TRIKE MODELS

2014 HARLEY-DAVIDSON® INTERNATIONAL OWNER'S MANUAL

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MOTOR
HARLEY-DAVIDSON
CYCLES
AUTHORIZED
SERVICE

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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)

NOTICE

NOTICE indicates a potentially hazardous situation which, if not avoided, may result in property damage. (00140b)

NOTE

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 of off-road usage in some areas may be illegal. Obey local laws and regulations. This manual should be considered a permanent part of the motorcycle and should remain with the motorcycle when resold.

VISIT THE HARLEY-DAVIDSON WEB SITE

http://www.harley-davidson.com

YOUR OWNER'S MANUAL

We Care About You

Welcome to the Harley-Davidson Motorcycling Family! When enjoying your Harley-Davidson motorcycle, be sure to ride safely, respectfully and within the limits of the law and your abilities. Always wear a helmet, proper eyewear and protective clothing, and insist your passenger does too. Never ride while under the influence of alcohol or drugs. Know your Harley and read 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 Riding Academy course, call 1-414-343-4056 (U.S.) or visit www.harley-davidson.com/learntoride. In the United States, for information about Motorcycle Safety Foundation rider courses, call 1-800-446-9227 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.americanmotorcyclist.com for more information.

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

CUSTOMER SERVICE ASSISTANCE

Most sales or service issues are resolved at the dealership.

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, contact the Harley-Davidson Customer Support Center. Harley-Davidson Motor Company Attention: Harley-Davidson Customer Support Center P.O. Box 653 Milwaukee, Wisconsin 53201 1-800-258-2464 (U.S. only) 1-414-343-4056

For customers outside the US, contact your local Harley-Davidson market office, call 1-414-343-4056 or visit harley-davidson.com.

Table 2. Vehicle and Personal Data

PERSONAL INFORMATION	DEALER INFORMATION
Date of Purchase:	
Name:	Name:
Address:	Address:
Address:	Address:
Vehicle Identification Number:	Sales Contact:
Key Number:	Service Contact:

NOTES

SAFE OPERATING RULES

⚠ WARNING

Three-wheeled motorcycles are different from two-wheeled motorcycles and other vehicles. They operate, steer, handle and brake differently. 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.**

(00587e)

- 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 motorcycle, read and follow the operating and maintenance instructions in this manual. Follow these basic rules for your personal safety.

- Review the TRIKE PRODUCT ORIENTATION VIDEO provided with your vehicle 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 (Page 11). Carefully read and familiarize yourself with the motorcycle safety information provided by your country or state. Read the RIDING TIPS booklet provided with your Owner's Kit (in the U.S.) and the MOTORCYCLE HANDBOOK which is made available by your state or regional traffic authority. The RIDING TIPS booklet is also available on www.msf-usa.org.
- Before starting engine, check for proper operation of brakes, clutch, shifter, throttle controls, correct fuel and oil supply.

⚠ WARNING

Harley-Davidson parts and accessories are designed for Harley-Davidson motorcycles. Using non-Harley-Davidson parts or accessories can adversely affect performance, stability or handling, which could result in death or serious injury. (00001b)

⚠ 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)

- Use only Harley-Davidson approved parts and accessories. Use of certain other manufacturer's performance parts may void your new motorcycle warranty, except where prohibited by law. See your Harley-Davidson dealer for details.

When refueling your motorcycle observe the following rules.

- Refuel in a 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 (Page 94).
- Operate motorcycle only at moderate speed and out of traffic until you have become thoroughly familiar with its operation and handling characteristics under all conditions.

NOTE

Harley-Davidson recommends that you obtain information and formal training in the correct motorcycle riding technique. In the United States, the Motorcycle Safety Foundation® offers beginning, advanced and 3-wheel basic rider safety courses. Call 800-446-9227 for information.

⚠ WARNING

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

- Do not exceed the legal speed limit or drive too fast for existing conditions. Always reduce speed when poor driving conditions exist. High speed increases the influence of any other condition affecting stability and increases the possibility of loss of control.
- 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, and always keep both hands on the handlebar grips when riding the motorcycle. The vehicle may be subject to upsetting forces such as wind blasts from passing trucks, holes in the pavement, rough road surfaces and rider control error. These forces may influence the handling characteristics of your motorcycle. If you experience these conditions, 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. 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 riding at moderate speeds.

- Operate your motorcycle defensively. Remember, a motorcycle does not afford the same protection as an automobile in an accident. One common risk for an accident occurs when another vehicle turns left in front of an on-coming motorcyclist. Operate only with headlamp on.

⚠ 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)

- 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.
- 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 (in the U.S.) or available on www.msf-usa.org.
- 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. Using the fork lock immediately after parking your motorcycle will discourage unauthorized use or theft.
- 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.
- For vehicles with a sound system, adjust the volume to a non-distracting level before operating vehicle.
- Maintain your motorcycle in proper operating condition in accordance with Table 32. Proper care and maintenance, including tire pressure, condition and tread depth plus proper adjustment to steering head bearings are important to the stability and safe operation.

⚠ 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, undamaged, and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced, improperly inflated, overloaded or damaged tires can lead to tire failure and adversely affect stability and handling, which could result in death or serious injury. (00014b)

⚠ WARNING

Replace punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the removed tire by a Harley-Davidson dealer. Speed should NOT exceed 80 km/h (50 mph) for the first 24 hours after repair, and the repaired tire should NEVER be used over 129 km/h (80 mph). Failure to follow this warning could lead to tire failure and result in death or serious injury. (00015b)

⚠ WARNING

Only install original equipment tire valves and valve caps. A valve, or valve and cap combination, that is too long or too heavy can strike adjacent components and damage the valve, causing rapid tire deflation. Rapid tire deflation can cause loss of vehicle control, which could result in death or serious injury. (00281a)

⚠ WARNING

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

- 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 label on the frame downtube.
- Refer to Table 11.

⚠ 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, damage and failure, reduced braking performance, and adversely affect stability and handling, which could result in death or serious injury. (00018c)

⚠ WARNING

Contact with DOT 4 brake fluid can have serious health effects. Failure to wear proper skin and eye protection could result in death or serious injury.

- **If inhaled: Keep calm, remove to fresh air, seek medical attention.**
- **If on skin: Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation develops, seek medical attention.**
- **If in eyes: Wash affected eyes for at least 15 minutes under running water with eye lids held open. If irritation develops, seek medical attention.**
- **If swallowed: Rinse mouth and then drink plenty of water. Do not induce vomiting. Contact Poison Control. Immediate medical attention required.**
- **See Safety Data Sheet (SDS) for more details available at sds.harley-davidson.com**

(00240e)

⚠ 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)

- Make 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 30.5 m (100 ft) 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 STOP to GO) 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 ACCESSORIES AND CARGO section within the SAFETY FIRST section in your owner's manual. Improper cargo loading or accessory installation can cause component failure and adversely affect stability, handling and performance, which could result in death or serious injury. (00021c)

⚠ WARNING

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

- 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 label on the frame downtube.
- Refer to Table 11.

⚠ WARNING

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

Accessories 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 and keep both hands on the handlebar grips at all times when riding the motorcycle. The vehicle may be subject to upsetting forces such as wind blasts from passing trucks, holes in the pavement, rough road surfaces and rider control error. 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.
- Do not exceed maximum specified load in Tour-Pak or trunk.
- Luggage racks are designed for lightweight items. Do not overload racks.
- Make 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, backrests and luggage racks can have an adverse affect on stability and handling.
- Only properly installed Genuine Harley-Davidson accessories designed specifically for your motorcycle model should be used.
- Pay particular attention to the weights of accessories, cargo, riding gear, passenger and rider and how the sum total of all these weights affect the loading capacity of your motorcycle.

⚠ WARNING

Harley-Davidson parts and accessories are designed for Harley-Davidson motorcycles. Using non-Harley-Davidson parts or accessories can adversely affect performance, stability or handling, which could result in death or serious injury. (00001b)

NOISE CONTROL SYSTEM

Tampering

Removal or replacement of any noise control system component may be prohibited by law. This prohibition includes modifications made 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.

LABELS

See Figure 1 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 3.

NOTE

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

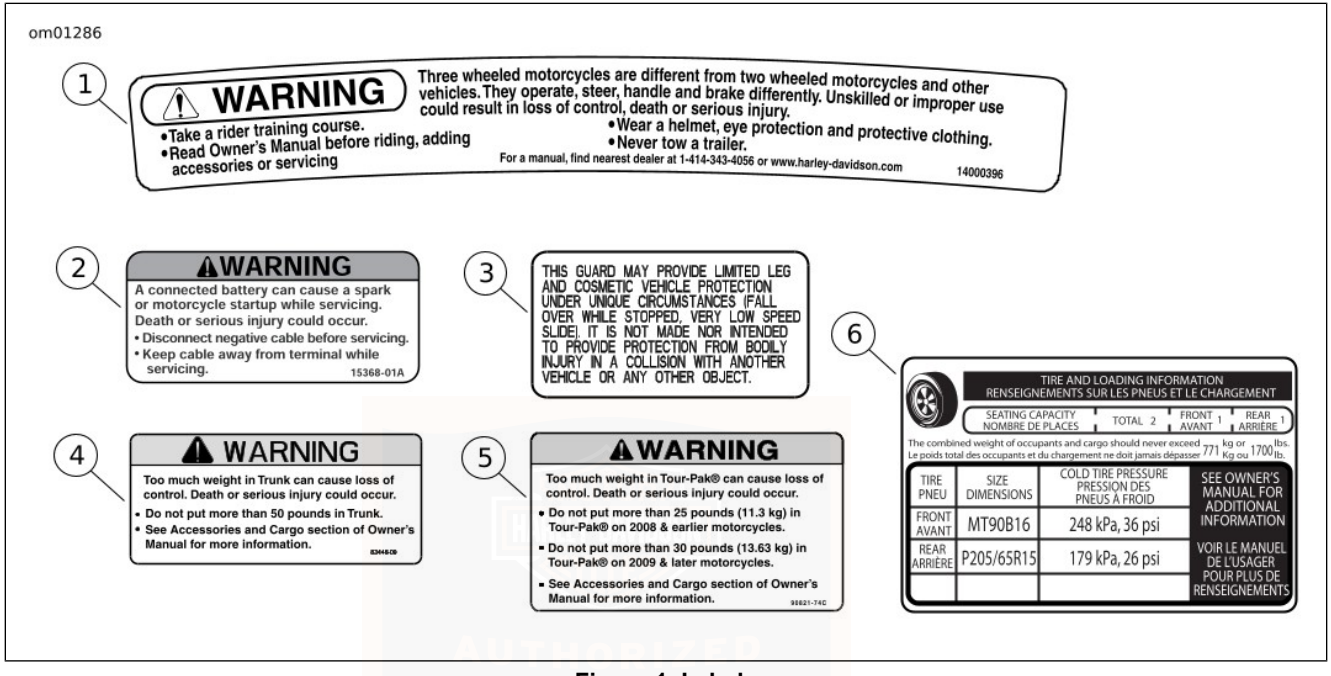


Figure 1. Labels

Table 3. Labels

ITEM	PART NO.	DESCRIPTION	LOCATION	TEXT
1	14000396	General warnings	Top of air cleaner cover	WARNING: Three wheeled motorcycles are different from two wheeled motorcycles and other vehicles. They operate, steer, handle and brake differently. 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 1-414-343-4056 or www .harley-davidson.com
2	15368-01A	Battery warning	Under seat, behind fuel tank on main harness trough	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.
3	14148-86	Engine guard label	On front of engine guard below center mount	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.

Table 3. Labels

ITEM	PART NO.	DESCRIPTION	LOCATION	TEXT
4	83446-09	Trunk load limits	Inside trunk door	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.
5	90821-74C	Tour-Pak load limits	Inside Tour-Pak lid	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 and earlier motorcycles. • Do not put more than 30 pounds (13.6 kg) in Tour-Pak® on 2009 and later motorcycles. • See Accessories and Cargo section of Owner's Manual for more information.
6	83563-10	Tire label	Under right side cover	TIRE AND LOADING INFORMATION SEATING CAPACITY, TOTAL 2, FRONT 1, REAR 1 The combined weight of occupants and cargo should never exceed weight specifications. See OWNER MANUAL > SPECIFICATIONS (Page 23) for tire data and maximum weight allowed.

NOTES

VEHICLE IDENTIFICATION NUMBER (VIN)

General

See Figure 3. A unique 17-digit serial or Vehicle Identification Number (VIN) is assigned to each motorcycle. For a description of each item in the VIN, refer to Table 4.

Location

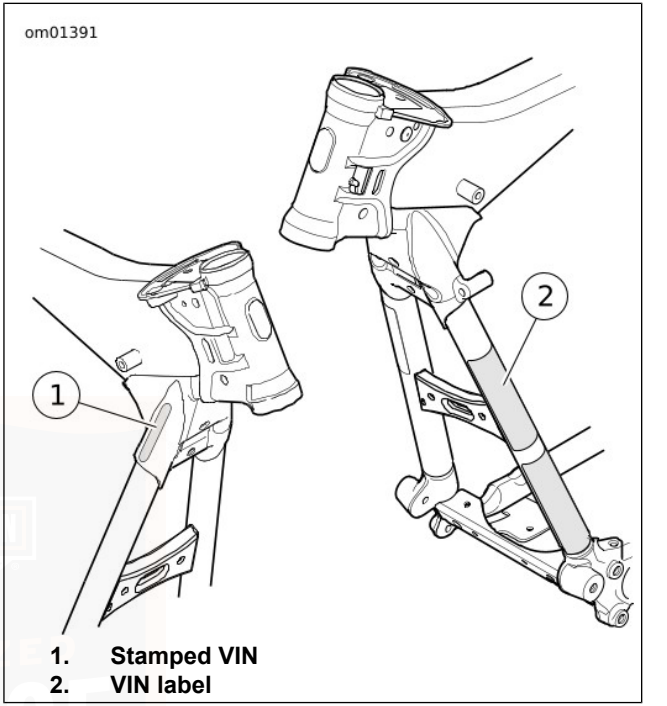
See Figure 2. The full 17-digit VIN (1) is stamped on the right side of the frame near the steering head. In some destinations, a printed VIN label (2) is also attached to the front downtube.

Abbreviated VIN

An abbreviated VIN 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.



1. Stamped VIN
2. VIN label

Figure 2. VIN Locations

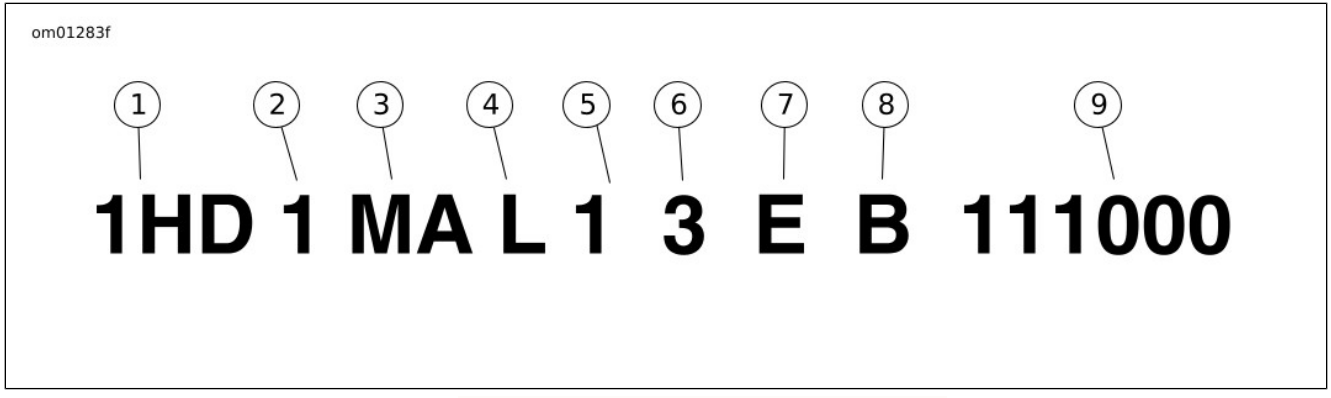


Figure 3. Typical Harley-Davidson VIN: 2014 Trike Models

Table 4. Harley-Davidson VIN Breakdown: 2014 Trike Models

POSITION	DESCRIPTION	POSSIBLE VALUES
1	World manufacturer identifier	1HD=Originally manufactured for sale **within** the United States 5HD=Originally manufactured for sale **outside** of the United States
2	Motorcycle type	1=Heavyweight motorcycle (901 cm^3 or larger)
3	Model	MA=FLHTCUTG Tri Glide™ Ultra
4	Engine type	L=Twin-Cooled™ 1690 cm^3 High Output Twin Cam 103™, fuel-injected

Table 4. Harley-Davidson VIN Breakdown: 2014 Trike Models

POSITION	DESCRIPTION	POSSIBLE VALUES	
5	Calibration/configuration, introduction	**Normal Introduction** 1=Domestic (DOM) 3=California (CAL) A=Canada (CAN) C=HDI E=Japan (JPN)	**Mid-year or Special Introduction** 2, 4=Domestic (DOM) 5, 6=California (CAL) B=Canada (CAN) D=HDI F=Japan (JPN)
6	VIN check digit	Can be 0-9 or X	
7	Model year	E=2014	
8	Assembly plant	B=York, PA U.S.A.	
9	Sequential number	Varies	

NOTES

SPECIFICATIONS

Table 5. Engine: Twin-Cooled High Output Twin Cam 103

ITEM	SPECIFICATION	
Number of cylinders	2	
Type	4-cycle, 45 degree V-Type, Twin-Cooled™	
Compression ratio	10.0:1	
Bore	3.875 in	98.42 mm
Stroke	4.38 in	111.3 mm
Displacement	103.0 in^3	1690 cm^3
Lubrication system	Pressurized, dry sump	
Cooling system	Liquid-cooled cylinder heads with lower fairing-mounted radiators, electric pump and thermostat	

Table 6. Electrical

COMPONENT	SPECIFICATION
Ignition timing	Not adjustable
Battery	12 volt, 28 amp-hr, 405 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

Table 6. Electrical

COMPONENT	SPECIFICATION	
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 7. Transmission

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 8. Sprocket Teeth

DRIVE	ITEM	NUMBER OF TEETH
Primary	Engine	34
	Clutch	46
Final	Transmission	30
	Rear wheel	70

Table 9. Overall Drive Ratios

GEAR	RATIO
1st Gear	10.534
2nd Gear	7.302
3rd Gear	5.423
4th Gear	4.392
5th Gear	3.741
6th Gear	3.157

Table 10. Capacities

ITEM	U.S.	L
Fuel tank (total)	6.0 gal	22.7
Low fuel warning light on (approximate)	1.0 gal	3.8
Engine oil with filter * (approximate)	4.0 qt	3.8
Transmission ** (approximate)	1.00 qt	0.95
Primary chaincase (approximate)	1.4 qt	1.3
Coolant, Twin-Cooled models (approximate)	1.1 qt	1.0
* When refilling, initially add 2.84 L (3.0 qt) and add as needed to bring level within specification. ** When refilling, initially add 0.83 L (28 fl oz) and add as needed to bring level within specification.		

⚠ WARNING

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

- 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 label on the frame downtube.

