

HARLEY-DAVIDSON OWNER'S MANUAL

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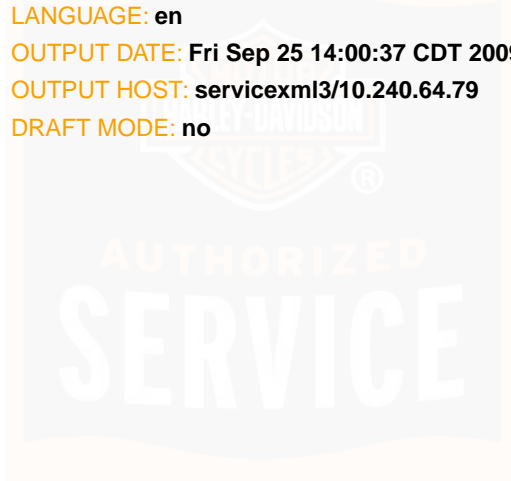
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IMPORTANT NOTICE!

Safety Definitions

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

WARNING

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

CAUTION

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

CAUTION

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

Printed in the U.S.A.

NOTE

Refers to important information and is placed in italic type. It is recommended that you take special notice of these items.

HARLEY-DAVIDSON MOTORCYCLES ARE FOR ON-ROAD USE ONLY

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

VISIT THE HARLEY-DAVIDSON WEB SITE

<http://www.harley-davidson.com>

YOUR OWNER'S MANUAL

WE CARE ABOUT YOU

Welcome to the Harley-Davidson Motorcycling Family! When enjoying your Harley-Davidson® motorcycle, be sure to ride safely, respectfully and within the limits of the law. Always wear an approved helmet, proper eyewear and protective clothing, and insist your passenger does too. Never ride while under the influence of alcohol or drugs. Know your Harley® motorcycle and read and understand your owner's manual from cover to cover.

This manual has been prepared to acquaint you with the operation, care and maintenance of your motorcycle and to provide you with important safety information. Follow these instructions carefully for maximum motorcycle performance and for your personal motorcycling safety and pleasure. Your Owner's Manual contains instructions for operation and minor maintenance. Major repairs are covered in the Harley-Davidson Service Manual. Such major repairs require the attention of a skilled technician and the use of special tools and equipment. Your Harley-Davidson dealer has the facilities, experience and Genuine Harley-Davidson® parts necessary to properly render this valuable service. We recommend that any emission system maintenance be performed by an authorized Harley-Davidson® dealer.

Attend a rider safety course. To enroll in a Harley-Davidson Rider's Edge® Course, call 800-588-2743 (U.S.) or visit www.harley-davidson.com (worldwide). For information about Motorcycle Safety Foundation rider courses in the United States, call 800-446-9227 or visit www.msf-usa.org.

UNITED STATES OWNERS

Your Harley-Davidson motorcycle conforms to all applicable U.S. Federal Motor Vehicle Safety Standards and U.S. Environmental Protection Agency regulations effective on the date of manufacture. Protect your privilege to ride by joining the American Motorcyclist Association. Visit www.ama-cycle.org for more information.

Harley-Davidson Motor Company

Printed in the U.S.A.

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CUSTOMER SERVICE ASSISTANCE IN THE UNITED STATES

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

1. Discuss your problem with the appropriate personnel at the dealership in the Sales, Service or Parts area. If that proves unsuccessful, speak to the owner of the dealership or the general manager.
2. If you cannot resolve the issue with the dealership, you can contact the Harley-Davidson Customer Service Department by calling (414) 343-4056 or write to:

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

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

- * Your name, address and phone number.
- * Motorcycle V.I.N. (Vehicle Identification Number) found on the vehicle registration or stamped on the steering head and on a label located on the motorcycle itself.
- * Name and location of the dealership.
- * Current mileage.
- * Clear description of issue.

PERSONAL INFORMATION

DEALER INFORMATION

Vehicle Identification Number:

Ignition Key Number:

Security System Personal Code:

-- -- -- --

Sales Contact:

Service Contact:

Parts Contact:

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

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



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SAFE OPERATING RULES

WARNING

Three-wheeled motorcycles and motorcycles with a sidecar are different from two-wheeled motorcycles. They operate, steer, handle and brake differently. Unskilled or improper use could result in loss of control, death or serious injury. (00587c)

- Take a rider training course.
- Read Owner's Manual before riding, adding accessories or servicing.
- Wear a helmet, eye protection and protective clothing.
- Never tow a trailer.

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.

- Review the TRIKE PRODUCT ORIENTATION VIDEO in your Owner's Kit to understand the operation and characteristics of your three-wheeled motorcycle.
- Know and respect the rules of the road (see SAFETY FIRST, Rules of the Road topic). Read and familiarize

yourself with the contents of the MOTORCYCLE HANDBOOK for your state.

- Before starting engine, check for proper operation of brakes, 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**

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

 **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)

- 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.

 **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.

- Steering and handling characteristics for a three wheeled motorcycle are different than a two wheeled motorcycle. Approach corners and sharp turns using the appropriate speed and steering technique to handle the turn and prevent rollover.
- Pay strict attention to road surfaces and wind conditions. The 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.
- The rear of the vehicle is wider than a typical motorcycle. Check for proper clearance when maneuvering, cornering, parking and operating the vehicle in reverse.
- 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 Tour-Pak or trunk.

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 the RIDING TIPS booklet 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 non-distracting level before operating vehicle.
- Maintain your motorcycle in proper operating condition in accordance with Table 33. Particularly important to motorcycle stability is proper tire inflation pressure, tread condition, and condition 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 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 80 mph (130 km/h). Failure to follow this warning could result in death or serious injury. (00015a)

 **WARNING**

Do not exceed the motorcycle'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**

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

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

- 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. 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, signal at least 100 feet (30.5 meters) before reaching the turning point. If turning across an intersection, move over to the centerline of the street (unless local rules require otherwise). Slow down when entering the intersection and turn carefully.
- 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. The 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.
- Do not load bulky items too far behind the rider or add weight to the handlebars or front forks.
- 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.

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.

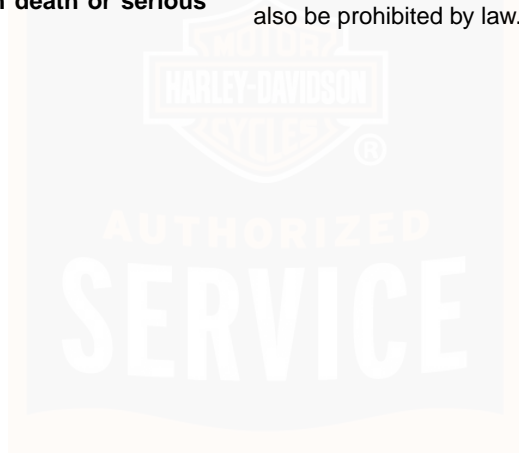
 **WARNING**

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)

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 (V.I.N.)

General

See Figure 2. A unique 17-digit serial or Vehicle Identification Number (V.I.N.) is assigned to each motorcycle. For a description of each item in the V.I.N., refer to Table 1.

Location

See Figure 1. The full 17-digit V.I.N. is stamped on the right side of the frame near the steering head. In some destinations, a printed V.I.N. label is also attached to the right front down-tube.

Abbreviated V.I.N.

An abbreviated V.I.N. showing the vehicle model, engine type, model year, and sequential number is stamped on the left side of the crankcase between the engine cylinders.

NOTE

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

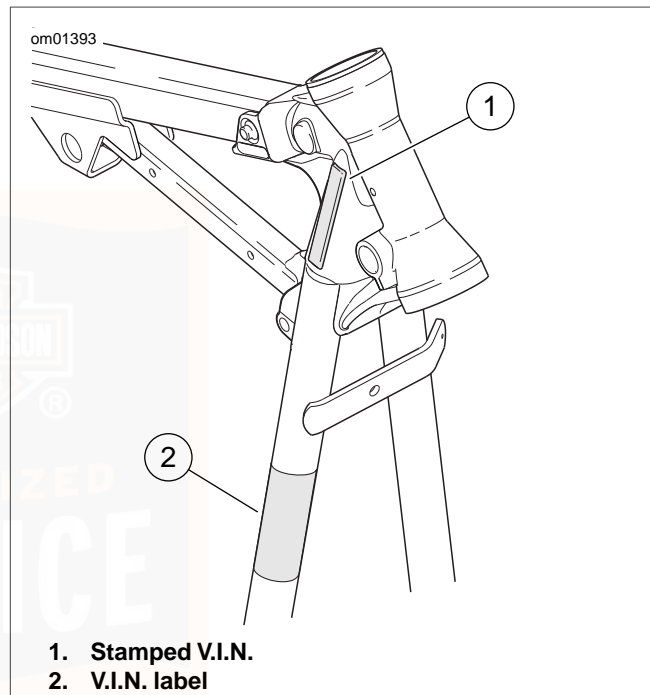


Figure 1. V.I.N. Locations

om01283a

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩
1 HD 1 MA M 1 3 A B 111000

Figure 2. Typical Harley-Davidson V.I.N.: 2010 Trike Models

Table 1. Harley-Davidson V.I.N. Breakdown: 2010 Trike Models

POSITION	DESCRIPTION	POSSIBLE VALUES	
1	Market designation	1=Originally manufactured for sale within the United States 5=Originally manufactured for sale outside the United States	
2	Manufacturer/vehicle type	HD=Harley-Davidson motorcycle	
3	Motorcycle type	1=Heavyweight motorcycle (901 cc or larger)	
4	Model	MA=FLHTCUTG Tri Glide™ Ultra Classic® MB=FLHXXX Street Glide® Trike	
5	Engine type	M=Twin Cam 103, 1690 cc air-cooled, fuel-injected	
6	Introduction date/calibration	Normal Introduction 1=Domestic 3=California A=Canada	Mid-year or Special Introduction 2, 4=Domestic 5, 6=California B=Canada
7	V.I.N. check digit	Can be 0-9 or X	
8	Model year	A=2010	
9	Assembly plant	B=York, PA U.S.A.	
10	Sequential number	Varies	

LABELS

See Figure 3 for safety and maintenance labels which were on the vehicle when new. If removed, replacement labels may be purchased for your motorcycle. Refer to Table 2 for label descriptions.

NOTE

Some labels may be available in different languages for destinations outside the U.S. See a Harley-Davidson dealer for all labels available for purchase.

Table 2. Labels

ITEM	PART NO.	DESCRIPTION	LOCATION
1	83881-09	General warnings	Top of air cleaner cover
2	15368-01A	Battery warning	Under seat, behind fuel tank on main harness trough
3	14148-86	Engine guard warning	On front of engine guard below center mount
4	83446-08	Trunk load limits	Inside trunk door
5	90821-74C	Tour-Pak load limits	Inside Tour-Pak lid
6	83563-10	Tire label - Canada	Under right side cover

1

⚠ WARNING

Three wheeled motorcycles are different from two wheeled motorcycles and other vehicles. Unskilled or improper use could result in loss of control, death or serious injury.

- Take a rider training course.
- Read Owner's Manual before riding, adding accessories or servicing.
- Wear a helmet, eye protection and protective clothing.
- Never tow a trailer.

For a manual, find nearest dealer at 1-800-443-2153 or www.harley-davidson.com 83881-09

2

⚠ WARNING

A connected battery can cause a spark or motorcycle startup while servicing. Death or serious injury could occur.

- Disconnect negative cable before servicing.
- Keep cable away from terminal while servicing.

15368-01A

3

THIS GUARD MAY PROVIDE LIMITED LEG AND COSMETIC VEHICLE PROTECTION UNDER UNIQUE CIRCUMSTANCES (FALL OVER WHILE STOPPED, VERY LOW SPEED SLIDE). IT IS NOT MADE NOR INTENDED TO PROVIDE PROTECTION FROM BODILY INJURY IN A COLLISION WITH ANOTHER VEHICLE OR ANY OTHER OBJECT.

4

⚠ WARNING

Too much weight in Trunk can cause loss of control. Death or serious injury could occur.

- Do not put more than 50 pounds in Trunk.
- See Accessories and Cargo section of Owner's Manual for more information.

8346-09

5

⚠ WARNING

Too much weight in Tour-Pak® can cause loss of control. Death or serious injury could occur.

- Do not put more than 25 pounds (11.3 kg) in Tour-Pak® on 2008 & earlier motorcycles.
- Do not put more than 30 pounds (13.63 kg) in Tour-Pak® on 2009 & later motorcycles.
- See Accessories and Cargo section of Owner's Manual for more information.

86821-71C

6

TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT

	SEATING CAPACITY NOMBRE DE PLACES	TOTAL 2	FRONT 1 AVANT 1	REAR 1 ARRIÈRE 1
The combined weight of occupants and cargo should never exceed 771 kg or 1709 lbs. Le poids total des occupants et du chargement ne doit jamais dépasser 771 kg ou 1709 lbs.				
TIRE PNEU	SIZE DIMENSIONS	COLD TIRE PRESSURE PRESSION DES PNEUS À FROID		SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
FRONT AVANT	MT90B16	248 kPa, 36 psi		VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
REAR ARRIÈRE	P205/65R15	179 kPa, 26 psi		

Figure 3. Labels

NOTES



SPECIFICATIONS

Table 3. Engine

ITEM	SPECIFICATION	
Number of cylinders	2	
Type	4-cycle, 45 degree V-Type, air-cooled	
Compression ratio	9.6:1	
Bore	3.875 in.	98.42 mm
Stroke	4.375 in.	111.12 mm
Displacement	103.00 cu. in.	1687.87 cu. cm
Lubrication system	Pressurized, dry sump with oil cooler	
Torque	101.00 ft-lbs @ 3500 RPM	137.00 Nm @ 3500 RPM

Table 4. Electrical

COMPONENT	SPECIFICATION	
Ignition timing	Not adjustable	
Battery	12 volt, 28 amp-hr, 370 CCA sealed and maintenance free	
Charging system	Three-phase, 50-amp system (585W @ 13V, 2000 rpm, 650W max power @ 13V)	
Spark plug type	HD-6R12	
Spark plug size	12 mm	
Spark plug gap	0.038-0.043 in.	0.97-1.09 mm
Spark plug torque	12-18 ft-lbs	16.3-24.4 Nm

Table 5. Transmission Specifications

TRANSMISSION	SPECIFICATION
Type	Constant mesh, foot shift
Speeds	6 forward

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 6. Sprocket Teeth

DRIVE	ITEM	NUMBER OF TEETH
Primary	Engine	34
	Clutch	46
Final	Transmission	32
	Rear wheel	70

Table 7. Gear Ratios

GEAR	RATIO
1st Gear	9.878
2nd Gear	6.847
3rd Gear	5.086
4th Gear	4.118
5th Gear	3.508
6th Gear	2.960

Table 8. Capacities

ITEM	U.S.	LITERS
Fuel tank (total)	6.00 gal	22.71
Low fuel warning light on	1.00 gal	3.79
Oil tank with filter	4.00 qt.	3.79
Transmission (approximate)	1.00 qt.	0.95
Primary chaincase (approximate)	1.40 qt.	1.32

Table 9. Tires

MOUNT	SIZE	NUMBER	PRESSURE (COLD)	
			PSI	kPa
Front	16 in.	Dunlop D402F MT90B16	36	248
Rear	15 in.	Dunlop P205/65 R15	26	179

⚠ 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)

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 right side front downtube.

Table 10. Weights

ITEM	FLHTCUTG		FLHXXX	
	LB	KG	LB	KG
Weight as shipped from factory	1139.6	516.91	1071	485.81
GVWR	1700	771.12	1700	771.12
GAWR front	500	226.80	500	226.80
GAWR rear	1200	544.32	1200	544.32

Table 11. Dimensions

ITEM	FLHTCUTG		FLHXXX	
	IN	MM	IN	MM
Wheelbase	66.6	1691.64	66.6	1691.64
Overall length	105.80	2687.32	105.80	2687.32
Overall width	54.30	1379.22	54.30	1379.22
Ground clearance	4.70	119.38	4.70	119.38
Overall height	59.30	1506.22	52.90	1343.66
Saddle height*	27.5	698.5	26.75	679.45
*With 180 lb (81.7 kg) rider on seat.				

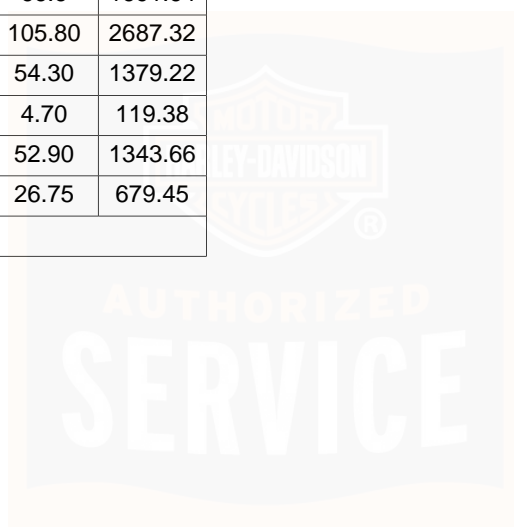


Table 12. Bulb Chart

LAMP (ALL LAMPS 12 VOLT)	BULBS REQUIRED	CURRENT DRAW AMPERAGE	HARLEY-DAVIDSON PART NUMBER
Headlamp	1	4.58/5.0	68329-03
Tail/stop/rear turn signal lamp	2	0.59/2.10	68167-04
Front turn signal lamp	2	2.25/0.59	69331-02
Tour-Pak tail/stop lamps (FLHTCUTG)	2	0.59/2.10	68168-89A
Fender tip lamps (FLHTCUTG)	1	0.30	68193-95
Auxiliary lamps (FLHTCUTG)	2	2.1	68453-05
Instrument panel lamps*	High beam indicator Oil pressure indicator Neutral indicator Turn signal indicator	Instrument panel is illuminated with LEDs. Replace entire assembly upon failure.	
License plate lamp	2	0.35	52441-95
Reverse enable lamp*	Illuminated with an LED. Replace entire assembly upon failure.		
Tour-Pak side lamps* (FLHTCUTG)	Illuminated with an LED. Replace entire assembly upon failure.		

Table 12. Bulb Chart

LAMP (ALL LAMPS 12 VOLT)		BULBS REQUIRED	CURRENT DRAW AMPERAGE	HARLEY-DAVIDSON PART NUMBER
Gauge lamps	Speedometer	N/A	N/A	N/A
	Tachometer	N/A	N/A	N/A
	Voltmeter	1	0.24	67445-00
	Oil pressure indicator	1	0.24	67445-00
	Air temperature gauge	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 1/32 in. (0.8 mm) tread depth remains, replace tire immediately. Using a worn tire can adversely affect stability and handling, which could result in death or serious injury. Use only Harley-Davidson approved replacement tires. (00090b)

See SPECIFICATIONS, Specifications 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.

- Do not use race gas or octane boosters. Use of these fuels will damage the fuel system.

Some gasoline blends might adversely affect the starting, driveability or fuel efficiency of the motorcycle. If any of these problems are experienced, try a different brand of gasoline or gasoline with a higher octane blend.

FUEL

Always use a good quality unleaded gasoline. Octane ratings are usually found on the pump. Refer to Table 13.

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 13. Octane Ratings

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

CATALYTIC CONVERTER

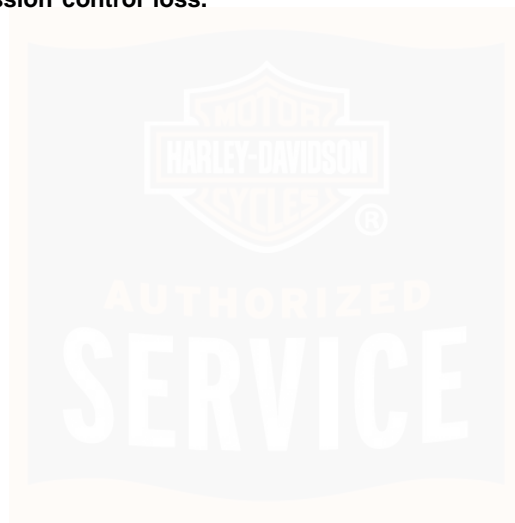
The motorcycle is equipped with a catalytic converter in the exhaust pipe collector.

CAUTION

Do not operate catalytic converter-equipped vehicle with engine misfire. If you operate the vehicle under this condition, the exhaust will become abnormally hot, which can cause vehicle damage, including emission control loss. (00149c)

CAUTION

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



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

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 4. The ignition/headlamp key switch controls electrical functions of the motorcycle.

WARNING

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

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)

CAUTION

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

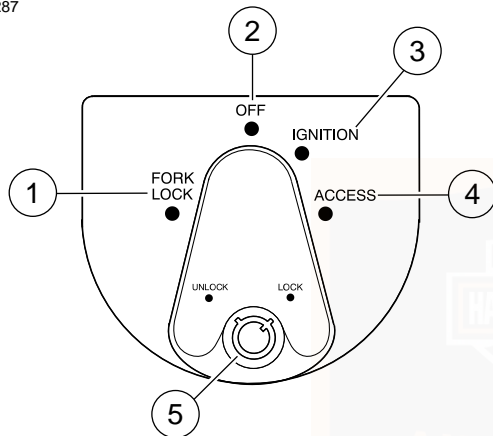
NOTES

- *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 14. Ignition/Headlamp Switch Positions

FUNCTION	LABEL	OPERATION
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 four positions. To prevent loss while riding, remove the key.
Switch	FORK LOCK	Locks fork in left position to discourage unauthorized use of vehicle when parked. See CONTROLS AND INDICATORS, Fork Lock for operation.
	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.
	ACCESS	When the switch is in the ACCESS position, all the lamps and accessories will operate but the engine can not be started. In ACCESS, the switch can be locked.

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1. Fork lock
2. Off
3. Ignition
4. Accessory
5. Switch lock

Figure 4. Ignition/Headamp Key Switch

FORK LOCK

CAUTION

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

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)

See Figure 4. Using the fork lock immediately after parking your motorcycle can discourage unauthorized use or theft when parking your motorcycle. The fork lock is integrated into the ignition switch.

NOTE

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

1. Turn fork to full left position.
2. See Figure 4. Turn switch knob to FORK LOCK and push knob down.

3. Insert key and turn key to LOCK position. Remove key.
4. To unlock fork, insert key and turn to UNLOCK position. Remove key and rotate switch knob out from the FORK LOCK position.

HAND CONTROLS: BASIC OPERATION

CAUTION

Control wiring is routed inside handlebar and may be pinched or cut if controls are rotated too far. Electrical damage to control wiring can result. See Service Manual Supplement or see a Harley-Davidson dealer. (00363a)

Clutch Hand Lever

WARNING

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

See Figure 5. 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, Cruise Control Operation.
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 in gears other than neutral.

Horn Switch

See Figure 5. The horn is operated by pushing on the horn switch (2) located on the left handlebar control group.

Headlamp Dimmer Switch

See Figure 5. 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 8. The (blue) high beam indicator lamp will illuminate when the high beam is on.

Turn Signal Switches

See Figure 5. Each handlebar control group contains a turn signal switch.

- The left turn signal switch (4) operates the left front and left rear flashing lamps.
- The right turn signal switch (5) operates the right front and right rear flashing lamps.

NOTE

Front turn signal lamps also function as running lamps.

Electric Starter Switch

NOTE

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

See Figure 5. The electric starter switch (6) 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 4. Turn ignition/headlamp key switch to IGNITION and push the START switch to operate starter motor.

Engine OFF/RUN Switch

See Figure 5. 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 RUN 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 4. Turn the ignition key to the OFF position to turn the ignition power completely OFF.

Front Brake Lever

See Figure 5. The front brake lever (8) applies mechanical pressure to the front brake master cylinder and the master cylinder applies hydraulic pressure to the front brake calipers.

Audio/CB Control Switches

See Figure 5. The audio control switch (10) sets up and operates functions within the Advanced Audio System and CB (if equipped).

See ADVANCED AUDIO SYSTEM, Advanced Audio System for detailed operation.

Cruise Control Resume/Set Switch

See Figure 5. If equipped with cruise control, the cruise control resume/set switch (11) automatically maintains the speed of the motorcycle.

See CONTROLS AND INDICATORS, Cruise Control Operation for detailed operation.

Reverse Control Switches

See Figure 5. If equipped with reverse option, the reverse control switches (12) operate the electric reverse motor. The reverse enable indicator (13) is lit when reverse operation is enabled.

See CONTROLS AND INDICATORS, Reverse Operation for detailed operation.

Throttle Control Grip

The throttle control grip 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 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 motorcycle) to close the throttle (decelerate).
2. Slowly turn throttle control grip counterclockwise (toward rear of motorcycle) 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.

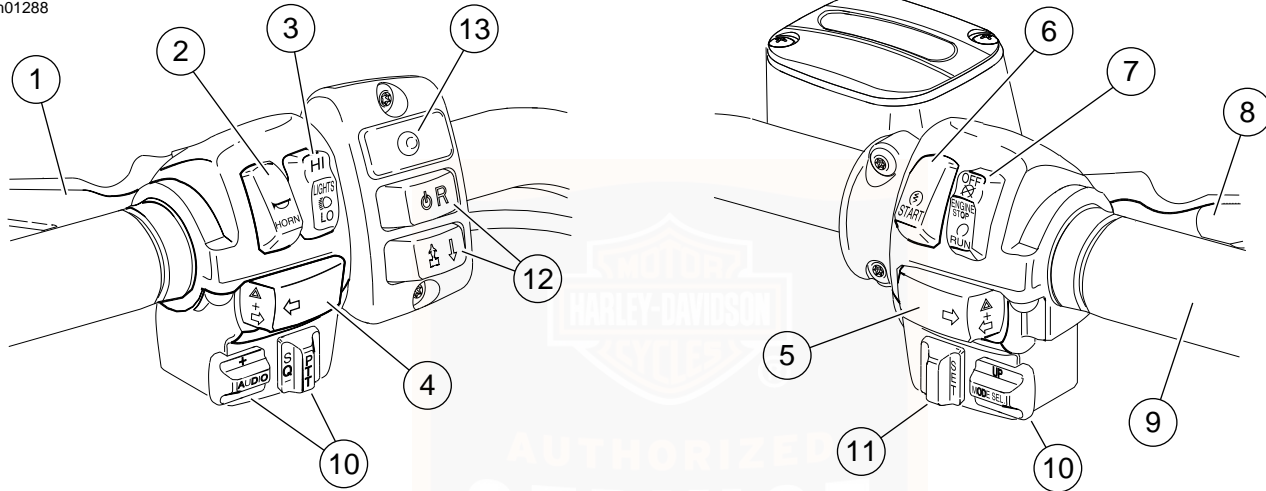
4. Screw the throttle adjustment screw in to increase friction on grip. This provides a damping effect on throttle motion.

NOTE

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



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1. Clutch hand lever
2. Horn switch
3. Headlamp dimmer switch
4. Left turn signal switch
5. Right turn signal switch

8. Front brake lever
9. Throttle control grip
10. Audio/CB control switches (if equipped)
11. Cruise control resume/set switch (if equipped)
12. Reverse control switches (if equipped)
13. Reverse enable indicator (if equipped)

Figure 5. Handlebar Controls (FLHTCUTG shown)

ELECTRONIC THROTTLE CONTROL (ETC)

Touring models are equipped with Electronic Throttle Control (ETC). Instead of using a mechanical cable connection to the throttle body, this technology uses redundant grip sensors to indicate rider requested throttle position to the Electronic Module (ECM). The ECM then regulates proper fuel/air intake and ignition timing based on the rider request. The grip sensor is manufactured with internal cams and spring retainer for natural feel and operation.

ETC operation is designed for rider safety and continued motorcycle operation, even in the event of a component failure. The Electronic Control Module monitors the status of the grip sensors, throttle plate actuation and airflow. If any problems are detected, the motorcycle will disable cruise control, illuminate the engine check lamp, and revert to one of the following fallback modes.

ETC Limited Performance Mode

The rider will experience near-normal operation. The motorcycle will operate with provisions to guard against unintended acceleration.

ETC Power Management Mode

The throttle plate actuator returns to an "idle detent" or "limp-home" position, which will provide enough torque to achieve

speed of about 25 mph (40 kph). The motorcycle's response to grip sensor input is significantly reduced.

ETC Forced Idle Mode

The throttle plate actuator is forced to a "fast idle" position, which will provide enough torque to crawl, but not enough torque to operate at traffic speeds.

ETC Forced Shutdown Mode

The engine is forced to shut down.

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 (if equipped), 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.

INSTRUMENTS

Speedometer



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 7. The speedometer registers miles per hour of forward speed. The speedometer has a single display for the following selectable functions:

- Odometer
 - Trip odometers A and B
 - Fuel range function
1. See Figure 7. Pressing the function switch with the ignition switch in any position will activate the odometer reading. Mileage may be checked without unlocking ignition switch. Press and release function switch once to view odometer.
 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.

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 6. 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.

Oil Pressure Gauge

The oil pressure gauge indicates engine oil pressure and is found on the front panel of the fairing. Engine oil pressure will normally vary from 5 psi (34 kN/m²) at idle speed to 30-38 PSI (207-262 kN/m²) at 2000 RPM when engine is at normal operating temperature of 230° F (110° C).

