSM/TSSM and ECM password using Digital Technician.

Use Table 2 for setting TSM/TSSM and ECM password using a Scanalyzer.

Use Table 3 for setting TSM/TSSM and ECM password without Scanalyzer (manual mode).

IMPORTANT NOTE

In the interest of preserving customer safety and satisfaction, always check for outstanding recalls whenever any motorcycle is brought into your dealership for either maintenance or service.

ROUTING	SERVICE MANAGER	SALES MANAGER	PARTS MANAGER	LEAD TECHNICIAN	TECHNICIAN NO.1	TECHNICIAN NO. 2	TECHNICIAN NO. 3	TECHNICIAN NO. 4	RETURN THIS TO
INITIAL HERE									

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Table 1: Setting TSM/TSSM and ECM Password Using Digital Technician

No.	Action	Confirmation	Notes
	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch ON-OFF .	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Step 11 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under 3.3 TSM/TSSM Vehicle Delivery		
2	Set Run/Off switch to Run		
3	Turn IGN key On	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds. Then begin 10 minute countdown cycle for TSM replacement.	Security Lamp will illuminate and stay on. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Connect Scanalyzer to connector [91A]. After Scanalyzer initializes, verify ECM and TSSM part numbers using System ID. Check for trouble codes. Verify that ECM set DTC P1009. Select tab for Module Replacement. Press the BEGIN button.		
7	Ignore screen "Make sure scanalyzer is connected and operational". Click OK		
8	Ignore screen "Set Run/Stop switch to RUN position". Click OK		
9	Ignore screen "Press starter button". Do not press starter button . Click OK		
10	Ignore screen "Leave the ignition on. Wait for 10 seconds". Click OK .		
11	Next screen will read "The ECM will remain in password learn for 10 minutes". Wait until Security Lamp goes out (or a minimum of ten minutes for TSM replacement) . Then click OK .		
12	When first segment of timer bar fills in, turn IGN OFF . Wait 15 seconds , then turn IGN ON and start engine to verify Password Learn was successful.		

Table 2: Setting TSM/TSSM and ECM Password Using Scanalyzer

No.	Action	Confirmation	Notes
	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch ON-OFF .	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Steps 5 and 7 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under 3.3 TSM/TSSM Vehicle Delivery		
2	Set Run/Off switch to Run		
3	Turn IGN key On	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds. Then begin 10 minute countdown cycle for TSM replacement.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Connect Scanalyzer to connector [91A]. After Scanalyzer initializes, verify ECM and TSSM part numbers using System ID. Check for trouble codes. Verify that ECM set DTC P1009. Return to main menu and select menu item 7 (calibrations) then select menu item 2 (module replacement). Do not press Enter.		
7	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
8	Press Enter on Scanalyzer key pad. Wait 5 seconds.		
9	Turn ignition switch OFF. Wait 15 seconds before turning Ignition on. Turn ignition switch ON and start engine to confirm successful Password Learn procedure. Clear trouble codes.		
10	Perform all steps under 3.3 TSM/TSSM Vehicle Delivery		

Table 3: Setting TSM/TSSM and ECM Password Without Scanalyzer (Manual Mode)

No	Action	Confirmation	Notes
.	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch ON-OFF .	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Steps 6, 8 and 10 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under 3.3 TSM/TSSM Vehicle Delivery		
2	Set Run/Off switch to Run		
3	Turn IGN key On	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
7	Quickly (within two seconds) turn IGN key OFF-ON .	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
8	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
9	Quickly (within two seconds) turn IGN key OFF-ON .	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
10	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
11	Quickly (within two seconds) turn IGN key OFF-ON .	Security Lamp will illuminate and then turn off . Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
12	Turn ignition switch OFF . Wait 15 seconds before turning Ignition on . Turn ignition switch ON and start engine to confirm successful Password Learn procedure. Clear trouble codes.		
13	Perform all steps under 3.3 TSM/TSSM Vehicle Delivery		

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Press right turn switch 1 time