NOTE

The maximum additional weight allowed on the motorcycle equals the Gross Vehicle Weight Rating (GVWR) minus the running weight. For example, a motorcycle with GVWR of 544 kg (1,200 lb) having a running weight of 363 kg (800 lb), would allow a maximum of an additional 181 kg (400 lb) combined weight of the rider, passenger, riding gear, cargo and installed accessories.

Table 11. Weights

ITEM	LB	KG
Running weight*	1215	551
Maximum added weight allowed**	485	220
GVWR	1700	771
GAWR front	500	227
GAWR rear	1200	544
* The total weight of the motorcycle as delivered with all oil/fluids and approximately 90% of fuel. ** The total weight of accessories, cargo, riding gear, passenger and rider must not exceed this weight.		

Table 12. Dimensions

ITEM	IN	MM
Length	105.1	2670
Overall Width	54.7	1390
Overall Height	56.3	1430
Wheelbase	65.7	1670
Ground clearance	4.5	115
Saddle height*	27.1	688
*With 81.7 kg (180 lb) rider on seat.		

Table 13. Bulb Chart

LAMP (ALL LAMPS 12 VOLT)	BULBS REQUIRED	HARLEY-DAVIDSON PART NUMBER
Headlamp: DOM, JPN *	LED	67700066
Headlamp: HDI *	LED	67700077
Tail/stop/rear turn signal lamp: DOM	2	68167-04
Tail/stop/rear turn signal lamp: HDI, JPN *	LED	See parts catalog
Front turn signal lamp: DOM	2	68168-89A
Front turn signal lamp: HDI, JPN *	LED	See parts catalog
Tour-Pak lamps *	LED	See parts catalog
Fender tip lamp, front (if equipped) *	LED	See parts catalog
Auxiliary/fog lamps *	LED	See parts catalog
License plate lamp	2 - 4	52441-95
Tour-Pak side lamps: DOM *	LED	See parts catalog.

Table 13. Bulb Chart

LAMP (ALL LAMPS 12 VOLT)	BULBS REQUIRED	HARLEY-DAVIDSON PART NUMBER
High beam, Oil pressure, Neutral, Reverse, Parking brake and Turn signal indicator lamps *	Incorporated in instrument panel. Replace assembly upon failure.	
Instrument and gauge illumination *	Incorporated in instruments. Replace assembly upon failure.	
Items with *	Illuminated with LEDs. Replace assembly upon failure.	

Table 14. Specified Tires

MOUNT	SIZE	SPECIFIED TIRE	PRESSURE (COLD)	
			PSI	kPa
Front	16 in.	Dunlop D402F MT90B16 72H	36	248
Rear	15 in.	Dunlop P205/65 R15 92T	26	179

TIRE DATA

⚠ WARNING

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

⚠ WARNING

Only install original equipment tire valves and valve caps. A valve, or valve and cap combination, that is too long or too heavy can strike adjacent components and damage the valve, causing rapid tire deflation. Rapid tire deflation can cause loss of vehicle control, which could result in death or serious injury. (00281a)

⚠ WARNING

Harley-Davidson recommends the use of its specified tires. Harley-Davidson vehicles are not designed for operation with non-specified tires, including snow, moped and other special-use tires. Use of non-specified tires can adversely affect stability, handling or braking and lead to loss of vehicle control, which could result in death or serious injury. (00024d)

Refer to Table 14 for specified tires and recommended pressures.

Tubeless tires are used on all Harley-Davidson cast and disc wheels.

⚠ 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

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

Always maintain proper tire pressure as specified in Table 14. Do not load tires beyond the GAWR specified in Table 11. Under inflated, over inflated, or over loaded tires can fail.

Harley-Davidson does not perform any testing with only nitrogen in tires. Harley-Davidson neither recommends nor discourages the use of pure nitrogen to inflate tires.

⚠ WARNING

Do not use liquid tire balancers or sealants in aluminum wheels. Using liquid tire balancers or sealants can cause rapid corrosion of the rim surface, which could cause tire deflation. Tire deflation can cause loss of vehicle control, which could result in death or serious injury. (00631b)

⚠ WARNING

Replace tire immediately with a Harley-Davidson specified tire when wear bars become visible or only 1 mm (1/32 in) tread depth remains. Riding with a worn tire could result in death or serious injury. (00090c)

Harley-Davidson tires are equipped with wear bars that run horizontally across the tread. When a tire is worn to the point the tread wear indicator bars become visible on the tread surfaces, or 0.8 mm (1/32 in) tread depth remains, the tires can:

- Be more easily damaged leading to tire failure
- Provide reduced traction
- Adversely affect stability and handling

India Tire Compliance Statement: Harley-Davidson Motor Company declares that the tires listed in the specifications section meet the Indian Standard 15627 requirement of the Bureau of Indian Standards (as amended from time to time) required for registration of vehicles assembled in India. These tires also comply with the Central Motor Vehicle Rules requirements, 1989.

FUEL

Always use a good quality unleaded gasoline. Octane ratings are usually found on the pump. Refer to Table 15.

⚠ WARNING

Avoid spills. Slowly open fuel 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. (00028b)

⚠ 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. This can cause air entrapment and pressurization.

Table 15. Octane Ratings

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

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.

NOTICE

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

- Gasoline/METHYL TERTIARY BUTYL ETHER (MTBE) blends are a mixture of gasoline and as much as 15 percent MTBE. Gasoline/MTBE blends use in your motorcycle is approved.
- ETHANOL fuel is a mixture of ethanol (grain alcohol) and unleaded gasoline and can have an impact on fuel mileage. Fuels with an ethanol content of up to 10 percent may be used in your motorcycle without affecting vehicle performance. U.S. EPA regulations currently indicate that fuels with 15 percent ethanol (E15) are restricted from use in motorcycles at the time of this publication. Some motorcycles are calibrated to operate with higher ethanol concentrations to meet the fuel standards in certain countries.
- REFORMULATED OR OXYGENATED GASOLINES (RFG) describes gasoline blends that are specifically designed to burn cleaner than other types of gasoline. This results in fewer tailpipe emissions. They are also formulated to evaporate less when filling the tank. Reformulated gasolines use additives to oxygenate the gas. Your motorcycle will run normally using this type of fuel. Harley-Davidson recommends using it whenever possible as an aid to cleaner air in our environment.
- Do not use racing fuel or fuel containing methanol. Use of these fuels will damage the fuel system.
- Using fuel additives other than those approved for use by Harley-Davidson may damage the engine, fuel system and other components.

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

CATALYTIC CONVERTER

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

NOTICE

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)

NOTICE

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

GENERAL: CONTROLS AND INDICATORS

⚠ WARNING

Identify and understand the specific features of your vehicle. Failure to understand how these features affect the vehicle's operation can lead to an accident, which could result in death or serious injury. (00043b)

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 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 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)

NOTICE

Protect your vehicle against theft. Failure to lock the motorcycle after parking could result in theft and/or equipment damage. (00151b)

NOTICE

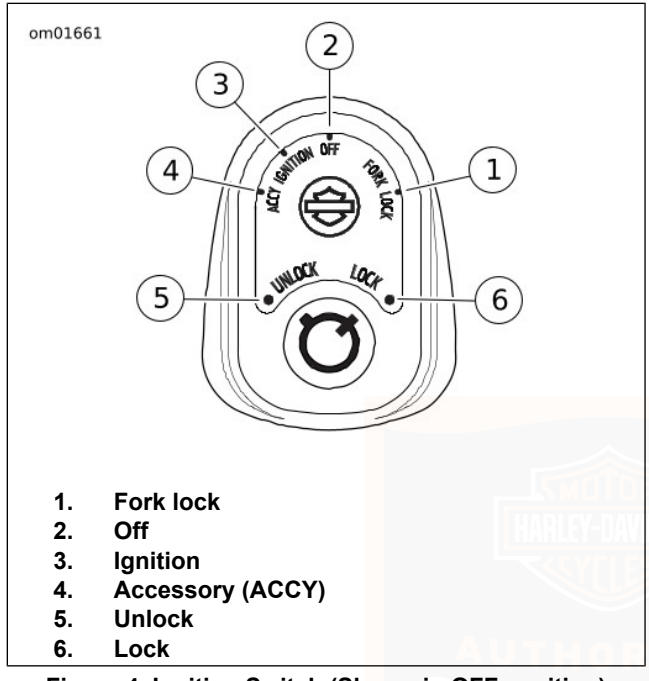
Do not lubricate barrel locks with petroleum based lubricants or graphite. Inoperative locks may result. (00152a)

NOTE

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

FUNCTION	LABEL	OPERATION
Key Lock	LOCK	Locks the switch in either the FORK LOCK or ACCESSORY 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 (Page 33) 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.
	ACCESSORY	When the switch is in the ACCESSORY position, the instrument lamps and accessories will operate but the engine can not be started. Brake lamp and horn can be activated. In ACCESSORY, the switch can be locked.



1. **Fork lock**
2. **Off**
3. **Ignition**
4. **Accessory (ACCY)**
5. **Unlock**
6. **Lock**

Figure 4. Ignition Switch (Shown in OFF position)

FORK LOCK

NOTICE

Protect your vehicle against theft. Failure to lock the motorcycle after parking could result in theft and/or equipment damage. (00151b)

⚠ 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.

INSTRUMENTS

Speedometer

⚠ WARNING

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

See Figure 5. The speedometer registers vehicle speed in miles per hour (U.S.) or kilometers per hour (international) of forward speed.

Instrument backlighting activates after a slight delay. The backlighting may briefly change when ambient lighting changes (such as going through a tunnel).

Tachometer

NOTICE

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

See Figure 5. The tachometer measures the engine speed in revolutions per minute (rpm x 100).

Fuel Gauge

See Figure 5. The fuel gauge is located in the instrument panel. The fuel gauge indicates the approximate amount of fuel in the fuel tank.

Voltmeter

See Figure 5. The voltmeter indicates electrical system voltage and is on the fairing front panel. With the engine running above 1500 rpm, the voltmeter should register 13.0-14.5 volts with battery at full charge.

Vehicle Information

Additional vehicle information can be displayed within the infotainment system by pressing the vehicle information switch. See CONTROLS AND INDICATORS > HAND CONTROLS (Page 43).

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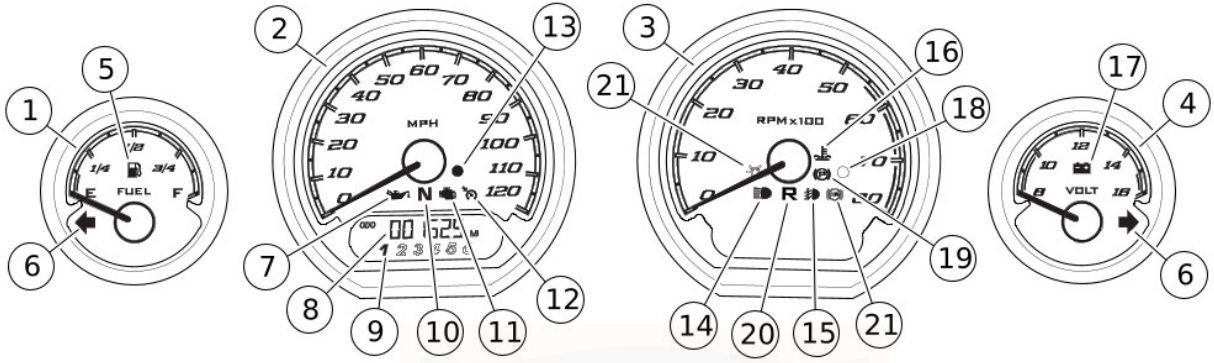

1. **Fuel gauge**
2. **Speedometer**
3. **Tachometer**
4. **Voltmeter**
5. **Low fuel lamp**
6. **Turn signal indicator lamp**
7. **Oil pressure lamp**
8. **Odometer window**
9. **Gear indicator**
10. **Neutral lamp**
11. **Check engine lamp**
12. **Cruise control lamp**
13. **Electrical system lamp (security system)**
14. **Headlamp high beam lamp**
15. **Auxiliary/fog lamp indicator lamp (Domestic, Japan)**
16. **Engine coolant temperature lamp**
17. **Battery discharge lamp**
18. **Light sensor (not an indicator)**
19. **Parking brake lamp**
20. **Reverse lamp**
21. **Not used on these models**

Figure 5. Instruments (typical)

INDICATOR LAMPS

NOTE

Some indicator lamps may not be on all models.

Check Engine Lamp

See Figure 5. The check engine lamp indicates the condition of the engine/engine management system.

The check engine lamp normally comes on when the ignition is first turned on and remains on for approximately 4 seconds. During this time, 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

Solid: See Figure 5. The low fuel warning lamp indicates when the gasoline in the tank reaches the low fuel level (approximate). Refer to Table 10 for the low fuel level. See CONTROLS AND INDICATORS > ODOMETER FUNCTIONS (Page 40) for fuel range features.

Flashing: If the low fuel lamp flashes continuously or remains on after filling the fuel tank, see a Harley-Davidson dealer.

Battery Discharge Lamp

See Figure 5. The battery discharge lamp indicates overcharging or undercharging of the battery. Refer to MAINTENANCE AND LUBRICATION > BATTERY MAINTENANCE (Page 152).

Electrical System Lamp

See Figure 5. The electrical system lamp displays the status of the security system and electrical self-diagnostics for the motorcycle. Refer to SECURITY SYSTEM > SECURITY SYSTEM (Page 79) for security system operation.

Flashing: The security system is armed.

Solid (security system armed): The alarm has been activated.

Solid (security system disarmed): If lamp remains on, see a Harley-Davidson dealer.

Turn Signal Indicator Lamps

Flashing: A turn signal is activated. When the 4-way hazard flashers are operating, both turn indicators flash simultaneously.

Rapid flashing: A turn signal bulb is not operating. Exercise caution and use hand signals. Replace inoperative components at earliest opportunity.

Headlamp High Beam Lamp

See Figure 5. The headlamp high beam lamp is on when the high beam or flash to pass switch is activated.

Neutral Lamp

See Figure 5. The neutral lamp is on when the transmission is in neutral and reverse is not enabled. The neutral lamp turns off when the reverse lamp turns on.

Cruise Control Lamp

Off: Cruise control is not enabled and reverse is not enabled. The neutral .

Orange: Cruise control is enabled. Cruising speed is not set or has been disengaged.

Green: Cruising speed is set.

Auxiliary/Fog Lamp Indicator Lamp (Domestic)

The auxiliary/fog lamp indicator is on when the auxiliary/fog lamps are turned on.

Gear Indicator

See Figure 5. On equipped models, the currently selected gear (1-6) is displayed in the odometer window. The gear indicator is calculated from the vehicle speed and engine speed. The gear indicator remains blank when the transmission is in neutral, the clutch lever is pulled in or the vehicle is not moving.

The gear indicator may be momentarily inaccurate depending on rider clutch use characteristics and clutch wear. This can occur if the clutch is allowed to slip either due to excessive wear, misadjusted clutch or if the operator rides the clutch.

Reverse Lamp

See Figure 5. The reverse lamp indicates that reverse is enabled. See CONTROLS AND INDICATORS > REVERSE OPERATION (Page 50) for reverse operation.

Parking Brake Lamp

See Figure 5. The parking brake indicator lamp turns on when the parking brake is applied. See CONTROLS AND INDICATORS > PARKING BRAKE (Page 63) for parking brake operation.

Engine Coolant Temperature Lamp

NOTICE

If the engine coolant temperature indicator lamp remains lit, always check the coolant level. If the coolant level 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. (00158a)

⚠ WARNING

Do not loosen or remove pressure cap when cooling system is hot. The cooling system is under pressure and hot coolant and steam can escape from pressure cap, which could cause severe burns. Allow motorcycle to cool before servicing the cooling system. (00091c)

On Twin-Cooled vehicles, the engine coolant temperature lamp is on when the coolant has exceeded threshold temperature.

Check and add coolant as necessary. See MAINTENANCE AND LUBRICATION > COOLING SYSTEM (Page 117). For other possible coolant system issues, see TROUBLESHOOTING > COOLING SYSTEM: TWIN-COOLED MODELS (Page 192).

If coolant level is sufficient and the lamp remains on, stop the engine immediately and see a Harley-Davidson dealer for service.

Oil Pressure Lamp

NOTICE

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)

See Figure 5. The oil pressure lamp turns on when the ignition is turned on. The lamp remains on until the engine is started.

If the lamp is on while the engine is running, sufficient oil is not circulating through the engine.

Check and add engine oil as necessary. See MAINTENANCE AND LUBRICATION > CHECKING OIL LEVEL (Page 105). For other possible causes, see TROUBLESHOOTING > ENGINE (Page 189).

If the engine oil level is sufficient and the lamp remains on, stop the engine immediately and see a Harley-Davidson dealer for service.

ODOMETER FUNCTIONS

NOTICE

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

Odometer

The odometer shows the total accumulated mileage for the motorcycle. Press the trigger switch to cycle through different odometer functions. The odometer can be displayed while the motorcycle is turned off by pressing the trigger switch.

Changing units: Motorcycles equipped with the BOOM! BOX INFOTAINMENT SYSTEM use the setup function in the radio to change the odometer units to ENGLISH or METRIC. See BOOM! BOX OWNER'S MANUAL. All odometer functions will display the selected units.

Trip Odometers

The two trip odometers (A and B) display the total accumulated mileage since they were last reset. To check, press and release the trigger switch until the desired trip odometer (A or B) is displayed.

Reset: With the desired trip odometer displayed (A or B), press and hold the trigger switch until the selected trip odometer resets to zero.

Fuel Range

The fuel range display shows the approximate mileage available with the amount of fuel left in the fuel tank. The range display is only updated when the vehicle is moving.

Display Fuel Range: With the ignition switch in the ACCESSORY or IGNITION position, press the trigger switch until fuel range is displayed. The fuel range is indicated by the letter "R" in the left side of the display. The calculated remaining distance (miles or kilometers) to empty is displayed, based on the amount of fuel in the tank.

Low Fuel: Refer to Table 10. The fuel range is automatically displayed in the odometer window when the low fuel lamp is on. When the fuel range drops to 10 miles or 10 kilometers remaining, the odometer window displays "LO RNG" to indicate that the motorcycle is nearly out of fuel. Refuel as soon as possible.

Turn Off Automatic Low Fuel Popup: With the fuel range displayed, hold the trigger switch until the fuel range flashes two times. To turn this feature back on, hold the trigger switch until the fuel range flashes once.

Reset: Resetting the low fuel warning lamp and fuel range requires sufficient fuel in the tank and an ignition cycle change (IGNITION-OFF-IGNITION).

Adding at least 7.5 L (2 USgal) of fuel allows the fuel range to update. The fuel range slowly updates over the next 50 km (30 mi) after refueling.

Battery Reconnection and Initialization: If the battery is disconnected and reconnected, the gauge requires approximately a half tank of fuel to initialize fuel range functionality.

Tip Indicator

⚠ 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)

See Figure 7. If the motorcycle is tipped over, the word "tiP" appears in the odometer window. The engine will not start until the tip condition is reset.

Reset: Bring the motorcycle to the upright position. Turn ignition switch OFF. Turn ignition switch ON.

No Fob Message

If the motorcycle has a security system and is driven off leaving the fob behind, 'NO FOB' temporarily displays in the odometer window.

With the motorcycle separated from its assigned fob, the motorcycle can only be started with a manual PIN entry to disarm the security system. See SECURITY SYSTEM > ARMING AND DISARMING (Page 84).