Voltmeter

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

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

Fuel Range Function

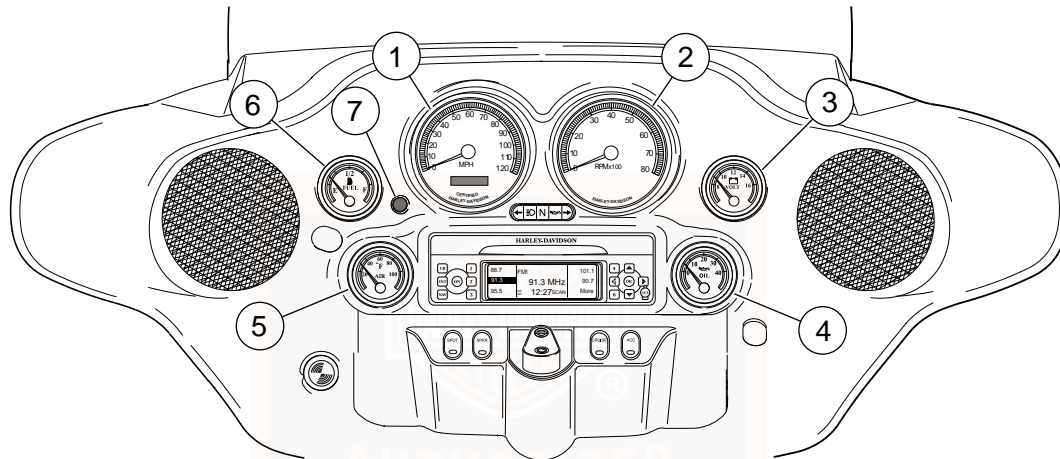
The fuel range function shows the approximate mileage available with the amount of fuel left in the fuel tank.

1. With the ignition switch in the ACC or IGNITION position, press function switch until fuel range function is displayed, as indicated by the letter 'r' in the left side of the odometer display. The calculated remaining distance (miles or kilometers) to empty is displayed, based on the amount of fuel in tank. Range can be accessed at any time using the function switch.

2. When the low fuel warning lamp illuminates, the range feature will automatically be displayed in the odometer unless this automatic pop-up feature is disabled by a press and hold of the function switch while in range display mode. Automatic range pop-up feature will show that it is disabled by blinking twice. Likewise, automatic range popup can be reactivated by a press and hold of the function switch. Range will blink once when the automatic pop-up feature is re-enabled.

NOTES

- *When the low fuel warning lamp turns on, there is approximately 1.00 gallon (3.79 liters) of fuel remaining in the tank. Refuel as soon as possible.*
 - *The range display is only updated when the vehicle is moving.*
3. After the range calculation reaches 10 miles (16 kilometers) remaining, the range display will display "r Lo" to indicate that the vehicle will shortly run out of fuel.
 4. Resetting the low fuel warning lamp and range requires an ignition cycle change.



- 1. Speedometer
- 2. Tachometer
- 3. Voltmeter
- 4. Oil pressure

- 5. Air temperature
- 6. Fuel level
- 7. Function button

Figure 6. Instruments (Typical)

INSTRUMENT LAMPS

Engine Check Lamp

See Figure 7. The engine check lamp is located near the lower left side of the speedometer 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 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 7. The low fuel lamp is located in the speedometer face, lower center by check engine lamp. The low fuel lamp indicates low fuel level in the tank. Refer to Table 8. Refill the tank as soon as possible. The low fuel lamp color is amber.

If the low fuel lamp remains lit after adding fuel or filling the fuel tank, see your Harley-Davidson dealer.

Battery Discharge Lamp

See Figure 7. The red battery charging lamp indicates either overcharging or undercharging of the battery. Refer to **MAINTENANCE AND LUBRICATION, Battery: General**.

Cruise Control Lamps

See Figure 7. A green lamp on the tachometer face indicates the cruise control is SET or NOT SET. An orange lamp on the cruise control switch indicates the cruise control is ON or OFF. Refer to **CONTROLS AND INDICATORS, Cruise Control Operation**.

Sixth Gear Lamp

See Figure 7. The amber sixth gear lamp on the speedometer face indicates when the transmission is in sixth gear.

Security System Lamp

See Figure 7. The red security system lamp on the speedometer face indicates when the security system is armed. Refer to **HANDS-FREE SECURITY MODULE, Harley-Davidson Smart Security System**.

If the security system lamp remains lit after the security system is disarmed, see your Harley-Davidson dealer.

Reverse Enable Lamp

The reverse enable lamp is located with the reverse controls on the left handlebar (if equipped). This yellow lamp is lit when reverse operation is enabled. See CONTROLS AND INDICATORS, Reverse Operation.

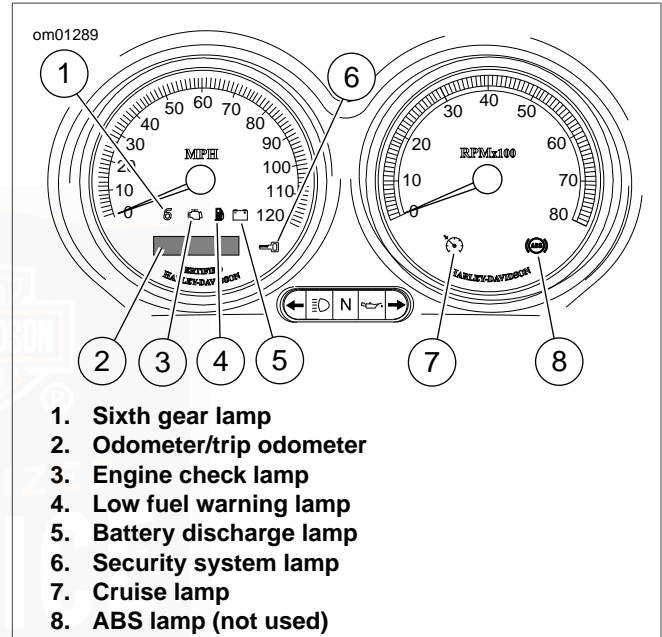


Figure 7. Indicator Lamps

INDICATOR LAMPS

See Figure 8. 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.

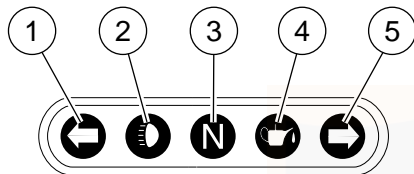
Several other circumstances that could cause the red oil indicator lamp to signal, include the following:

- 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 8. Indicator Lamps

CRUISE CONTROL

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 9. A fairing cap cruise control switch located to the right of the ignition/headlamp key switch turns the cruise control system ON and OFF.

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. If you cannot SET cruise speed, see your dealer.

See Figure 10. RESUME/SET switch is located in the right handlebar control group.

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

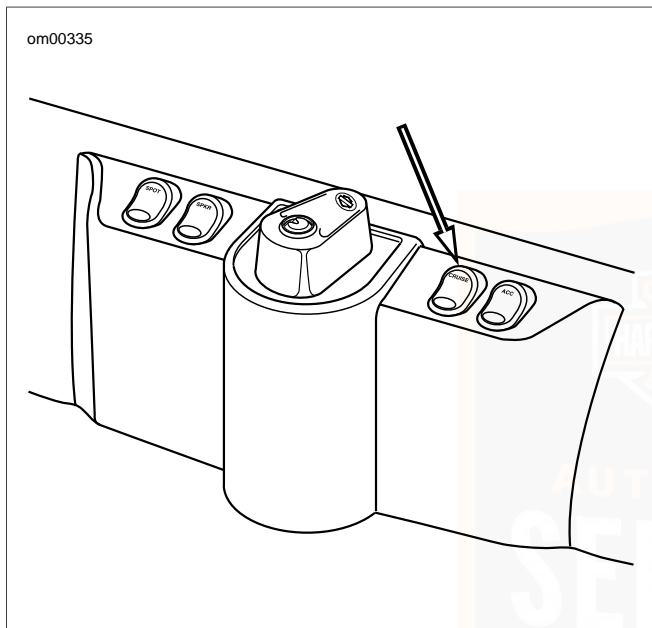


Figure 9. Cruise Control Fairing Cap Switch

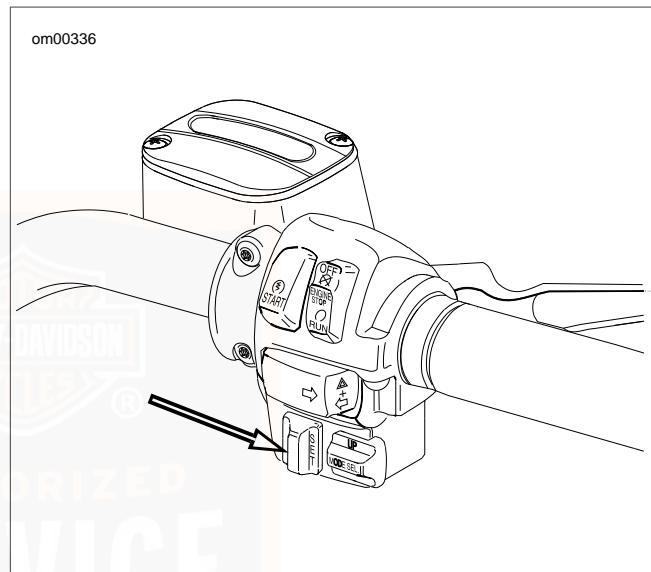


Figure 10. RESUME/SET Switch

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 30 mph (48 km/h) or above 90 mph (145 km/h).*
- *The system is managed by the ECM. The tachometer provides information to disengage the system if the engine RPM suddenly increases.*
- *Besides the ECM, the system has other components: a stepper-motor (controlled by the computer) which operates the throttle during CRUISE operation, and several internal switches, all sending information to the computer.*
- *The system will allow rider to increase speed 10 mph (16 km/h) or more (depending on how hard the rider rolls on the throttle and the condition of the vehicle) 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 7. 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 30-90 mph (48-145 km/h), momentarily push the RESUME/SET switch on the right handlebar to SET. After a delay of about 1-1/2 seconds, the icon will turn green on the face of the gauge to indicate the selected cruising speed is locked in.

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 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 10 mph (16 km/h) above the set speed may also deactivate the cruise control.

When the cruise is disengaged, the green cruise engaged icon on the face of the gauge changes to 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 15 mph (24 km/h) below the SET speed, speed can no longer be RESUMED. If cruise operation is still desired, press the RESUME/SET switch to SET to reset the cruise speed.

Accelerating Above Cruise Speed

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

Decelerating Cruise Control

1. With the cruise speed set, momentarily press the RESUME/SET switch to SET to reduce the speed by 1 mph (1.6 kph).
2. Pressing and holding the RESUME/SET switch at SET will cause the system to continue to reduce speed in increments of approximately 1 mph (1.6 kph) 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:

- Rider operates at vehicle speeds below 30 mph (48 km/h) or above 90 mph (145 km/h).
- Brake lamps are on constantly. See dealer.

Installing non-specified tires or gearing may affect cruise control operation.

GEAR SHIFT LEVER

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 transmission is a six speed sequential gear box.

1. Push the gear shift lever all the way down (full stroke) to shift the transmission to the next lower gear.
2. Lift the gear shift lever all the way up (full stroke) to shift the transmission to the next higher gear.

NOTES

- Release the gear shift lever after each gear change.
- The lever must return to its central position before another gear change can be made.

First gear is the last gear position that can be found by pushing the gear shift lever full stroke downward.

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 one-half of its full stroke.

When the motorcycle is standing still and the engine is not running, shifting gears requires a different technique. Before shifting in this condition, move the motorcycle backward and forward with the clutch fully disengaged (clutch lever pulled in). While maintaining slight pressure on the shift lever, shift from one gear to another.

Even with the engine running and the motorcycle standing still, difficulty may be experienced in shifting gears. This difficulty occurs because transmission gears are not turning and shifting parts are not lined up to permit engagement.

CAUTION

When difficulty of shifting gears is experienced, do not under any circumstances, attempt to force the shift. The results of such abuse will be a damaged or broken shifter mechanism. (00161a)

See OPERATION, Shifting Gears for more information.

HEEL-TOE FOOT SHIFTER

See Figure 11. Some motorcycles have a heel-toe shifter lever. With this shift lever, upshifts can be made with the heel of the left foot. Downshifts can be made with the toe.

- Pushing heel-toe foot shift lever all the way down (full stroke) shifts the transmission to the next lower gear.
- Lifting the foot shift lever all the way up (full stroke) shifts the transmission into the next higher gear.

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.

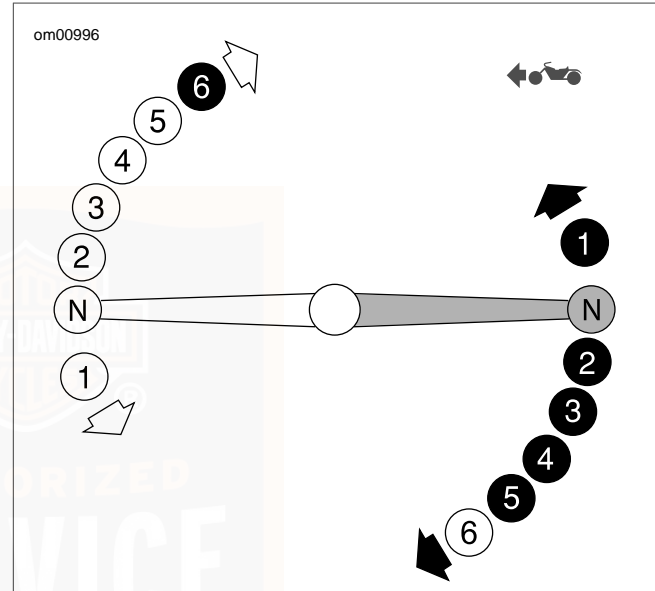


Figure 11. Heel-Toe Foot Shift Lever

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.

PARKING BRAKE

The parking brake lever is located on the right side of vehicle. The lever mechanically engages brakes for both rear wheels to prevent the vehicle from rolling when parked.

Do not use parking brake when the vehicle is in motion. It is not an emergency brake. Always disengage parking brake before riding.

NOTE

As brake pads wear, the parking brake lever may have to be adjusted to provide sufficient lever effort and fully engage rear brakes. See MAINTENANCE AND LUBRICATION, Parking Brake for inspection and adjustment.

Engaging Parking Brake

1. Bring the vehicle to a complete stop using service brakes.
2. Shift to first gear and shut off engine.
3. Apply front brake with left hand and cover rear brake with right foot.
4. See Figure 12. Push parking brake lever to the forward position (2) with right hand.

NOTE

The rear brake pedal will increase pressure as the parking brake engages. This is normal operation. Do not resist rear brake pedal motion when engaging the parking brake.

Disengaging Parking Brake

1. Apply front brake with left hand and cover rear brake with right foot.
2. See Figure 12. With right hand, pull parking brake lever to the upright position (1). The rear brake pedal will decrease pressure as the parking brake disengages.
3. Start motorcycle and operate normally.

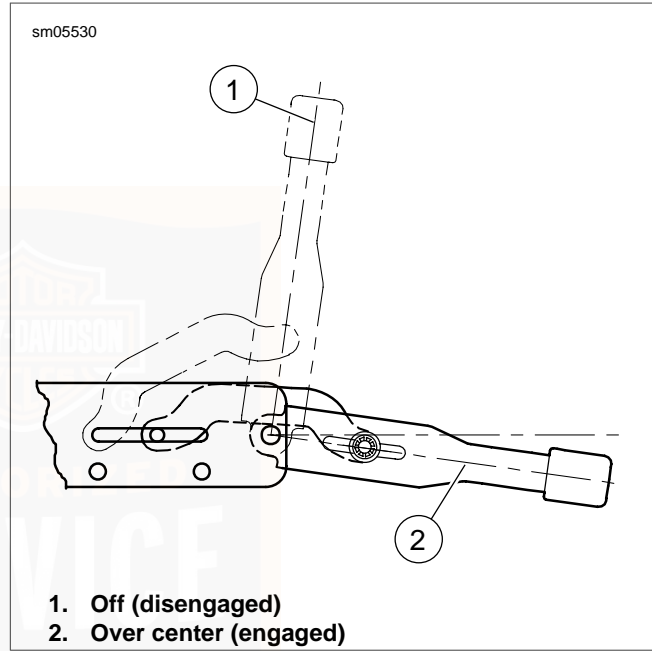


Figure 12. Park Brake Positions

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

Gasoline is extremely flammable and highly explosive. Inadequate safety precautions could result in death or serious injury. See SAFE OPERATING RULES and review safety procedures listed below.

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)

The fuel filler cap is located beneath a door on the fuel tank. Insert key into fuel door lock and turn counterclockwise to open. Unscrew fuel filler cap.

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. Tighten fuel filler cap clockwise until it clicks. Close fuel door and turn key clockwise to lock fuel door.

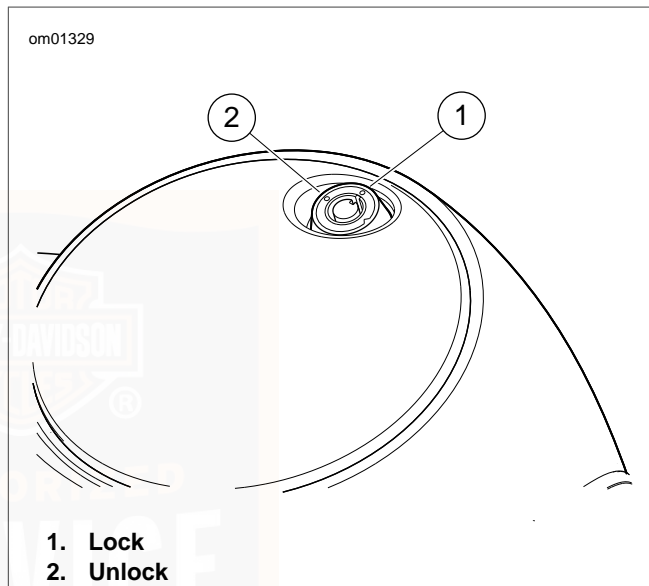


Figure 13. Fuel Door

REAR AIR SUSPENSION

Refer to Table 15. The vehicle features air-adjustable rear suspension. Air pressure in the rear shocks may be adjusted to suit load requirements, riding style and personal comfort.

1. Remove the right side cover.
2. See Figure 14. Remove the cap from the air valve located behind the shock absorber.

NOTES

- Always add 3-5 psi (21-35 kPa) to the existing pressure before releasing air from the system to prevent oil from exiting the air valve. NEVER exceed 50 psi (345 kPa).
 - Do not exceed maximum GVWR or GAWR.
3. Attach AIR SUSPENSION PUMP AND GAUGE (Part No. HD-34633) to the air valve. Fill or release air from the shock absorber to the pressure specified for your load.

NOTE

The specified pressures are recommended starting points. Adjust pressure to suit load conditions, riding style and comfort desired. Less 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.

4. Install cap on air valve.
5. Install right side cover.

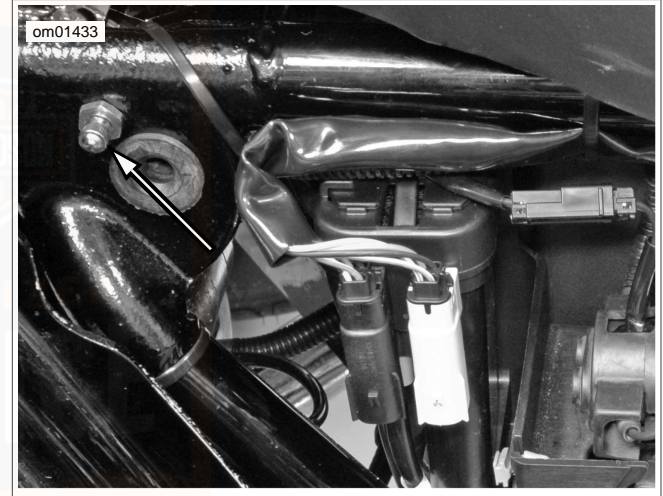


Figure 14. Rear Air Suspension Valve

Table 15. Rear Suspension Recommended Air Pressure: Trike Models

SHOCK LOAD	TOTAL WEIGHT		PRESSURE	
	LB	KG	PSI	kPa
Solo rider	up to 150	up to 68	5-10	34-69
	150-200	68-91	10-20	69-138
	200-250	91-113	20-30	138-206
	250-300	113-136	30-40	206-276
	over 300	over 136	40-50	276-345
Solo rider with capacity luggage of 80 lb (36 kg)	up to 150	up to 68	25-30	172-206
	150-200	68-91	30-40	206-276
	200-250	91-113	40-50	276-345
	over 250	over 113	50	345
Rider plus passenger	All weights		50	345
Maximum loaded vehicle	GVWR		50	345
Do not exceed 50 psi (345 kPa) rear shock pressure.				

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.

Make sure all storage compartments are secure before operating motorcycle.

Adhere to the weight limits and loading instructions on the labels within the storage compartments.

TOUR-PAK

Operation

See Figure 15. Some models are equipped with a lockable Tour-Pak. To open, unlock the Tour-Pak lock with the ignition key and open the 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 installed in the forward or rearward position. See the service manual or a Harley-Davidson dealer for Tour-Pak removal/relocation.

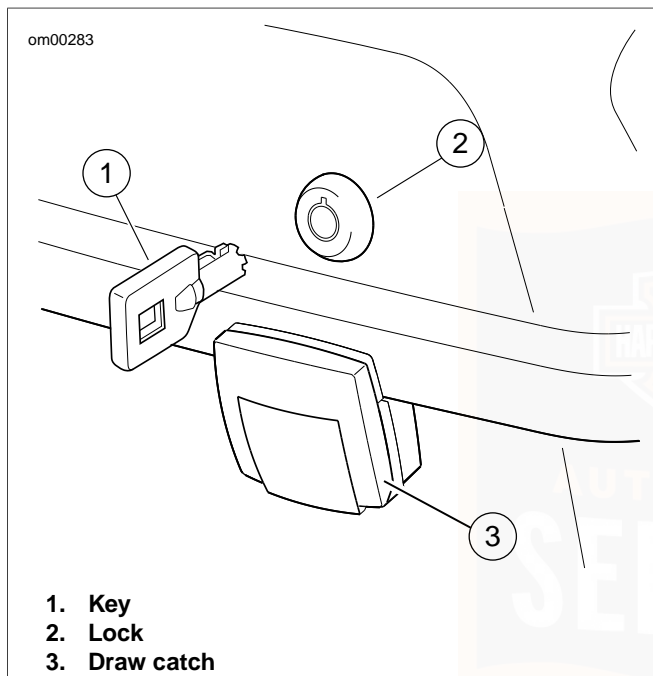


Figure 15. Tour-Pak Lock and Draw Catch

TRUNK

The vehicle has a lockable trunk. When loading the trunk, distribute weight evenly and do not exceed the maximum load of 50 lb (22 kg). Contents in trunk may shift while riding.

1. See Figure 16. To unlock trunk, insert key into barrel lock and turn one-eighth turn clockwise. Return key to bottom center position and remove.
2. See Figure 17. Push in the barrel lock to unlatch door. Pull handle to open trunk door.
3. Firmly close the trunk door to engage **both** latches. Pull handle to make sure trunk door is secure.

NOTE

If both latches are not engaged, it is possible for water to leak past the trunk door seal.

4. To lock trunk, insert key into barrel lock and turn one-eighth turn counterclockwise. Return key to bottom center position and remove. Push on barrel lock to make sure trunk is locked.

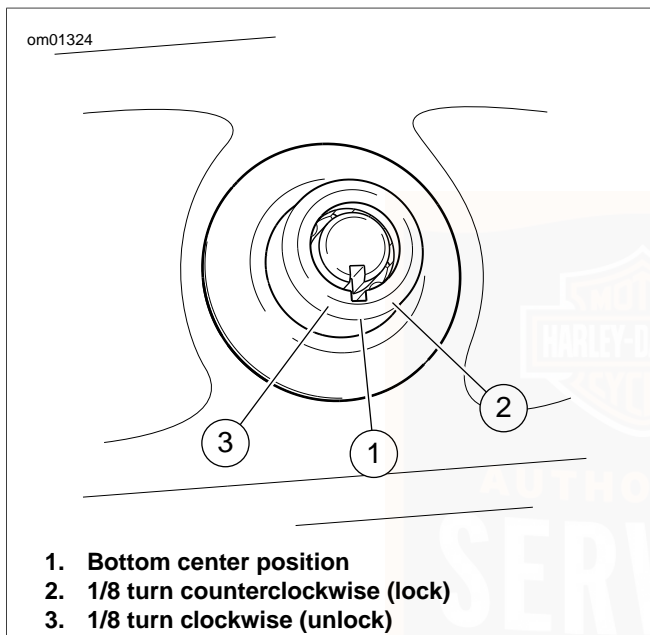


Figure 16. Trunk Lock

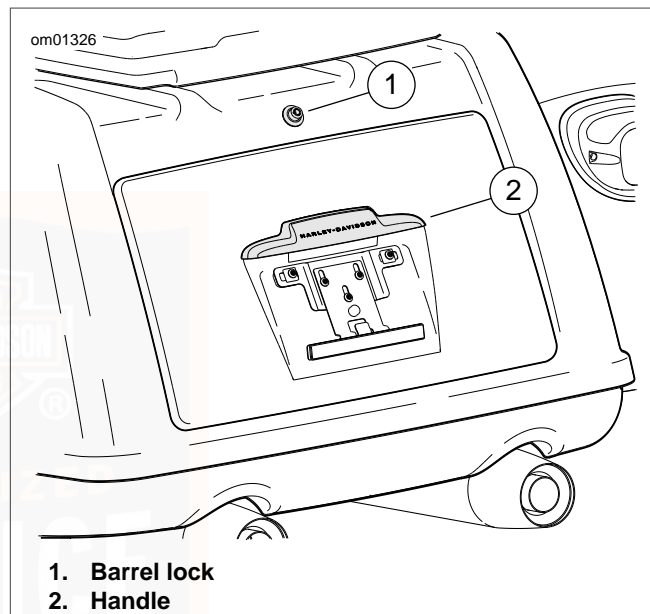


Figure 17. Trunk

ADJUSTABLE AIR DEFLECTORS

See Figure 18. Some models are equipped with adjustable air deflectors located along the left and right bottom edge of the fairing. These deflectors can be rotated to direct airflow for rider and passenger comfort.

To adjust, grasp the outer edge of the deflector and pivot to the desired position.

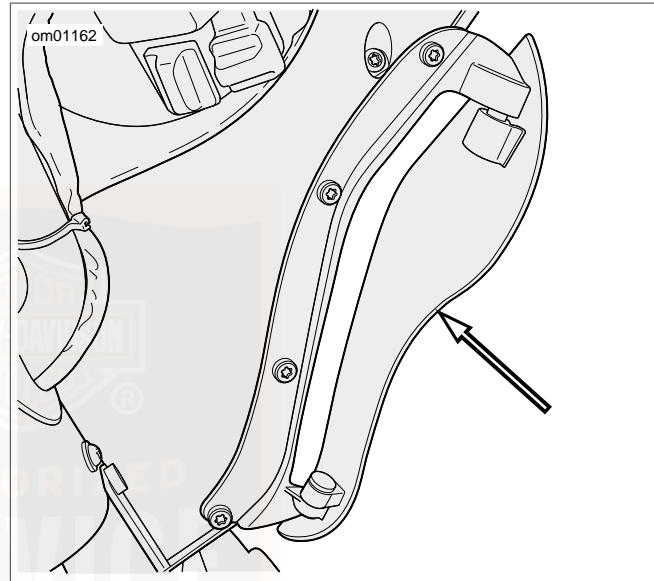


Figure 18. Adjustable Air Deflector

CIGARETTE LIGHTER

CAUTION

Do not use cigarette lighter socket to power electrical devices. Automotive electrical plugs can damage the socket, which can result in improper lighter operation and overheating that could cause equipment damage. (00599b)

See Figure 19. Some models are equipped with a cigarette lighter. The lighter is located on the left side of the fairing. To operate, press lighter into socket. The lighter will pop out when hot.

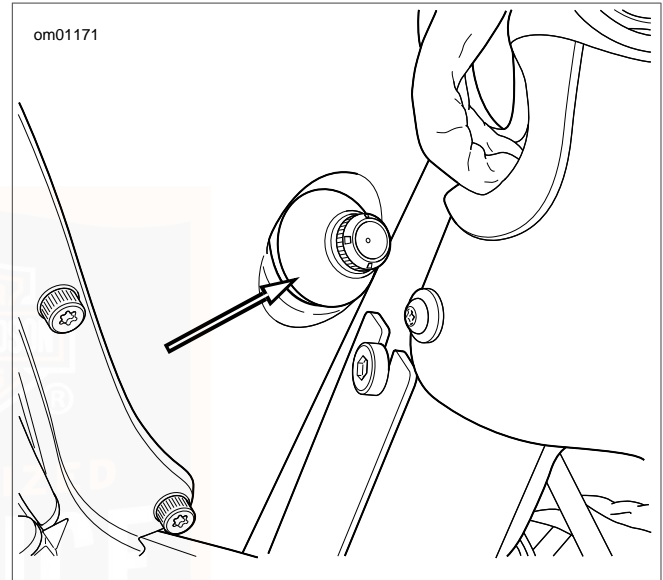


Figure 19. Cigarette Lighter

ACCESSORY SWITCH

See Figure 20. An accessory switch (4) is located on the right side of the fairing.