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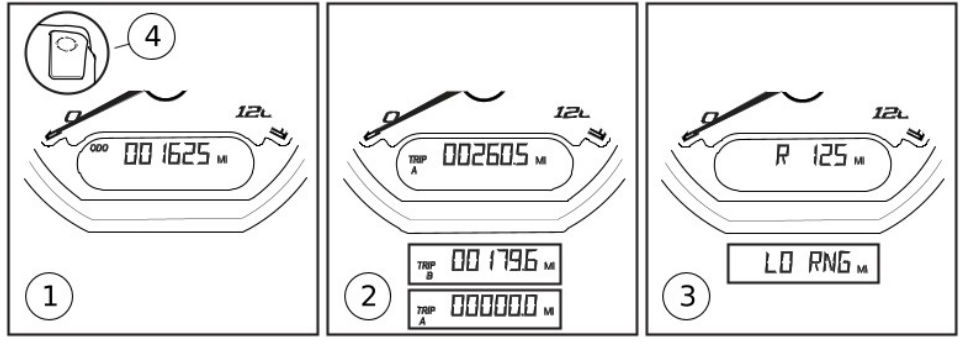


1. **Odometer**
2. **Trip odometers (A, B, reset)**
3. **Fuel range (low fuel range)**
4. **Trigger switch (left hand control)**

Figure 6. Odometer Functions

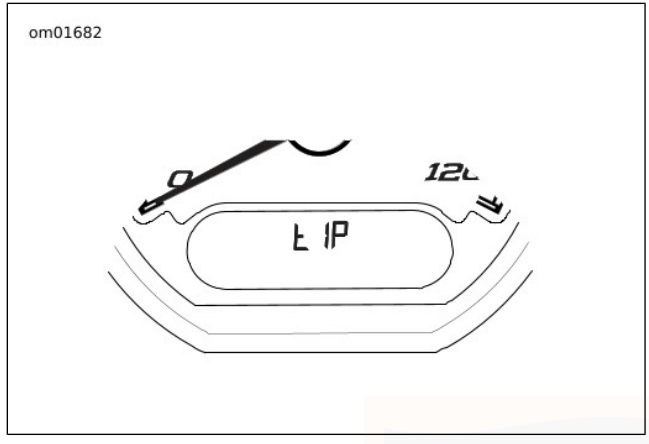


Figure 7. Tip Indicator

HAND CONTROLS

Engine OFF/RUN Switch

See Figure 8. The engine OFF/RUN switch turns the engine power ON or OFF. The switch is located in the right hand controls.

OFF: Press the top of the OFF/RUN switch to turn off the engine. After shutting off the engine, turn the ignition switch OFF to completely turn off the motorcycle.

RUN: Press the bottom of the OFF/RUN switch to turn on ignition power before starting the motorcycle.

Engine Start/Hazard Warning Switch

See Figure 8. The engine start/hazard warning switch is located in the right hand controls.

START: Pressing the bottom of the switch operates the starter motor. See OPERATION > STARTING THE ENGINE (Page 96).

1. See Figure 4. Turn ignition switch to IGNITION.
2. Press the engine OFF/RUN switch to the RUN position. Put the transmission in neutral (neutral indicator lamp lit).
3. Press the START switch to operate starter motor (with security system fob present).

NOTE

- *The START switch does not attempt to start the engine when the vehicle is in gear, the clutch is engaged and the front or rear brake is not applied.*
- *If the engine does not start, the starter motor will operate for five seconds and then stop. Release and press the START switch. After several unsuccessful start attempts, see TROUBLESHOOTING > ENGINE (Page 189). See an authorized Harley-Davidson dealer for service.*

Hazard Warning: Pressing the top of the switch (triangle symbol) operates the four-way flashers. This system allows a stranded motorcycle to be left in the four-way flashing mode and secured until help is found.

1. With the ignition switch in the IGNITION or ACCESSORY position, press the hazard warning switch (triangle) to activate the four-way flashers.
2. Turn ignition switch OFF (with security system fob present). Lock the ignition switch. The four-way flashers continue flashing for two hours or until the rider cancels operation. The security system will arm (on equipped vehicles).
3. To cancel, turn the ignition switch to IGNITION or ACCESSORY (with security system fob present). Press the hazard warning switch (triangle) to cancel the flashers.

Horn Switch

See Figure 8. The horn is operated by pushing the HORN switch located in the left hand controls. The horn can be activated for up to 10 seconds at a time. If the HORN switch is held for a longer period, the horn will automatically deactivate.

Headlamp Dimmer Switch

See Figure 8. The headlamp dimmer switch is located in the left hand controls. The switch has three positions.

High beam: Press the top of the switch to activate the high beam. The high beam indicator shows when the high beam is turned on.

Low beam: Press the lower portion of the switch to activate the low beam.

Flash to pass: Press and hold the bottom of the switch to flash the high beam lamp. When in accessory mode, press the flash to pass switch to activate the headlamp.

Turn Signal Switches

See Figure 8. The turn signal switches are in the left and right hand controls.

Activating: Press and release the left or right turn signal switch to activate the turn signal lamps. The lamps flash until they are automatically canceled or manually canceled by the rider.

Automatic canceling: The turn signal lamps automatically cancel when a full turn has been detected. The lamps also cancel if the turn signal has been activated for a prolonged period while riding. The lamps will not cancel while the motorcycle remains stopped or at a very low speed.

Manual canceling: To cancel the turn signal, press and release the turn signal switch a second time. To activate the opposite turn signal, press and release the turn signal switch

for the new direction. The first turn signal cancels and the opposite turn signal lamps begin flashing.

NOTE

- *If a turn signal indicator flashes rapidly, a turn signal bulb is not operating. Be cautious and use hand signals. Replace inoperative components at earliest opportunity.*
- *Front turn signal lamps also function as running lamps on some vehicles.*

Cruise Control Switch

See Figure 8. The CRUISE/SET/RESUME switch automatically regulates the speed of the vehicle. See CONTROLS AND INDICATORS > CRUISE CONTROL (Page 52) for detailed operation.

CRUISE: Press the CRUISE switch straight in to enable cruise control. The cruise control indicator lights orange. Pressing the CRUISE switch again turns off cruise control.

SET/-: With cruise control enabled, press SET/- to set the cruising speed. The cruise control indicator lights green. While at cruising speed, press SET/- to decrease the regulated speed.

RESUME/+: If cruise control is disengaged (such as a braking event), press RESUME/+ to resume the previous cruising speed. While at cruising speed, press RESUME/+ to increase speed.

Push-To-Talk (PTT)/Squelch Switch (If Equipped)

See Figure 8. The Push-To-Talk (PTT)/Squelch (SQ+/SQ-) switch is used to operate the CB radio or rider/passenger intercom on equipped vehicles. See the BOOM! BOX OWNER'S MANUAL for complete instructions.

PTT: With the CB or intercom turned on and headset connected, press and hold the PTT switch to transmit over the CB or through the intercom. Release the PTT switch to end transmission.

SQ+/SQ-: The CB audio remains muted until a CB signal stronger than the squelch level is received. Press SQ- to decrease the squelch threshold (allowing more signals and noise). Press SQ+ to raise the squelch threshold (allowing only stronger signals).

Voice Command Switch

See Figure 8. The voice command switch activates the voice recognition features on equipped vehicles. With a headset connected, press the voice command switch. The radio shows a list of available commands. Speak the desired command into the headset microphone. See the BOOM! BOX OWNER'S MANUAL.

Vehicle Information Switch

See Figure 8. On equipped vehicles, press the vehicle information switch to display the following items on the radio screen when the radio is turned on. See the BOOM! BOX OWNER'S MANUAL.

Air Temperature: Displays the measured ambient air temperature.

Engine Oil Pressure: Displays the engine oil pressure. Engine oil pressure will normally vary from 34 kPa (5 psi) at idle speed to 207–262 kPa (30–38 psi) at 2000 rpm when engine is at normal operating temperature of 110 °C (230 °F).

EITMS: Displays the status of the Engine Idle Temperature Management System (EITMS). The status may be ACTIVE, ENABLED or DISABLED. See OPERATION > ENGINE IDLE TEMPERATURE MANAGEMENT SYSTEM (Page 98).

HOME/VOLUME/SEEK Switch

See Figure 8. The HOME/VOLUME/SEEK five-way switch operates radio features on equipped vehicles. See the BOOM! BOX OWNER'S MANUAL.

HOME: Press the HOME switch straight in to transition to the HOME screen on the radio.

VOLUME: Press the switch up to increase volume or down to decrease volume.

SEEK: Press the switch to the left or right to seek up/down for a radio station or to select the previous/next media file.

CURSOR/SELECT Switch

See Figure 8. The CURSOR/SELECT five-way switch operates radio features on equipped vehicles. See the BOOM! BOX OWNER'S MANUAL.

SELECT: Press the SELECT switch straight in to select or toggle a feature on the radio screen.

CURSOR: Press the switch in the desired direction to move the cursor or selection on the radio screen.

Trigger Switch

See Figure 8. The trigger switch is on the front of the left hand controls.

Vehicle off: Press the trigger switch display the accumulated mileage in the odometer.

Vehicle in accessory/ignition mode: Press the trigger switch to cycle through the odometer functions. See CONTROLS AND INDICATORS > ODOMETER FUNCTIONS (Page 40).

Front Brake 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 8. The front brake lever is on the right handlebar and is operated with the fingers of the right hand. Squeeze the brake lever to actuate the front brakes. See CONTROLS AND INDICATORS > BRAKE SYSTEM (Page 63).

Throttle Control Grip

See Figure 8. The throttle control grip is on the right handlebar and is operated with the right hand.

Decelerate: Slowly turn throttle control grip clockwise (toward front of motorcycle) to close the throttle.

Accelerate: Slowly turn throttle control grip counterclockwise (toward rear of motorcycle) to open the throttle.

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 8. The clutch hand lever is on the left handlebar and is operated with the fingers of the left hand.

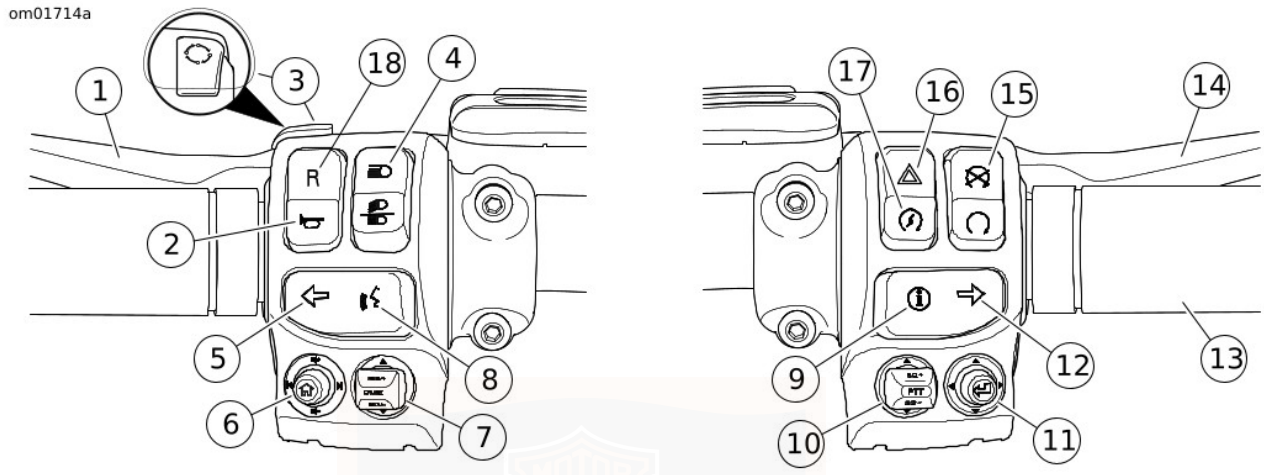
1. Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch.
2. Shift to first gear using the gear shifter lever. See CONTROLS AND INDICATORS > GEAR SHIFT LEVER (Page 61).
3. Slowly release the clutch hand lever to engage clutch.

The vehicle can be started in any gear as long as the clutch lever is pulled in and the front or rear brake is applied. If the clutch is not disengaged and the front or rear brake is not applied, the vehicle will not start when in gear.

Reverse Control Switches

See Figure 8. The reverse control switch operates the electric reverse motor. The reverse enable indicator is lit when reverse operation is enabled.

See CONTROLS AND INDICATORS > REVERSE OPERATION (Page 50) for detailed operation.



1. Clutch hand lever
2. Horn switch
3. Trigger switch
4. Headlamp dimmer switch
5. Left turn signal switch
6. Home/volume/seek switch
7. Cruise control switch
8. Voice command switch
9. Vehicle information switch
10. Push-to-talk/squelch switch (if equipped)
11. Cursor/select switch
12. Right turn signal switch
13. Throttle control grip
14. Front brake lever
15. Engine off/run switch
16. Hazard warning switch
17. Engine start switch
18. Reverse switch

Figure 8. Hand Controls

REVERSE OPERATION

The vehicle has an electric reverse motor. The reverse motor 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.

Light application of the brakes during reverse, backing into something then trying to pull away, or backing up a steep incline and then allowing the vehicle to coast the other direction may cause the reverse drive to not disengage. If this occurs, a loud whine will be heard when pulling forward and considerable drag will be felt as if the parking brake is applied. In the event this happens, stop immediately and rock the vehicle slightly to disengage the drive. If the reverse drive remains engaged and the vehicle is driven in a forward direction, reverse motor damage may occur.

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 released.
2. See Figure 9. With the vehicle started and in neutral, press and hold the reverse switch in the left side controls until the reverse lamp in the tachometer illuminates. See Figure 5. The lamp in the tachometer indicates that the reverse is enabled. Release the reverse switch. The neutral lamp turns off when the reverse lamp turns on.

NOTE

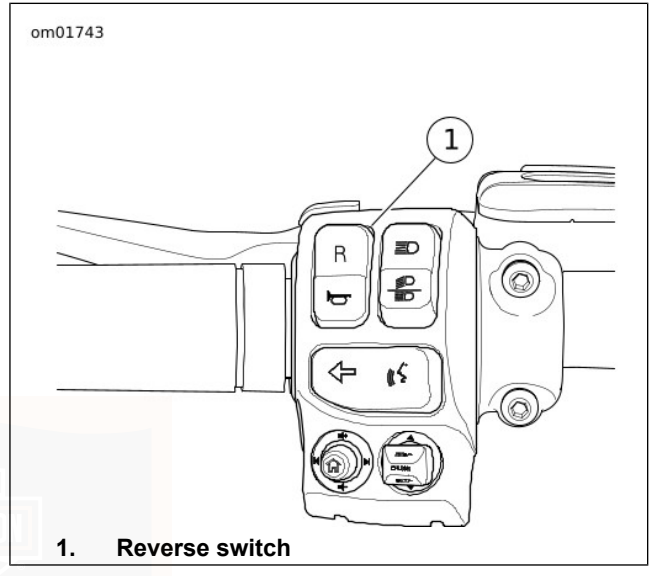
The lamp will not come on or flashes three times to indicate that the conditions for operating the electric reverse are not met. If the lamp will not illuminate or continues to flash, verify that the vehicle is started, in neutral and the circuit breaker is not tripped.

3. Press and hold the reverse switch a second time to operate the electric reverse motor. The motorcycle continues moving in reverse as long as the reverse switch is held down. The reverse automatically turns off when the engine is stopped, or when the motorcycle is shifted into a forward gear.

NOTE

- *The reverse vehicle speed is affected by surface incline. When backing down a hill, use both front and rear brakes to control reverse speed. Do not exceed walking speed and be prepared to slow or stop the vehicle.*
- *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 (Page 169) to reset the circuit breaker.*

4. Release the reverse switch. Brake as necessary to stop the vehicle.
5. Shift into a forward gear and ride normally or turn ignition to OFF and apply the parking brake.



1. Reverse switch

Figure 9. Reverse Controls

CRUISE 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)

⚠ 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)

Cruise control can be engaged to automatically maintain the cruising speed of the motorcycle. The rider remains in control and may disengage cruise control at any time by applying the brakes, pulling the clutch lever, rolling back the throttle or turning off cruise control.

Cruise control can be engaged at speeds between 48 km/h (30 mph) and 145 km/h (90 mph). The system will not engage at speeds outside this range.

While cruising, the rider can increase speed 16 km/h (10 mph) or more (depending on how hard the rider rolls on the throttle and the condition of the vehicle) over the SET point before the system automatically deactivates. This allows the rider to momentarily increase speed, if necessary. Rolling on the throttle too greatly may disengage the system.

NOTE

Non-specified tires or gearing impact cruise control operation.

Set Cruising Speed

1. See Figure 8. Press the CRUISE switch straight in to enable cruise control. The cruise control lamp turns orange to indicate that cruise control is enabled. See Figure 5.
2. With the motorcycle traveling at the desired cruising speed of 48–145 km/h (30–90 mph), momentarily press SET to engage cruise control at the current vehicle speed. The cruise control lamp turns green to indicate that the selected cruising speed is locked in.

Disengage Cruising Speed

When cruising speed is disengaged, the cruise control indicator lamp turns orange. Cruise control is still enabled and the previous cruising speed can be resumed. Cruising speed automatically disengages when any of the following events are detected.

- Front or rear brake is applied.

- Motorcycle clutch is disengaged (module senses too great an increase in engine rpm).
- Throttle is rolled off or closed, actuating roll-off (disengage) switch.
- Rolling on the throttle more than 16 km/h (10 mph) above the SET speed (depending on how hard the rider rolls on the throttle and the condition of the vehicle).
- The CRUISE switch is pressed straight in (cruise control turns off).
- Vehicle speed is out of the operating range.

Resume Cruising Speed

If the system is disengaged using one of the methods described in DISENGAGE CRUISING SPEED, the system is still enabled. The previous SET speed is retained and can be resumed until cruise control is turned off.

See Figure 8. To resume the previous SET speed, press RESUME.

Cruise control will not resume if the vehicle speed is more than 24 km/h (15 mph) below the previous SET speed. In this case, press SET to engage a new cruising speed.

Increase/Decrease Cruising Speed

With the cruising speed set, momentarily press RESUME/+ to increase speed, or press SET/- to decrease speed. The cruising speed increases or decreases by 1.6 km/h (1 mph).

Holding the switch increases or decreases speed in increments of 1.6 km/h (1 mph) until the switch is released. There is a delay of about 2 seconds before the speed changes.

Deactivate Cruising Speed

Press the CRUISE switch straight in to turn off cruise control. The cruise control lamp turns off to indicate that the system is off. Cruise control must be turned back on before setting a new cruising speed. Cruise control also deactivates when shutting off and restarting the motorcycle.