See Figure 21. There is an accessory connector located in front of the battery 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)

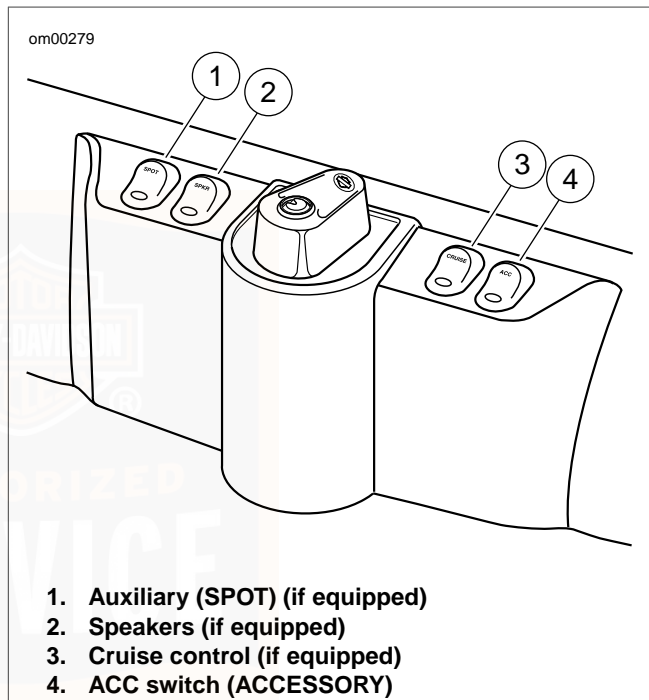


Figure 20. Switch Indicators (typical)

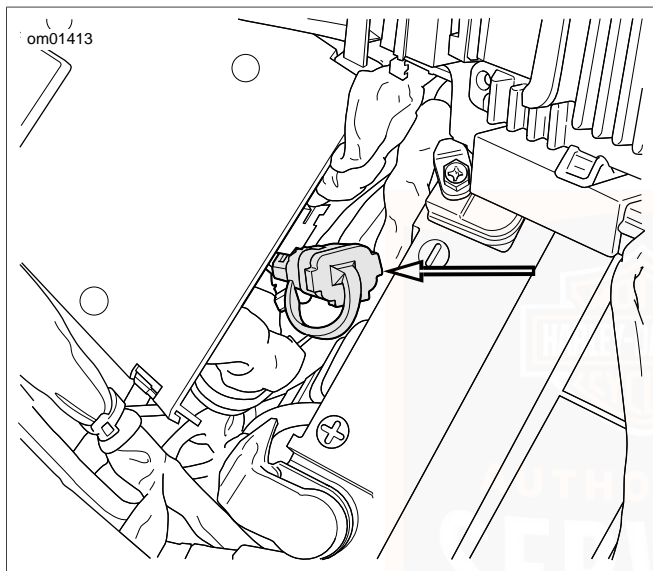


Figure 21. Accessory Connector

AUXILIARY LAMPS

See Figure 20. On models equipped with auxiliary lamps, use the auxiliary lamp switch to turn on the auxiliary lamps as

needed. The auxiliary lamp switch (SPOT) is on the left side of the ignition/headlamp key switch on fairing cap.

When the high beam headlamp is turned on, the auxiliary lamps automatically turn off.

FAIRING LOWER VENTS

Some models are equipped with fairing lowers. The fairing lowers block wind and water from the rider legs, and include a compartment for storing small items.

See Figure 22. Vents in fairing lowers are controlled by the lever shown. Adjust vent openings to control air flow.

Fairing lowers may be removed in warmer ambient temperature to increase rider and passenger comfort.



Figure 22. Fairing Lower Vent Control

PASSENGER FOOTBOARDS

Passenger footboards can be adjusted to one of three positions. Remove plastic plugs from holes in the footrest mount in the frame as necessary.

1. See Figure 23. Remove socket screw with lockwasher from top of footboard bracket. Do not remove lower screw.
2. Slide bracket to the desired position.
3. Install socket screw with lockwasher and tighten to 36-42 ft-lbs (49-56 Nm).

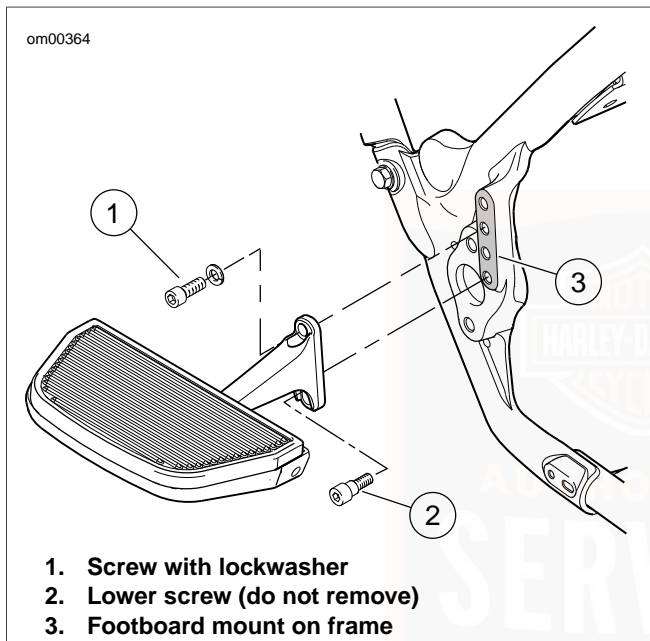


Figure 23. Passenger Footboard

REVERSE OPERATION

The vehicle may be equipped with an optional electric reverse motor. The reverse motor is an electrical component that uses battery power to move the vehicle in reverse with the engine running and the transmission in neutral.

The reverse motor is designed for light load, short duration use. Steep inclines, long distance travel in reverse or attempted operation with the brakes or parking brake applied or while the vehicle is against resistance (such as a curb) will drain the battery and may cause the reverse circuit breaker to trip.

NOTE

Always come to a complete stop before placing the vehicle in forward gear or enabling the reverse motor.

1. Bring the vehicle to a complete stop using front and/or rear brake. If parked, check that the parking brake is disengaged.
2. See Figure 24. With the vehicle started and in neutral, press the reverse enable switch (2) in the left hand control group. The yellow reverse enable lamp (1) will light.
3. Press and hold the reverse drive switch (3) to operate the electric reverse motor.

NOTES

- *The reverse vehicle speed is affected by the incline of the surface. On a level surface the maximum reverse speed is approximately 2-3 mph (3-5 km/h). Do not exceed 2-3 mph (3-5 km/h) and be prepared to slow or stop the vehicle while in reverse.*
 - *The rear of the vehicle is wider than a typical motorcycle. Check for proper clearance when maneuvering.*
 - *If the reverse motor does not operate, see MAINTENANCE AND LUBRICATION, Reverse Motor Circuit Breaker: If Equipped to reset the circuit breaker.*
4. Release the reverse drive switch and brake as necessary to stop the vehicle.
 5. Shift into a forward gear and ride normally or turn ignition to OFF and engage the parking brake.

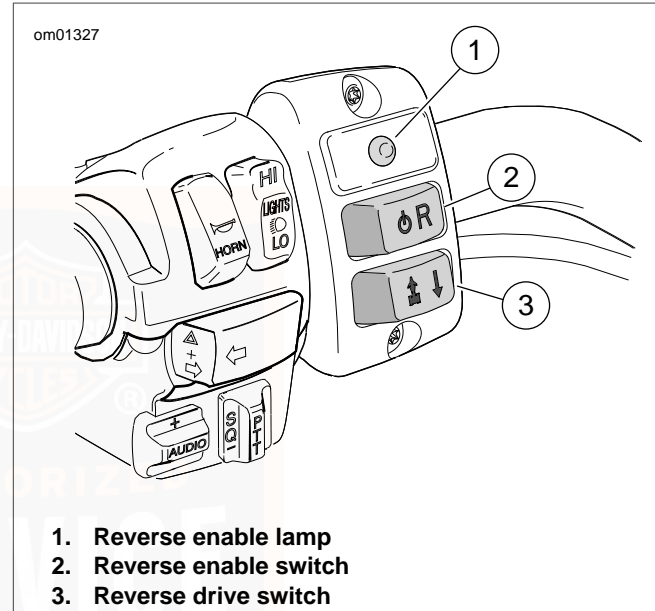


Figure 24. Reverse Controls (FLHTCUTG shown)

AUDIO SYSTEM QUICK START GUIDE

See the remaining information in this section for detailed information on all the features for the Advanced Audio System.

Radio Receiver

1. See Figure 25. With the ignition/headlamp key switch in IGNITION or ACCESS, press the **ON** button (10).
2. **Adjust Volume:** See Figure 26. Adjust volume with the the **AUDIO** switch (1) on the left hand grip. Push **AUDIO** switch up (+) to raise the volume or down (-) to lower the volume.
3. **Manual Tuning:** Press and hold the **Up Arrow** or **Down Arrow** until the desired radio frequency is displayed in the LCD (8).
4. **Preset Tuning:** Manually tune the radio to the desired station. Push and hold any one of the five soft keys (7 or 9).

Compact Disc (CD) Player

1. See Figure 25. Turn radio receiver ON, raise the CD door (2) and gently insert a CD with the label side up. The unit will automatically pull the CD into the player. Close the CD door.
2. **Change Tracks:** Push and release the MODE SEL switch on the right hand grip to select a specific track. Pushing

the **Up Arrow** and **Down Arrow** (6) keys will also advance tracks.

3. Push the EJECT button (3) (located under the CD door) to eject the CD from the player.

Intercom - If Equipped

NOTE

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

1. Plug headsets into front (Figure 31) and rear (Figure 33) headset jacks.
2. **Transmitting:** Press and hold either the rider PTT switch (Figure 26) or passenger PTT switch (Figure 33) to transmit. To end transmission, release **PTT** switch.

Citizen Band (CB) Radio - If Equipped

1. See Figure 25. Turn radio receiver ON and push the **COM** button (1). Push soft key 1 (9) to turn the CB ON/OFF.
2. **Select a Channel:** Push and release the MODE SEL switch on the right hand grip to select a CB channel.
3. **Transmitting:** Press and hold either the rider PTT switch (Figure 26) or passenger PTT switch (Figure 33) to transmit. To end transmission, release **PTT** switch.

ADVANCED AUDIO SYSTEM MODULES

Table 16. Advanced Audio System Modules

MODULE	FLHTCUTG	FLHXXX
AM/FM Stereo Receiver	X	X
CD/MP3 Player	X	X
CB Radio	X	-
Weather Band	X	X
Weather Band Alert	X	-
Intercom	X	-
Passenger Controls	X	-
X = Standard equipment - = Not equipped		

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.

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. 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 volume levels and other controls on audio and electronic devices before riding. Distractions can lead to loss of control, resulting in death or serious injury. (00088b)

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 25. 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

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

COM is the Citizen Band (CB) setup button. See **ADVANCED AUDIO SYSTEM, CB Operation**. Press the **COM** pushbutton to display the CB Setup menu.

INT

INT is the intercom setup button. See **ADVANCED AUDIO SYSTEM, Intercom Operation**. Press the **INT** pushbutton to display the Intercom Setup menu.

NOTE

With the headsets/microphones plugged into the rider and/or passenger intercom sockets, the intercom is voice activated (VOX).

NAV

Active only with the Advanced Audio System accessory, **NAV** is the GPS positioning and turn-to-turn navigation setup button. Press the **NAV** pushbutton to display the navigational menu.

LCD

The liquid crystal display (LCD) displays the operational status of the stereo receiver and that of any accessory.

CD Door

The CD door is a spring-loaded cover and will stay open when exchanging CDs.

Close the CD door after loading or unloading a CD. To close the door, push the door down until it latches.

EJECT

The CD **EJECT** button is found under the CD cover. Press the **EJECT** pushbutton to eject the CD.

AUX

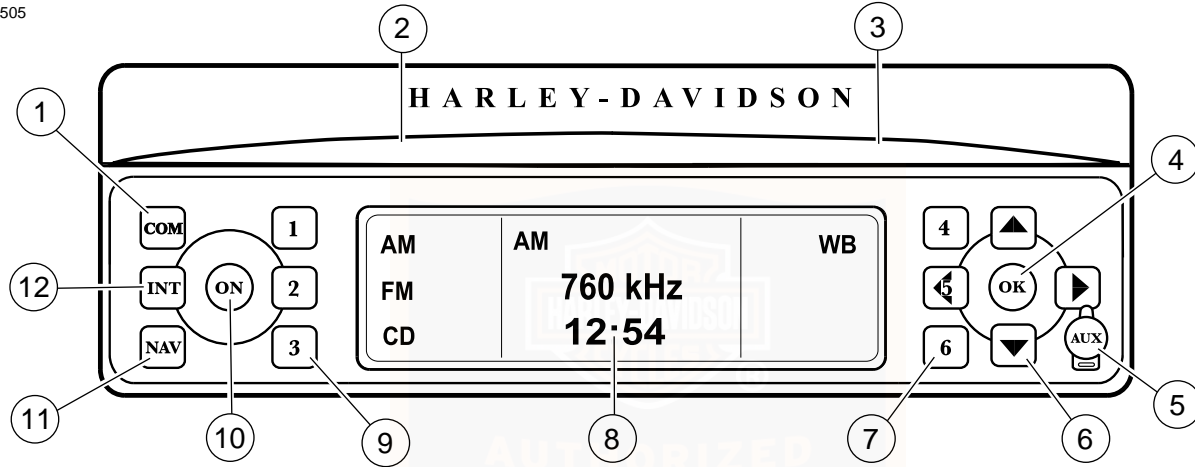
The auxiliary input port under the **AUX** cover connects the receiver to an auxiliary device such as a cassette or MP3 player.

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

The user has control of Bass, Treble, Fader and Volume, if so equipped, but all other player functions are performed with the auxiliary device. Set the volume level of the **AUX** device to normal or average.

NOTE

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



- | | |
|--|---|
| 1. Communications (CB) setup (if equipped) | 7. Soft keys (4, 5/Left Arrow, 6) |
| 2. CD cover | 8. Liquid crystal display (LCD) |
| 3. EJECT (under cover) | 9. Soft keys (1, 2, 3) |
| 4. OK (Confirm) | 10. ON key |
| 5. Auxiliary connector cover | 11. GPS navigation module (if equipped) |
| 6. Left (5), Up, Right, Down Arrow Keys | 12. Intercom setup (if equipped) |

Figure 25. Advanced Audio System Front Panel

LEFT HANDLEBAR CONTROLS

See Figure 26. Easy to operate while riding, audio controls are mounted on the left hand switch housing on the left handgrip. The left hand audio controls are a **+AUDIO/-** and a **PTT +/SQ/-** switch.

+AUDIO/- Switch

AUDIO: See Figure 26. Press the **AUDIO** switch to access the Audio/Setup menu on the LCD. Press and release **AUDIO** or the press the soft key to toggle to the next displayed function in sequence from Bass, to Treble, to Fade, to Display, to Volume and then to AVC.

If the **AUDIO** switch is left on any selection the function automatically reverts back to the selected mode after approximately 2-3 seconds.

+/-: Pressing the **AUDIO** switch upward (+) raises the level for the currently selected Audio/Setup (Bass, Treble, Fade, Volume or AVC). Pressing the switch downward (-) lowers the level. The level is raised or lowered as long as the switch is held until the minimum or maximum level is reached.

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

See C in Figure 34. Fade adjusts the balance between rider and passenger speakers. Pressing **AUDIO** upward (+) moves the balance to the front speakers while pressing **AUDIO** downward (-) moves the balance to the rear speakers. Equal volume in front and rear speakers is indicated by one horizontal single line in the center position.

The Display function sets the illumination level of the characters in the LCD display.

The AVC (Automatic Volume Control) function sets the volume level to compensate for the ambient noise associated with motorcycle speed.

PTT and +/SQ/- Switch

See Figure 26. Push-To-Talk (**PTT**) and the squelch control switch (**+SQ/-**) is located on the left handlebar switch assembly.

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

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

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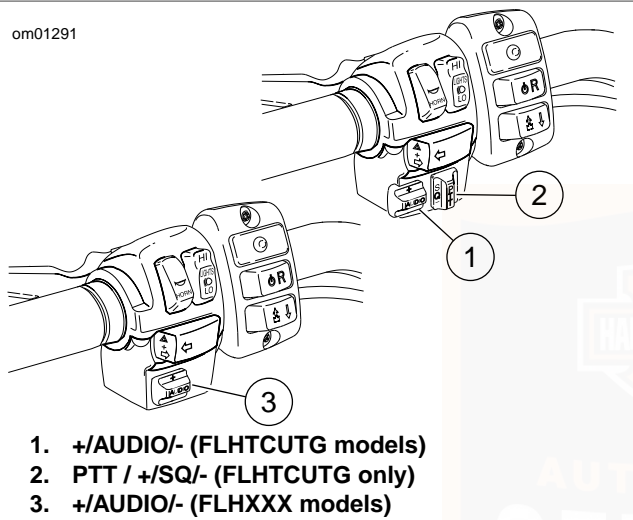


Figure 26. LH Audio Controls

RIGHT HANDLEBAR CONTROLS

See Figure 27. The mode select (**MODE SEL**) switch is located on the right handlebar switch assembly.

UP/MODE SEL/DN Switch

MODE SEL

With the radio power ON, press and release the **MODE SEL** switch to sequence between the radio bands.

When a audio CD/MP3 disc is inserted into the CD player the **CD** function is added to the selections. When a 1/8 in. (3.5 mm) connector is plugged into the **AUX** input port the **AUX** function is added to the selections.

The LCD display indicates the function selected.

UP/DN

In the receiver mode: **UP/DN** allows up or down radio station SEEK tuning.

In CD/MP3 mode: **UP/DN** changes tracks and performs fast advance and fast reverse.

In the CB mode: **UP/DN** changes the CB channel.

In the Intercom mode: **UP/DN** changes the voice activated microphone (VOX) sensitivity.

In the AUX mode: The **UP/DN** switch is inactive.

For a detailed description of the various modes, see **ADVANCED AUDIO SYSTEM, Receiver Operation**.

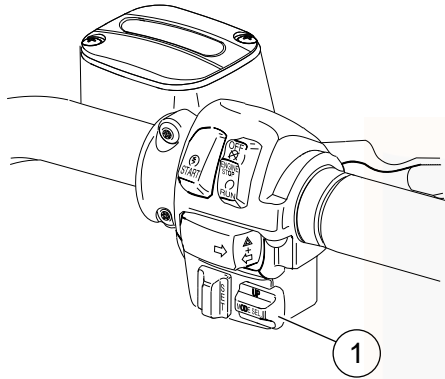
Table 17. Receiver Frequency Bands

MARKET	BAND	FREQUENCY	STEPS
Domestic	AM	530-1700 kHz	10 kHz
	FM	87.75-107.9 MHz	200 kHz
	WB	162.400-162.550 MHz	25 kHz

NOTE

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

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1. UP/MODE SEL/DN

Figure 27. RH Audio Controls

RECEIVER OPERATION

See Figure 25 for an illustration of the stereo receiver front panel.

Set Time-of-Day

Set the time-of-day with the ignition/headlamp key switch turned to **IGNITION** or **ACCESS** but with the stereo receiver OFF.

Press the Set soft key (6) (Set) on the front panel to display the time setup menu.

See A in Figure 28. To increase the hours in the display press the Hrs+ soft key. To decrease hours press the Hrs- soft key. When the hour is correct, release the soft key.

To increase the minutes in the display press the Min+ soft key. To decrease minutes press the Min- soft key. When the minute is correct, release the soft key.

Turn Receiver ON/OFF

To turn the receiver ON, turn the ignition/headlamp key switch to **IGNITION** or **ACCESS** and press the **ON** button on the front panel. To turn the receiver OFF, press the **ON** button.

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

Select a Frequency Band

Using the right thumb, press the **MODE SEL** switch on the right hand grip and release to cycle to the desired frequency

band (mode) or press the soft key next to the frequency band displayed in the LCD to select a frequency band.

See B in Figure 28. The LCD highlights the selected band.

NOTE

*Refer to Table 17. When a CD/MP3 disc is present in the CD slot and/or an auxiliary player is plugged into the AUX port, the **MODE SEL** switch will cycle through the CD and AUX modes as well as the frequency bands.*

Volume

See D in Figure 28. At any time the receiver is playing, the volume can be adjusted by pressing the **AUDIO** switch up (+) to increase volume or down (-) to decrease volume.

AM vs FM Reception

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

AM

AM radio waves reflect off the ionosphere which results in consistent signal reception at a long range (up to 100 miles or 160 kilometers).

However, AM radio can be displaced by loud humming, popping and crackling noises. This is electrical interference caused by

noise from vehicle ignitions, electric signs, power lines and electrical storms.

FM

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

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

FM Stereo vs FM Mono

See E in Figure 28. Normally, the Advanced Audio System plays FM signals in stereo. The LCD will indicate **STEREO**.

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

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

WB

See H in Figure 28. Broadcast by the National Oceanic and Atmospheric Administration (NOAA) National Weather Band (WB) frequencies are available in North America only.

To receive NOAA weather alerts while listening to other radio bands, highlight the Alert indicator in the WB display by pressing the soft key. An alert tone will automatically switch the receiver to the announcing WB channel regardless of which frequency band is playing.

When equipped with the CB module, use the soft key to highlight the Alert indicator in the LCD display. Weather alerts are announced over other audio and the **Alert** indicator is highlighted in the display.

Tuning a Radio Station

The radio has several tuning modes in each of the frequency bands: Manual, Seek, Scan, Preset Memory and Preset Scan.

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

Manual Tuning

To manually tune the radio to a different frequency:

Press the **Up Arrow** button or the **Down Arrow** button to select the frequency in that direction. Hold the selected arrow button, and after a short delay of 1.5 seconds, the radio will continue to change frequencies until the selected arrow button is released.

SEEK Tuning

See E in Figure 28. In SEEK, the radio tunes in to the next strong station.

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

NOTE

The SEEK icon appears in the display as long as the receiver is seeking the next strong frequency. The SEEK icon disappears as soon as the receiver has tuned in the next station.

SCAN Tuning

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

See F in Figure 28. Press and hold the **MODE SEL** switch **UP** or **DN** approximately 5 seconds to scan the band for strong station signals. Each strong station remains tuned in for 8

seconds before the radio scans to the next station. The receiver will continue to scan until cancelled.

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

Preset Memory Tuning

Use the soft keys, **1**, **2**, **3**, **4**, and **5/Left Arrow** as preset buttons to store frequently tuned stations.

NOTES

See *C* in Figure 28. AM can store 6 preset frequencies.

See *E* and *F* in Figure 28. Separate FM1 and FM2 bands allow the rider to store 2 sets of 5 preset FM frequencies (10 total). Use the **More** soft key to toggle between FM1 and FM2. The full range of FM frequencies can be selected in either FM1 or FM2.

To store a current station, press and hold any one of the preset buttons for 1.5 seconds. After an audible signal (a chirp), the station's frequency has been stored and the frequency will appear in the display next to the preset soft key.

To tune to a stored station, press and release the preset soft key.

Preset SCAN Tuning

See *G* in Figure 28. In preset SCAN, the radio continuously tunes from one preset station to the next until the preset SCAN is cancelled. A P.SC icon will display while preset SCAN is active.

In the FM band, press and hold the More soft key for approximately 3 seconds. Each preset station remains tuned in for 10 seconds before the radio moves to the next station.

To select a station, cancel preset SCAN while the radio is tuned to that station. Press the **MODE SEL** switch **UP** or **DN** to cancel a preset SCAN.

Adjusting Volume

Volume can be adjusted in any radio band.

See *D* in Figure 28. Volume is adjusted with the **AUDIO** switch on the left hand grip. Using left thumb, press the **AUDIO** switch up (+) to raise the volume or down (-) to lower the volume. The LCD displays the word Volume and a bar graph that changes length with the volume.

Press the **MODE SEL UP** or **DN** to cancel the Audio/Setup display or wait 5 seconds after the **AUDIO** switch is released, the display switches to the currently selected frequency band.

See K in Figure 28. Volume can also be adjusted in Audio/Setup.

Press and release the **AUDIO** switch to enter the Audio/Setup display. Press and release the **AUDIO** switch to cycle through Bass, Treble, Fade and Display to Volume and the **AUDIO** switch to raise (+) or lower (-) the volume.

Mixing Bass and Treble

Bass and treble range adjustments can be applied to any Advanced Audio System source.

BASS: See I in Figure 28. Press **AUDIO** to display Bass Audio/Setup. Using the left thumb, press the **AUDIO** switch up (+) to increase the bass range or down (-) to lower the bass range. The LCD displays the word Bass and a dashed line that changes length with the setting. The short center dash indicates a middle setting.

TREBLE: See J in Figure 28. From Bass Audio/Setup, press and release **AUDIO** to sequence to Treble. Using the left thumb, press the **AUDIO** switch up (+) to increase the treble range or down (-) to lower the treble range.

See J in Figure 28. The LCD displays the word Treble and a bar graph that changes length with the setting. The short center dash indicates a middle setting.

Adjusting AVC

See L in Figure 28. Automatic Volume Control (AVC) automatically adjusts volume level to compensate for ambient noise associated with motorcycle speed.

If the AVC does not adequately compensate for ambient noise (or if it over compensates), enter the audio setup menu and select AVC. Compensation is adjusted with the **AUDIO** switch on the left hand grip. Using left thumb, press the **AUDIO** switch up (+) to raise the compensation level or down (-) to lower the compensation.

NOTE

Although the receiver AVC is preset at 3 bars, it is adjustable from zero bars (OFF) to four bars. At one bar, the volume does not change with motorcycle speed. The more bars displayed, the higher the volume increases with speed.

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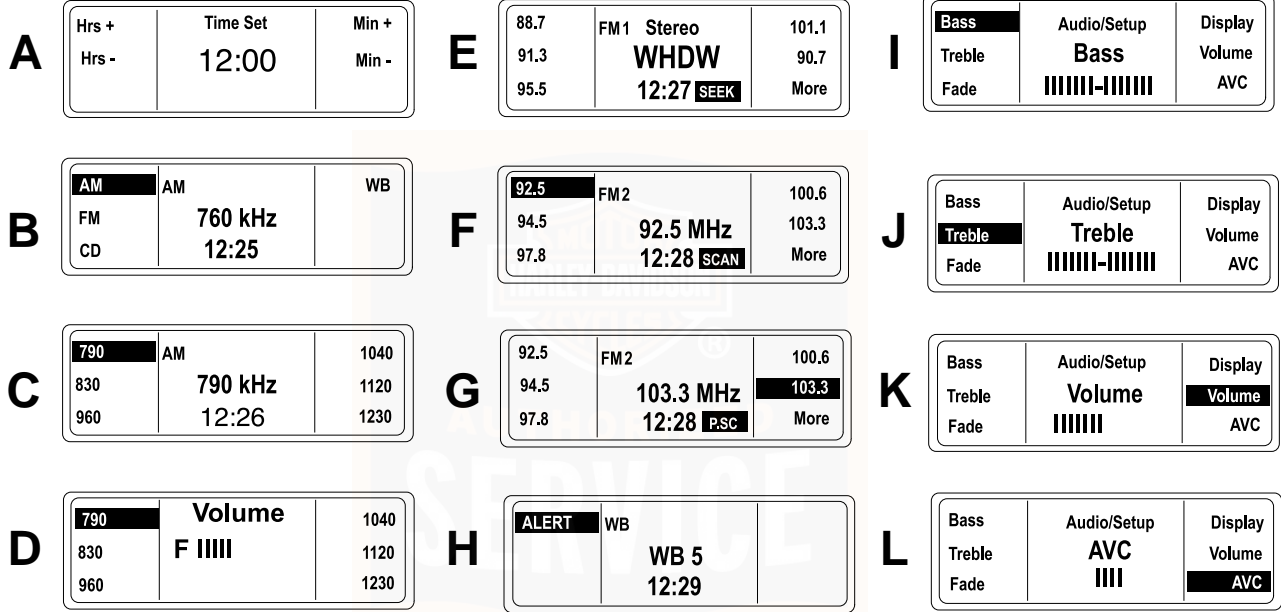


Figure 28. LCD Display Examples

Adjusting Display Contrast

See Figure 29. Select Display from the Audio/Setup menu with the **AUDIO** switch. Press the **AUDIO** up (+) to increase or down (-) to decrease the contrast of the characters in the display.

NOTE

The contrast can be decreased to render the characters invisible against the background. The characters will appear to have disappeared in the display. Before leaving the Display screen, always increase the character illumination to make the characters visible in other modes.

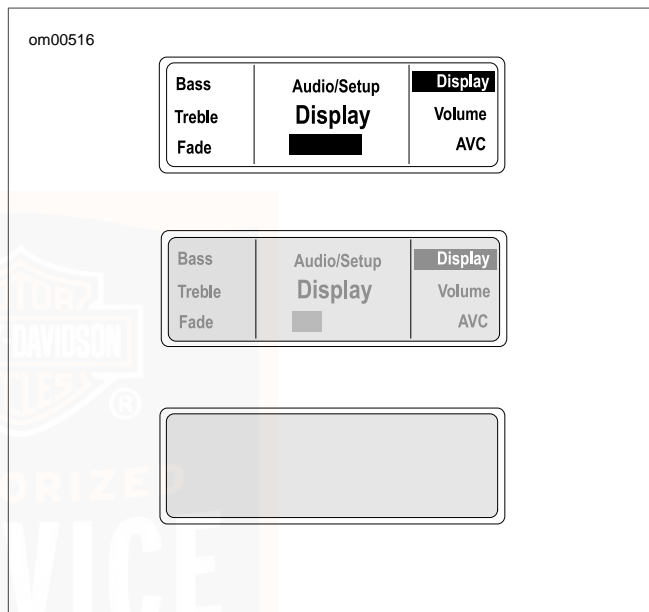


Figure 29. Character Display Illumination

CD/MP3 OPERATION

The CD player will accept commercial audio discs as well as compact discs recorded with MP3 (MPEG 2.5 Level III), files on compact disc read only (CDR) or compact disc read and write (CDRW) formats.

CAUTION

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

WARNING

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

WARNING

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

Auto Load

With the receiver power ON, raise the CD door and gently insert a CD, label side up, into the CD slot until the unit automatically pulls the CD into the player. Close the CD door.

NOTE

Do not use double sided CDs in the Advanced Audio stereo receiver. Double-sided CDs may become permanently lodged in the player.

See C in Figure 30. The receiver will automatically switch to CD operation. The CD track number and play time will appear in the LCD display. With a CD in the player, CD is added to the modes selectable with the **MODE SEL** switch.

WARNING

Set volume levels and other controls on audio and electronic devices before riding. Distractions can lead to loss of control, resulting in death or serious injury. (00088b)

Disc Error 1

See B in Figure 30. If the CD loaded into the CD player is damaged, of incorrect format, or upside down, the LCD will display the Disc Error 1 message.

Eject the CD. Refer to ADVANCED AUDIO SYSTEM, Recommendations for Handling CDs.

Eject

WARNING

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

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

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

Tracks

To change CD/MP3 tracks, use the right thumb and press and release the **MODE SEL** switch on the right hand grip. Press **UP** and release to select higher numbered tracks or press **DN** and release to select lower number tracks.

Pressing the **Up Arrow** and **Down Arrow** keys will also advance tracks.

NOTES

The player automatically numbers the MP3 files found on a CD in alphabetical order.

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

CD track selection wraps around the first and last track.

Fast Advance and Reverse

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

See D in Figure 30. The play time display in the LCD will also fast advance.

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

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

Random

To play tracks randomly, press the Random soft key on the front panel while in the CD mode. The word Random will remain highlighted in the display. No selection is repeated until all other selections have been played.

NOTE

*The Random soft key toggles between normal and Random play. Press once for random play. Press a second time to return to normal play. Pressing the **MODE SEL** switch **UP** or **DN** will select different tracks at random.*

See D in Figure 30. Random will be highlighted in the display.

Scan

To scan the tracks on an CD/MP3 disk, press the Scan soft key.

NOTE

The tracks will play for 8 seconds and then jump to the next track which will play for 8 seconds.

Upon selecting a track, press and release the **MODE SEL** switch to continue playing that track.

Repeat

To repeat a CD track while it is playing, press the soft key next to the Repeat display.

To cancel Repeat, press the Repeat soft key again or press the **MODE SEL** switch **UP** or **DN** to change tracks.

Repeat will no longer be highlighted in the display.

MP3

The receiver CD player will automatically recognize and play MP3 files.

NOTE

The files will be numbered sequentially.

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A

AM	AM	WB
FM	760 kHz	
CD	12:25	

B

Random	CD	
Scan	Disc Error 1	
Repeat	12:31	

C

Random	CD	
Scan	Track 01	
Repeat	+00:26	

D

Random	CD	
Scan	Track 01	
Repeat	+00:26	

Figure 30. CD/MP3 Display Examples

RECOMMENDATIONS FOR HANDLING CDS

- Use caution when handling a CD. Avoid touching the bottom (shiny) side.
- Store audio CD/MP3 discs in acrylic jewel cases to protect against dust, scratches, light, and changes in humidity.
- Store CDs in a cool dry place away from direct sunlight.
- Use commercially available cleaning tissue to clean the CDs. Never use solvents that can damage the CD.
- Keep protective CD door closed at all times.

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)

NOTES

- *A laser that cannot focus properly may cause skipping. A clouded lens can be caused by dirty CDs, dust, smoke, high humidity, and airborne particles may cause the laser*

lens to cloud. Operating the CD without allowing the motorcycle to warm up can also cause a CD to skip.

- *Do not attempt to clean the lens with a cleaning disc. Commercially available cleaning discs may cause damage or become stuck in the CD player.*

INTERCOM AND CITIZEN BAND

The Advanced Audio System includes a digitally tuned 40 channel Citizen Band (CB) transceiver, a rider/passenger intercom.

Features include:

- Rider headset connector on fuel tank console
- Passenger headset connector on backrest
- Handlebar mounted rider push to talk (**PTT/+ /SQ/-**) switch (CB and Intercom)
- Fairing-mounted speaker switch
- Rear-mounted passenger **UP/MODE SEL/DN** and **PTT/+ /VOL/-** switches (CB and Intercom)
- Digitally adjustable rear headset speaker volume
- Passenger receiver band switching and frequency tuning
- Passenger CD/MP3 player control
- Rider hand-held microphone compatibility for areas that prohibit headset (helmet-mounted) speakers

HEADSETS AND SOCKETS

NOTE

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

A Harley-Davidson dealer can help you select the correct genuine Harley-Davidson headsets and microphones for your

year and model Harley-Davidson. Harley-Davidson stereo helmet headsets with 7-pin DIN jacks fit the rider and the passenger intercom sockets. Other headset microphones will not work.

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

NOTE

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

CAUTION

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

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

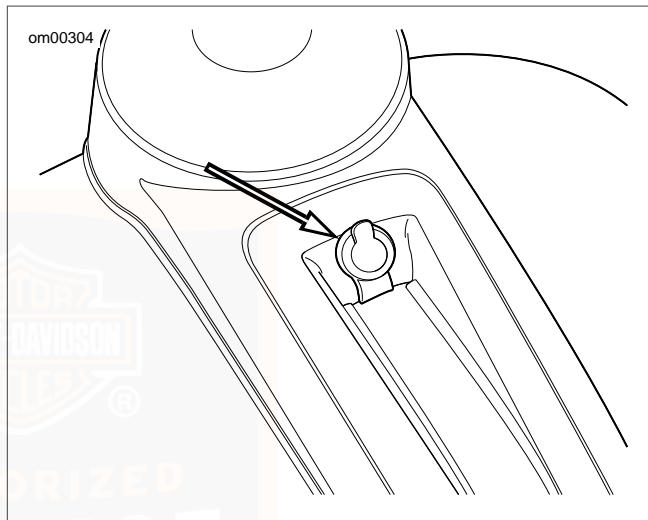


Figure 31. Front Headset Socket Cap

VOX MICROPHONES

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

The intercom is activated when a voice or sound exceeds a preset audio level, the voice is said to "break VOX". The voice or sound is transmitted to the headsets.

NOTE

*Pressing and holding the **PTT** switch will also open the microphone.*

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

Because loud exhausts, passing trucks, car horns or other background sounds may unintentionally activate the intercom, the sound level necessary to break VOX is adjustable. See **ADVANCED AUDIO SYSTEM**, Intercom Operation.

SPEAKER CONTROLS

SPKR Switch

A three position speaker (SPKR) switch is located on the inner fairing cap. See Figure 32.

Off/Forward: In the forward position, the speakers are off. Audio (radio, CD/MP3, AUX and CB) is played in the headsets

only. During simultaneous CB reception, the other audio source is muted and only the CB is heard in the headsets.

Center: In the center position, the radio, CD/MP3 player or AUX is played over the speakers while the CB is played only in the headsets.

On/Rearward: In the rearward position, the speakers are on. With the SPKR indicator lit, the radio, the CD/MP3 player, or any AUX device and the CB are played through both the rider and passenger speakers. When a CB signal is received, other audio sources mute and the CB is played over the speakers. Refer to Table 19.

NOTE

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

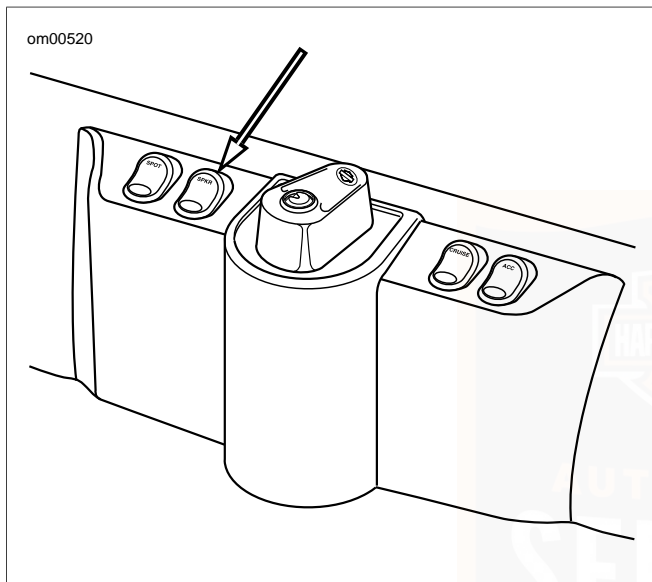


Figure 32. SPKR (speaker) Switch

Rider to Passenger Speaker Balance

The receiver FADER control balances the front rider and rear passenger speakers.

FADER: With the fairing speaker switch in either the SPKR or center position, press the **AUDIO** switch to cycle through Bass to Treble to Fade in the LCD or with the motorcycle stationary, press the left hand **AUDIO** switch once to enter the Bass display and select Fade with the **MODE SEL** switch or with the soft key.

The LCD displays the word Fader and a row of outlined rectangles. The smaller center rectangle indicates equal balance between front and rear speakers. A single solid rectangle moves left or right of the center dash as the balance of volume is switched from the passenger speakers (to the left) to the rider speakers (to the right). See C in Figure 34.

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

PASSENGER CONTROLS

UP/MODE SEL/DN Switch

See Figure 33. The passenger **MODE SEL** switch on the left side of the speaker box gives the passenger control of radio

band selection, tuning, CD/MP3 operation and all functions of the hand grip mounted **MODE SEL** switch.

NOTE

For information on routing audio signals to the passenger speakers and headsets, refer to Table 19.

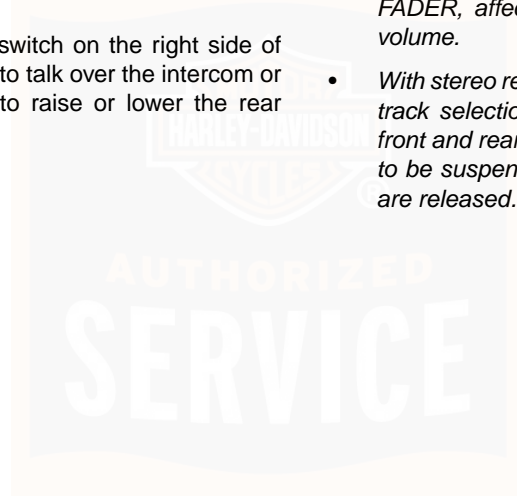
PTT and +/VOL/- Switch

See Figure 33. The **PTT+/VOL/-** switch on the right side of speaker box allows the passenger to talk over the intercom or transmit over the CB as well as to raise or lower the rear headset volume.

See E in Figure 34. When the rear headset volume is adjusted, a F (front) and R (rear) bar graph appear in the LCD display.

NOTES

- *The passenger VOL switch affects only the passenger headset. The handlebar mounted **AUDIO** switch is the master volume control, and used in conjunction with the **FADER**, affects both the rider and passenger speaker volume.*
- *With stereo receiver tuning, radio band selection, CD/MP3 track selection or other functions, simultaneous use of front and rear **MODE SEL** switches may cause operation to be suspended until either rider or passenger controls are released.*



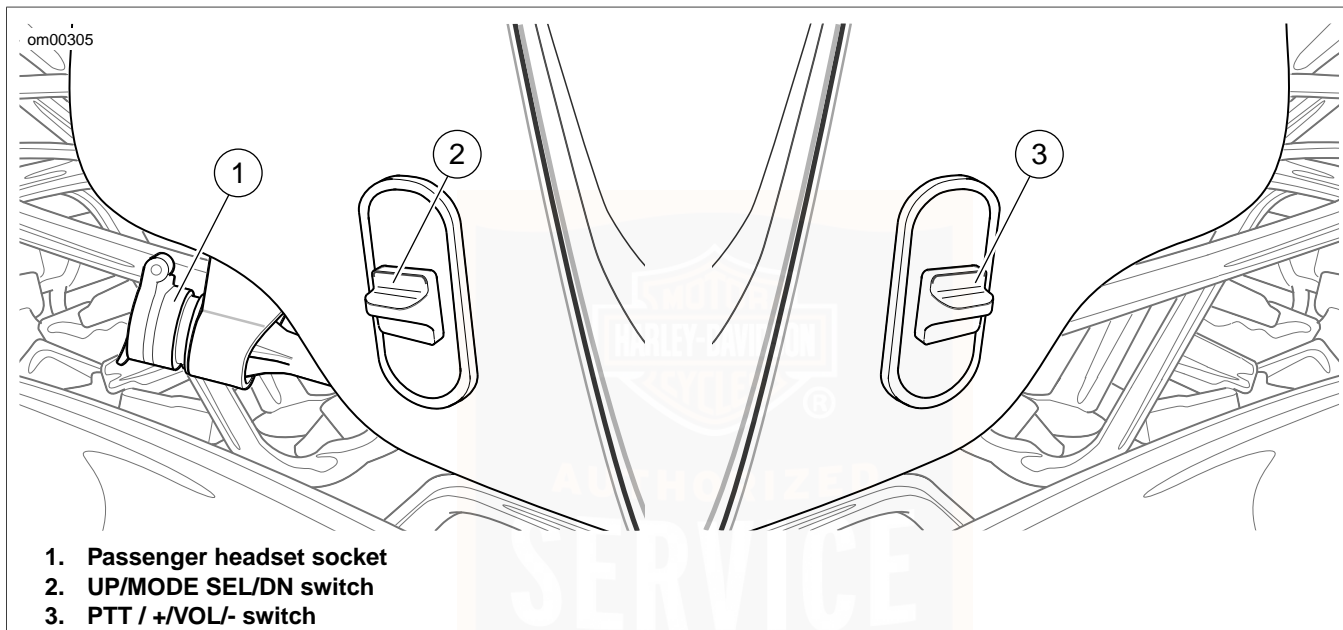


Figure 33. Passenger Controls (FLHTCUTG shown)

INTERCOM OPERATION

Operation

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

NOTE

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

Activating the Intercom and the VOX Microphones

Press and hold the **INT** button on the front panel, to open the Intercom Setup display.

See D in Figure 34. To activate the intercom (INT) and the VOX microphones, press soft key **1** to turn the intercom ON.

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

To exit Int Setup, press and release the **MODE SEL** switch or the **INT** button.

To make adjustments to VOX sensitivity after exiting Intercom Setup, re-enter Intercom Setup by pressing **INT**.

NOTE

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

To turn OFF the intercom and the VOX microphones, press the **INT** button to open the Intercom Setup display and press the On/Off soft key (**1**).

Adjusting VOX Sensitivity

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

Enter Intercom Setup by pressing the **INT** button. Press the **ON** or **1** soft key to turn the intercom on.

See G in Figure 34. Press the **MODE SEL** switch **UP** or **DN** or press the **4** or **5** soft key to initiate the VOX display. The LCD displays VOX sensitivity as a bar graph with a smaller bar to indicate the center of the 14 bars. A higher number of bars indicates greater sensitivity while a lower number means less sensitivity.

Continue to use **MODE SEL** on the right hand grip to adjust the sensitivity level. Press **MODE SEL UP** to make the microphone more sensitive. Press the **MODE SEL DN** to reduce

sensitivity. To exit Setup, press and release the **MODE SEL** switch.

NOTES

- *The receiver retains the sensitivity level from the previous setup. However, if power is removed from the receiver, VOX sensitivity defaults to mid level.*
- *VOX sensitivity may have to be adjusted if either microphone is unintentionally activated because the microphone misinterprets radio, road or background sound as conversation.*

When VOX is set to its maximum, the microphone is always open. The VOX display will read Open.

When VOX is set to lowest value, the microphone is closed and the VOX display reads Closed.

Adjusting Rider Headset Volume

The rider intercom volume is only adjustable in Intercom Setup.

See E in Figure 34. Enter Intercom Setup, speak into microphone and adjust the intercom volume with the **AUDIO** switch on the left hand grip. Press **AUDIO +** to raise the volume and **AUDIO -** to lower the volume. The LCD displays a dashed line that changes length with the level.

See F in Figure 34. When the headset volume has been adjusted to the bottom of its range, Mute will appear in the volume display.

To exit Intercom Setup, press and release the **MODE SEL** switch.

WARNING

Set volume levels and other controls on audio and electronic devices before riding. Distractions can lead to loss of control, resulting in death or serious injury. (00088b)

Adjusting Passenger Headset Volume

The passenger intercom volume is only adjustable in Intercom Setup.

Enter Intercom Setup. Speak into the microphone and adjust the intercom volume with the **AUDIO** switch on the right speaker box on the passenger's backrest. Press **AUDIO +** to raise the volume and **-** to lower the volume. The LCD displays a bar graph that changes length with the level.

See F in Figure 34. When the headset volume has been adjusted to the bottom of its range, Mute will appear in the volume display.

To exit Intercom Setup, press and release the **MODE SEL** switch or press the INT pushbutton.

CB OPERATION

Activating the CB

See H and I in Figure 34. To activate the Citizen Band transceiver, press and release the **COM** pushbutton on the front panel. Press soft key **1** to turn the CB ON/OFF. The CB will activate in CB Setup with squelch threshold and channel settings from the previous use. CB channels are selected in CB Setup.

To exit CB Setup but leave the receiver with the CB active, press and release the **MODE SEL** switch or the **COM** pushbutton.

To turn off the CB, press the **COM** button to enter CB Setup. Press soft key **1** to turn the CB ON and Off.

CAUTION

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

Entering CB Setup

See J in Figure 34. With the CB on, press **COM** to enter CB Setup. The LCD displays CB SETUP in the upper half and the CB channel appears in the lower half.

To exit CB Setup, press and release the **MODE SEL** switch.

After exiting CB Setup with the CB still active, re-enter CB Setup by pressing and releasing the **COM** soft key.

Selecting a Channel

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

Soft keys 4, 5 and 6 can be used to preset CB channels.

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

See K in Figure 34. When squelch is interrupted, the CB in the display inverts. If the squelch is not interrupted and the another source is playing, CB is displayed.



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

Preset Channels

See J in Figure 34. Up to 3 CB channels can be preset. Press and hold a soft key (4, 5, 6) to preset a CB channel.

Once set, press the preset soft key to switch to the preset channel when the CB display is active.

Adjusting Squelch

See K in Figure 34. The CB signal is passed to the speakers or headsets only if signal strength exceeds the threshold set with the squelch control switch (**PTT/+SQ/-**). When CB signals exceed the threshold, they are said to "break squelch." Refer to Table 18.

- To lower the threshold to process the weakest CB signals, press **SQ -** or rearward.
- To raise the threshold to process stronger signals, press **SQ +** or forward.

In the LCD, a dashed line changes length with the setting.

Table 18. Squelch Control Switch

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

Transmitting

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

Adjusting Volume

Refer to Table 19. See L in Figure 34. To adjust volume of the CB in the speakers or headset, Press **AUDIO +** to raise the volume or **AUDIO -** to lower the volume. CB volume is adjustable when squelch is interrupted or when the display is in CB Setup.

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

CAUTION

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

CB Range

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

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

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

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

NOTE

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

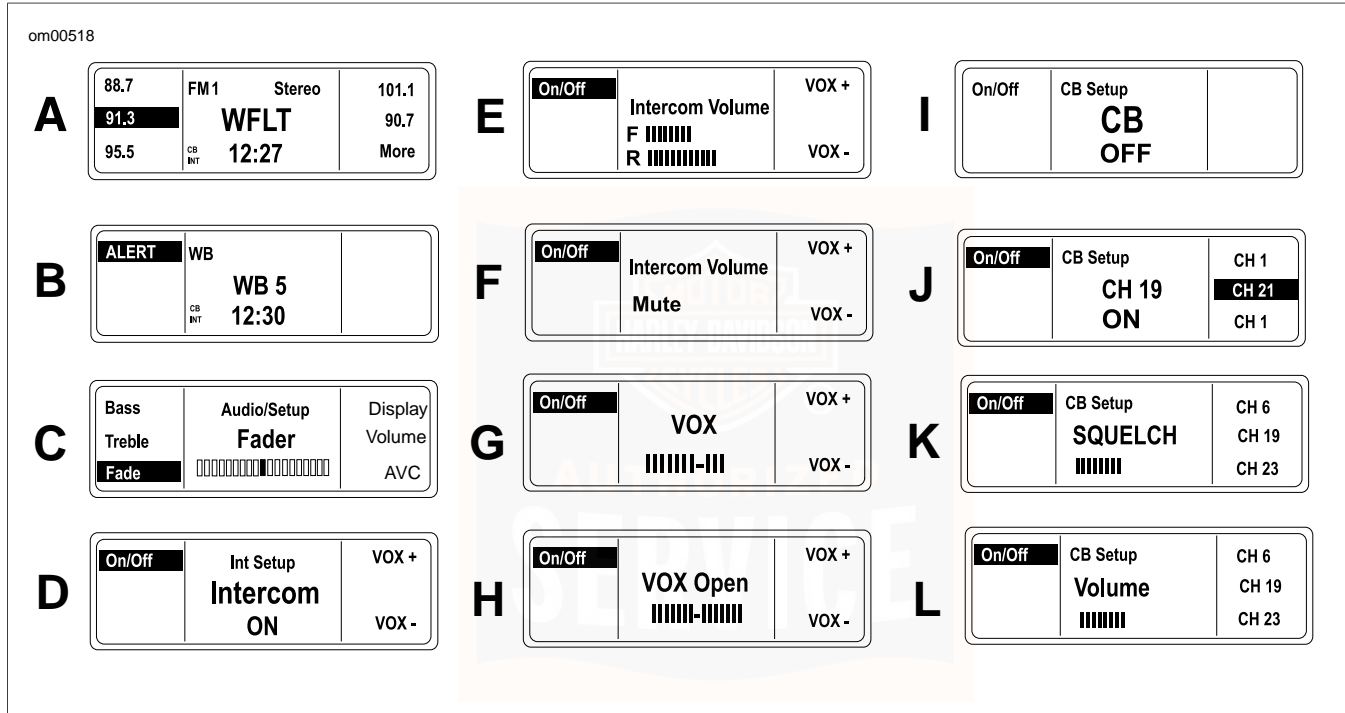


Figure 34. Display Examples

AUDIO ROUTING AND MIXING

General

Refer to Table 19. Whether audio is routed to the headsets, speakers or both depends on the **SPKR** control switch and the **INT** and **CB** buttons on the receiver.

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

NOTE

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

Table 19. Audio Routing and Mixing Combinations

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

Table 19. Audio Routing and Mixing Combinations

AUDIO ROUTING COMBINATIONS			VOLUME CONTROL
SPEAKER CONTROL SWITCH	AUDIO SOURCE(S)	AUDIO OUT	AUDIO +/- OR VOL +/-
Center (Speakers and headsets)	Music*	Speakers	Music*
	CB	Headsets	CB (During reception or SETUP)
	Intercom	Headsets	Intercom (Only in SETUP)
	Intercom and music*	Intercom in the headsets Music* in the speakers	Music*
	CB and music*	CB in the headsets Music* in the speakers Music is muted during CB reception	CB
	Intercom and CB	Both in the headsets (Music is MUTED during CB reception)	CB*

Table 19. Audio Routing and Mixing Combinations

AUDIO ROUTING COMBINATIONS			VOLUME CONTROL
SPEAKER CONTROL SWITCH	AUDIO SOURCE(S)	AUDIO OUT	AUDIO +/- OR VOL +/-
On or rearward (Speakers)	Music*	Speakers	Music*
	CB	Speakers	CB (During reception or SETUP)
	Intercom	Headsets	Intercom (Only in SETUP)
	Intercom and music*	Intercom in the headsets. Music in the speakers.	Music
	CB and music*	CB in the speakers (When squelch is broken)	CB
	Intercom and CB	Intercom in the headsets (CB in the speakers MUTED during CB reception)	CB
* Music = Radio, CD player or auxiliary (AUX) audio source.			

TROUBLESHOOTING: AUDIO

Audio Troubleshooting

Refer to Table 20. Use the following table to identify rider or passenger control settings that prevent intended operation.

NOTE

See the electrical diagnostic manual for all system diagnosis and electrical troubleshooting information.

CAUTION

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

WARNING

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

Radio Fuses

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

See Figure 71. Radio fuses are located in the fuse block under the left side cover.

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

Remove the radio fuses and inspect the element. Replace the fuse if the element is burned or separated.

NOTE

See Figure 71. A spare 15 amp fuse is installed in the fuse block.

Table 20. Operational Troubleshooting: Advanced Audio System

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

NOTES



HARLEY-DAVIDSON SMART SECURITY SYSTEM

Components

The Harley-Davidson Smart Security System (H-DSSS) consists of a Hands-Free Security Module (HFSM) and a hands-free antenna 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.

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.

NOTE

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 35. 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, affix the label to a blank "NOTES" page in this 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).*

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 luggage compartment. Unintentionally leaving the fob with the motorcycle when it is 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 3.0 in (76 mm) 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.



Figure 35. Hands-Free Fob: Smart Security System

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 21.

Table 21. 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 36.
5	Enter first digit (a) of new PIN by pressing left turn signal switch a times.		

Table 21. Changing the PIN

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
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.	
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.		

Table 21. Changing the PIN

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
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.



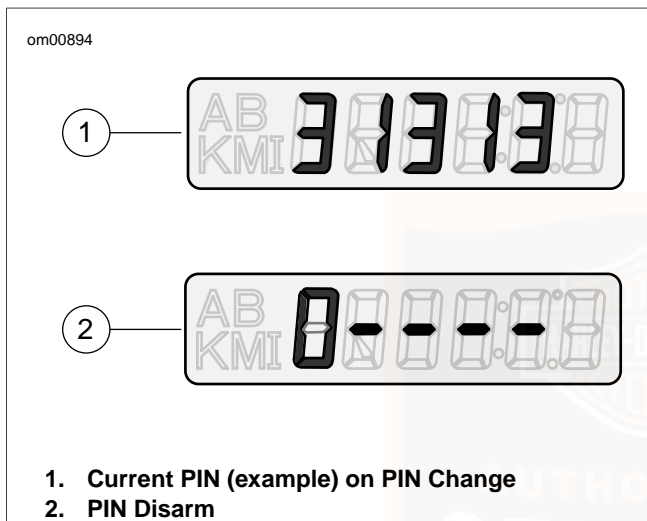


Figure 36. Odometer Windows - PIN

SECURITY STATUS INDICATOR

See Figure 7. 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 turn 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 Chirp Mode (Confirmation)*.

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 or turning the ignition key to IGNITION will cause the module to 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 or straddle seat. During a PIN disarm, if the Smart Security System detects motorcycle motion the system will activate the alarm.

Table 22. 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 .		

Table 22. Entering a PIN to Disarm Harley-Davidson Smart Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
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 36. 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.	

Table 22. Entering a PIN to Disarm Harley-Davidson Smart Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
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.*

Arming with Hazard Warning 4-Way Flashers On

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.

1. Turn ignition key to IGNITION.
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.

To turn hazard warning flashers OFF, turn the ignition key to IGNITION and simultaneously press the left and right turn signal switches.

ALARM

Warnings

Once armed, if the motorcycle is moved 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 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.
- 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 0.5 mile (0.8 km). See a Harley-Davidson dealer for details.

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 CHIRP MODE (CONFIRMATION)

Chirp Mode

In chirp mode, the siren sounds two chirps when arming, and a single chirp when disarming.

Chirpless Mode

In chirpless mode, the siren does not chirp on arming or disarming.

The siren will still provide warning chirps and sound the alarm if the motorcycle is moved or the ignition switch is turned on without the fob present.