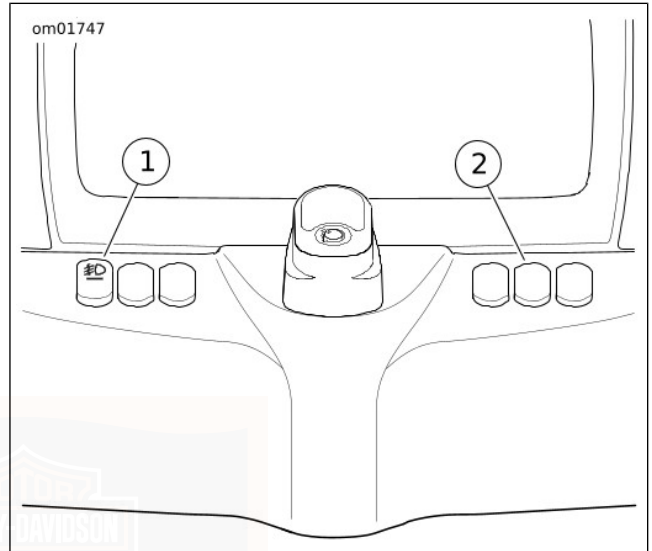
ACCESSORY SWITCH

NOTICE

It is possible to overload the vehicle's charging system by adding too many electrical accessories. If the combined electrical accessories operating at any one time consume more electrical current than the vehicle's charging system can produce, the electrical consumption can discharge the battery and cause damage to the vehicle's electrical system. (00211d)

See Figure 11. The accessory connector is located under the left side cover. See a Harley-Davidson dealer for electrical accessories that may be purchased and installed.

See Figure 10. A panel for accessory switches is next to the ignition switch in the fairing cap. Switches can be added for installed accessories. The maximum load per switch is 2 amps.



1. **Auxiliary/fog lamp switch (equipped models)**
2. **Blanks (for additional accessory switches)**

Figure 10. Fairing Cap Switches

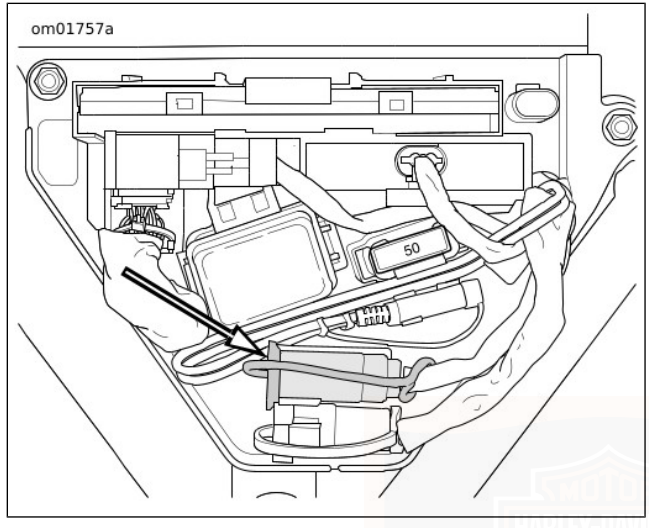


Figure 11. Accessory Connector (under left side cover)

AUXILIARY/FOG LAMPS

The auxiliary/fog lamps provide extra light to the road and surrounding environment in dark or rainy conditions. The lamps also give the motorcycle more visibility to other motorists.

See Figure 10. On models equipped with the auxiliary/fog lamps, the switch is on the left side of the fairing cap.

Domestic/Canada configurations: The auxiliary/fog lamps are configured to turn off when the high beam headlamp is turned on, except as required by state/province.

PASSENGER CONTROLS

See Figure 12. Some vehicles have passenger controls on the right side of the Tour-Pak. These controls allow the passenger to operate functions in the infotainment system. See BOOM! BOX OWNER'S MANUAL for detailed instructions.

Mode Switch

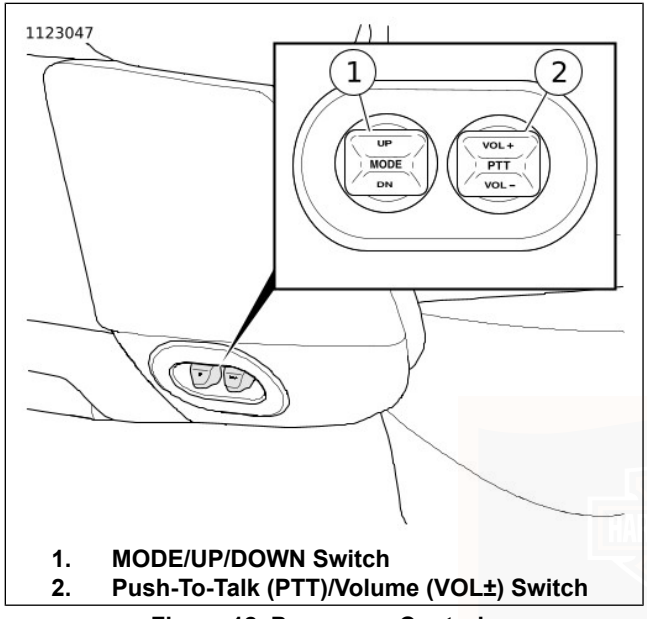
MODE: Press switch straight in to select the next available audio source.

UP/DN: Press switch up/down to select the previous/next radio station or media file.

Push-To-Talk (PTT)/Volume (VOL) Switch

PTT: Press switch to transmit over CB or intercom.

VOL+/VOL-: Press switch up/down to raise/lower the volume to the passenger headset.



1. MODE/UP/DOWN Switch
2. Push-To-Talk (PTT)/Volume (VOL±) Switch

Figure 12. Passenger Controls

BOOM! BOX INFOTAINMENT SYSTEM

⚠ 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)

⚠ WARNING

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

⚠ WARNING

Do not select a volume level that blocks out traffic noise or interrupts the concentration necessary for safe operation of the motorcycle. Distractions or a volume level that blocks out traffic noise could cause loss of control resulting in death or serious injury. (00539b)

NOTE

- *See BOOM! BOX OWNER'S MANUAL for a complete description of features and instructions for operation.*
- *Perform system setup and get familiar with the controls and features of the infotainment system before operating the motorcycle on the road.*

- *For additional instruction and information, see an authorized Harley-Davidson dealer and online resources at www.harley-davidson.com/touring.*

See Figure 13. Some vehicles have a Boom! Box infotainment system. The system operates while the ignition switch is in the IGNITION or ACCESSORY position. The following controls are on the radio.

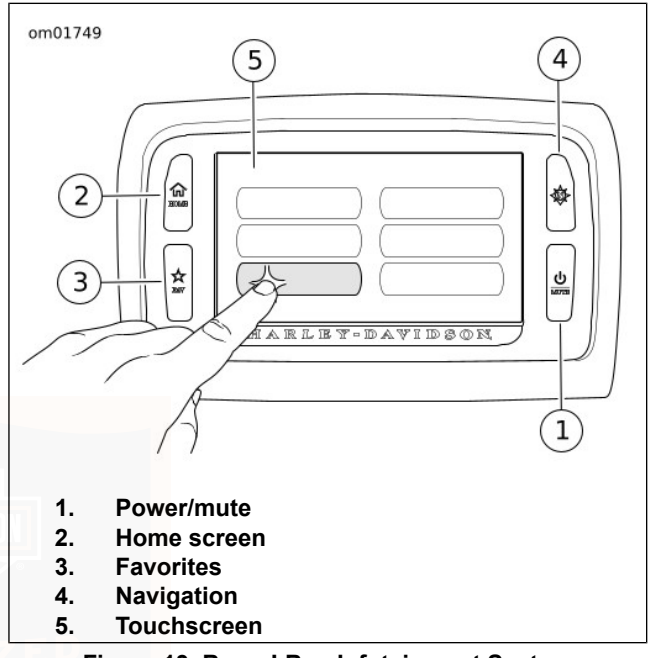
Power/Mute: Press and hold to turn the system on/off. Press briefly to mute/unmute audio and pause media.

Home: Press to display the home screen.

Favorites: Press to display the saved favorite.

Navigation: On equipped models, press this switch to enter GPS navigation (or to display compass on some models).

Touchscreen: Select items on the touchscreen to operate the infotainment system. The touchscreen can be operated while wearing riding gloves. The touchscreen has a replaceable screen protector which must remain on the screen. Damage to the screen due to use without a screen protector will not be covered under warranty.



1. **Power/mute**
2. **Home screen**
3. **Favorites**
4. **Navigation**
5. **Touchscreen**

Figure 13. Boom! Box Infotainment System

MEDIA COMPARTMENT

See Figure 14. The Jukebox media compartment is an enclosure in the dash which may be used to connect a media device or store small items. Media players and USB storage

devices with media files can be connected to the USB port. Radio system updates are also performed through a USB storage device.

The USB port charges the connected device while the ignition switch is in the IGNITION or ACCESSORY position. See BOOM! BOX OWNER'S MANUAL to install updates or play files.

Open: See Figure 14. Push lower portion of door and release.

Close: Firmly push the door shut until latch engages.

Install USB or media device: See Figure 15. Connect device to the USB port. Rest device in the padded cradle. Close the compartment door.

Door latch reset: If compartment door was forced open or is not latching properly, the door latch may need to be reset. Push the door shut. Open the door. Close the door again to engage the latch mechanism.

Keep door closed while riding to prevent items from falling out. Remove valuable items from the media compartment before leaving the vehicle unattended.

The cradle can be removed to clean within the media compartment. Install the cradle before riding to prevent media devices from moving in the compartment and to minimize vibration.

NOTE

*Do **not** use media players with hard drives. Vibration may cause internal damage.*

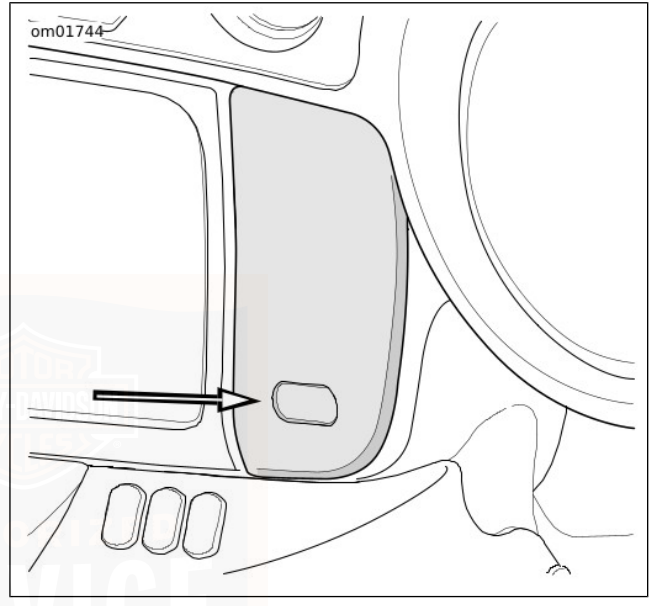
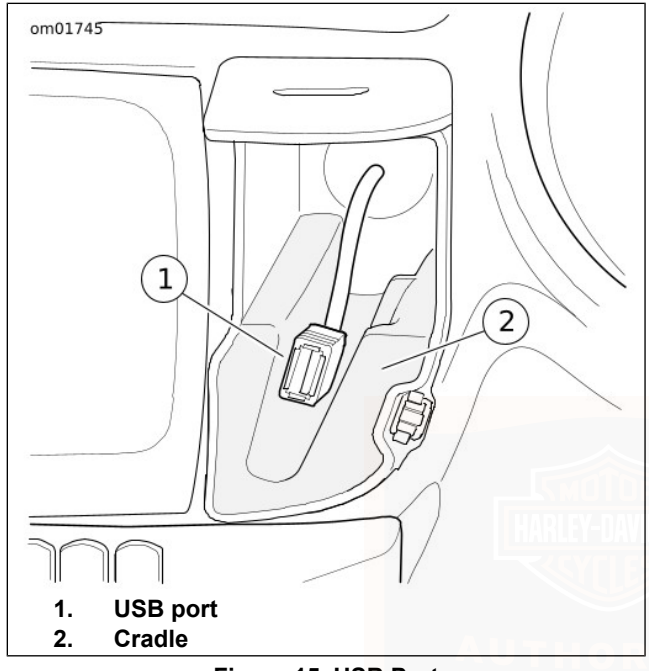


Figure 14. Media Compartment



1. **USB port**
2. **Cradle**

Figure 15. USB Port

HEADSET CONNECTION

NOTICE

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)

See Figure 16 and Figure 17. Some vehicles have a rider headset connector on the fuel tank panel and a passenger headset connector on the left speaker pod. The headsets are used to operate the CB, intercom, voice command and other features on equipped models.

Use the Harley-Davidson 7-pin DIN headset that is supplied with equipped models or purchased from a Harley-Davidson dealer. Other headset microphones will not work. See the instructions that are included with the headset to install in a helmet.

Connect the headset by aligning the ridge on the headset with the slot on the connector.

Audio routing for the headset is controlled through the radio. Volume and push-to-talk functions are done using the rider and passenger hand controls. See the BOOM! BOX OWNER'S MANUAL.

The socket caps remain shut when not in use to prevent dirt and water from entering the socket. Close both socket caps before washing the motorcycle.

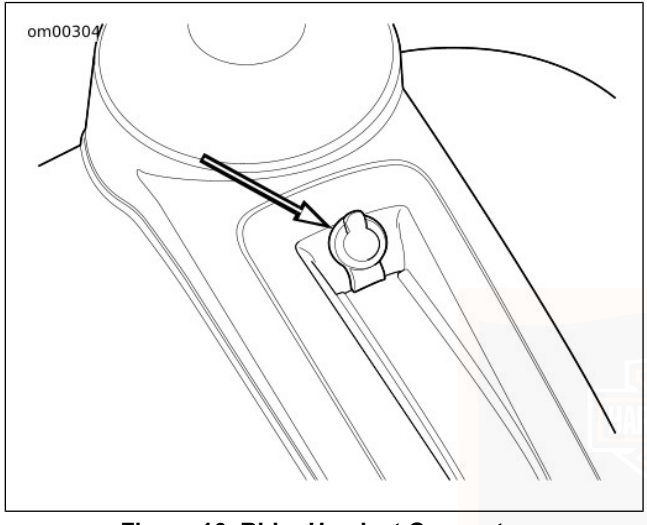


Figure 16. Rider Headset Connector

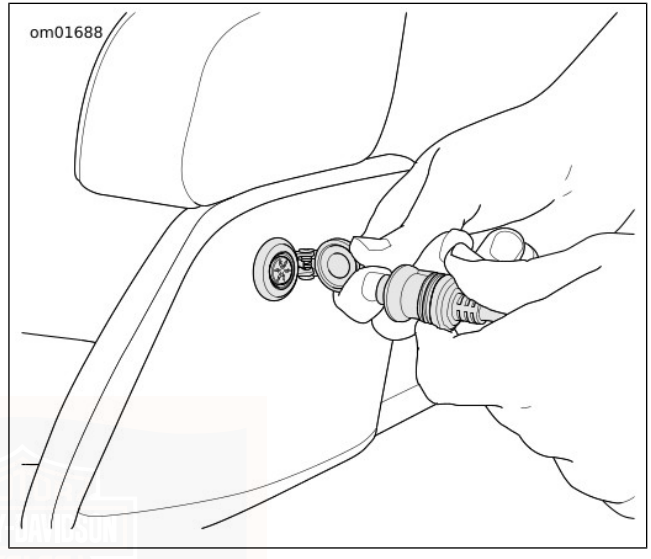


Figure 17. Passenger Headset Connector

ELECTRONIC THROTTLE CONTROL (ETC)

The motorcycle is 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 Control Module (ECM). The ECM then regulates proper fuel/air intake and ignition timing based on the rider's actions. The

grip sensor is manufactured with internal cams and spring retainer for natural feel and operation.

In the event of a component failure, the ETC operation is designed for rider safety and continued motorcycle operation. 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 check engine 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 40 km/h (25 mph). 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.

GEAR SHIFT LEVER

Location

See Figure 18. The gear shift lever is located on the left side of the motorcycle and is operated with the left foot. The shift lever changes gears in a sequential six-speed transmission.

Shift Pattern

NOTICE

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

See Figure 18. Each gear must be engaged in sequence. Lift the gear shift lever to upshift and press the lever to downshift. After each gear change, release the gear shift lever to allow it to return to its resting position. See OPERATION > SHIFTING GEARS (Page 99).

Neutral

Neutral is located between first and second gear. The transmission can be shifted to neutral from either first or

second gear. Lift or press the gear shift lever 1/2 of its stroke. In neutral, the indicator lamp will light.

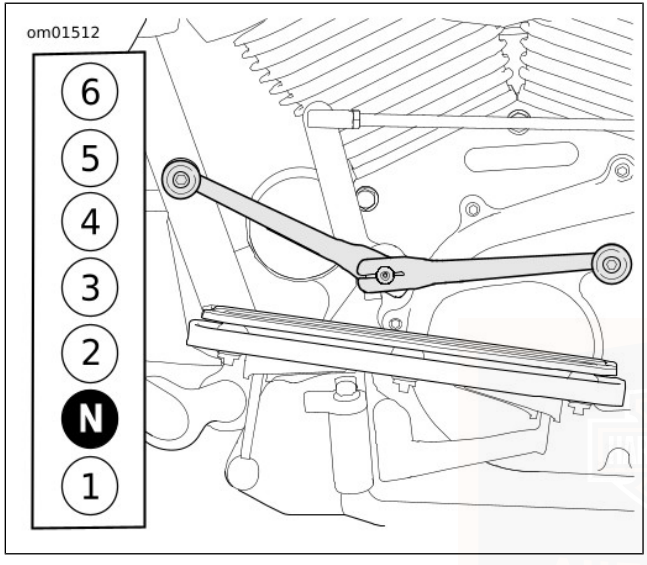


Figure 18. Gear Shift Lever and Shift Pattern

HEEL-TOE FOOT SHIFTER

See Figure 19. Some motorcycles have a heel-toe shifter lever. Upshifts can be made with the heel of the left foot. Upshifts and downshifts can be made with the toe.

Downshift (toe): Push toe shift lever all the way down (full stroke)

Upshift (toe): Lift the toe shift lever all the way up (full stroke)

Upshift (heel): Push the heel shift lever all the way down (full stroke)

Release the foot shift lever after each gear change to allow the lever to return to its center position before another gear change.

NOTE

The height of the heel and toe shift levers can be adjusted for rider preference. Verify that full lever movement is available after adjustment. See the service manual.

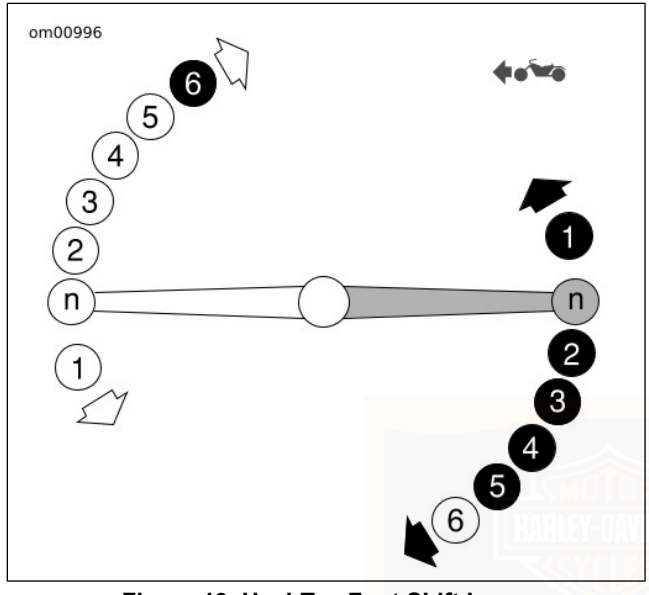


Figure 19. Heel-Toe Foot Shift Lever

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)

This vehicle employs linked brakes meaning both front and rear brakes are applied when the rear brake pedal is operated. The rear brake pedal is located on the motorcycle's right side. Operate the rear brake pedal with the right foot.