Switching Modes

Perform the following to switch between chirp and chirpless modes.

1. With the fob present, turn the ignition switch ON.
2. When the security lamp turns off, turn the ignition switch OFF.

3. When the security lamp turns off (but before the turn signals flash twice), immediately turn the ignition switch ON.
4. When the security lamp turns off, immediately turn the ignition switch OFF.
5. When the security lamp turns off (but before the turn signals flash twice), immediately turn the ignition switch ON.
6. When the security lamp turns off, immediately turn the ignition switch OFF.
7. When the security lamp turns off (but before the turn signals flash twice), immediately turn the ignition switch ON.

TRANSPORT MODE

It is possible to arm the security system without enabling the motion detector for one ignition cycle. This allows the vehicle to be picked up and moved in an armed state, however, any attempt to start the engine when the key fob is not within range will trigger the alarm.

To Enter Transport Mode

1. Turn the ignition switch to IGNITION.
2. Set the engine stop switch to OFF.
3. With an assigned fob within range, turn the ignition switch from IGNITION to ACC.

4. Simultaneously press both the left and the right turn signal switches. This must be done within five seconds of turning the ignition switch to ACC.
5. After the turn signals flash once, turn the ignition switch to OFF and the module is armed.
6. Confirmation: Turn signal blinks three times when armed for one ignition cycle.

To Exit Transport Mode

Return the system to normal operation:

With the fob present, turn the ignition switch to IGNITION to disarm the HFSM. To cancel the transport mode, set the engine stop switch to 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, 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.

FOB BATTERY

Replacing the Battery

Replace the key fob battery every year.

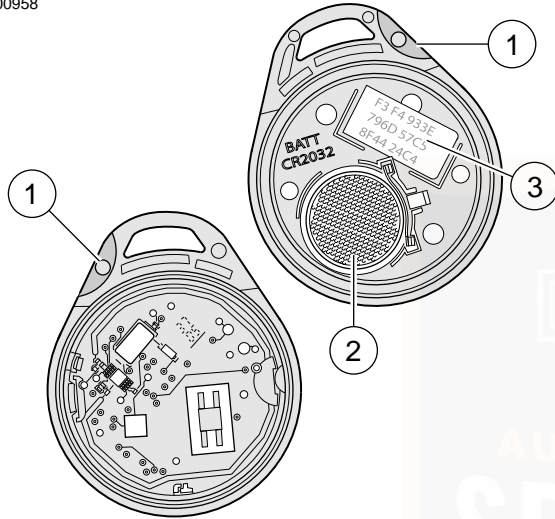
1. See Figure 37. Slowly turn a thin blade in the thumbnail slot (1) on the side of the fob to separate the two halves.
2. Remove the battery (2) and discard.

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.

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1. **Thumb slot**
2. **Battery**
3. **Fob serial number**

Figure 37. Hands-Free Fob Battery

DISCONNECTING POWER

Optional Siren

When disconnecting the battery or removing the main fuse, perform the following steps to prevent the optional siren from sounding.

1. Verify that the fob is present.
2. Turn the ignition key to IGNITION.
3. Pull the main 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

If the Smart Security System continues to actuate warnings and alarms with the fob present, 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 3.0 in. (76 mm) 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 15 feet (5 m) 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 from 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.

NOTES



OPERATING RECOMMENDATIONS

WARNING

Three-wheeled motorcycles and motorcycles with a sidecar are different from two-wheeled motorcycles. They operate, steer, handle and brake differently. Unskilled or improper use could result in loss of control, death or serious injury. (00587c)

- Take a rider training course.
- Read Owner's Manual before riding, adding accessories or servicing.
- Wear a helmet, eye protection and protective clothing.
- Never tow a trailer.

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)

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 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)

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 500 Miles (800 Kilometers)

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 500 miles (800 kilometers). Adherence to these suggestions will help to assure good future durability and performance.

1. During the first 50 miles (80 kilometers) 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 500 miles (800 kilometers), 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 200 miles (300 kilometers).

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. Check oil level. Add oil if necessary.
4. Check controls to make sure they operate properly. Operate the front and rear brakes, parking brake, 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. (00563b)

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

Starting

1. Verify that transmission is in gear.
2. Turn ignition/headlamp key switch to IGNITION position. Do not roll the throttle.

WARNING

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

3. Shift transmission to neutral.
4. See Figure 38. Turn the off/run switch to RUN position.

NOTE

The engine lamp will light for approximately 4 seconds and you will hear the fuel pump operating for approximately 2 seconds as it fills the fuel lines with gasoline.

5. Squeeze the clutch lever in against the handgrip.

NOTE

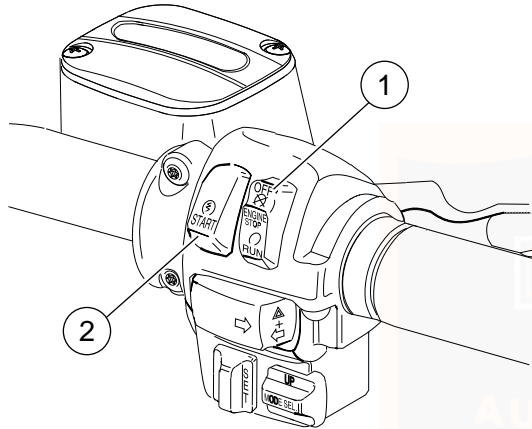
To activate the starting system, the clutch interlock circuitry requires the clutch be disengaged, clutch lever pulled in against left handgrip, and/or the transmission be shifted to the neutral position (green neutral lamp lit).

6. Press the starter button to start the motorcycle.
7. Release the parking brake before riding the motorcycle. See CONTROLS AND INDICATORS, Reverse Operation.

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 38. Right Handlebar Controls

AUTOMATIC COMPRESSION RELEASE (ACR)

Vehicles with Twin Cam 103 and 110 engines are equipped with an Automatic Compression Release (ACR). During starting, a small auxiliary valve in the cylinder head is opened automatically by the ECM. The open valve releases the air compressed in the cylinder heads and allows the starter motor to turn the high compression engine over at a faster rate to aid starting.

After starting and during normal operation, the ACR valves remain closed.

ENGINE IDLE TEMPERATURE MANAGEMENT SYSTEM

For those riders who frequently find themselves in riding conditions where the vehicle is subjected to prolonged idle conditions or traffic congestion, the motorcycle is equipped with an Engine Idle Temperature Management System (EITMS) to provide limited cooling of the rear cylinder.

Operation

When engine temperature reaches a pre-determined point, the EITMS will turn off the rear cylinder fuel injector. Idle speed

will be maintained, however the rear cylinder will become an "air pump" which will work to cool the engine.

EITMS will activate (rear cylinder will turn off) when **all** of the following conditions are met:

- Engine temperature is greater than 287°F domestic (165°C international)
- Twist grip opening is at idle
- Vehicle speed under 1 mph (2 km/h)
- Engine speed under 1200 RPM

EITMS will disable (rear cylinder will again fire) if **any one** of the following occurs:

- Engine temperature falls below 275°F domestic (135°C international)
- Twist grip opening is greater than idle
- Vehicle speed exceeds 2 mph (3 km/h)
- Engine speed exceeds 1350 RPM
- Clutch is released with vehicle in gear

When the engine is in EITMS operation, you may notice a difference in idle cadence. Additionally, there may be a unique exhaust odor. These are both considered to be normal conditions.

Enabling/Disabling EITMS

Enabled: The EITMS engine cooling feature will automatically activate whenever the vehicle comes to a complete stop and is idling during elevated temperature conditions. Even with the feature enabled, it may not activate under cool riding conditions.

Disabled: The EITMS feature is not active under any conditions.

Vehicles are delivered from the factory with EITMS disabled. EITMS can be enabled or disabled by the rider by performing the following procedure.

1. Turn the ignition switch to the ON position and push the engine OFF/RUN switch on the right handlebar to the RUN position (do not start the motorcycle).
2. Push the throttle to roll-off position and hold.
3. See Figure 7. After approximately 3 seconds, the cruise indicator lamp will either flash green (EITMS enabled) or red (EITMS disabled).

NOTE

A flashing lamp indicates the EITMS setting. A solid (non-flashing) lamp indicates the cruise control setting.

4. Repeat the procedure as needed to enable or disable EITMS.

NOTE

The EITMS setting will remain in effect until it is changed by the rider or dealer. It does not have to be reconfigured at each startup.

SHIFTING GEARS

Getting Started

NOTE

Release parking brake before riding motorcycle. See CONTROLS AND INDICATORS, Parking Brake.

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.

1. With motorcycle engine running and parking brake disengaged, 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 23. Engage second gear after the motorcycle has reached the appropriate shifting speed.

Table 23. Upshift (Acceleration) Gear Speeds: Six Speed

GEAR CHANGE	MPH	KPH
First to second	15	25
Second to third	25	40
Third to fourth	35	55
Fourth to fifth	45	70
Fifth to sixth	55	85

1. Close the throttle.
2. Disengage the clutch (pull clutch lever in).
3. See Figure 39. 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.

- 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).

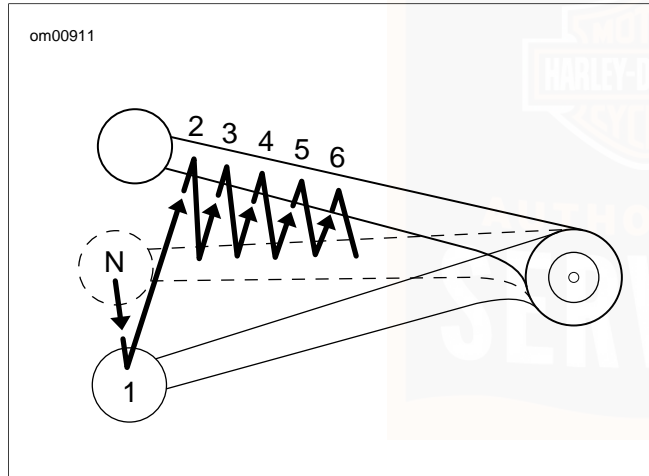


Figure 39. Shifting Sequence: Upshift

Downshift (Deceleration)



Do not downshift at speeds higher than those listed. 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. (00045b)

Gear shift pattern is first gear down; next five gears up. Refer to Table 24 for shifting speeds.

Table 24. Downshift (Deceleration) Gear Speeds: Six Speed

GEAR CHANGE	MPH	KPH
Sixth to fifth	50	80
Fifth to fourth	40	65
Fourth to third	30	50
Third to second	20	30
Second to first	10	15

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 40. 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.

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.

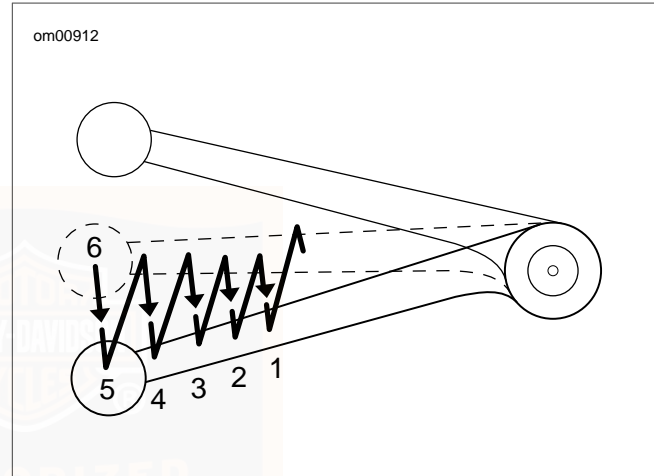


Figure 40. Shifting Sequence: Downshift

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 igni-

tion/headlamp key switch at once to prevent battery discharge.

3. Shift the transmission into gear and engage the parking brake.



NOTES



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)

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)

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. Drive belt 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 for proper emissions system operation.

Refer to Table 33. After a new motorcycle has been ridden its first 1000 miles (1600 kilometers), it should be taken to an authorized Harley-Davidson dealer 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.

Your authorized dealer has the proper oil to suit your requirements. Refer to Table 25.

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 25. Recommended Engine Oils

H-D TYPE	VISCOSITY	H-D RATING	LOWEST AMBIENT TEMPERATURE	COLD WEATHER STARTS BELOW 50 °F (10 °C)
H-D Multi-grade	SAE 10W40	HD 360	Below 40 °F (4 °C)	Excellent
Screamin' Eagle SYN3 Synthetic Motorcycle Lubricant	SAE 20W50	HD 360	Above 40 °F (4 °C)	Excellent
H-D Multi-grade	SAE 20W50	HD 360	Above 40 °F (4 °C)	Good
H-D Regular Heavy	SAE 50	HD 360	Above 60 °F (16 °C)	Poor
H-D Extra Heavy	SAE 60	HD 360	Above 80 °F (27 °C)	Poor

CHECKING OIL LEVEL

CAUTION

Oil level cannot be accurately measured on a cold engine. For pre-ride inspection, with motorcycle 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. (00589b)

NOTE

See Figure 42. When checking oil level, use the side of the dipstick marked FULL HOT VEHICLE UPRIGHT.

Oil Level Cold Check

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

1. For pre-ride inspection, park vehicle on level ground.
2. See Figure 41. Remove filler plug/dipstick and wipe off the dipstick. Insert the dipstick and tighten into the fill spout.
3. Remove the dipstick. Using the gauge marked FULL HOT VEHICLE UPRIGHT on the dipstick, verify the oil level. The correct oil level should register midway (2) between the FULL and ADD marks on the dipstick.

NOTE

If oil level is at or below the ADD mark, add only enough oil to bring the level to the middle of the two marks on the dipstick. For cold level check, do not exceed the midpoint (2) when filling with oil.

Oil Level Hot Check

NOTES

- The engine will require a longer warm up period in colder weather.
- Engine oil level hot check should be performed only when engine is at normal operating temperature.

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

1. Ride motorcycle until engine is at normal operating temperature.
2. Park vehicle on level ground. Allow engine to idle for 1-2 minutes. Turn engine off.
3. Remove filler plug/dipstick and wipe off the dipstick. Insert the dipstick and tighten into the fill spout.
4. See Figure 42. Remove the dipstick. Using the gauge marked FULL HOT VEHICLE UPRIGHT on the dipstick, verify the oil level. The level should be between the ADD

(1) and FULL (3) marks. Add oil as necessary to bring the level to the FULL mark on the dipstick. Do not overfill.

NOTE

Refer to Table 25. 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.

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 level at each complete fuel refill.
- Refer to Table 33. Oil should be changed at specified intervals in normal service at warm or moderate temperatures.
- Oil change intervals should be more frequent in cold weather or severe operating conditions. See MAINTENANCE AND LUBRICATION, Winter Lubrication.

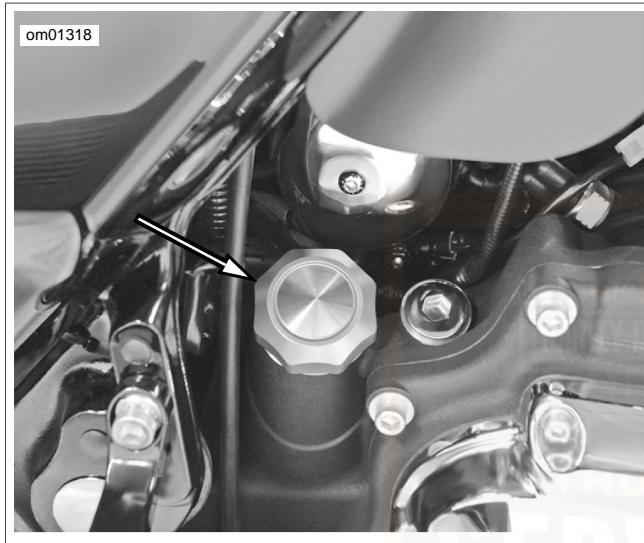


Figure 41. Engine Oil Filler Cap

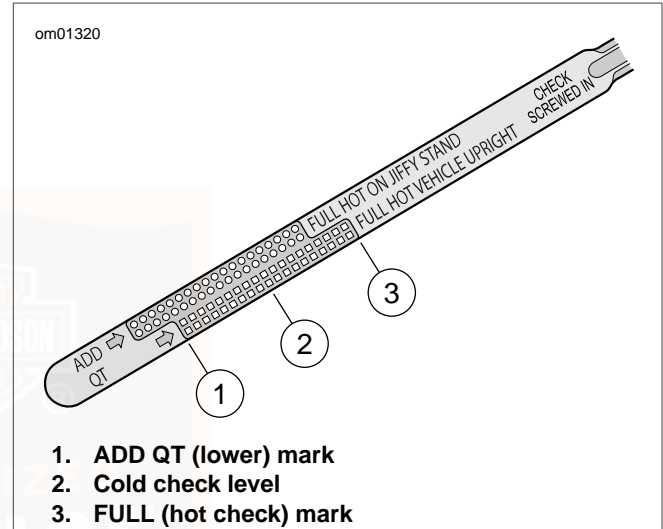


Figure 42. Engine Oil Dipstick

CHANGING OIL AND OIL FILTER

Refer to Table 33. Oil should be changed after the first 1000 miles (1600 kilometers) for a new engine and at regular intervals in normal service at warm or moderate temperatures.

Oil change intervals should be more frequent in cold weather or severe operating conditions. See MAINTENANCE AND LUBRICATION, Winter Lubrication.

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

CAUTION

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

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)

1. Ride motorcycle until oil is at normal operating temperature. Turn engine off.
2. Remove filler plug/dipstick.
3. See Figure 43. Remove the oil drain plug (2). Do not remove hex plug (3) or transmission drain plug (1). Allow oil to drain completely.

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

CAUTION

Use Harley-Davidson oil filter wrench for filter removal. This tool can prevent damage to crankshaft position sensor and/or sensor cable. (00192b)

5. Remove the oil filter using OIL FILTER WRENCH (Part No. HD-42311) or OIL FILTER WRENCH (Part No. HD-44067A) and hand tools. Do not use with air tools.
6. Clean the oil filter mount flange of any old gasket material.

NOTE

Dispose of oil and oil filter in accordance with local regulations.

7. See Figure 44. Lubricate gasket with clean engine oil and install **new** oil filter on filter mount. Hand-tighten oil filter one-half to three-quarters of a turn after gasket first contacts filter mounting surface. Do NOT use oil filter wrench for installation.
8. Install engine oil drain plug and tighten to 14-21 ft-lb (19.0-28.5 Nm).

NOTE

Use the proper grade of oil for the lowest temperature expected before the next oil change. Refer to Table 25 for recommended oil.

9. Initially add 3.5 quarts (3.3 liters) of engine oil.
10. Verify proper oil level. See MAINTENANCE AND LUBRICATION, Checking Oil Level.
 - 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.

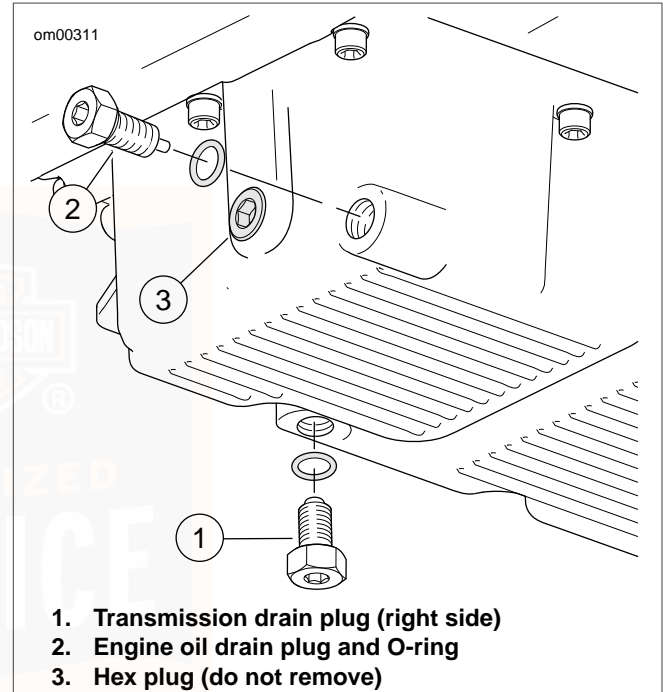


Figure 43. Oil Pan

om00108

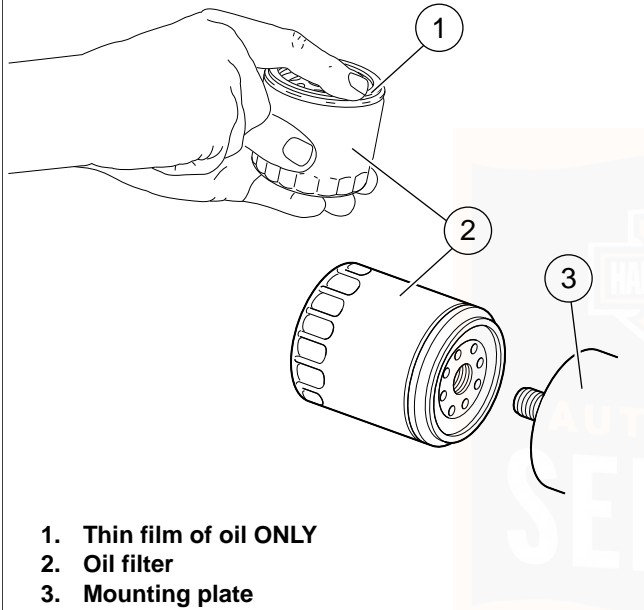


Figure 44. Applying Thin Oil Film

WINTER LUBRICATION

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

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.

OIL COOLER

Motorcycles with a Twin Cam 103 or 110 engine are equipped with a factory installed oil cooler. Always keep the cooler clean and free from dirt and debris. This will help maintain maximum cooling efficiency.

TRANSMISSION LUBRICATION

General

The transmission lubricant level should be checked monthly.

Refer to Table 33. The transmission should be drained and refilled with fresh lubricant at specified intervals.

Check Lubricant Level

1. See Figure 45. Remove the threaded filler plug/dipstick.
2. See Figure 46. 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.

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)

3. 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 32 fluid ounces (0.95 liters).
4. Inspect o-ring for tears or damage. Replace if required. Wipe any foreign material from plug.
5. Install threaded filler/check plug and tighten clockwise to 25-75 **in-lbs** (2.8-8.5 Nm).

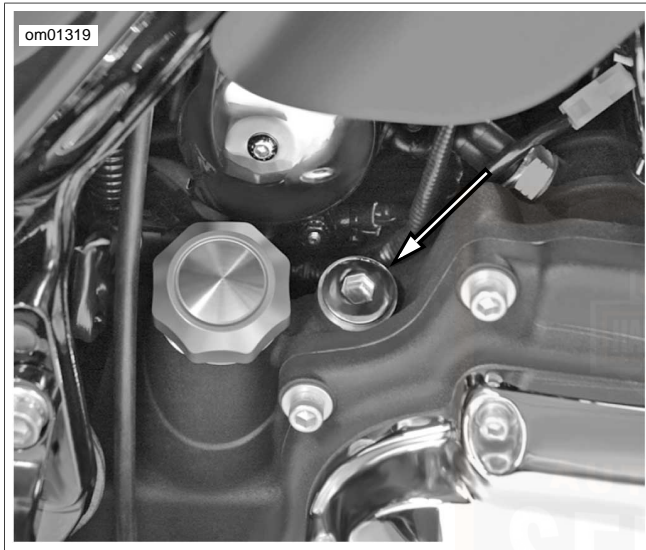


Figure 45. Transmission Filler Plug/Dipstick Location

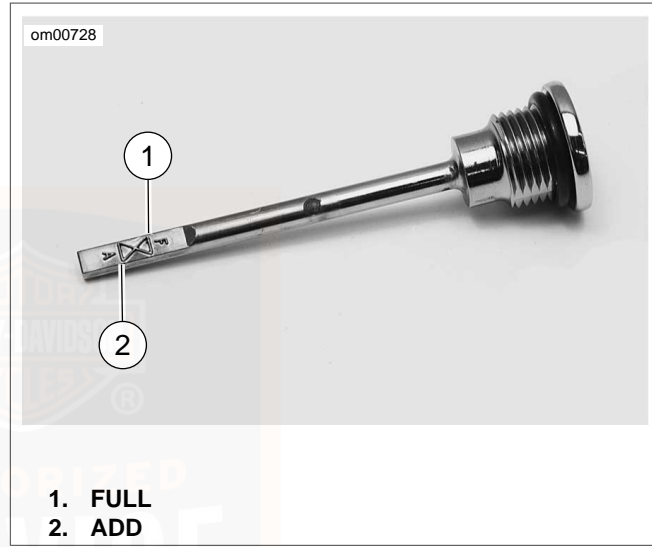


Figure 46. Transmission Filler Plug/Dipstick Lubricant Level

Changing Transmission Fluid

1. See Figure 45. Remove the threaded filler plug/dipstick.

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)

2. See Figure 43. Remove transmission drain plug (1) and drain lubricant into a suitable container.

NOTE

Dispose of transmission lubricant in accordance with local regulations.

3. Inspect the drain plug o-ring for tears or damage. Replace if required. Wipe any foreign material from plug.
4. Install drain plug and tighten to 14-21 ft-lbs (19.0-28.5 Nm). Fill the transmission with 32 fl. oz. (0.95 liters) 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 32 fl. oz. (0.95 liters).

5. Install threaded filler plug/dipstick and tighten clockwise to 25-75 **in-lbs** (2.8-8.5 Nm).
6. Start engine and carefully check for oil leaks around drain plug.

CHAINCASE LUBRICANT

General

Refer to Table 33. The primary chaincase lubricant should be drained and refilled with fresh lubricant at specified intervals.

Check Lubricant Level

1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. Park vehicle on a level surface, so that primary chaincase is level.
3. See Figure 47. Remove five screws to free clutch inspection cover from primary chaincase cover.
4. Remove seal ring from clutch inspection cover and discard.

5. If the fluid level can be seen, it is adequate. Otherwise, pour enough GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05, U.S. quart) in through the clutch inspection cover opening until it is visible along the bottom portion of the clutch assembly.
6. Refer to CHANGING CHAINCASE LUBRICANT to install seal ring 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)

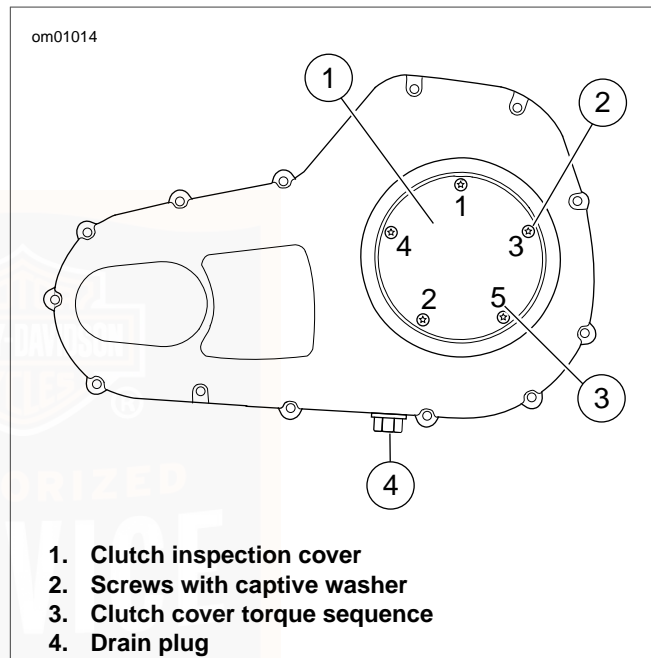


Figure 47. Primary Chaincase Cover

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. Remove five screws to free clutch inspection cover from primary chaincase cover.
3. Remove drain plug at bottom of primary chaincase. Drain lubricant into suitable container.

NOTE

Dispose of chaincase lubricant in accordance with local regulations.

4. Clean drain plug magnet. If plug has accumulated a lot of debris, inspect the condition of chaincase components.
5. Inspect drain plug O-ring for cuts, tears or signs of deterioration. Replace as necessary.
6. Install drain plug into primary chaincase and tighten to 14-21 ft-lbs (19.0-28.5 Nm).

7. Pour 38 fl. oz. (1124 ml) of GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05 quart) through the clutch inspection cover opening.

NOTE

Only add 45 fl. oz. (1331 ml) after service that involves removal of the primary chaincase or primary chaincase cover.

CAUTION

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

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)

8. Swab all lubricant from seal ring groove in clutch inspection cover. Install **new** seal ring in groove with nubs contacting ring groove walls.

9. See Figure 47. Install clutch inspection cover to primary chaincase cover. Tighten screws in the sequence shown to 84-108 **in-lbs** (9.5-12.2 Nm).

DRIVE BELT

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

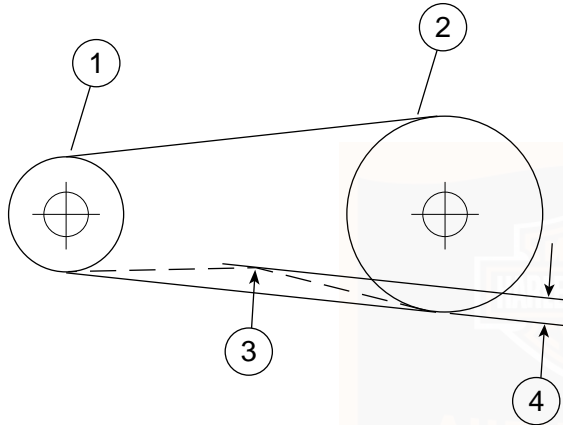
Checking Deflection

See Figure 48. Check belt deflection at the loosest spot in the belt with the transmission in neutral and the motorcycle at ambient temperature. With 10 PSI in the rear shocks use the BELT TENSION GAUGE (Part No. HD-35381) to apply 10 lb (4.5 kg) of force at the midpoint of the bottom belt strand.

Belt deflection should be within specification as shown in Table 26. If belt tension adjustment is necessary, see a Harley-Davidson dealer or follow the instructions in the service manual.

Visually inspect condition of rear sprocket and differential.

om00156



1. Transmission sprocket
2. Rear wheel sprocket
3. Force of 10 lbs (4.5 kg)
4. Deflection

Figure 48. Check Belt Deflection

Table 26. Belt Deflection

MODEL	INCHES	MM
Trike Models	3/8-7/16	9.5-11.1

CHASSIS LUBRICATION

Refer to Table 33 for all maintenance schedules.

1. Use recommended special purpose grease for steering head bearings. Use a multi-purpose chassis grease for other applications.
2. Lubricate clutch control cable at proper intervals.
3. Lubricate front brake hand lever and clutch control hand lever only if necessary.
4. Pack the steering head bearings with fresh grease 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 33 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 33. 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 MAINTENANCE SCHEDULING in this manual. Failure to oil and adjust the clutch control cable can result in equipment damage. (00203b)

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 indica-

tion that one or more of the hydraulic units may not be functioning properly.

Always check the engine oil level first since normal circulation of oil through the engine is necessary for proper operation of the hydraulic lifters.

If engine oil is at the proper level, the lifters 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.

STEERING DAMPER

Refer to Table 33. Inspect the hydraulic steering damper for leaks at specified intervals. Elevate the front wheel slightly and turn handlebars through their full range of steering travel several times to check for smooth damper action. Check all damper mounting fasteners for tightness.

The steering damper must be replaced or rebuilt at specified intervals. If steering damper leaks or is damaged, see a Harley-Davidson dealer.

MISCELLANEOUS LUBRICATION

Hinges, Latches, Etc.

Lubricate the rub points of latches and hinges with Harley Lube (Part No. 94968-09) as required.

FRONT FORK BEARINGS



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 33. 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 33. 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

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

- *The master cylinder cover specifies correct brake fluid.*
 - *When adding or changing brake fluid, 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 33. 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.

NOTE

If the brake system is not leaking, there should not be a need to add fluid. If the fluid level is low, the pads are probably worn and need to be replaced. By replacing the pads, the fluid level will rise.

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.

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 49. 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)

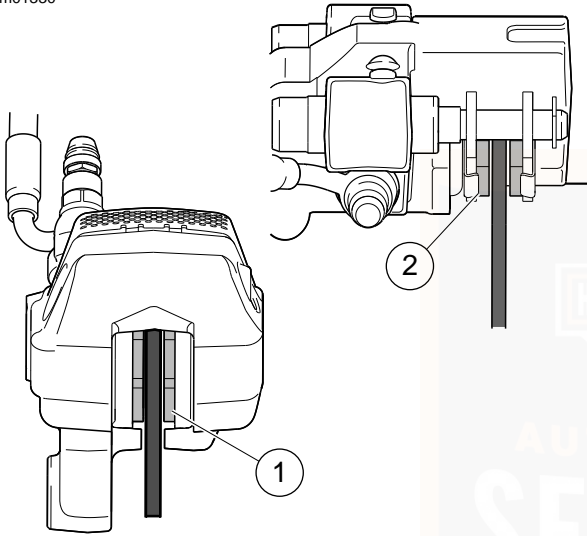
For front brake, the brake pad friction material should measure at least 0.016 in. (0.4 mm).

For rear brakes, the brake pad friction material should measure at least 0.050 in. (1.27 mm).

NOTES

- *If the thickness of the brake pad friction material is less than specified, the pads must be replaced immediately.*
- *Always replace brake pads in pairs. If rear brake pads are worn, replace brake pads for both rear wheels.*

om01330



1. Front brake
2. Rear brake

Figure 49. Brake Friction Material

PARKING BRAKE

As brake pads begin to wear in, the parking brake lever effort will lessen and the grip of the parking brakes on rear rotors will decrease. Inspect and adjust the parking brake on the following occasions.

- At regular intervals. Refer to Table 33.
- Periodically after extensive rear brake usage.
- After replacement of rear brake pads or other rear brake service.

NOTE

The following inspection and adjustment procedures may be used to adjust the parking brake between service intervals. For regular service intervals, see a Harley-Davidson dealer or service manual for complete maintenance instructions.

Inspection

1. Park vehicle (with normal load) on a steep incline. Turn ignition switch to OFF and shift transmission into first gear.
2. Apply front brake with left hand and cover rear brake pedal with right foot.

3. Push parking brake lever to the forward position with right hand. If parking brake lever is difficult to engage, see ADJUSTMENT to decrease lever effort.
 4. With parking brake engaged, release the front brake and pull in the clutch lever.
 5. See Figure 50. The rear brakes should hold securely and the vehicle should remain still. Check position of the parking brake lever (should be in over center position). See ADJUSTMENT to adjust parking brake as necessary.
3. Rotate knob until set screw is aligned with gap at front or rear of handle. Tighten set screw.
 4. See INSPECTION to check performance of the adjusted parking brake.

Adjustment

1. See Figure 50. With vehicle on level ground, move parking brake lever to OFF position.

NOTE

Park brake has two positions, off (disengaged) and over center (engaged), approximately 90° apart.

2. See Figure 51. Loosen set screw with hex wrench (provided in tool kit) and turn knob several revolutions in the appropriate direction.
 - a. Turn clockwise to increase brake grip/lever effort.
 - b. Turn counterclockwise to decrease brake grip/lever effort.

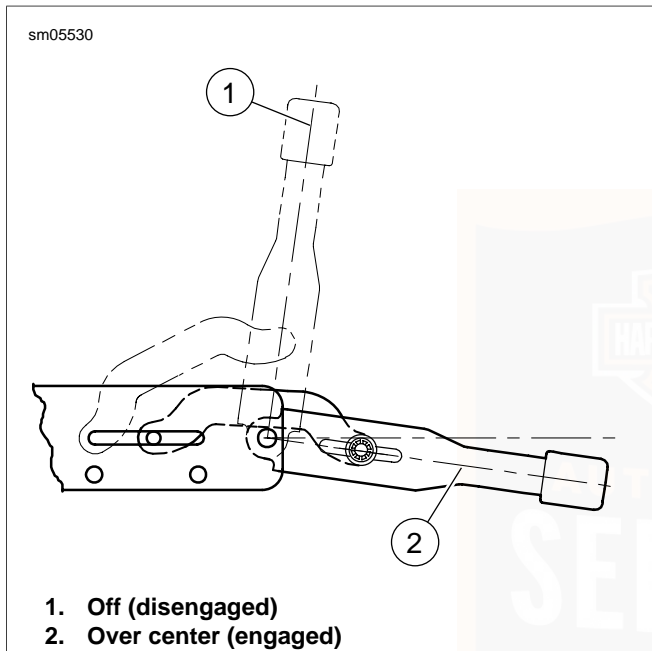


Figure 50. Park Brake Positions

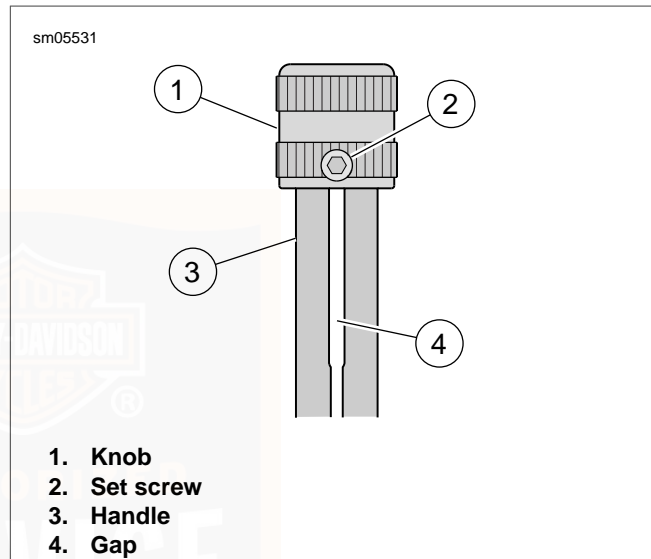


Figure 51. Park Brake

JACKING POINTS

CAUTION

When lifting a motorcycle using a jack, be sure jack contacts both lower frame tubes where down tubes and lower frame tubes converge. Never lift by jacking on cross-members, oil pan or other housings. Failure to comply can cause serious damage resulting in the need to perform major repair work. (00586c)

NOTES

- *Never use differential housing as lifting point.*
- *Set the park brake and block the wheels as necessary to prevent the vehicle from rolling.*
- *Lift against the forgings where the down tubes and lower frame tubes join.*

Because the balance point is toward the rear of the motorcycle, special consideration must be made when lifting with a jack for service.

See Figure 52. When lifting the front to remove the front tire or check steering head bearings, etc., engage the parking brake. Place the jack under the forward portion of the frame,

approximately centered under the crankshaft, and be sure it contacts the frame tube forgings on both sides.

See Figure 53. When lifting the rear of the motorcycle, secure the front tire in a wheel vise and secure front end to the motorcycle lift using straps. Place the jack under the rear portion of the frame, approximately centered under the clutch cover, and be sure it contacts the frame tube forgings on both sides.

Alternatively, each rear wheel can be raised by placing a jack under the left or right side of the axle.



Figure 52. Jack Placement Under Front

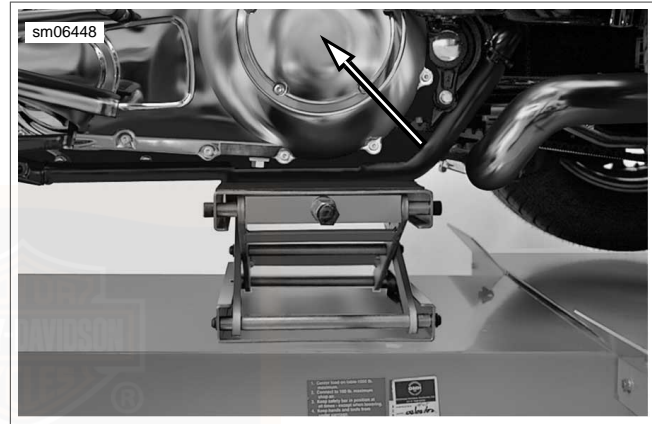


Figure 53. Jack Placement Under Rear

TIRES

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

WARNING

Striking an object, such as a curb, can cause internal tire damage. If an object is struck, remove and inspect both the inside and outside of the tire. A damaged tire can adversely affect stability and handling, which could result in death or serious injury. (00058a)

TIRE REPLACEMENT

Inspection

WARNING

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

See Figure 54. Arrows on tire sidewalls pinpoint location of wear bar indicators.

Tread wear indicator bars will appear on tire tread surfaces when 1/32 in (0.8 mm) or less of tire tread remains. See Figure 55. Always replace tires before the tread wear indicator bars appear.

When To Replace Tires

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)

New tires are needed if any of the following conditions exist:

1. Tread wear indicator bars become visible on the tread surfaces.
2. Tire cords or fabric become visible through cracked sidewalls, snags or deep cuts.
3. A bump, bulge or split in the tire.
4. Puncture, cut or other damage to the tire that cannot be repaired.

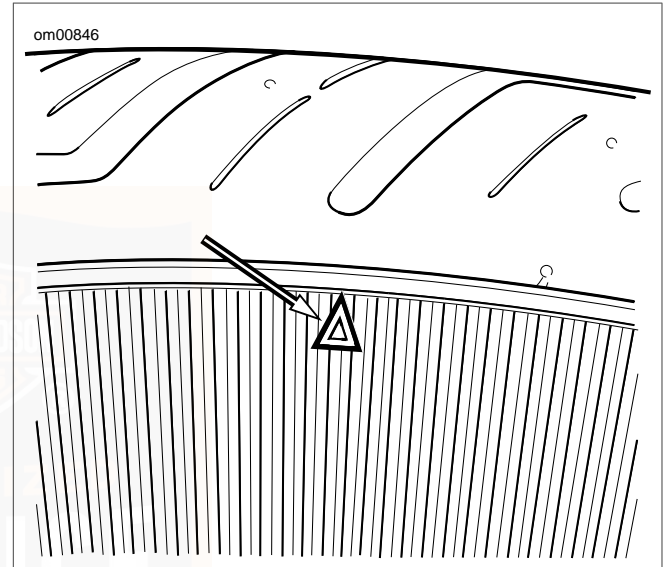


Figure 54. Tire Sidewall Wear Bar Locator (Typical)

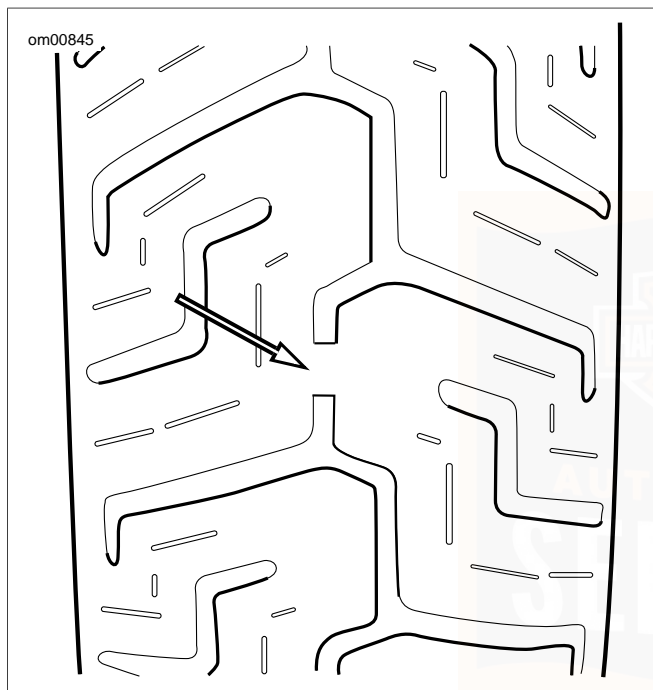


Figure 55. Wear Bar Appearance (Typical)

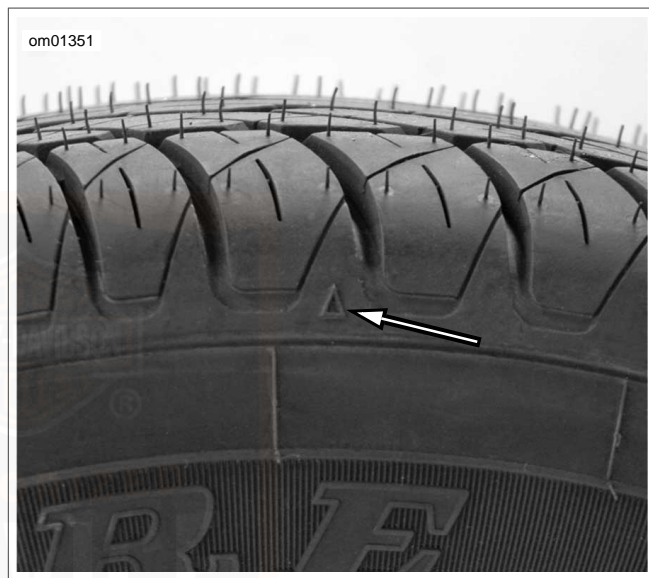


Figure 56. Rear Tire Tread Wear Bar Indicator

VEHICLE ALIGNMENT

Refer to Table 33. Vehicle alignment should be checked at regular intervals. This includes whenever the rear drive belt is

adjusted. The stabilizer link 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. Inspect both front to rear alignment and lateral (side to side) alignment. Major alignment of the front and rear wheels are partially controlled by one stabilizer link at the top of the engine and alignment of the rear axle. See a Harley-Davidson dealer for this service.

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

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

SPARK PLUGS

WARNING

Disconnecting spark plug cable with engine running can result in electric shock and death or serious injury. (00464b)

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)

Refer to Table 33 before servicing spark plugs. Check the spark plugs at proper intervals.

1. Disconnect spark plug cables from plugs by pulling up on the molded connector caps.
2. Check spark plug type. Only use those spark plugs specified for your model motorcycle.

NOTE

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

3. Check spark plug gap against specifications table.
4. Always tighten to the proper torque. Spark plugs must be tightened to the torque specified for proper heat transfer.
5. Connect each molded connector cap until the cap snaps firmly into place over the spark plug.

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 57. The engine air cleaner is a paper/wire mesh air filter element.

Refer to Table 33. Remove air cleaner cover and inspect filter element at proper intervals. When operated under dusty conditions, inspect more often.

The paper/wire mesh air filter element should be washed in lukewarm 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)

Install baseplate gasket, air filter element and bracket if removed. Tighten bracket screws to 108-132 **in-lbs** (12.2-14.9 Nm).

When installing air cleaner cover, apply a drop of LOCTITE THREADLOCKER 243 (blue) to the threads of the cover screw and tighten to 36-60 **in-lb** (4.1-6.8 Nm).

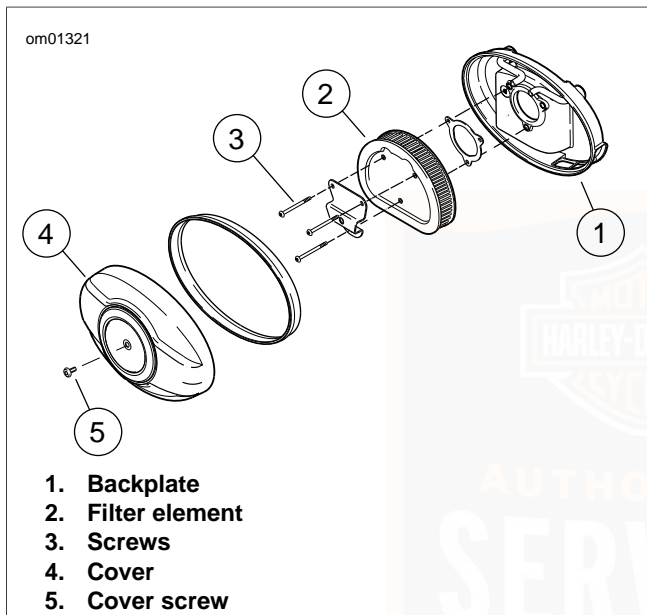


Figure 57. Air Cleaner: Twin Cam Models

HEADLAMP BULB REPLACEMENT: SINGLE HEADLIGHT

WARNING

Handle bulb carefully and wear eye protection. Bulb contains gas under pressure, which, if not handled carefully, could cause serious eye injury. (00062b)

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)

If a headlamp bulb filament burns out, the bulb must be discarded and a new bulb installed. Refer to Table 12 for bulbs.

Bulb Removal

WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

NOTE

Make note of components during disassembly to aid in correct assembly.

1. Remove main fuse. See MAINTENANCE AND LUBRICATION, Fuses and Relays.
2. See Figure 58. Remove mounting screw at bottom of trim ring. Remove trim ring.
3. Remove retaining screws and retaining ring.
4. Remove headlamp connector from lens assembly.
5. Remove lens assembly and remove rubber boot.
6. See Figure 59. Release wire retaining clip (1) from retainer (2).

NOTE

It may be necessary to loosen wire clip retainer screw one-half to one-full turn to release wire clip.

WARNING

Handle bulb carefully and wear eye protection. Bulb contains gas under pressure, which, if not handled carefully, could cause serious eye injury. (00062b)

7. Remove and discard bulb.

Installation

CAUTION

Never touch the quartz bulb. Fingerprints will etch the glass and decrease bulb life. Handle the bulb with paper or a clean, dry cloth. Failure to do so could result in bulb damage. (00210b)

NOTE

When installing a new bulb, be sure connector contacts are clean for good electrical contact.

1. See Figure 58. Align the tab on the bulb with the notch in the headlamp housing.
2. Install new bulb and assemble the headlamp components.

NOTE

Verify that reflector cone is still centered under decorative logo. If it is not, loosen wire clip retainer screw and repeat step until the proper results are achieved.

3. Install rubber boot at back of lens housing.
4. Connect the headlamp connector.
5. Install headlamp connector on headlamp bulb.

6. Install headlamp assembly and tighten screws to: **9-18 in-lbs** (1.0-2.0 Nm).
7. Fit the trim ring spring into slot at top of headlamp housing and secure the trim ring with screw. Tighten to **22-32 in-lbs** (2.5-3.6 Nm).



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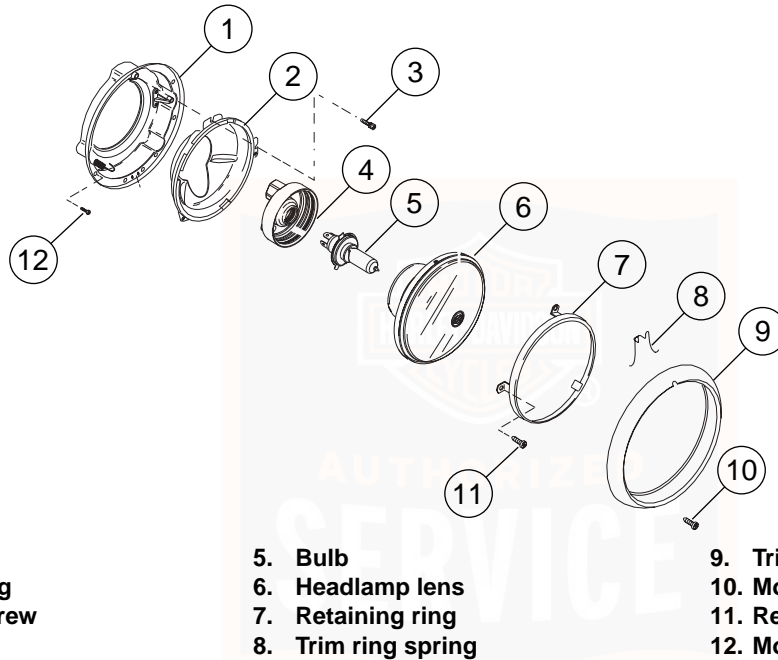


Figure 58. Replace Headlamp: Single Headlight

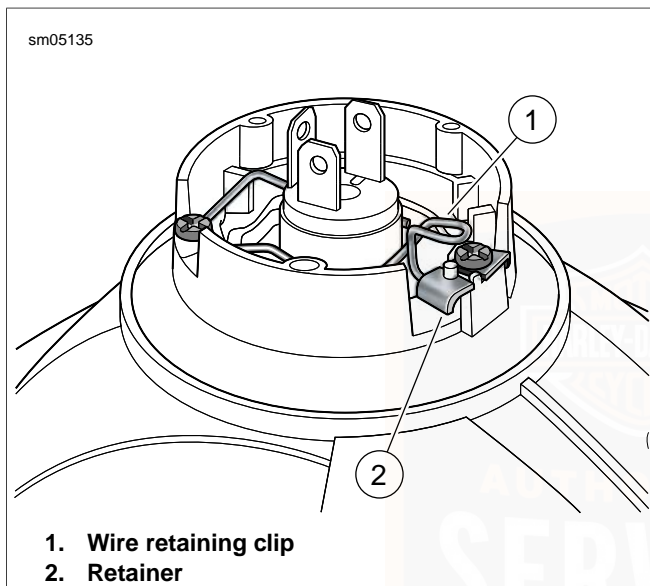


Figure 59. Wire Retaining Clip

HEADLAMP 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)

NOTE

Vehicles with multiple beam headlamps that are individually aimed should be adjusted so both lamps converge into one pattern.

1. Verify that front and rear tire inflation pressures are correct and that suspension is adjusted to the weight of the principal rider. See SPECIFICATIONS.
2. Fill fuel tank or add ballast to equal the weight of the fuel needed.

NOTE

See Figure 60. To aid in properly placing the motorcycle, a perpendicular line (1) can be drawn on the floor. For best results, choose an area with minimum light.

3. Draw a vertical line (2) on the wall.

- Position motorcycle so that front axle is 25 ft (7.6 m) from wall.

NOTE

As the weight of the rider will compress the suspension slightly, have a person whose weight is approximately the same as that of the principal rider sit on the motorcycle.

- With the vehicle laden and upright, point the front wheel straight forward at wall and measure the distance (4) from the floor to the center of the HIGH BEAM bulb.
- Draw a horizontal line (5) through the vertical line on the wall that is 2.1 in (53.3 mm) lower than the measured bulb centerline.

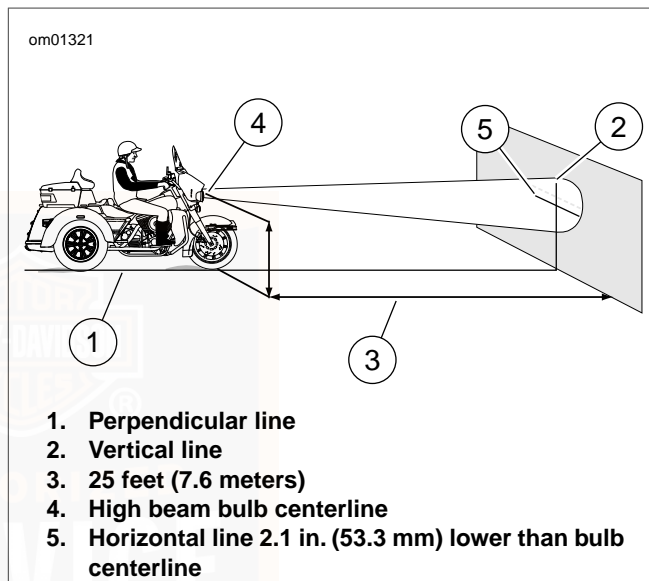


Figure 60. Check Headlamp Alignment

7. Verify headlamp alignment. Turn the ignition switch to IGNITION and set the headlamp switch to HIGH beam.
 - a. The center of the hot spot (brightest area of light beam) should be centered where the two lines intersect.
 - b. Adjust headlamp alignment if necessary.

HEADLAMP ADJUSTMENT

NOTE

Headlamp adjustment can be performed without removing the trim ring.

1. See Figure 61. Insert Phillips screwdriver between headlamp housing and rubber gasket.
2. Adjust beam.
 - a. Turn the vertical adjusting screw (2) to adjust headlamp vertically.
 - b. Turn the horizontal adjusting screw (1) to adjust headlamp horizontally.

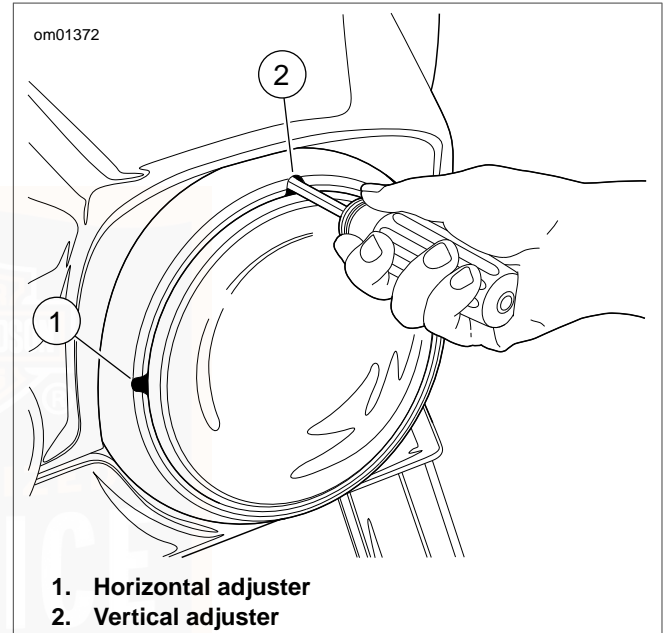


Figure 61. Headlamp Adjusters (typical)

AUXILIARY LAMPS

For models equipped with auxiliary lamps, see a Harley-Davidson dealer or service manual for bulb replacement or alignment.

TURN SIGNAL BULB REPLACEMENT: BULLET STYLE

1. See Figure 62. Insert a coin or the blade of a small screwdriver into the notch at the bottom of the lens cap. Carefully twist until the lens cap pops out of the lamp housing.
2. Push bulb in and rotate counterclockwise. Pull bulb from socket.
3. Inspect condition of electrical contacts in socket. If necessary, clean with a small wire brush and electrical contact cleaner.
4. Coat base of **new** bulb with ELECTRICAL CONTACT GREASE (Part No. 99861-90).
5. Align pins on bulb with pin guides in bulb socket. Push **new** bulb in and turn clockwise to lock in place.
6. Snap lens cap back into the lamp holder. Rotate lens to position notch at bottom of lamp.