The front brake lever will apply additional braking to the front wheel only. The front brake hand lever 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

See Figure 20. The parking brake pedal is on the left side of vehicle. The parking brake mechanically engages brakes for both rear wheels preventing the vehicle from rolling when parked. The parking brake indicator lamp turns on when the parking brake is applied.

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

NOTE

As brake pads wear, the parking brake may require adjustment to firmly engage the rear brakes. The parking brake indicator lamp turns on when the parking brake is applied, even if the parking brake is not properly adjusted. See MAINTENANCE AND LUBRICATION > PARKING BRAKE (Page 130) for inspection and adjustment.

Applying Parking Brake

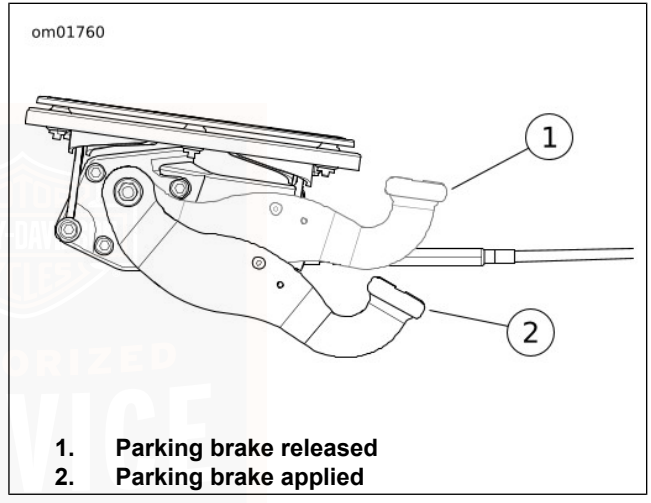
1. Bring the vehicle to a complete stop.
2. Shift to first gear and shut off engine.
3. Apply front brake and cover rear brake with right foot.
4. See Figure 20. With the left foot, firmly push down the parking brake pedal until it cannot be pushed any further.

NOTE

The rear brake pedal pressure increases when applying the parking brake. This is normal operation. Do not resist rear brake pedal motion when applying the parking brake.

Releasing Parking Brake

1. Apply front brake and cover rear brake with right foot.
2. See Figure 20. With the left foot, firmly press the parking brake pedal and release. The parking brake returns to the released position. The rear brake pedal pressure decreases as the parking brake releases.
3. Start motorcycle. The parking brake indicator lamp should be off. Operate the motorcycle normally.



1. Parking brake released
2. Parking brake applied

Figure 20. Parking Brake

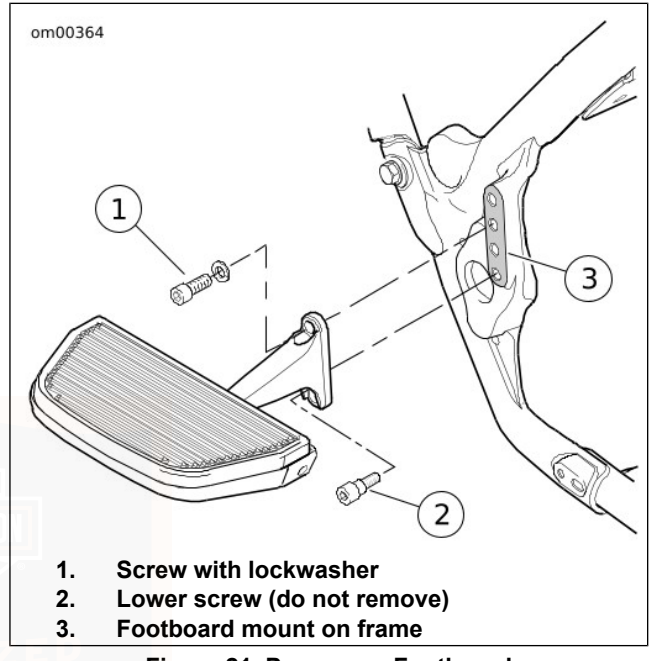
PASSENGER FOOTBOARDS

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 21. 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. Apply a drop of Loctite Threadlocker 243 (blue) to the threads. Tighten socket screw to 49–56 N·m (36–42 ft-lbs).



1. **Screw with lockwasher**
2. **Lower screw (do not remove)**
3. **Footboard mount on frame**

Figure 21. Passenger Footboard

FUEL FILLER CAP

See SAFETY FIRST > SAFE OPERATING RULES (Page 5) and review the following safety procedures.

⚠ WARNING

Avoid spills. Slowly open fuel 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. (00028b)

⚠ WARNING

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

⚠ WARNING

Do not 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)

NOTICE

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)

NOTICE

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

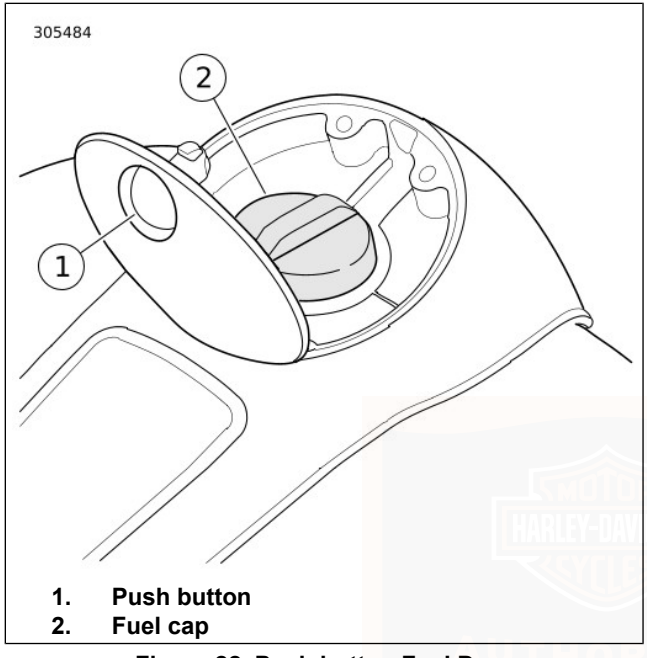
The fuel filler cap is beneath a push button or locking door on the fuel tank.

Push button fuel door: See Figure 22. Push button to release the door.

Locking fuel door: See Figure 23. Unlock fuel door with the ignition key. Lock fuel door by removing key and closing fuel door.

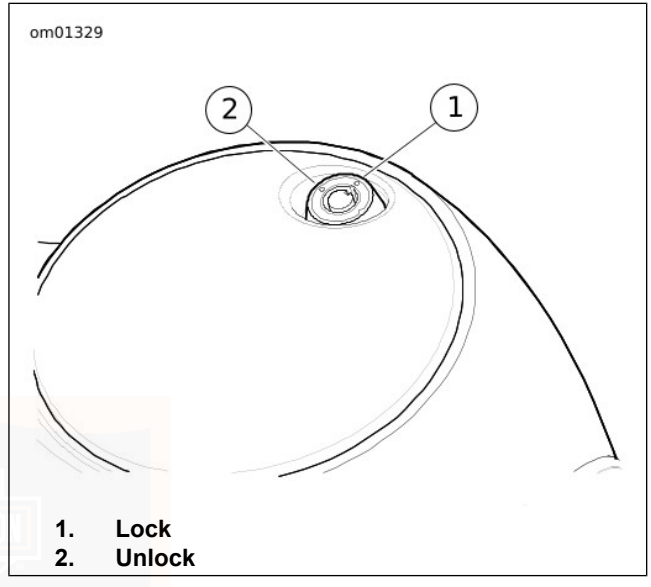
Fill fuel tank slowly to prevent fuel spillage. Do not fill above the bottom of the filler neck insert. Leave enough air space to allow for fuel expansion. Expansion can cause an overfilled tank to overflow fuel through the filler cap vent onto surrounding areas.

After refueling, make sure that filler cap is securely tightened. Tighten fuel filler cap clockwise until it clicks. Close fuel door.



1. Push button
2. Fuel cap

Figure 22. Push button Fuel Door



1. Lock
2. Unlock

Figure 23. Locking Fuel Door

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.

REAR AIR SUSPENSION

⚠ WARNING

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

NOTICE

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

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 24. Remove the cap from the air valve located behind the shock absorber.

NOTE

- *Always add 21–35 kPa (3–5 psi) to the existing pressure before releasing air from the system to prevent oil from exiting the air valve. NEVER exceed 345 kPa (50 psi).*
- *Do not exceed maximum GVWR or GAWR.*

3. See Figure 25. Attach AIR SUSPENSION PUMP AND GAUGE (PART NUMBER: HD-34633) to the air valve. Fill or release air from the shock absorber to the pressure specified for your load. Refer to Table 17.

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.

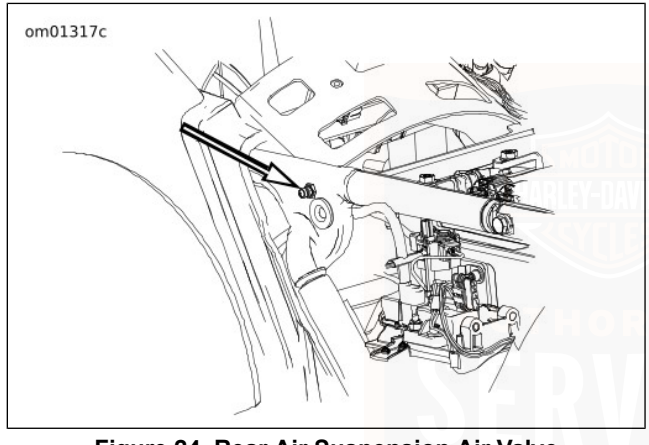


Figure 24. Rear Air Suspension Air Valve

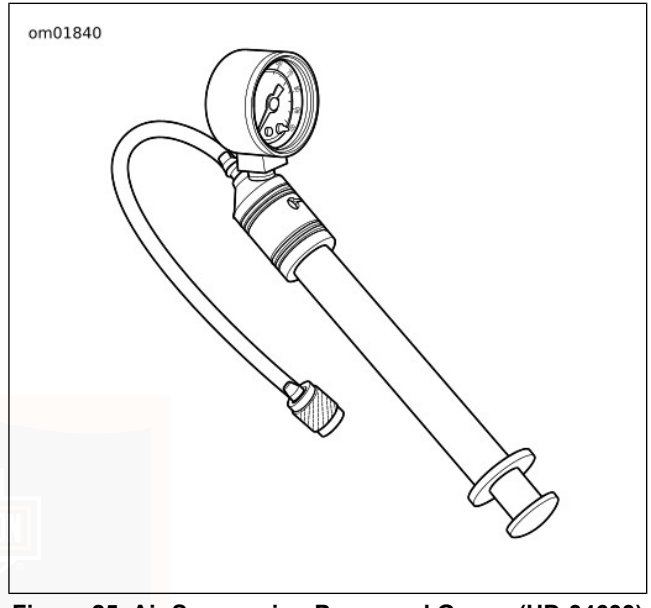


Figure 25. Air Suspension Pump and Gauge (HD-34633)

Table 17. Rear Suspension Recommended Air Pressure

SHOCK LOAD	TOTAL WEIGHT	PRESSURE	
		PSI	kPa
Solo rider	up to 68 kg (150 lb)	5-10	34-69
	68–91 kg (150–200 lb)	10-20	69-138
	91–113 kg (200–250 lb)	20-30	138-206
	113–136 kg (250–300 lb)	30-40	206-276
	136 kg (300 lb) to maximum added weight allowed*	40-50	276-345
Solo rider with capacity luggage of 36 kg (80 lb)	up to 68 kg (150 lb)	25-30	172-206
	68–91 kg (150–200 lb)	30-40	206-276
	91–113 kg (200–250 lb)	40-50	276-345
	113 kg (250 lb) to maximum added weight allowed*	50	345
Rider plus passenger	Any weight up to maximum added weight allowed*	50	345
Maximum loaded vehicle	Maximum added weight allowed*	50	345
Do **not** exceed 345 kPa (50 psi) rear shock pressure. *Refer to Table 11 for maximum added weight allowed on the motorcycle.			

LUGGAGE

⚠ WARNING

See ACCESSORIES AND CARGO section within the SAFETY FIRST section in your owner's manual. Improper cargo loading or accessory installation can cause component failure and adversely affect stability, handling and performance, which could result in death or serious injury. (00021c)

⚠ WARNING

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

- 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 label on the frame downtube.

⚠ WARNING

Improper loading of cargo or installation of accessories can affect motorcycle stability and handling, which could result in death or serious injury. (00095a)

- 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. Do not load bulky items too far behind the rider or add weight to the handlebars or front forks. Do not exceed maximum load on the label within the luggage.
- Check that cargo is secure and will not shift while riding. Periodically recheck load.
- Close and lock luggage before riding or leaving the vehicle unattended.

TOUR-PAK

⚠ WARNING

Do not exceed Tour-Pak weight capacity. Too much weight can cause loss of control, which could result in death or serious injury. (00401c)

⚠ 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)

Operation

See Figure 26. Some vehicles have a lockable Tour-Pak for storing cargo.

Lock/Unlock: Use the ignition key to lock or unlock the latch handle.

Open: Pull the latch handle. Raise the lid.

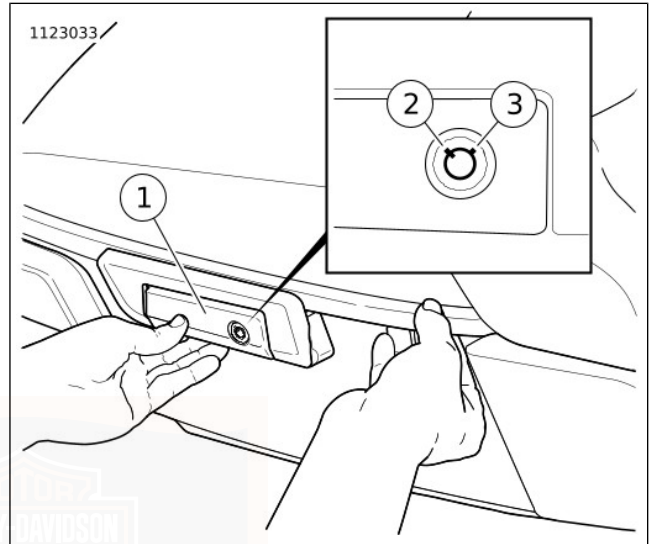
Close: Close the lid. Push the latch handle to secure the lid. Lift on lid to check that it is secure.

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. The motorcycle is shipped from the factory with the Tour-Pak installed in the rearward position. See the service manual or a Harley-Davidson dealer.



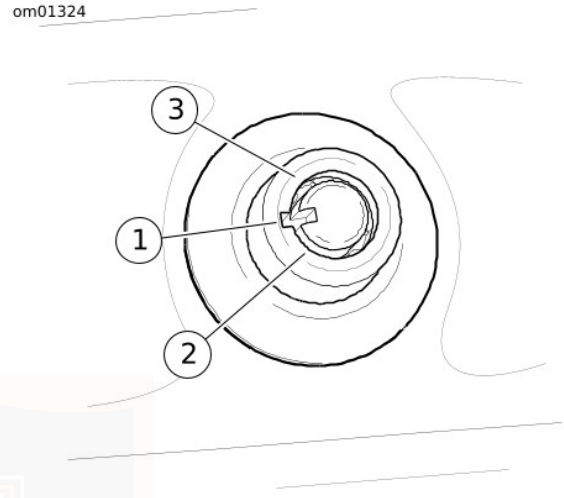
1. **Latch handle**
2. **Unlock**
3. **Lock**

Figure 26. Tour-Pak

TRUNK

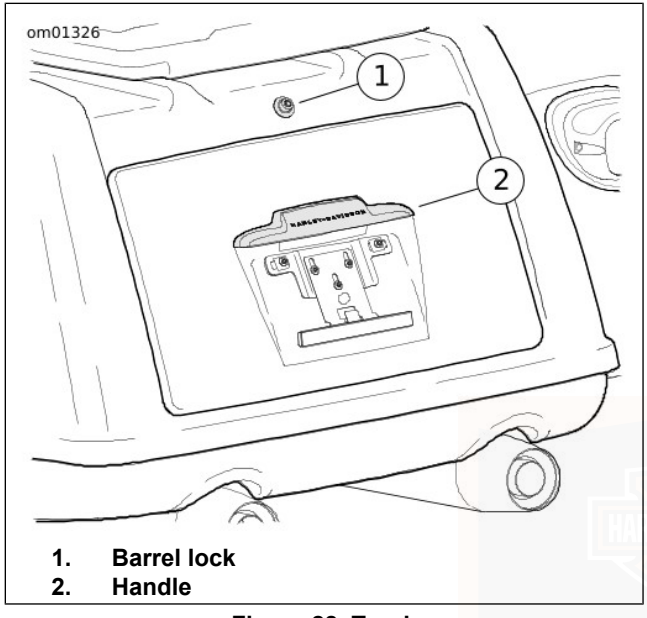
The vehicle has a lockable trunk. When loading the trunk, distribute weight evenly and do not exceed the maximum load of 22 kg (50 lb). Contents in trunk may shift while riding.

1. See Figure 27. To unlock trunk, insert key into barrel lock and turn one-eighth turn clockwise. Return key to center position and remove.
2. See Figure 28. Push in the barrel lock to unlatch door. Pull handle to open trunk door.
3. Firmly close the trunk door to engage latch. Pull handle to make sure trunk door is secure.
4. To lock trunk, insert key into barrel lock and turn one-eighth turn counterclockwise. Return key to center position and remove. Push on barrel lock to make sure trunk is locked.



1. **Center position**
2. **1/8 turn counterclockwise (lock)**
3. **1/8 turn clockwise (unlock)**

Figure 27. Trunk Lock



1. **Barrel lock**
2. **Handle**

Figure 28. Trunk

POWER PORT

See Figure 29. The power port is on the right side of the fairing. The port can be used to power or charge 12 VDC accessories with a standard automotive power connector. Follow the manufacturer instructions when installing and operating accessories. Firmly push the accessory connector into the power port.

⚠ WARNING

Be sure that steering is smooth and free without interference. Interference with steering could result in loss of vehicle control and death or serious injury. (00371a)

NOTE

- *Before riding, rotate handlebars to the full right position and check for contact between installed accessories or wiring and the fuel tank.*
- *Do not use the power port as a cigarette lighter. Damage to the socket may occur. See an authorized Harley-Davidson dealer for available accessories.*

The port is energized while the ignition switch is in the IGNITION or ACCESSORY position. Powering accessories for an extended time while the engine is not running drains the battery.

The maximum current draw for all connected accessories is 15 amps. This includes the total current for all power ports and any other accessories installed. If excessive current is detected, the system cuts off power to the port. The system automatically enables power to the port again when it senses

the overcurrent situation has ceased (such as when faulty or high powered accessory has been removed).

Items charging with the power port may cause interference with radio reception.

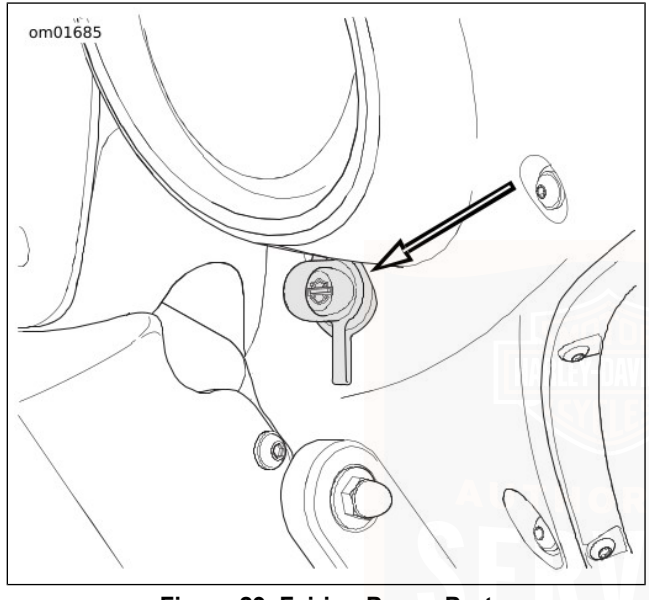


Figure 29. Fairing Power Port

FAIRING SPLITSTREAM VENT

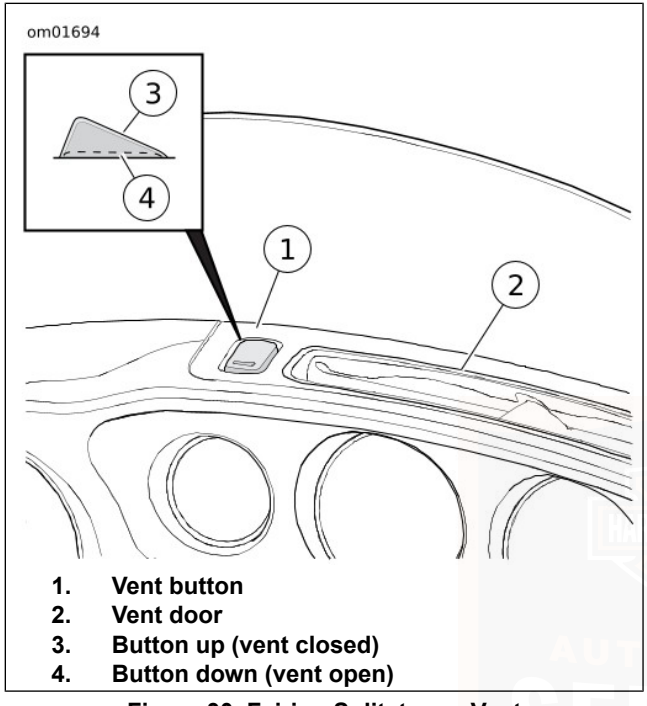
See Figure 30. Vehicles with a fairing have a vent in the upper dash for ventilation. The vent can be closed or opened to provide a comfortable flow of air to the rider and to minimize wind buffeting. The preferred position is to keep the vent open for improved turbulence.

Open: Press down the vent button until it clicks. The vent door remains in the open position.

Close: Press down the vent button and release. The button pops up and the vent door closes.

Reset: If the latch does not catch, firmly press the button to open, close and reopen the vent until the mechanism engages.

Keep the vent free of foreign objects. Periodically clean the vent mechanism to remove dirt, bugs and leaves, and to keep all parts from sticking. Clean the button and vent door if they become difficult to open or close. See CARE AND CLEANING > FAIRING SPLITSTREAM VENT CARE (Page 186).



1. **Vent button**
2. **Vent door**
3. **Button up (vent closed)**
4. **Button down (vent open)**

Figure 30. Fairing Splitstream Vent

ADJUSTABLE AIR DEFLECTORS

See Figure 31. Some vehicles have adjustable air deflectors located along the left and right edge of the fairing. These deflectors can be rotated to direct airflow for rider and passenger comfort.

Adjust: With the vehicle parked, grasp the outer edge of the deflector and pivot to the desired position.

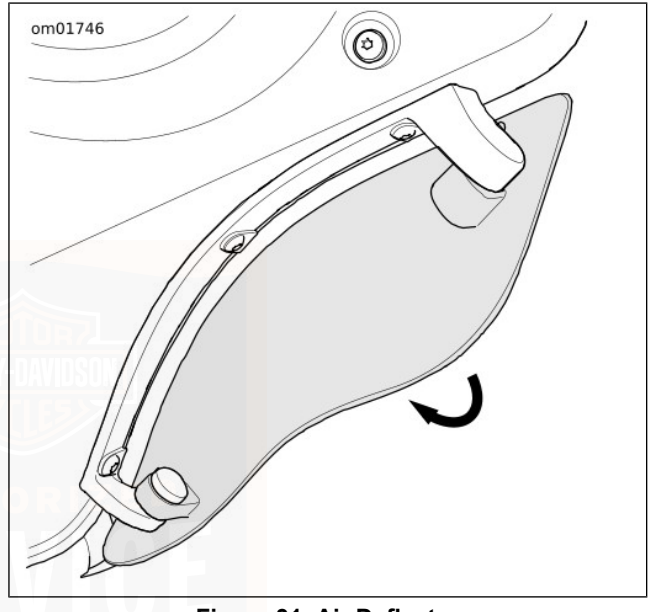


Figure 31. Air Deflector

FAIRING LOWERS

Some vehicles have fairing lowers. The fairing lowers provide an extra level of riding comfort by blocking wind and water from the rider's legs.

Vent Door

See Figure 32. Adjust the fairing lower vent door to direct airflow for rider comfort and circulate air across the engine. Slide the vent door lever to adjust or close the vent door.

Cooling System (Twin-Cooled Vehicles)

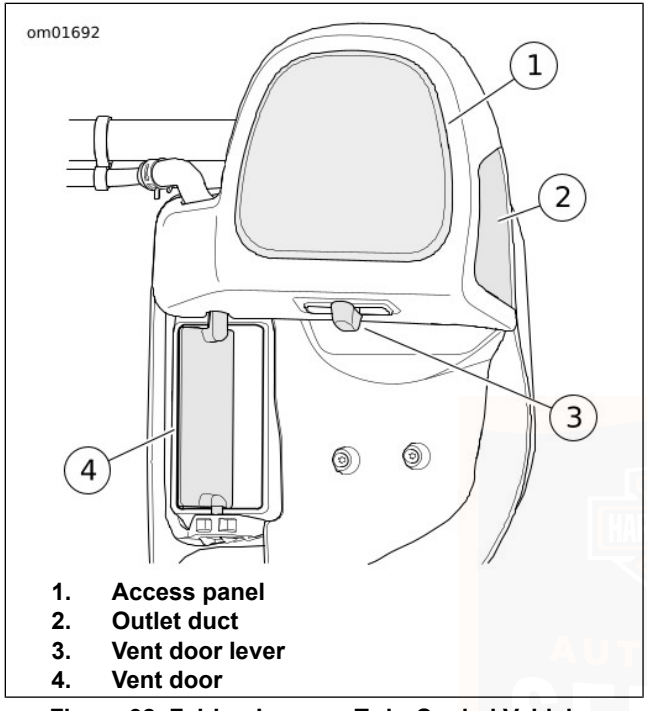
See Figure 32. On Twin-Cooled vehicles, the fairing lowers include cooling system components. The coolant bottle is behind the access panel in the right side fairing lower. See MAINTENANCE AND LUBRICATION > COOLING SYSTEM (Page 117) to check the coolant level.

The access panel is secured with three retainers. Carefully pry at the top and at each lower corner to remove the access panel. To install, push the panel until the retainers snap into place.

Keep the radiator screen and outlet duct clean and free from obstructions.

NOTE

- *The fairing lowers on Twin-Cooled vehicles contain cooling system components. Do not remove fairing lowers on Twin-Cooled vehicles.*
- *The fairing lowers on Twin-Cooled vehicles do not have a storage compartment. The access areas on these vehicles have a large opening at the bottom. Items placed in these access areas can fall out. Do not store any items in the fairing lowers on a Twin-Cooled vehicle.*



1. **Access panel**
2. **Outlet duct**
3. **Vent door lever**
4. **Vent door**

Figure 32. Fairing Lowers: Twin-Cooled Vehicles

SECURITY SYSTEM

Components

The security system consists of a control module, 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 to OFF or ACCESSORY and the 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 disable the ignition if someone tampers with the ignition switch or activate an alarm if someone attempts to move the motorcycle.

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

NOTE

- *If disconnecting power from the motorcycle battery, see SECURITY SYSTEM > DISCONNECTING POWER (Page 90) to prevent the optional security system siren from sounding.*
- *Do not relocate the module or the antenna on the motorcycle.*

Options

See a Harley-Davidson dealer or www.harley-davidson.com for security system options.

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

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 expressively 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.

SECURITY SYSTEM FOB

Fob Assignment

See Figure 33. Fobs are electronically assigned to the Security System by a Harley-Davidson dealer. Up to two fobs can be assigned 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.

NOTE

- *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 SECURITY SYSTEM > FOB BATTERY (Page 89).*
- *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. Write the PIN on the Personal Information page in the front of this Owner's Manual and on the removable wallet card.*
- *If the fob is misplaced or the fob fails, refer to the wallet card and use the PIN to manually disarm the system. Refer to SECURITY SYSTEM > ARMING AND DISARMING (Page 84) and SECURITY SYSTEM > TROUBLESHOOTING (Page 90).*
- *The rider can change the PIN at any time. Refer to SECURITY SYSTEM > PERSONAL IDENTIFICATION NUMBER (PIN) (Page 81).*

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 disabling the ignition and activating the alarm. If the ignition switched is unlocked, the ignition switch can be set to IGN and the engine started.
- Do not ride with the fob stored in a metal case or with the fob closer than 76 mm (3.0 in) to a mobile 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 key when parked. If the fob is within range and the motorcycle is unlocked, tampering with the motorcycle will not activate the alarm.

Riding without a Fob

If the motorcycle is ridden off without the fob, the odometer window temporarily displays "NO FOB". If the motorcycle is stopped and the ignition turned to OFF, disarm the security system with the PIN and restart the motorcycle.

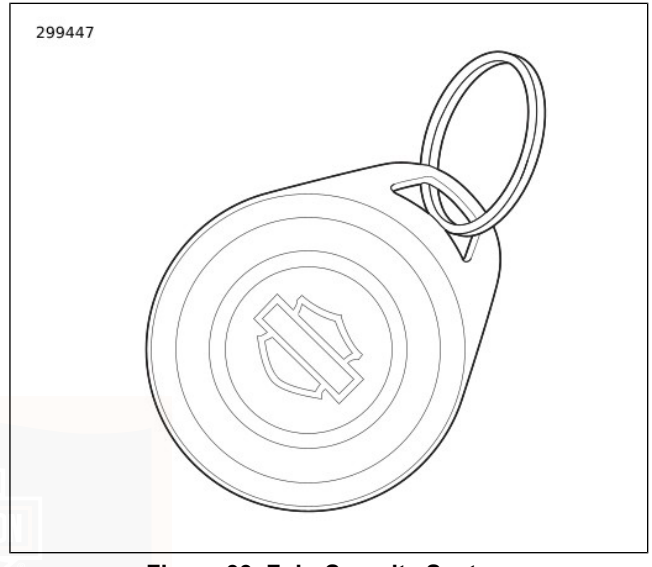


Figure 33. Fob: Security System

PERSONAL IDENTIFICATION NUMBER (PIN)

The Personal Identification Number (PIN) is a number that can be used to disarm the security system in case an assigned fob is misplaced, fails or if the fob cannot communicate with the motorcycle 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 18.

Table 18. 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 the OFF/RUN switch to **OFF**.		
3	Turn the ignition switch to **IGN**.		
4	Cycle the OFF/RUN switch twice: **RUN - OFF - RUN - OFF - RUN**.		
5	Press **left** turn signal switch **2 times**.	ENTER PIN will scroll through the odometer window.	
6	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.	
7	Enter first digit of new PIN by pressing and releasing the **left** turn signal switch until the selected digit appears.		
8	Press **right** turn signal switch **1 time** and release.	The new digit will replace the current in odometer window.	
9	Enter second digit of selected PIN by pressing and releasing the **left** turn signal switch until the selected digit is present.		

Table 18. Changing the PIN

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
10	Press **right** turn signal switch **1 time** and release.	The new digit will replace the current in odometer window.	
11	Enter third digit of the selected PIN by pressing and releasing the **left** turn signal switch until the selected digit is present.		
12	Press **right** turn switch **1 time** and release.	The new digit will replace the current in odometer window.	
13	Enter fourth digit of new PIN by pressing and releasing the **left** turn signal switch until the selected digit is present.		
14	Press **right** turn switch **1 time** and release.	The new digit will replace the current in odometer window.	
15	Enter fifth digit of the new PIN by pressing and releasing the **left** turn signal switch until the selected digit is present.		
16	Press **right** turn switch **1 time** and release.	The new digit will replace the current in odometer window.	
17	Turn the OFF/RUN switch **OFF**, then turn the ignition switch to **OFF**.		Pushing the OFF/RUN switch to **OFF** stores the new PIN in the module.

SECURITY STATUS INDICATOR

See Figure 5. The electrical system lamp in the speedometer face indicates the status of the security system.

- **Armed:** A lamp that blinks approximately every 3 seconds indicates that the system is armed.
- **Disarmed:** After the system disarms and the ignition is on, the lamp will remain illuminated for approximately four seconds and then turn off.
- **Service:** A lamp that remains illuminated longer than four seconds when the system is disarmed indicates that service of the module is required.

ARMING AND DISARMING

Arming

When the motorcycle is parked and the ignition is turned to OFF or ACCESSORY, the 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 if the siren is in the chirp mode. While armed, the indicator lamp in the speedometer face will flash every three seconds.

NOTE

International Models: *The system must be in the chirp mode for the siren to chirp on arming or on disarming. See SECURITY SYSTEM > SIREN CHIRP MODE (CONFIRMATION) (Page 88).*

Disarming

With the fob present, the rider may ride or move the motorcycle for parking, storage or service without setting off the alarm. Disarming is automatic as long as the fob is within range.

Fob: An armed security system is automatically disarmed when the fob is present and the motorcycle is moved or the ignition switch is turned to IGNITION or ACCESSORY.

When the system disarms, the optional siren will chirp once and the security indicator lamp will illuminate for a solid four seconds and then turn off.

NOTE

On any motion, like lifting the motorcycle up off of its jiffy stand or turning the ignition to ON, the system will electronically "poll" for the presence of the fob. If the fob is present, the system disarms.

Personal Identification Number (PIN): If the fob is misplaced or if the present fob fails to communicate, the system can be disarmed with the Personal Identification Number (PIN). Refer to Table 19.

Disarming with a PIN

Disarm the security system manually using the PIN if the fob is lost, the fob battery is discharged or if where you parked there is a strong electromagnetic interference.

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

NOTE

- *If a mistake is made while entering PIN, turn the ignition Switch to OFF before entering the last digit and then start the procedure from the beginning.*
- *If the procedure fails to disarm the security system, wait two minutes before attempting another PIN disarm.*
- *The security system will remain disarmed until the ignition is turned to OFF.*
- *At any time during a PIN disarm if the fob is brought within range of the motorcycle, the security system will disarm as the module receives the coded signal from the fob.*

Table 19. Entering a PIN to Disarm 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 to **IGN**.	If armed, the odometer window display will read: ENTER PIN and the security lamp will be flashing at a fast rate. The headlight will not be on.	
3	Press and release the left turn signal switch.	In the odometer window, a flashing 1 will appear.	
4	Increment the digit by tapping the left turn signal until the odometer window displays the first digit of the PIN.	The first digit in the odometer will be the first digit in the PIN.	

Table 19. Entering a PIN to Disarm Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
5	Press **right** turn switch **1 time.**	The first digit is stored and the next digit will flash.	Serves as enter key.
6	Increment the second digit using the left turn switch until the digit reaches the second digit of the PIN.	The second digit 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	Increment the third digit using the left turn switch until it reaches the third digit of the PIN.	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	Increment the fourth digit using the left turn switch until it reaches the fourth digit of the PIN.	The fourth digit (**d**) in the odometer will be the fourth digit in the PIN.	
11	Press **right** turn switch **1 time.**	The fourth digit is stored and the next dash will flash.	Serves as enter key.
12	Increment the fifth digit using the left turn switch until it reaches the fifth digit of the PIN.	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 security system indicator lamp stops blinking.	Security System is disarmed.

ALARM

Ignition Disabled

When the fob is not present and the system is armed, if the ignition switch is turned to IGNITION or ACCESSORY, the security lamp will flash at a fast rate and the odometer window display will scroll "ENtER PIN". The headlamp will not turn on.

After approximately 10 seconds, if the system does not receive a left turn signal switch input, the display will go blank. The ignition system will remain disabled until the fob is present or the current PIN is entered.

Warnings

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

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

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

When activated, the 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 siren. The range of a pager can be up to 0.8 km (0.5 mi). See a Harley-Davidson dealer for details.

Deactivate the Alarm

Fob: Bring the fob to the motorcycle. After the system 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 still provides warning chirps and sounds the alarm if motorcycle is moved or ignition switch is turned on without the fob present.

Switching Modes

Quickly cycling ignition switch ON-OFF-ON-OFF-ON switches the system from one mode to the other.

1. With the fob present, turn the ignition switch to IGNITION.
2. When the security lamp turns off, turn the ignition switch to OFF.
3. When the security lamp turns off (but before the turn signals flash twice), immediately turn the ignition switch to IGNITION.
4. When the security lamp turns off, immediately turn the ignition switch to OFF.
5. When the security lamp turns off (but before the turn signals flash twice), immediately turn the ignition switch to IGNITION.

TRANSPORT MODE

When transporting the motorcycle, place the system in the Transport Mode. Otherwise, the alarm activated by motion detection can discharge the battery.

In the transport mode, the security system is armed 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 fob is not within range will trigger the alarm.

To Enter Transport Mode

1. With an assigned fob within range, turn the ignition switch to IGNITION.
2. Before the security system lamp goes out, turn the ignition switch to OFF.

3. Within three seconds, simultaneously press both the left and the right turn signal switches.
4. After the turn signals flash once, the system enters the transport mode. With the fob removed, the motorcycle can be moved without setting off the alarm.

To Exit Transport Mode

With the fob present, turn the ignition switch to IGNITION to disarm the system.

STORAGE AND SERVICE DEPARTMENTS

Long-Term Parking

To maintain arming, store the fob beyond the range of the antenna. The antenna range is approximately 6 m (20 ft). 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 (Page 172).

Service Departments

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

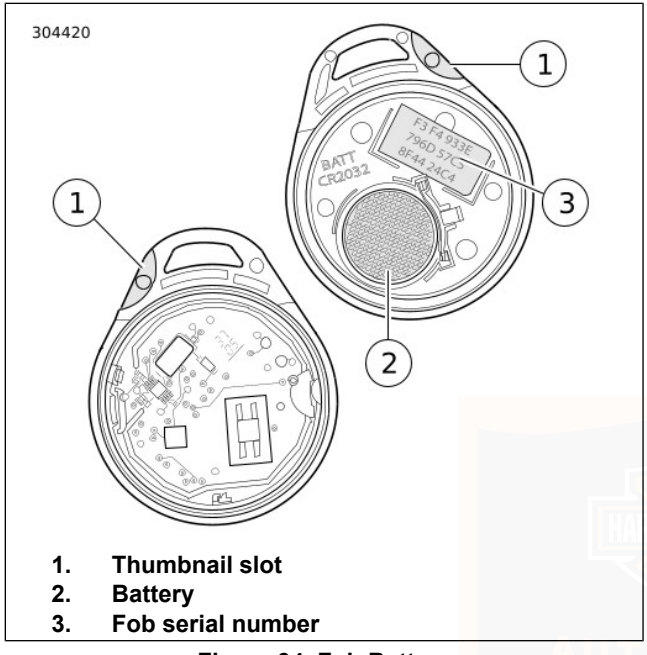
1. Leave an assigned fob with the dealer.
2. To maintain possession of the fob, ask the dealer to disable the system for service (service mode) before leaving the dealership.