WARNING

Be sure that all lights and switches operate properly before operating motorcycle. Low visibility of rider can result in death or serious injury. (00316a)

7. Test turn signal operation.

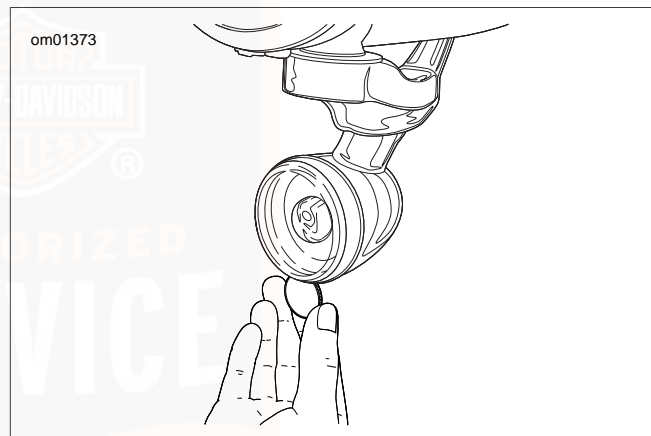


Figure 62. Lens Cap Notch

TAIL LAMP BULB REPLACEMENT

Removal

1. Remove two screws to release tail lamp assembly from chrome base.
2. See Figure 63. Disconnect tail lamp connector (3).
3. Rotate bulb socket (4) 1/4 turn counterclockwise and remove from tail lamp assembly. Pull bulb from socket.

Installation

1. Coat base of **new** bulb with ELECTRICAL CONTACT GREASE (Part No. 99861-90). Install **new** bulb in socket.
2. Insert socket (4) into tail lamp assembly and rotate 1/4 turn clockwise.
3. See Figure 63. Connect tail lamp connector (3).
4. Place tail lamp into position against chrome base.

NOTE

Over tightening screws can crack the lens.

5. Install two screws and tighten to 20-24 **in-lbs** (2.3-2.7 Nm).



Be sure that all lights and switches operate properly before operating motorcycle. Low visibility of rider can result in death or serious injury. (00316a)

6. Test tail lamp operation.

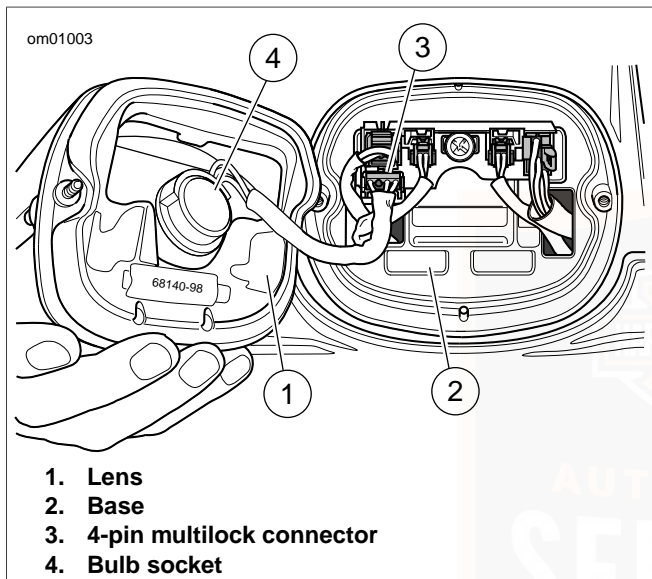


Figure 63. Tail Lamp Assembly

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 27. 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

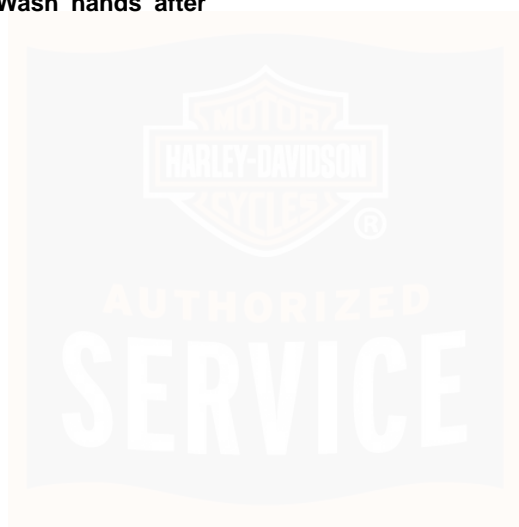
Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well-ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. KEEP BATTERIES AWAY FROM CHILDREN. (00065a)

⚠ WARNING

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

⚠ 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)



om00618



1



2



3



4



5



6

NON-SPILLABLE

This is a ready filled,
activated SEALED BATTERY.
NEVER remove strip.

Refer to owner's manual
or instruction sheet for
charging procedure.



! DANGER/POISON


3-

 SHIELD
EYES.
EXPLOSIVE
GASES CAN
CAUSE BLINDNESS
OR INJURY.



NO
•SPARKS
•FLAMES
•SMOKING

 SULFURIC
ACID
CAN CAUSE
BLINDNESS OR
SEVERE BURNS.

FLUSH EYES
IMMEDIATELY
WITH WATER.
 GET
MEDICAL
HELP FAST.

KEEP OUT OF REACH OF CHILDREN. DO NOT OPEN BATTERY.

1. Contents are corrosive
2. Wear safety glasses
3. Contents are explosive

4. Keep flames away
5. Read instructions
6. Keep away from children

Figure 64. Battery Warning Label



Figure 65. Battery Warning Label

Voltmeter Test

Refer to Table 28. 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 28. 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.
5. 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.
6. 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)

1. Perform a voltmeter test to determine the state of charge. If battery needs to be charged, proceed to the next step.
2. 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 in Table 29 show typical charging times. Charge times may vary. When using automatic chargers, allow the charger to determine when charging is complete.*
 - *Do not use chargers with excessively high voltage designed for flooded batteries or excessively high current designed for much larger batteries. Charging should be limited to no more than 5 amps at no more than 14.6 volts.*
3. Connect the red battery charger lead to positive (+) terminal of the battery.

4. 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.

5. 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)

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

Table 29. 19 Amp-Hour Battery Charging Rates/Times (Approximate)

READING (VOLTS)	PERCENT OF CHARGE	5 AMP CHARGER	2 AMP CHARGER	1.5 AMP CHARGER	0.75 AMP CHARGER
12.7	100	-	-	-	-
12.6	75	2 hours	3 hours 24 minutes	4 hours 12 minutes	7 hours 18 minutes
12.3	50	2 hours 54 minutes	5 hours 48 minutes	7 hours 18 minutes	13 hours 42 minutes
12.0	25	3 hours 54 minutes	8 hours 6 minutes	10 hours 30 minutes	20 hours
11.8	0	4 hours 48 minutes	10 hours 30 minutes	13 hours 42 minutes	26 hours 18 minutes

Storage

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.

A battery that is removed from the vehicle is affected by self-discharge. A battery that is stored in the vehicle is affected by both self-discharge and, more significantly, parasitic loads.

Parasitic loads occur from things like diode leakage and maintaining computer memory with the vehicle off.

- Batteries self-discharge at a faster rate at higher ambient temperatures.
- To reduce the self-discharge rate, store battery in a cool, dry place.
- Charge the battery once per month if stored in the vehicle.
- Charge the battery every three months if stored out of the vehicle.

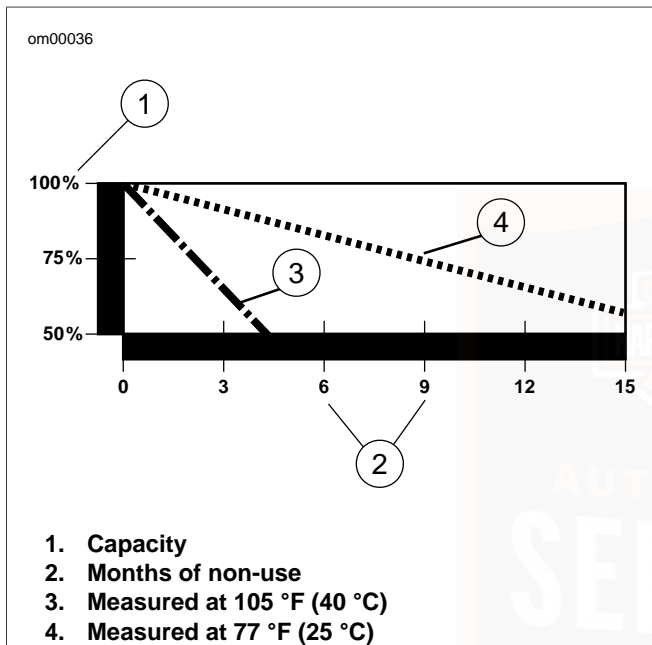


Figure 66. Effective Rate of Temperature on Battery Self-discharging Rate

BATTERY

NOTE

The top caddy has an opening in the front right corner allowing access to the negative battery terminal.

Disconnection and Removal

1. If equipped with security system siren, turn the ignition switch ON with the hands-free fob present to disarm the security system.
2. Remove seat.
3. See Figure 67. Remove two screws from rear of top caddy.
4. Pull up rear of top caddy and disengage the caddy from the clip. Move caddy and connectors aside.

! 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)

5. See Figure 68. Remove battery negative cable (black) from battery negative (-) terminal.

6. Remove battery positive cable (red) from battery positive (+) terminal.
7. Pull up on strap to lift battery out from compartment.

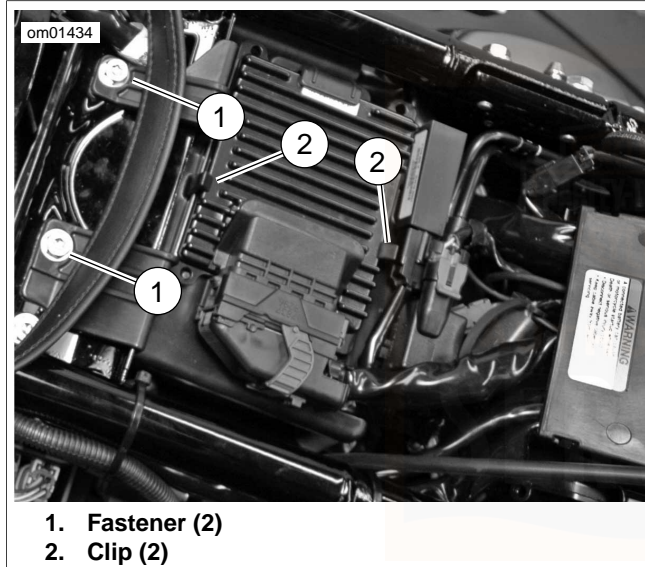


Figure 67. Top Caddy (FLHXXX shown)

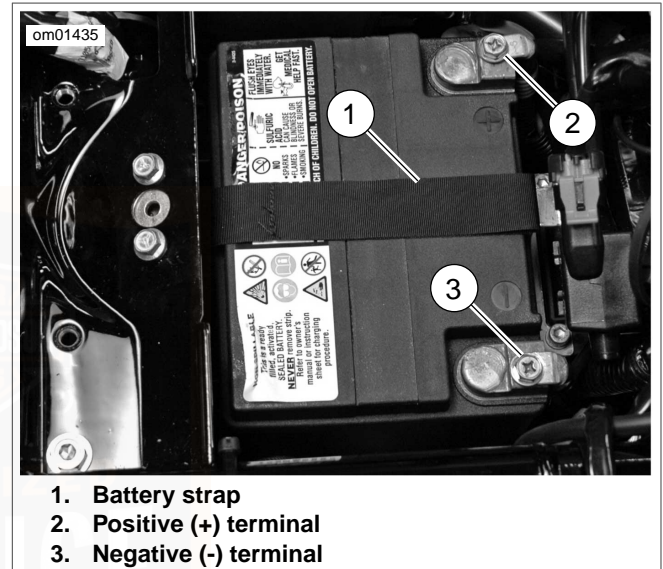


Figure 68. Battery Compartment (FLHXXX shown)

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

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)

NOTE

Make sure strap is inside compartment under battery. The strap handle should remain outside the compartment.

1. See Figure 68. Place the fully charged battery into the compartment with terminals toward the front of the vehicle. Lay battery strap over top of battery.

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)

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. Connect battery positive cable (red) to battery positive (+) terminal. Tighten bolt to 60-70 **in-lbs** (6.8-7.9 Nm).
3. Connect battery negative cable (black) to battery negative (-) terminal. Tighten bolt to 60-70 **in-lbs** (6.8-7.9 Nm).

CAUTION

Keep battery clean and lightly coat terminals with petroleum jelly to prevent corrosion. Failure to do so could result in damage to battery terminals. (00217a)

4. Apply a light coat of petroleum jelly or ELECTRICAL CONTACT LUBRICANT, Part No. 99861-02 (1 oz tube), to both battery terminals.
5. See Figure 67. Rotate top caddy into position above battery and engage front of caddy to the front clip.
6. Align rear of top caddy with mounting holes. Install two screws in top caddy and tighten to 72-96 **in-lbs** (8.1-10.9 Nm).

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)

7. Install seat.

JUMP STARTING

Jump-starting a motorcycle is typically not recommended. However, there may be circumstances when it is necessary to do so. If a jump-start is necessary, use the following procedure.

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

Be sure both vehicles have the same battery voltage when jump starting. Connecting vehicles with different system voltages can result in vehicle damage. (00220c)

NOTES

- *This procedure presumes the BOOSTER battery is in another vehicle. DO NOT jump start from a running booster vehicle. The high output charging systems on some*

vehicles can damage the electrical components on the motorcycle.

- *Make sure the motorcycle and the BOOSTER vehicle are not touching one another.*
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.

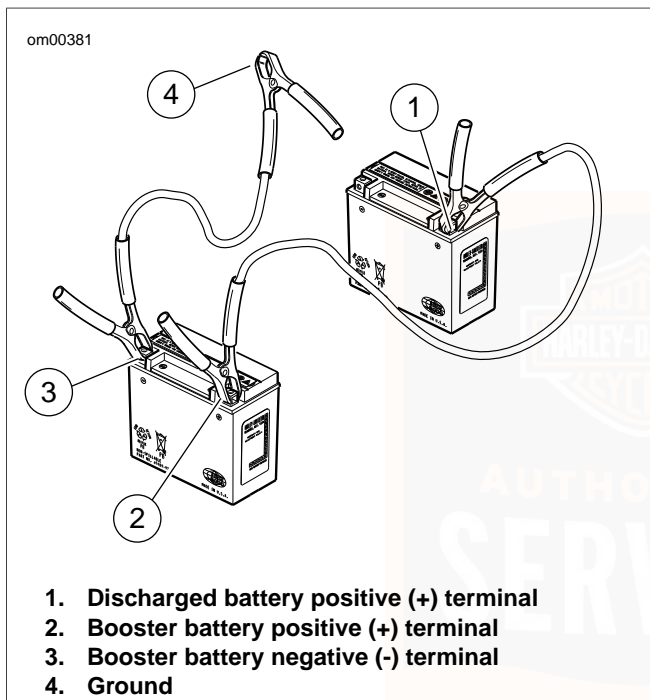


Figure 69. Jump Start Cable Connections

FUSES AND RELAYS

Main Fuse

See Figure 70. A 40 amp main fuse (2) is located near the fuse block. Removing the main fuse will disconnect power to all systems except the starter motor/solenoid.

If equipped with security system siren, turn the ignition switch ON with the hands-free fob present to disarm the security system before removing the main fuse.

System Fuses

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)

See Figure 70. Fuses are located under left side cover.

If fuse replacement does not correct a problem, see a Harley-Davidson dealer for electrical diagnosis.

1. Place the ignition/headlamp key switch in the OFF position.

NOTE

Removal of side cover requires no tools. Pull side cover to remove. To install, align barbed studs on side cover with grommets in frame and push.

2. Remove left side cover.
3. See Figure 70. Press latch on bottom of fuse block cover (1) and swing bottom of the cover out. Remove the cover.

NOTE

The fuse block cover has a fuse puller (3) attachment that may be used to remove fuses.

4. See Figure 71. 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)

5. Replace the fuse if the element is burned or damaged.

NOTE

Use automotive-type ATO fuses for replacements. Two spare fuses can be found in the fuse block.

6. Install the fuse block cover.

7. Install left side cover.

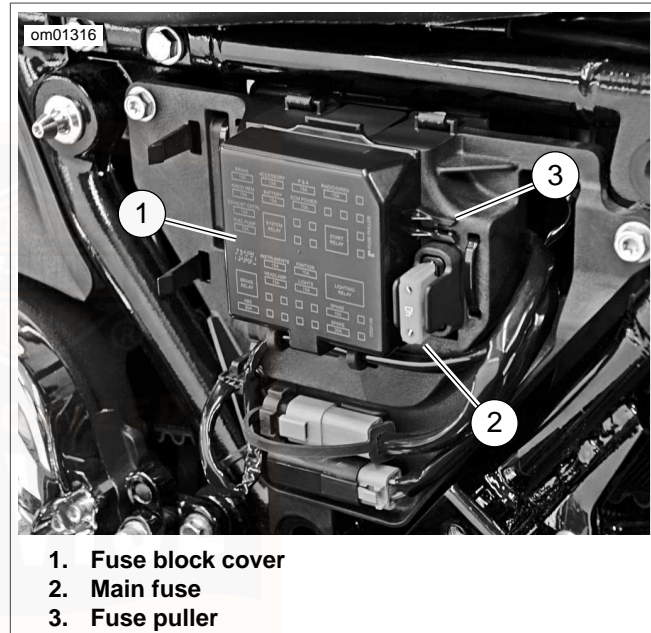
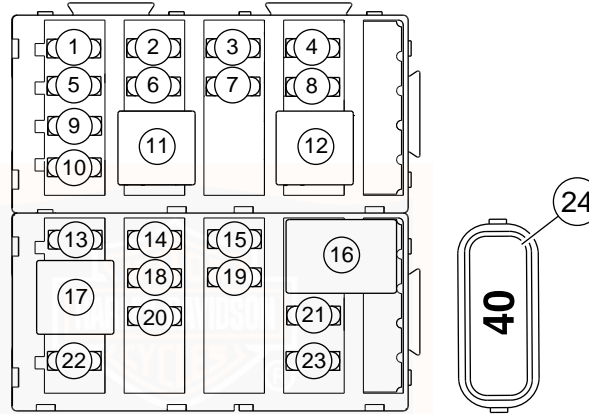


Figure 70. Fuse Block

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- 1. Brake (15 amp)
- 2. Accessory (15 amp)
- 3. P&A (15 amp)
- 4. Radio power/siren (15 amp)
- 5. Radio memory (15 amp)
- 6. Battery (15 amp)
- 7. ECM power (15 amp)
- 8. Power outlet (if equipped) (15 amp)

- 9. Not used
- 10. Fuel pump (15 amp)
- 11. System relay
- 12. Start relay
- 13. P&A ignition (2 amp max)
- 14. Instruments (15 amp)
- 15. Ignition (15 amp)
- 16. Lighting relay

- 17. Brake relay
- 18. Headlamp (15 amp)
- 19. Lights (15 amp)
- 20. Spare (15 amp)
- 21. ABS (not used)
- 22. No used
- 23. Main fuse (40 amp)

Figure 71. Fuses

REVERSE MOTOR CIRCUIT BREAKER: IF EQUIPPED

The reverse motor circuit is equipped with a circuit breaker to prevent current overload conditions to the motor and power cabling. The power circuit for the reverse control module is also protected by the accessory fuse in the fuse block.

Perform reverse operation as explained in CONTROLS AND INDICATORS, Reverse Operation. If reverse motor will not run or cuts off during operation, turn off the engine and check the condition of the circuit breaker and accessory fuse.

See Figure 72. The circuit breaker is located in the electrical caddy. This manually resettable circuit breaker has a red trip pushbutton (2) and a reset switch (1). To manually trip the circuit breaker, push down on the trip pushbutton (which causes the reset switch to extend out).

If the reset switch is extended as shown, the reverse circuit is open/tripped. Push the reset switch into the center of the circuit breaker body until an audible click is heard to reset.

If the circuit breaker repeatedly opens under non-strenuous loading conditions, or if the reverse motor will not operate after resetting circuit breaker and checking fuses, see a Harley-Davidson dealer.

NOTE

The reverse enable lamp in the hand control housing will illuminate even if the circuit breaker is tripped/open.

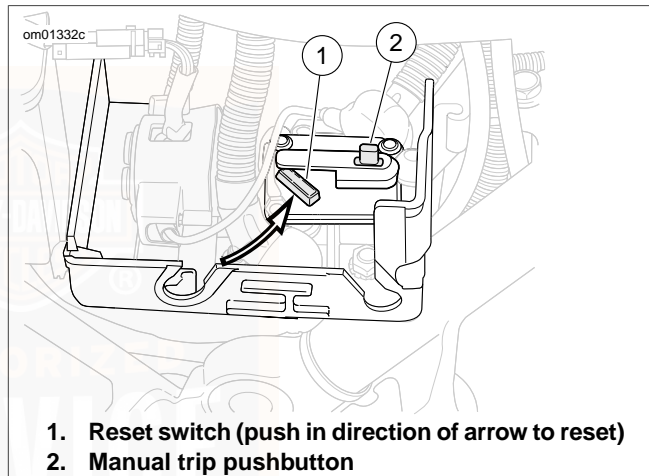


Figure 72. Reverse Motor Circuit Breaker

SEAT

Removal: FLHXXX

1. Remove screw securing rear of seat.
2. See Figure 73. Push seat rearward to free seat from tongue on rear fuel tank bracket.
3. Turn seat slightly and slide the seat out of the grab strap.

Installation: FLHXXX

1. Slide rear of seat through grab strap.
2. See Figure 74. Firmly push front of seat downward and then forward until slot engages tongue.

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)

3. Secure rear of seat with screw and tighten to 48-72 **in-lbs** (5.4-8.1 Nm).

Removal: FLHTCUTG

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 temporarily install in rearward position.

2. Remove screw securing rear of seat.
3. To protect Tour-Pak finish, cover rear seat mounting bracket with palm of hand.
4. See Figure 73. While pushing seat forward, raise rear of seat until bracket clears top of Tour-Pak. Push seat rearward slightly to free seat from frame.

Installation

1. See Figure 74. Place seat on frame backbone.
2. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
3. While raising rear of seat approximately 3.0 in (76.2 mm), use other hand to firmly push front of seat downward and rearward until tongue engages slot in seat.

4. Push seat forward until rear seat retention nut is aligned with hole of mounting bracket.
5. Install seat mounting fastener. Tighten to 20-40 **in-lbs** (2.3-4.5 Nm).

⚠ 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.

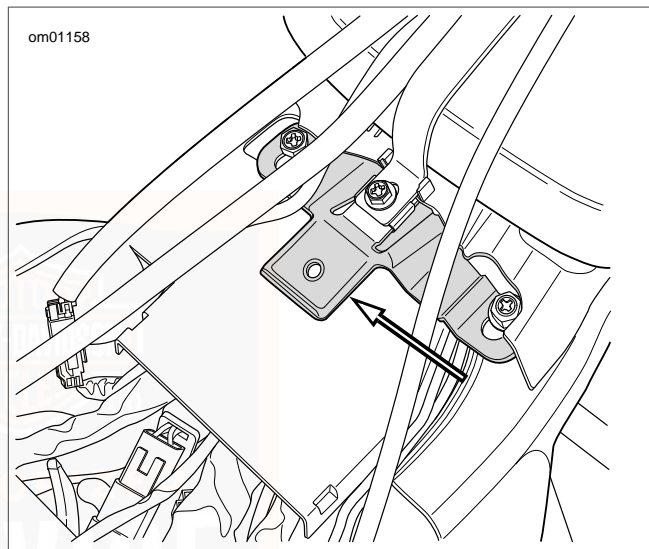


Figure 73. Seat Tongue

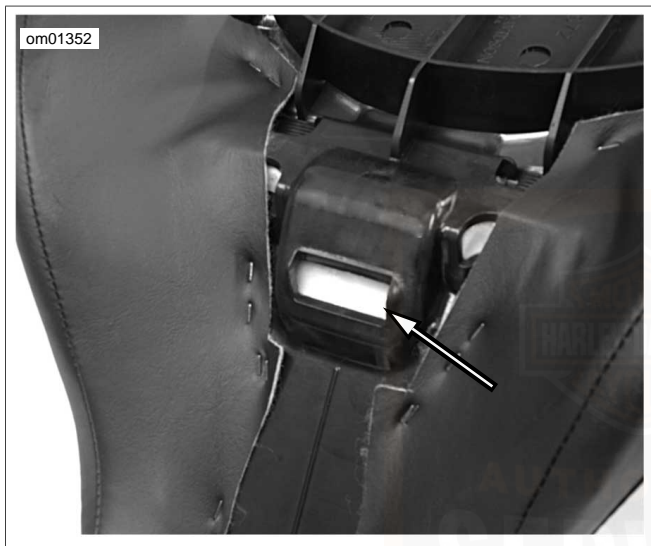


Figure 74. Seat Slot

REAR AXLE TIE DOWN LOOPS: FLHTCUTG

The rear axle has steel loops on the bottom (left and right sides) which may be used to tie down the rear end of the vehicle when transporting on a trailer.

RADIO/CB ANTENNA

The antenna mast is threaded on a mount at the rear of the motorcycle. Unscrew the antennas if they must be removed. When installing, hand-tighten only.

Antennas for the radio and CB are different. For vehicles with a CB, always install the CB antenna (marked with the letters "CB" at the base of the mast) on the right side of the motorcycle. Installing the incorrect antenna for the radio or CB will result in degraded reception.

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 CARE AND CLEANING section of this owner's manual prior to storage.
6. Prepare battery for winter storage. See MAINTENANCE AND LUBRICATION, Battery.

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 main 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 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)

NOTES



CLEANING AND GENERAL CARE

Clean and protect the cosmetic surfaces on your motorcycle as often as possible to inhibit rust and corrosion. After the motorcycle is cleaned, polish and seal the motorcycle to create a sacrificial barrier of protection against the weather and harsh substances.

Refer to Table 30 and Table 31. Harley-Davidson cleaning products are tested extensively for use on vehicle surfaces and are formulated to be compatible with one another. See a Harley-Davidson dealer to purchase recommended cleaning products.

NOTES

Use recommended surface care products. Paper towels, terry cloths, cloth diapers or other materials with nylon fibers can create fine scratches to surfaces.

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)

CAUTION

Do not use a pressure washer to clean motorcycle. Using a pressure washer can result in equipment damage. (00489c)

CAUTION

Use of abrasive products or powered buffing equipment will cause permanent cosmetic damage to body panels. Use only recommended products and techniques outlined in this manual to avoid damaging body panels. (00245b)

Table 30. Recommended Cleaning and Care Products

PRODUCT	PART NUMBER	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
H-D Sunwash Cleaner Concentrate	94659-98	General cleaning and washing of all surfaces. Prevents hard water spots and rinses clean in the sun.	Yes	Yes	Yes	Yes	
H-D Bug Remover	94657-98	Removes bugs from metal, plastic or painted surfaces.	Yes	Yes	Yes	Yes	
Harley-Gloss	94627-98	Produces high gloss with UV protection. Allows chrome to breathe, unlike wax. Good for windshields.	Yes	Yes	Yes	Yes	
Harley Spray Cleaner and Polish	99817-99A	Aerosol spot cleaner and detailer. Degreases and reduces static attraction to dust.	Yes	Yes	Yes	No	

Table 30. Recommended Cleaning and Care Products

PRODUCT	PART NUMBER	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER	
Wheel and Tire Cleaner	94658-98	Cleans wheels, tires, whitewalls and black-coated exhaust pipes and mufflers. Do not use on frames or anodized parts.	No	No	Yes	No		
Harley Bright Chrome Cleaner	94683-99	Shines chrome-plated surfaces and cleans brushed aluminum or stainless steel surfaces.	As applicable					
Harley Bright Metal Polish	99725-89	Polishes non-clear coated polished aluminum or polished stainless steel surfaces.	As applicable					
Harley Glaze Polish & Sealant	99701-84	Polishes windshields, painted surfaces and chrome.	Yes	Yes	As applicable	No		
H-D Swirl & Scratch Treatment	94655-98	Removes fine scratches and swirls.	Yes	Yes	No	No		
H-D Black Tire Sidewall Protectant	94628-05	Restores luster to black tire sidewalls.	No	No	No	No	Tires	
H-D Preserve Bare Aluminum Protectant	99845-07	Corrosion control for bare aluminum surfaces.	As applicable					

Table 30. Recommended Cleaning and Care Products

PRODUCT	PART NUMBER	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
H-D Windshield Water Repellent Treatment	99841-01	Allows water to bead and dissipate from the windshield.	No	No	No	No	Windshield
H-D Leather Dressing	98261-91V	Weatherproofs and preserves leather products.	No	No	No	No	Leather goods
S100 Total Cycle Cleaner	99760-85T	Cleans painted surfaces, chrome and aluminum. Rinse completely while surfaces are wet. Do not allow to dry.	Yes	Yes	Yes	No	
Grease-cutting dish-washing detergent	Not applicable	Cleans Denim finish. Dilute per manufacturer's instructions.	No	No	No	Yes	
Ammonia-based glass cleaner	Not applicable	Spot cleans Denim finish. Do NOT use on windshields.	No	No	No	Yes	
NOVUS 1 Cleaner/Protectant	99837-94T	Cleans windshields, tail lamps and all plastics. Resists fingerprints, fogging, smears and repels dust.	No	No	No	No	Windshield
NOVUS 2 Scratch Remover	99836-94T	Minor scratch remover for windshields and plastics. Apply after NOVUS 1.	No	No	No	No	Windshield

Table 31. Recommended Surface Care Products

PRODUCT	PART NO.	DESCRIPTION
Wash Mitt	94760-99	Absorbant wool-blended washing mitten.
Soft Detailing Pad	94790-01	Soft pad for removing bugs and debris without scratching the surface finish.
Softstrips	94680-99	For cylindrical surfaces such as handlebars, forks, pushrod covers and spokes.
Softcloth	94656-98	Non-absorbant cloth for applying and buffing Swirl & Scratch treatment and Harley Glaze to painted surfaces or chrome.
Soft Drying Towel	94791-01	Extra-absorbant, non-streaking synthetic towel for drying. Dampen towel and wring out before using for greatest absorbancy.
Wheel & Spoke Brush	43078-99	Cone-shaped scrub brush for wheels.
Microfiber Detailing cloth	94663-02	Highly absorbant detailing cloth for polishing and sealing. Contains no nylon fibers.
S100 Detailing Swabs	99780-04	Large cotton swabs for cleaning crevices and detailed surfaces.