FOB BATTERY

Replacing the Battery

Replace the fob battery every year.

1. See Figure 34. 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.
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.



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

Figure 34. Fob Battery

DISCONNECTING POWER

Siren Equipped Models

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 switch to IGNITION.
3. Pull the main fuse from its holder or disconnect the battery.

NOTE

Place the ignition switch in the OFF position before installing the main fuse.

TROUBLESHOOTING

Security System Indicator

If the system indicator lamp stays illuminated while riding, see a Harley-Davidson dealer.

Fob

If the 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 security system to operate inconsistently.

   a. Verify that the fob is not in a metal enclosure or within 76 mm (3.0 in) of any other electronic devices.

   b. Place the fob on the seat and turn the ignition to IGN. After the system disarms, return the fob to a convenient location.

   c. Move motorcycle at least 5 m (15 ft) from the spot of interference.

   d. Use the PIN to disarm the system.

NOTE

Leaving a fob next to a computer monitor can run down the battery.

2. **Discharged fob battery:** Use the PIN to disarm the system. Replace the battery. Refer to SECURITY SYSTEM > FOB BATTERY (Page 89).
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 20-30 seconds and then turn off for 5-10 seconds. This alarm cycle will be repeated ten times if the siren is in the self-driven mode.

NOTES

OPERATING RECOMMENDATIONS

⚠ WARNING

Three-wheeled motorcycles are different from two-wheeled motorcycles and other vehicles. They operate, steer, handle and brake differently. 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.**

(00587e)

- 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.

NOTICE

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.

NOTICE

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

NOTICE

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

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

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

NOTE

Have the engine checked regularly and keep it well tuned.

⚠ 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 800 km (500 mi). Adherence to these suggestions will help to provide good future durability and performance.

1. During the first 80 km (50 mi) of riding, keep the engine speed below 3000 RPM in any gear. Do not lug the engine by running or accelerating at very low RPM, or by running at high RPM longer than needed for shifting or passing.
2. Up to 800 km (500 mi), vary the engine speed and avoid operating at any steady engine speed for long periods. Engine speed up to 3500 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. Break-in new brakes by moderate use for the first 300 km (200 mi).

PRE-RIDING CHECKLIST

⚠ WARNING

Identify and understand the specific features of your vehicle. Failure to understand how these features affect the vehicle's operation can lead to an accident, which could result in death or serious injury. (00043b)

Before riding your motorcycle at any time, make a general inspection. Verify that 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 open fuel 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. (00028b)

⚠ 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 there is sufficient supply of fresh fuel in the fuel tank. Add fuel if necessary.
2. Adjust mirrors to proper riding positions.
3. Check engine oil level. Add oil if necessary.
4. Check controls to make sure that 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, undamaged, and have adequate tread. Inspect your tires regularly and see a Harley-Davidson dealer for replacements. Riding with excessively worn, unbalanced, improperly inflated, overloaded or damaged tires can lead to tire failure and adversely affect stability and handling, which could result in death or serious injury. (00014b)

6. Check tire condition, pressure and motorcycle loading. Incorrect pressure and excessive loading can lead to tire or wheel failure, and can affect handling and stability. Refer to Table 14 for correct inflation pressure.

⚠ 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. Test all switches and lights for proper operation.

8. Check for any fuel, oil, coolant or hydraulic fluid leaks.

9. Check secondary belt for wear or damage.

10. Service your motorcycle as necessary.

STARTING THE ENGINE

General

NOTICE

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)

Rolling the throttle before starting the motorcycle is unnecessary.

Starting

1. Turn ignition 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)

2. See Figure 35. With the security system fob present, turn the off/run switch to RUN position.

NOTE

The engine lamp lights for approximately 4 seconds. The fuel pump operates for approximately 2 seconds as it fills the fuel lines.

3. Squeeze the clutch lever in against the hand grip. Shift transmission to neutral.

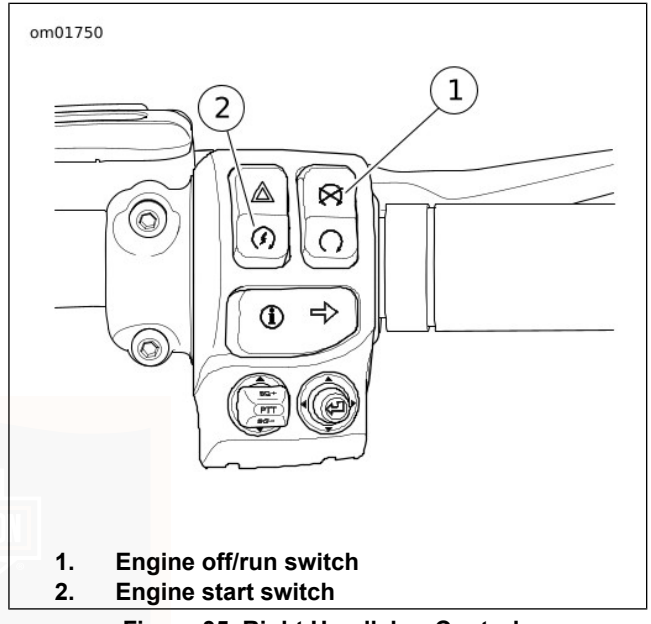
NOTE

To activate the starting system, the clutch interlock circuitry requires that the clutch be disengaged. The clutch lever must be pulled in against the left handlebar grip and/or the transmission must be shifted to the neutral position (with the green neutral lamp lit). The front and/or rear brake must be applied to start the engine in gear and to prevent any movement.

4. Apply the front or rear brake.

5. Press the engine start switch to start the motorcycle.

6. Release the parking brake before riding the motorcycle. See CONTROLS AND INDICATORS > PARKING BRAKE (Page 63).



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

Figure 35. Right Handlebar Controls

STARTING AFTER TIP OVER

⚠ 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)

After a tip over, reset the ignition before starting the engine.

NOTE

The word "tIP" appears in the odometer window.

1. Set the motorcycle upright.
2. Reset the ignition by turning the ignition switch OFF-IGNITION.

ENGINE IDLE TEMPERATURE MANAGEMENT SYSTEM

The Engine Idle Temperature Management System (EITMS) can provide limited cooling of the rear cylinder for riders who frequently find themselves in prolonged idle conditions or traffic congestion.

Operation

When engine temperature reaches a predetermined point, the EITMS turns off the rear cylinder fuel injector. The rear cylinder becomes an "air pump" which works to cool the engine.

EITMS activates (rear cylinder turns off) when **all** of the following conditions are met:

NOTE

EITMS does not activate within the first four minutes after starting the vehicle.

- Ambient temperature or engine temperature exceeds temperature threshold.
- Throttle control is at idle
- Vehicle speed under 2 km/h (1 mph)
- Engine speed under 1200 rpm

EITMS disables (rear cylinder begins firing again) if **any one** of the following occurs:

- Ambient temperature or engine temperature falls below temperature threshold.
- Throttle control is above idle
- Vehicle speed exceeds 3 km/h (2 mph)

- 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 automatically activates whenever the vehicle comes to a complete stop and is idling during elevated temperature conditions. When the feature is enabled, it may not activate under cool riding conditions.

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

EITMS can be enabled or disabled by performing the following procedure.

1. Turn ignition switch ON. Push the engine OFF/RUN switch on the right handlebar to the RUN position (the motorcycle may be running or not running).
2. Push the throttle to roll-off position and hold.
3. See Figure 5. After approximately 3 seconds, the cruise indicator lamp will either flash green (EITMS enabled) or orange (EITMS disabled).
4. Repeat the procedure as necessary to enable or disable EITMS.

NOTE

- *A flashing cruise lamp indicates the EITMS setting. A solid (non-flashing) lamp indicates the cruise control setting.*
- *The EITMS setting remains in effect until it is changed by the rider or dealer. There is no need to reconfigure EITMS at each startup.*

SHIFTING GEARS

Shifting while Stopped, Engine Off

Squeeze in the clutch lever to fully disengage the clutch. Gears may not engage because the transmission shafts are not turning and shifter components are not lined up. Rock the motorcycle backward and forward while lightly pressing on the shift lever.

Starting from a Stop

NOTE

Release parking brake before riding motorcycle. See CONTROLS AND INDICATORS > PARKING BRAKE (Page 63).

NOTICE

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

NOTE

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

1. With motorcycle engine running and parking brake released, pull the clutch hand lever in against handlebar grip to fully disengage clutch.
2. Press the gear shift lever down to end of its travel and release. The transmission is now in first gear.
3. Ease out the clutch lever and at the same time, gradually open the throttle.

Upshift (Acceleration)

See Figure 36. Engage the next higher gear when the motorcycle reaches the shifting speed. Refer to Table 20.

Table 20. Upshift (Acceleration) Gear Speeds: Six Speed

GEAR CHANGE	mph	km/h
First to second	15	25
Second to third	25	40
Third to fourth	35	55

Table 20. Upshift (Acceleration) Gear Speeds: Six Speed

GEAR CHANGE	mph	km/h
Fourth to fifth	45	70
Fifth to sixth	55	85

1. Close the throttle.
2. Disengage the clutch (pull the clutch lever in).
3. Lift the gear shift lever up to the end of its travel and release.
4. Ease out the clutch lever and gradually open the throttle.
5. Repeat the previous steps to engage remaining gears.

NOTE

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

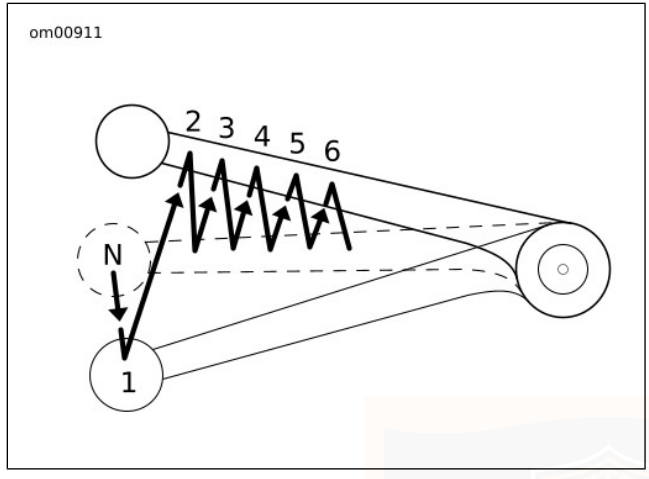


Figure 36. Shifting Sequence: Upshift

Downshift (Deceleration)

⚠ WARNING

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)

See Figure 37. When engine speed decreases, as when climbing a hill or slowing for a turn, shift to the next lower gear. Refer to Table 21.

Table 21. Downshift (Deceleration) Gear Speeds: Six Speed

GEAR CHANGE	mph	km/h
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 table are recommendations. Vehicle owners may determine that their own individual shifting patterns may differ from those stated and are additionally appropriate for individual riding styles.

1. Close the throttle.
2. Disengage the clutch (pull the clutch lever in).
3. Press the gear shift lever down to the end of its travel and release.
4. Ease out the clutch lever and gradually open the throttle.
5. Repeat the previous steps to engage remaining gears.

NOTE

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

NOTICE

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.

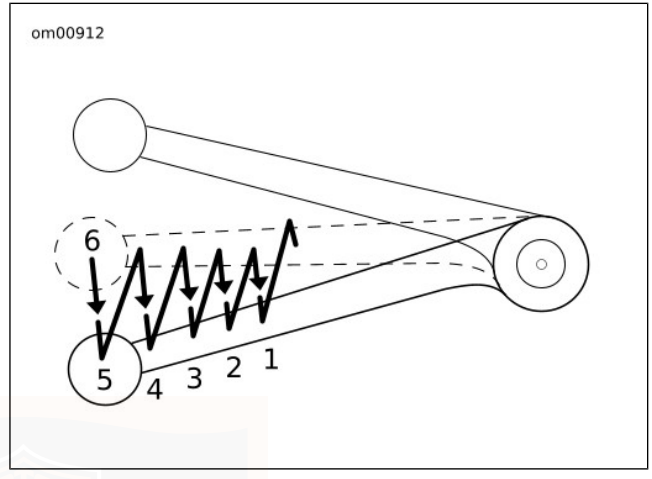


Figure 37. Shifting Sequence: Downshift

STOPPING THE ENGINE

1. Stop the engine by turning OFF the engine stop switch on right handlebar.
2. Turn OFF the ignition switch. If the engine should be stalled or stopped in any way, turn off the ignition switch at once to prevent battery discharge.
3. Shift the transmission into gear and apply the parking brake.

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)

NOTICE

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, mounting brackets, components or housings. Failure to comply can cause serious damage resulting in the need to perform major repair work. (00586d)

Keep the motorcycle maintained according to Table 32. Frequently inspect the motorcycle between regular service intervals and after periods of storage to determine if additional maintenance is necessary.

Check the following items:

1. Tires for correct pressure, excessive wear or any signs of tire damage.
2. 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. Coolant level if applicable. 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.

After a new motorcycle has been ridden 1,600 km (1000 mi), visit an authorized Harley-Davidson dealer for initial service. Refer to MAINTENANCE SCHEDULING > REGULAR SERVICE INTERVALS (Page 205).

DISPOSAL AND RECYCLING

When servicing the motorcycle, properly recycle or dispose of all fluids, bulbs, batteries, filters and other scrap materials according to local regulations.

ENGINE LUBRICATION

⚠ CAUTION

Prolonged or repeated contact with used motor oil may be harmful to skin and could cause skin cancer. Promptly wash affected areas with soap and water. (00358b)

⚠ CAUTION

If engine oil is swallowed, do not induce vomiting. Contact a physician immediately. In case of contact with eyes, immediately flush with water. Contact a physician if irritation persists. (00357d)

NOTICE

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. Use the proper grade of oil for the lowest temperature expected before the next oil change. Refer to Table 22.

This motorcycle was originally equipped with GENUINE HARLEY-DAVIDSON H-D 360 MOTORCYCLE OIL 20W50. H-D 360 is the preferred oil under normal operating conditions. If operation under extreme cold or heat are expected, refer to Table 22 for alternative choices.

If necessary and H-D 360 is not available, add oil certified for diesel engines. Acceptable designations include: CH-4, CI-4 and CJ-4. The preferred viscosities, 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 22. Recommended Engine Oils

TYPE	VISCOSITY	RATING	LOWEST AMBIENT TEMPERATURE	COLD-WEATHER STARTS BELOW 50 °F (10 °C)
Screamin' Eagle SYN 3 Full Synthetic Motorcycle Lubricant	SAE 20W50	HD 360	Above 30 °F (-1 °C)	Excellent
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 20W50	HD 360	Above 4 °C (40 °F)	Good
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 50	HD 360	Above 16 °C (60 °F)	Poor
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 60	HD 360	Above 27 °C (80 °F)	Poor
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 10W40	HD 360	Below 4 °C (40 °F)	Excellent

CHECKING OIL LEVEL

⚠ CAUTION

Prolonged or repeated contact with used motor oil may be harmful to skin and could cause skin cancer. Promptly wash affected areas with soap and water. (00358b)

NOTICE

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 39. When checking oil level, use the gauge 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 38. Remove filler plug/dipstick and wipe off the dipstick. Insert the dipstick and tighten into the fill spout.

NOTE

Oil level on a cold engine should never be above the midway point.

3. See Figure 39. Remove filler plug/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 ADD QT and FULL HOT marks on the dipstick.

NOTE

If oil level is at or below the ADD QT mark, add only enough oil to bring the level midway (2) between the ADD QT and FULL HOT marks. Never bring the level to the FULL HOT mark on a cold engine.

Oil Level Hot Check

NOTE

- *The engine will require a longer warm up period in colder weather.*
- *Perform engine oil level hot check 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 39. Remove filler plug/dipstick. Using the gauge marked FULL HOT VEHICLE UPRIGHT on the dipstick, verify the oil level. The level should be between the ADD QT (1) and FULL HOT (3) marks. Add oil as necessary to bring the level to the FULL HOT mark on the dipstick. Do not overfill.

NOTE

Refer to Table 22. Use only recommended oil specified in MAINTENANCE AND LUBRICATION > ENGINE LUBRICATION (Page 104).

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

NOTICE

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)

NOTICE

Do not overfill oil. Doing so can result in oil carryover to the air cleaner leading to equipment damage and/or equipment malfunction. (00190b)

- Check engine oil level at each complete fuel refill.
- Refer to Table 32. 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 (Page 110).

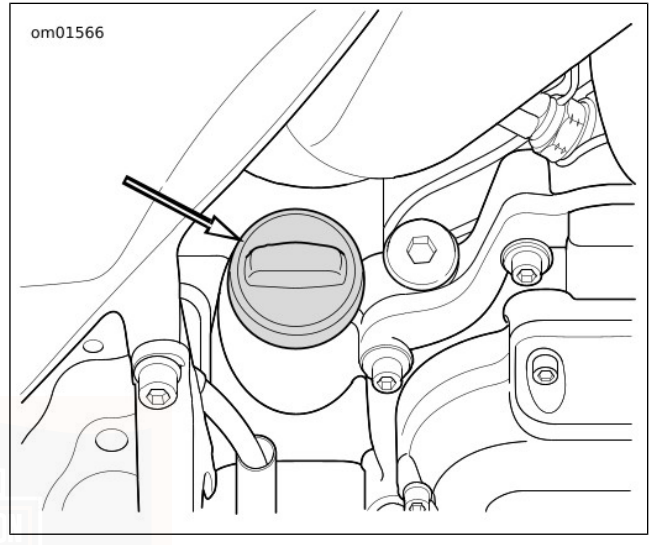
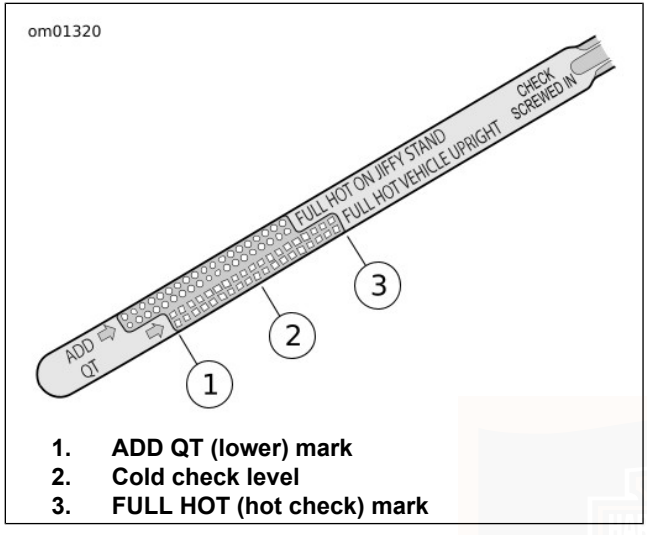


Figure 38. Engine Oil Filler Cap



1. **ADD QT (lower) mark**
2. **Cold check level**
3. **FULL HOT (hot check) mark**

Figure 39. Engine Oil Dipstick (VEHICLE UPRIGHT Gauge)

CHANGING OIL AND OIL FILTER

Refer to Table 32. Change engine oil at the first 1,600 km (1000 mi) for a **new** engine and at regular intervals in normal service at warm or moderate temperatures.