TRUNK

Before washing the motorcycle, make sure the trunk door is securely closed with **both** latches engaged.

Water can leak into the trunk if both trunk door latches are not engaged or if water is directed at the lock or seal area for an extended time.

WASHING THE MOTORCYCLE

Refer to Table 30 and Table 31 for recommended cleaning and care products.

Preparation

1. Allow motorcycle to cool before rinsing or washing. Spraying water on hot surfaces can leave water spots and mineral deposits.

NOTE

During rinsing and washing, avoid direct spray on radio, saddlebags, trunk or Tour-Pak sealing areas (if equipped). Avoid spraying water under leather saddlebag covers (if equipped).

2. Rinse the motorcycle from the bottom up.
3. To loosen dried bugs or hardened dirt, allow surfaces to soak under a damp towel.

Cleaning the Wheels and Tires

1. Rinse wheel and tire surfaces. Avoid splashing brake dust on chrome or painted parts.
2. Apply Wheel and Tire Cleaner. Allow cleaner to sit for 1 minute.

3. Clean wheel with Soft Detailing Pad or Wheel & Spoke Brush. Use Softstrips to clean wheel spokes.
4. Rinse well.

Washing the Motorcycle

NOTE

Refer to the appropriate instructions in this section for cleaning leather, Denim (flat) finishes, windshields or other special surfaces.

1. Fill a bucket with clean water.
2. Fill another bucket with water and add H-D Sunwash Cleaner Concentrate, following the directions on the package.
3. Soak the H-D Wash Mitt in the Sunwash solution. Wash all surfaces from the top working down.
4. Use H-D Bug Remover to remove any bugs.
5. Rinse from the bottom up, then rinse from the top down.

Drying the Motorcycle

1. Dry the surfaces of the motorcycle from the top down using a Soft Drying Towel or HOG Blaster.

2. Dampen towel in clean water and wring out the excess. The towel is more absorbent when wet.
3. Wipe across the vehicle surface.
4. Repeat as necessary until surface is completely dry.

Polishing and Sealing

NOTE

If motorcycle has Denim finish, skip the Polishing and Sealing procedure.

1. Apply Harley Glaze Polish & Sealant with a Softcloth or Microfiber Detailing Cloth, following the instructions on the package.
2. Buff with a Softcloth.

Finishing Tires

1. Apply Harley Black to tires, following the instructions on the package.

DENIM FINISH CARE

Some motorcycles have a Denim (flat or matte) finish. The Denim finish has qualities which differ from high gloss finishes on all other Harley-Davidson motorcycles. Like denim fabric, Denim paint will burnish or mar with age and use, thus adding

character and personality to the finish of the motorcycle. Refer to Table 30 for recommended products.

- If scratched, the color coat of paint does nick/scuff and these marks cannot be rubbed out.
- If polished, the finish will become less matte and more glossy over time.

How to Clean

1. For heavier deposits:
 - a. Use grease cutting dishwashing detergent and a clean Wash Mitt. (Dilute the detergent per the instruction provided by its manufacturer.)
 - b. Rinse thoroughly with clean water.
2. For light deposits, use glass cleaner (ammonia base) and Softcloth. This helps remove finger prints and light soil.
3. For final detailing, apply Harley Gloss with a Softcloth.

LEATHER CARE

NOTES

Many Harley-Davidson accessories and seats are made of either treated or untreated 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 time. This maturing is natural and will enhance the custom quality of your Harley-Davidson motorcycle.

Leather surfaces are not designed for long-term exposure to inclement weather and should be protected with a Harley-Davidson Seat Rain Cover or Motorcycle Storage Cover (sold separately). See your Harley-Davidson dealer.

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. Always allow leather to dry completely before using.
 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 H-D Leather Dressing.

WHEEL CARE

Regular washing and the use of a corrosion protectant will help the wheels maintain their original appearance. Damage from harsh chemicals, acid based wheel cleaners, brake dust and lack of maintenance can occur. Refer to Table 30 for recommended cleaning products.

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.*
- *Aluminum wheels do not have a protective coating.*

WINDSHIELD CARE

CAUTION

Polycarbonate windscreens/windshields require proper attention and care to maintain. Failure to maintain polycarbonate properly can result in damage to the windscreen/windshield. (00483d)

- Do not clean in hot sun or high temperature.
- Powdered, abrasive or alkaline cleanser will damage the windscreen/windshield.

CAUTION

Use only Harley-Davidson recommended products on Harley-Davidson windshields. Do not use harsh chemicals or rain sheeting products, which can cause windshield surface damage, such as dulling or hazing. (00231c)

Windshields require special care. Harley-Davidson recommends using Harley Softcloths to clean your windshield. Refer to Table 30 for recommended cleaning products.

NOTES

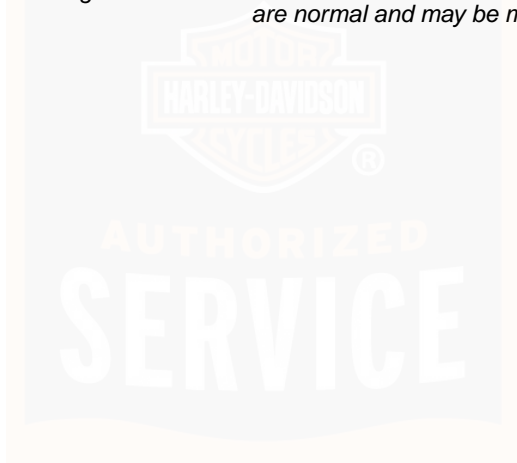
- Use *NOVUS 2 SCRATCH REMOVER* to remove minor scratches.
- To treat the windshield with water repellent use *WINDSHIELD WATER REPELLENT TREATMENT*.
- Covering the windshield with a clean, wet cloth for approximately 15-20 minutes before washing will make

dried bug removal easier.

1. Use mild soap and warm water to wash the windshield.
2. Wipe dry with a clean Soft Drying Towel.

NOTE

To minimize swirl marks, cleaning should be done when motorcycle is cool and parked in the shade. Faint swirl marks are normal and may be more visible on tinted windshields.



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

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 damaged 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. Damaged 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.
8. Steering head damper worn or damaged. See dealer.

9. Panhard rod fasteners loose. See dealer.

ELECTRICAL SYSTEM

Alternator Does Not Charge

1. Regulator not grounded. See dealer.
2. Engine ground wire loose or damaged. See dealer.
3. Loose or damaged 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.

Transmission Jumps Out of Gear

1. 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 freeplay. See dealer.

Parking Brake Does Not Hold Normally

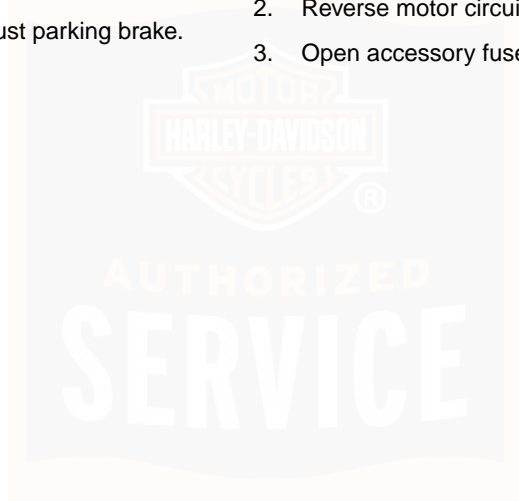
1. Rear brake pads slightly worn in. Adjust parking brake.

2. Rear brake pads badly worn. See dealer.

REVERSE MOTOR: IF EQUIPPED

Reverse Motor Does Not Operate/Cannot Enable

1. Vehicle not started or vehicle not in neutral.
2. Reverse motor circuit breaker open/tripped.
3. Open accessory fuse.



WARRANTY AND MAINTENANCE

This Owner's Manual contains your new motorcycle warranty and an owner's maintenance record.

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 prior to first 1000 miles (1600 kilometers).
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 the maintenance record in the Owner's Manual 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)

Use only Harley-Davidson approved parts and accessories. Use of other manufacturers performance parts may void your warranty. See a Harley-Davidson dealer.

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

Genuine Harley-Davidson parts are engineered and tested specifically for use on your motorcycle. Insist that your dealer uses only Genuine replacement parts to keep your Harley-Davidson motorcycle and its warranty intact.

NOTE

Installing off-road or competition parts to enhance performance may void all or part of your new motorcycle warranty. See the

Harley-Davidson Motorcycle 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)

CALIFORNIA EVAPORATIVE EMISSION CONTROLS: 2010 MODELS

All new 2010 Harley-Davidson motorcycles sold in the State of California are equipped with an evaporative emission control system. This system is designed to meet the CARB regulations in effect at the time of manufacture. A complete CARB emissions warranty statement can be obtained from your dealer.

The system requires a small amount of maintenance. Periodic inspection is required to make sure hoses are properly routed,

not kinked or blocked and that all fittings are secure. Mounting hardware should also be checked periodically for tightness.

EPA NOISE REGULATIONS IN THE UNITED STATES

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

EPA Regulations

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

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE FOLLOWING:

1. Replacing the muffler(s) and/or the entire exhaust system with parts not certified to be noise legal for street use.
2. Removing or modifying the muffler internal baffles in any way.

3. Replacing the air intake/cleaner assembly with one not certified to be noise legal for street use.
4. Modifying the air intake/cleaner assembly in such a way as to make the vehicle no longer noise legal for street use.

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

WARRANTY/SERVICE INFORMATION

Any authorized Harley-Davidson dealer is responsible for providing the warranty repair work on your motorcycle. If you have any questions regarding warranty obligations contact your selling dealer.

For normal service work or warranty work under the above conditions, you may obtain the name and location of your nearest U.S. Harley-Davidson dealer by calling 800-490-9635 (toll free), in any state except Alaska and Hawaii. To find dealers worldwide, see www.harley-davidson.com.

NOTE

The number shown above is accessible only with a touch-tone phone.

REPORTING SAFETY DEFECTS IN UNITED STATES

Safety defects must be reported to the National Highway Traffic Safety Administration (NHTSA) and Harley-Davidson.

NHTSA Statement

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Harley-Davidson.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Harley-Davidson.

Refer to Table 32 to contact NHTSA.

Table 32. NHTSA Contacts

ITEM	DATA
Phone	Call the Auto Safety Hot Line toll-free at 888-DASH-2DOT
Mail	U.S. Department of Transportation, National Highway Traffic Safety Administration, Office of Defects Investigation, NVS-210, 400 7th Street S.W., Washington, D.C. 20590
Web site	www.nhtsa.dot.gov

You can also obtain other information about motor vehicle safety from the hot line.

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.

OWNER CONTACT INFORMATION

If you move from your present address, sell your motorcycle, or purchase a pre-owned Harley-Davidson or Buell motorcycle, see a Harley-Davidson or Buell dealer to update your owner contact information.

This will provide the Company with an accurate registration (as required by law in some countries), and will allow the Company to notify you in the event of a recall or product program.

Updated owner information must also be on file with the Company when transferring an Extended Service Plan Contract on a pre-owned motorcycle.

When updating your contact information, your dealer will need your vehicle identification number (VIN), odometer mileage, and date of vehicle transfer (if applicable).

2010 HARLEY-DAVIDSON MOTORCYCLE LIMITED WARRANTY

24 Months/Unlimited Miles

Harley-Davidson warrants for any new 2010 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 TIME, INCONVENIENCE, LOSS OF MOTORCYCLE USE, 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.
5. Acts of God, war, riot, insurrection, natural disasters, including, but not limited to, nuclear contamination, lightning, forest fires, dust storms, hail storms, ice storms, earthquakes, floods, or for other circumstances out of Harley-Davidson's control.

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, chain/belt adjustment and 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 MODIFIC-

ATION INCLUDING LABOR WHICH MAY BE SOLD AND/OR INSTALLED BY OUR DEALERS.

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



NOTES



2010 HARLEY-DAVIDSON MOTORCYCLE NOISE CONTROL SYSTEM LIMITED WARRANTY

The following warranty applies to the noise control system, is in addition to the MOTORCYCLE LIMITED WARRANTY and EMISSION CONTROL SYSTEM LIMITED WARRANTY, and applies only to motorcycles sold in the U.S.

Harley-Davidson Motor Company warrants to the first owner and each subsequent owner that this vehicle is designed and built so as to conform at the time of sale with applicable regulations of the U.S. Environmental Protection Agency (as tested following F-76 Drive-By test procedure) and that it is free from defects in materials and workmanship which can cause this motorcycle not to meet U.S. Environmental Protection Agency Standards within one (1) year from initial retail purchase and delivery from an authorized Harley-Davidson dealer or one (1) year from the [second] anniversary of the last day of the model year of the motorcycle, or 3,730 miles (6,000 kilometers) whichever occurs first. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period. If the motorcycle was used as a demonstrator, then the warranty period may have started and/or expired prior to the initial retail sale. See a Harley-Davidson dealer for details.

THERE IS NO OTHER EXPRESS WARRANTY (OTHER THAN THE SEPARATE MOTORCYCLE AND EMISSIONS WAR-

RANTIES) 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.

The Limited 2 year warranty period shall begin on the date the motorcycle is delivered to the first retail purchaser or, if the motorcycle is placed in service as a demonstrator or company vehicle prior to sale at retail, on the date it is first placed in service.

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

1. Failures which arise as a result of misuse, alteration, or non-performance of maintenance as specified in the Owner's Manual.
2. Replacing, removing, or modifying any portion of the NOISE CONTROL SYSTEM (consisting of the exhaust system and air intake/cleaner assembly) with parts not certified to be noise legal for street use.
3. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.
4. TO THE FULLEST EXTENT ALLOWED BY LAW, HARLEY-DAVIDSON AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF TIME, INCONVENIENCE,

LOSS OF MOTORCYCLE USE, 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.

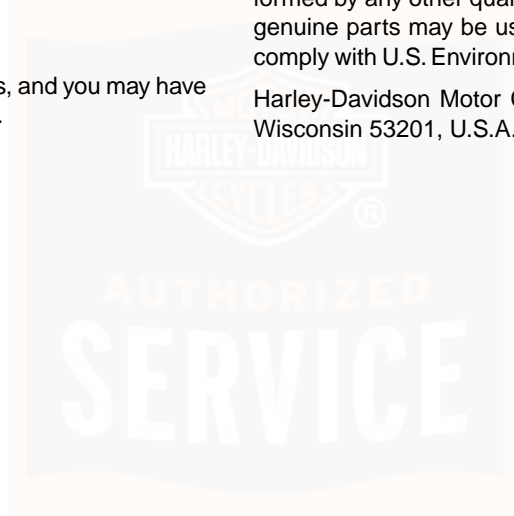
Other Rights

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Recommendations for Required Maintenance

It is recommended that any noise system maintenance be performed by an authorized Harley-Davidson dealer using genuine Harley-Davidson replacement parts. The maintenance, replacement or repair of the noise control system may be performed by any other qualified service outlet or individual. Non-genuine parts may be used only if such parts are certified to comply with U.S. Environmental Protection Agency Standards.

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



2010 HARLEY-DAVIDSON EMISSION CONTROL SYSTEM LIMITED WARRANTY

The following warranty applies to the emission control system, is in addition to the MOTORCYCLE LIMITED WARRANTY and NOISE CONTROL SYSTEM LIMITED WARRANTY, and applies only to motorcycles sold in the U.S.

Harley-Davidson Motor Company warrants to the first owner and each subsequent owner that this vehicle is designed and built so as to conform at the time of sale with applicable regulations of the U.S. Federal Environmental Protection Agency, and that it is free from defects in materials and workmanship which would cause this motorcycle not to meet U.S. Environmental Protection Agency Standards within five (5) years from initial retail purchased and delivery from an authorized Harley-Davidson dealer or five (5) years from the [second] anniversary of the last day of the model year of the motorcycle, or 18,641 miles (30,000 kilometers) whichever occurs first. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period. If the motorcycle was used as a demonstrator, then the warranty period may have started and/or expired prior to the initial retail sale. See a Harley-Davidson dealer for details.

THERE IS NO OTHER EXPRESS WARRANTY (OTHER THAN THE SEPARATE MOTORCYCLE 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.

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

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

1. Failures which arise as a result of misuse, alterations, accident or non-performance of maintenance as specified in the Owner's Manual.
2. The replacement of parts (such as spark plugs, fuel and oil filters, etc.) used in required maintenance.
3. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.
4. TO THE FULLEST EXTENT ALLOWED BY LAW, HARLEY-DAVIDSON AND ITS DEALERS SHALL NOT BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, LOSS OF MOTORCYCLE USE, 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.

Other Rights

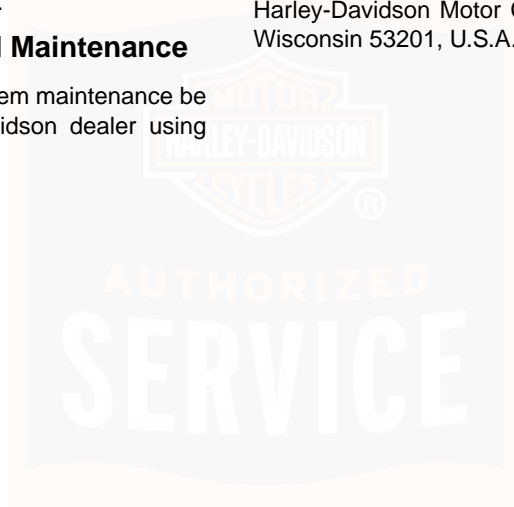
This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Recommendations for Required Maintenance

It is recommended that any emission system maintenance be performed by an authorized Harley-Davidson dealer using

genuine Harley-Davidson replacement parts. The maintenance, replacement or repair of the emissions control system may be performed by any other qualified service outlet or individual. Non-genuine parts may be used only if such parts are certified to comply with U.S. Environmental Protection Agency Standards.

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



2010 LIMITED RADIO WARRANTY

Harley-Davidson Motor Company warrants that this Harley-Davidson radio will be free from factory defects in material and workmanship, under normal use and service, for a period of twenty four (24) months starting from the earlier of (a) the date of initial retail purchase of the motorcycle/sidecar on which the radio is installed, or (b) the third anniversary of the last day of the model year of the motorcycle/sidecar on which the radio is installed. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period. If the motorcycle/sidecar was used as a demonstrator, then the warranty period may have started and/or expired prior to the initial retail sale. See a Harley-Davidson Dealer for details.

This warranty does not cover defects or damage due to abuse, misuse or improper installation, or any radio on a motorcycle which has been registered with Harley-Davidson Motor Company as a collector's vehicle. See a Harley-Davidson dealer for details.

To obtain warranty service, return your motorcycle/sidecar with sound system intact, at your expense, within the warranty period to the selling dealer, or to any other authorized dealer if you have moved a long distance, or are touring a long distance. Our dealer should be able to provide warranty service during his normal business hours and as soon as possible,

depending upon his service department's workload and the availability of necessary parts.

The remedy for breach of this warranty is expressly limited to the repair or replacement, without charge for parts and labor, of any part that proves to be defective, AND DOES NOT EXTEND TO LIABILITY FOR CONSEQUENTIAL DAMAGES, COSTS OR EXPENSES, INCLUDING LOSS OF TIME, INCONVENIENCE OR LOSS OF USE OF THE VEHICLE, RESULTING FROM ANY PART THAT PROVES TO BE DEFECTIVE.

THERE IS NO OTHER EXPRESS WARRANTY ON THE RADIO. ANY IMPLIED WARRANTY RELATING TO THIS RADIO, INCLUDING WARRANTIES OR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO TWENTY FOUR (24) MONTHS, THE DURATION OF THIS WARRANTY.

(Some states do not allow the limitation of the length of an implied warranty or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you.)

Other Rights

This warranty gives you specific legal rights, and you may have other rights which vary from state to state in the United States.

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

NOTES



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 33. 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 34. 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 33. Regular Service Intervals: 2010 Trike Models

ITEM SERVICED	PROCEDURE	1000 MI 1600 KM	5000 MI 8000 KM	10000 MI 16000 KM	15000 MI 24000 KM	20000 MI 32000 KM	25000 MI 40000 KM	30000 MI 48000 KM	35000 MI 56000 KM	40000 MI 64000 KM	45000 MI 72000 KM	50000 MI 80000 KM	NOTES
Engine oil and filter	Replace	X	X	X	X	X	X	X	X	X	X	X	
Oil lines and brake system	Inspect for leaks, contact or abrasion	X	X	X	X	X	X	X	X	X	X	X	1, 3
Air cleaner	Inspect, service as required	X	X	X	X	X	X	X	X	X	X	X	

Table 33. Regular Service Intervals: 2010 Trike Models

ITEM SERVICED	PROCEDURE	1000 MI 1600 KM	5000 MI 8000 KM	10000 MI 16000 KM	15000 MI 24000 KM	20000 MI 32000 KM	25000 MI 40000 KM	30000 MI 48000 KM	35000 MI 56000 KM	40000 MI 64000 KM	45000 MI 72000 KM	50000 MI 80000 KM	NOTES
Tires	Check pressure, inspect tread	X	X	X	X	X	X	X	X	X	X	X	
Primary chaincase lubricant	Replace	X		X		X		X		X		X	
Transmission lubricant	Replace	X				X				X			
Clutch	Check adjustment	X	X	X	X	X	X	X	X	X	X	X	1
Drive belt and sprocket(s)	Inspect, adjust belt	X	X	X	X	X	X	X	X	X	X	X	1
Compensator sprocket isolators	Inspect for wear					X				X			1
Brake and clutch controls	Check and lubricate	X	X	X	X	X	X	X	X	X	X	X	1
Park brake	Inspect, adjust	X	X	X	X	X	X	X	X	X	X	X	1
Fuel lines and fittings	Inspect for leaks, contact or abrasion	X	X	X	X	X	X	X	X	X	X	X	1, 3
Fuel tank filter	Replace						X					X	1
Brake fluid	Check levels and condition	X	X	X	X	X	X	X	X	X	X	X	4
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	X	X	X	X	X	

Table 33. Regular Service Intervals: 2010 Trike Models

ITEM SERVICED	PROCEDURE	1000 MI 1600 KM	5000 MI 8000 KM	10000 MI 16000 KM	15000 MI 24000 KM	20000 MI 32000 KM	25000 MI 40000 KM	30000 MI 48000 KM	35000 MI 56000 KM	40000 MI 64000 KM	45000 MI 72000 KM	50000 MI 80000 KM	NOTES
Spark plugs	Inspect	X	X	X	X		X	X	X		X	X	
	Replace					X				X			
Electrical equipment and switches	Check operation	X	X	X	X	X	X	X	X	X	X	X	
Front fork oil	Replace											X	1, 6
Steering head bearings	Lubricate	X		X		X		X		X			
	Adjust						X					X	1, 2
Hydraulic steering damper	Check for leaks, smooth damper action, mounting fastener torque	X	X	X	X	X	X	X	X	X	X	X	5
Air suspension	Check pressure, operation and leakage	X	X	X	X	X	X	X	X	X	X	X	1
Fuel door, trunk, Tour-Pak (if equipped)	Lubricate hinges and latches	X	X	X	X	X	X	X	X	X	X	X	
Critical fasteners	Check tightness	X		X		X		X		X		X	1
Battery	Check battery and clean connections												3

Table 33. Regular Service Intervals: 2010 Trike Models

ITEM SERVICED	PROCEDURE	1000 MI 1600 KM	5000 MI 8000 KM	10000 MI 16000 KM	15000 MI 24000 KM	20000 MI 32000 KM	25000 MI 40000 KM	30000 MI 48000 KM	35000 MI 56000 KM	40000 MI 64000 KM	45000 MI 72000 KM	50000 MI 80000 KM	NOTES
Exhaust system	Inspect for leaks, cracks, and loose or missing fasteners or heat shields	X	X	X	X	X	X	X	X	X	X	X	3
Road test	Verify component and system functions	X	X	X	X	X	X	X	X	X	X	X	7
NOTES:	<ol style="list-style-type: none"> 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 50,000 miles (80,000 kilometers). 3. Perform annually or at specified intervals, whichever comes first. 4. Change D.O.T. 4 hydraulic brake fluid and flush system every two years. 5. Replace or have rebuilt at 50,000 miles (80,000 kilometers). 6. Replace fork oil and inspect every 50,000 miles (80,000 kilometers). 7. Check reverse operation at each service interval (if equipped). 												

Table 34. Owner's Maintenance Records

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

SERVICE LITERATURE

Refer to Table 35. Visit any 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 35. Service Literature: 2010 Trike Models

DOCUMENT	LANGUAGE	PART NUMBER
Touring Models Service Manual	English	99483-10
Trike Service Manual Supplement	English	99601-10
Touring Models Electrical Diagnostics Manual	English	99497-10
Touring Models Service and Electrical Diagnostics Manual	French	99483-10FR
Touring Models Service and Electrical Diagnostics Manual	German	99483-10DE
Touring Models Service and Electrical Diagnostics Manual	Spanish	99483-10ES
Touring Models Service and Electrical Diagnostics Manual	Italian	99483-10IT
Trike Parts Catalog	English	99602-10

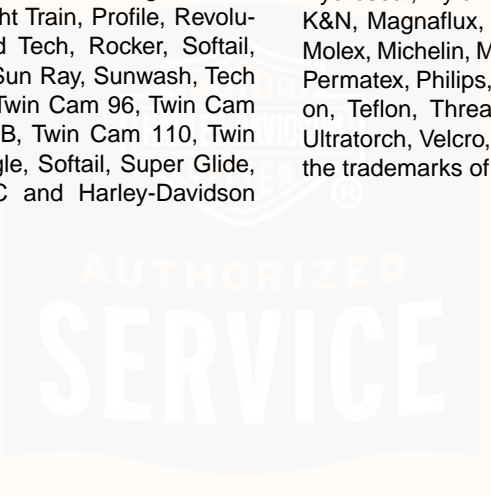
H-D MICHIGAN, INC. TRADEMARK INFORMATION

Harley, Harley-Davidson, H-D, Bar & Shield, Cross Bones, Digital Tech, Digital Technician, Digital Technician II, Dyna, Electra Glide, Evolution, Fat Bob, Fat Boy, Glaze, Gloss, H-D, H-Dnet.com, HD, Harley, Harley-Davidson, Heritage Softail, Low Rider, Night Rod, Nightster, Night Train, Profile, Revolution, Road Glide, Road King, Road Tech, Rocker, Softail, Sportster, Street Glide, Street Rod, Sun Ray, Sunwash, Tech Link, Twin Cam 88, Twin Cam 88B, Twin Cam 96, Twin Cam 96B, Twin Cam 103, Twin Cam 103B, Twin Cam 110, Twin Cam 110B, Tour-Pak, Screamin' Eagle, Softail, Super Glide, SYN3, Ultra Classic, V-Rod, VRSC and Harley-Davidson

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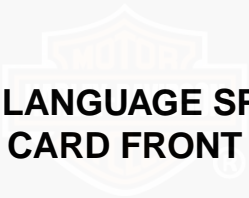
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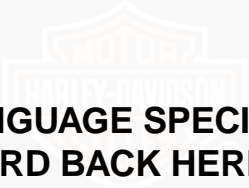
NOTES





**STRIP-IN LANGUAGE SPECIFIC
ALARM CARD FRONT HERE**

**AUTHORIZED
SERVICE**



**STRIP-IN LANGUAGE SPECIFIC
ALARM CARD BACK HERE**

**AUTHORIZED
SERVICE**

Front of label sheet goes here



Back of label sheet goes here



INSIDE BACK COVER GOES HERE



OUTSIDE BACK COVER GOES HERE