Change oil change at more frequent intervals in cold weather or severe operating conditions. See MAINTENANCE AND LUBRICATION > WINTER LUBRICATION (Page 110).

Twin Cam equipped vehicles require the premium oil filter, available in chrome (Part No. 63798-99A) or black Part No. 63731-99A).

NOTICE

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. Run motorcycle until engine is at normal operating temperature. Turn off engine.
2. Remove filler plug/dipstick.
3. See Figure 40. Remove the oil drain plug (2). Do not remove hex plug (3) or transmission drain plug (1). Allow oil to drain completely.
4. Replace drain plug O-ring if damaged.

NOTICE

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 NUMBER: HD-42311) or OIL FILTER WRENCH (PART NUMBER: HD-44067-A) and hand tools. Do not use with air tools.

6. Clean the oil filter mount flange of any old gasket material.

7. See Figure 41. Lubricate gasket with clean engine oil. 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. Tighten to 19–28.5 N·m (14–21 ft-lbs).

NOTE

Use the proper grade of oil for the lowest temperature expected before the next oil change. Refer to Table 22 for recommended oil.

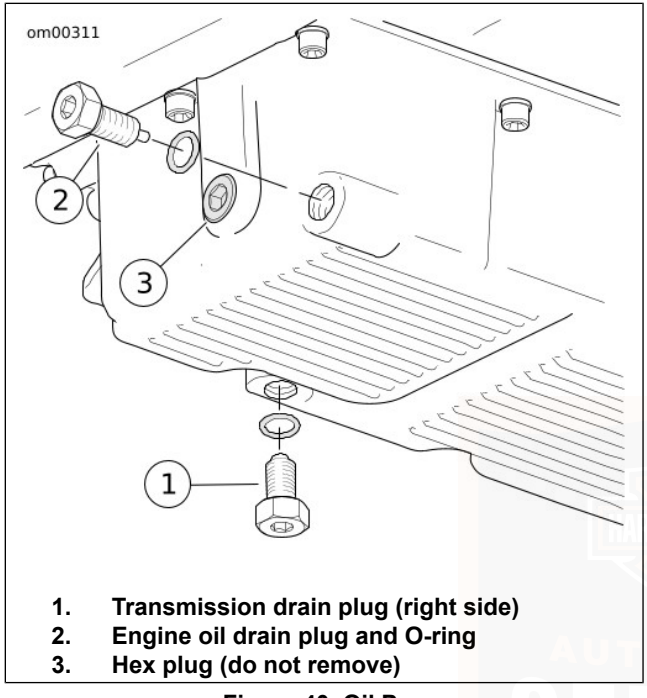
9. Initially add 2.8 L (3.0 qt) of engine oil.

10. Verify proper oil level. See MAINTENANCE AND LUBRICATION > CHECKING OIL LEVEL (Page 105).

    a. Perform engine oil level **cold check**.

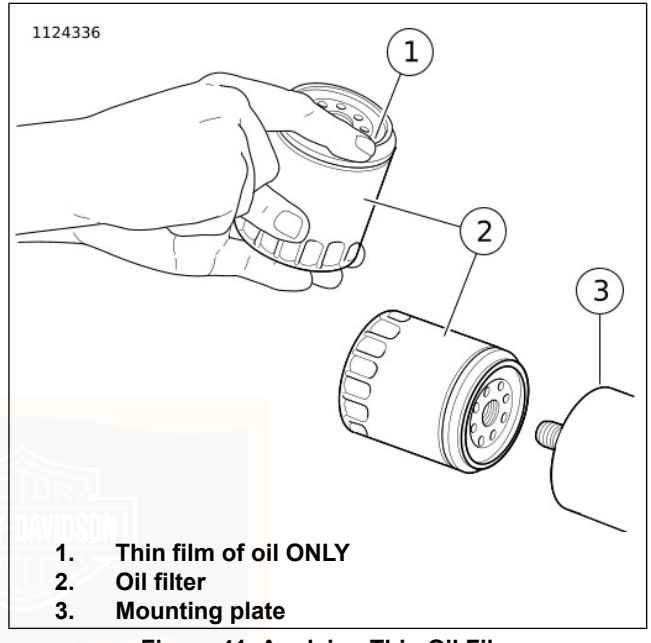
    b. Start engine and carefully check for oil leaks around drain plug and oil filter.

    c. Perform engine oil level **hot check**.



1. **Transmission drain plug (right side)**
2. **Engine oil drain plug and O-ring**
3. **Hex plug (do not remove)**

Figure 40. Oil Pan



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

Figure 41. Applying Thin Oil Film

WINTER LUBRICATION

Change engine oil often in colder climates. If motorcycle is frequently used for trips less than 24 km (15 mi), in ambient temperatures below 16 °C (60 °F), reduce oil change intervals to 2,400 km (1500 mi).

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 water vapor condenses to liquid form on the cool metal surfaces inside the engine. In freezing weather this water will become slush or ice. Over time, accumulated slush or ice may block the oil lines and cause engine damage.

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

CHECKING TRANSMISSION LUBRICANT LEVEL

Check the transmission lubricant level with engine turned off and motorcycle on level surface.

NOTE

Allow vehicle to rest for a few moments before checking lubricant level. This will allow lubricant level to normalize.

1. See Figure 42. Remove transmission lubricant dipstick. Wipe dipstick clean.

2. Insert dipstick into transmission. Thread dipstick in until O-ring makes contact with case. Do not tighten.

3. See Figure 43. Remove dipstick and check lubricant level on dipstick. If lubricant level is at or below the ADD (A) mark on the dipstick, add only enough lubricant to bring level to between ADD (A) mark and FULL (F) mark on dipstick.

4. Install dipstick. Tighten to 2.8–8.5 N·m (25–75 **in-lbs**).

Table 23. Recommended Lubricant

LUBRICANT	REFILL QUANTITY *
FORMULA+ TRANSMISSION AND PRIMARY CHAIN LUBRICANT or SCREAMIN' EAGLE SYN3 FULL SYNTHETIC MOTORCYCLE LUBRICANT 20W50	0.83 L (28 fl oz)
*Approximate. Check and add as needed to bring level within specification.	

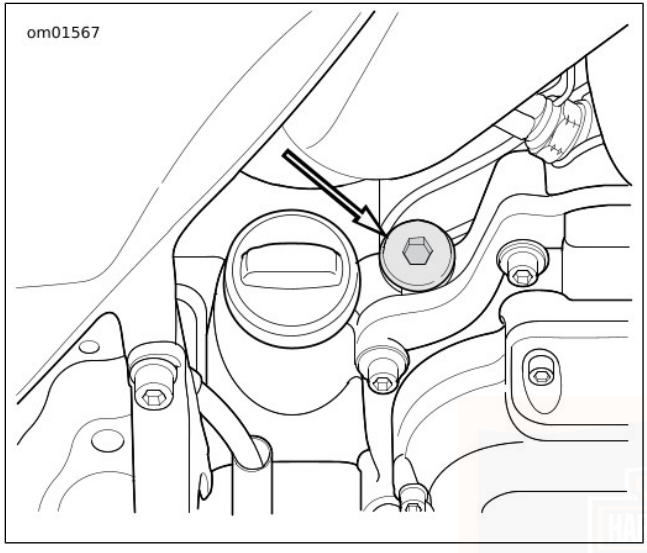
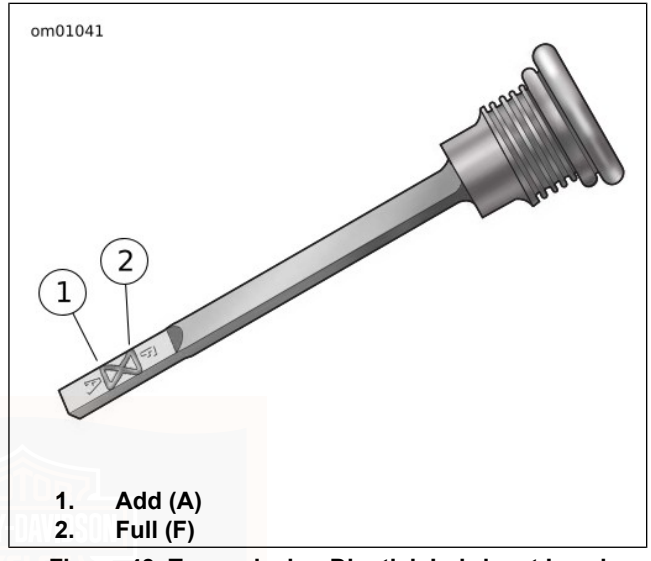


Figure 42. Transmission Dipstick Location



1. **Add (A)**
2. **Full (F)**

Figure 43. Transmission Dipstick Lubricant Level

CHANGING TRANSMISSION LUBRICANT

1. See Figure 42. Remove transmission filler plug/dipstick.

NOTICE

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 44. Remove transmission drain plug. Drain lubricant into a suitable container.

3. Clean and inspect drain plug and O-ring.

NOTICE

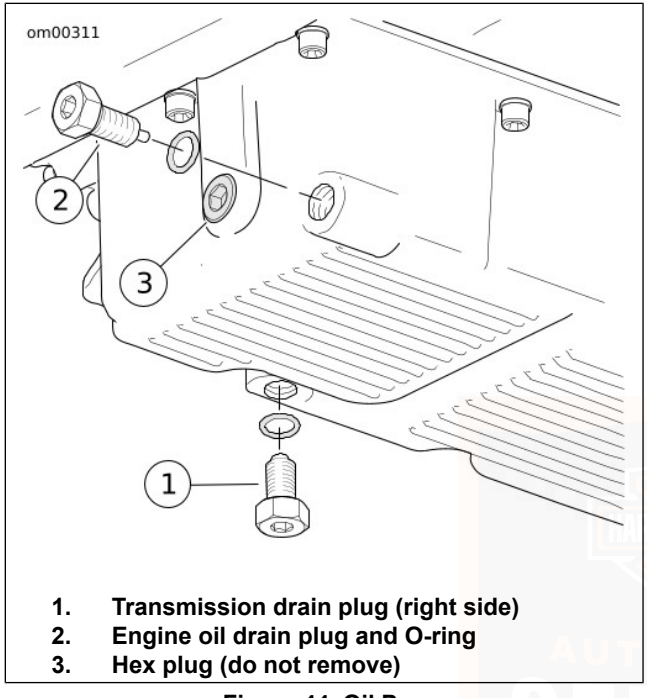
Do not over-tighten filler or drain plug. Doing so could result in a lubricant leak. (00200b)

4. Install drain plug with O-ring. Tighten to 19–28.5 N·m (14–21 ft-lbs). Do not over-tighten.

5. Fill the transmission with 0.83 L (28 fl oz) of recommended Harley-Davidson lubricant. Refer to Table 23.

6. Check lubricant level and add enough lubricant to bring the level between the ADD (A) and FULL (F) marks. See MAINTENANCE AND LUBRICATION > CHECKING TRANSMISSION LUBRICANT LEVEL (Page 111).

7. Install filler plug/dipstick. Tighten to 2.8–8.5 N·m (25–75 **in-lbs**).



1. **Transmission drain plug (right side)**
2. **Engine oil drain plug and O-ring**
3. **Hex plug (do not remove)**

Figure 44. Oil Pan

CHANGING PRIMARY CHAINCASE LUBRICANT

1. Run motorcycle until engine is at normal operating temperature.

NOTICE

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 45. Drain lubricant into suitable container.
3. Clean drain plug. If plug has accumulated a lot of debris, inspect the condition of chaincase components.
4. Install **new** O-ring on drain plug.
5. Install drain plug into primary chaincase cover. Tighten to 19–28.5 N·m (14–21 ft-lbs).

⚠ WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, disconnect negative (-) battery cable before proceeding. (00048a)

6. Disconnect negative battery cable.

7. See Figure 46. Remove screws with captive washers (3) and clutch inspection cover (2).

8. Remove seal (1). Wipe oil from groove in chaincase cover and mounting surface.

NOTICE

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)

9. Place motorcycle in an upright position to fill primary chaincase.

10. Pour specified amount of FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT through clutch inspection cover opening. Refer to Table 24.

Table 24. Primary Chaincase Lubricant Refill Capacity

ITEM	CAPACITY
Primary chaincase lubricant	1.12 L (38 fl oz) wet
	1.33 L (45 fl oz) dry

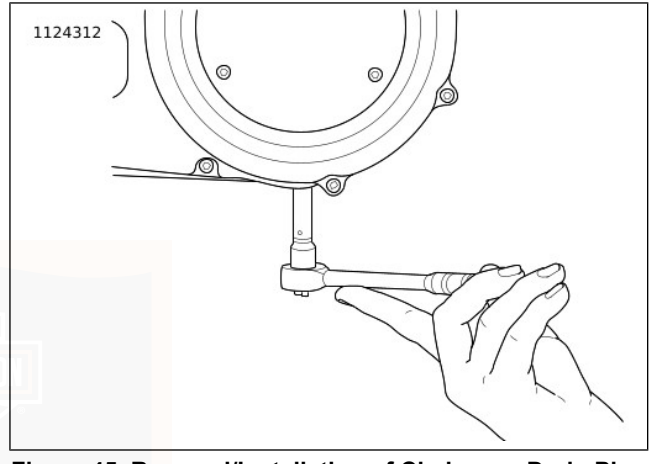
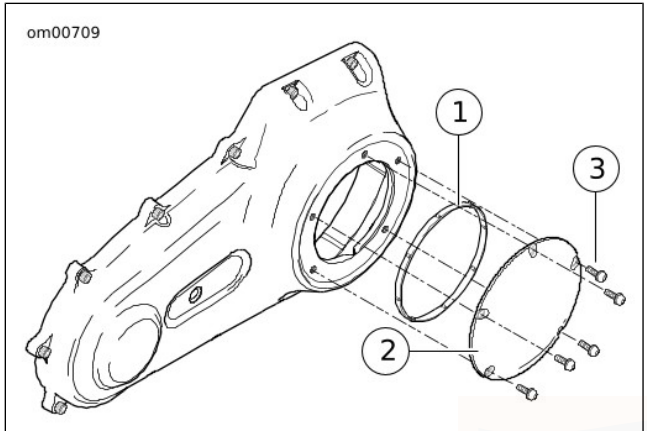


Figure 45. Removal/Installation of Chaincase Drain Plug



1. **Seal**
2. **Clutch inspection cover**
3. **Screw with captive washer (5)**

Figure 46. Clutch Cover

11. Install clutch inspection cover and **new** seal:

    a. Thoroughly wipe all lubricant from cover mounting surface and groove in chaincase cover.

    b. See Figure 46. Position **new** seal (1) in groove in clutch inspection cover. Press each of the nubs on seal into the groove.

    c. Secure inspection cover with screws with captive washers (3).

    d. See Figure 47. Tighten in sequence shown to 9.5–12.2 N·m (84–108 **in-lbs**).

12. Connect battery negative cable. Tighten to 6.8–7.9 N·m (60–70 **in-lbs**).

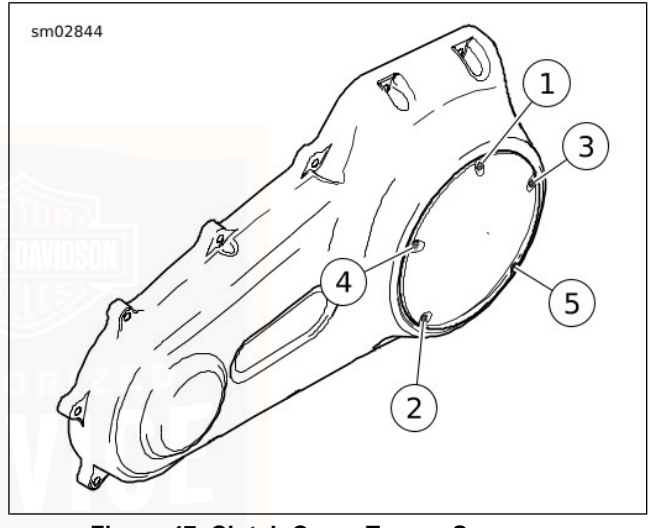


Figure 47. Clutch Cover Torque Sequence

COOLING SYSTEM

⚠ CAUTION

At operating temperature, radiators and oil coolers contain hot fluids. Contact with a radiator or oil cooler can result in minor or moderate burns. (00141b)

⚠ WARNING

Coolant mixture contains toxic chemicals, which may be fatal if swallowed. If swallowed, do not induce vomiting; call a physician immediately. Use in a well ventilated area. Irritation to skin or eyes can occur from vapors or direct contact. In case of skin or eye contact, flush thoroughly with water and go to hospital, if necessary. Dispose of used coolant according to federal, state and local regulations. (00092a)

NOTICE

Use only Genuine Harley-Davidson Extended Life Antifreeze and Coolant. Use of other coolants/mixtures may lead to motorcycle damage. (00179c)

NOTE

Cooling fans operate automatically, even when the ignition switch is off. While the motorcycle is operating, electronically controlled cooling fans turn on periodically.

GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT is pre-diluted and ready to use full strength. It provides temperature protection to -34° F (-36.7° C). DO NOT add water.

NOTICE

De-ionized water must be used with the antifreeze in the cooling system. Hard water can cause scale accumulation in water passages which reduces cooling system efficiency, leading to overheating and motorcycle damage. (00195b)

If GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT is unavailable, a mixture of de-ionized water and ethylene glycol-based antifreeze may be used. At the first opportunity, change back to GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT.

Checking Coolant Level

NOTE

Check coolant level with engine cool and motorcycle on level ground.

1. Remove access panel from lower right fairing. Pry the center top and pull out to release retainers.

NOTE

The coolant bottle has two lines. Use the Full line, vehicle level (1) for all TRIKE models.

2. See Figure 48. Check that coolant level in coolant bottle is at or slightly above the "COLD" line.

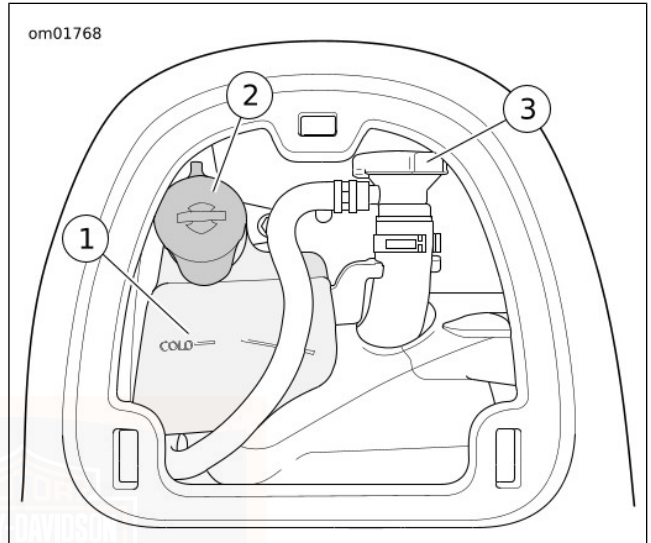
NOTE

- *Do not remove the pressure cap. Fill the coolant bottle by removing the rubber plug.*
- *If the coolant bottle is empty when the engine is cold, inspect the system for leaks. Fill system with coolant and purge any trapped air. Refer to the service manual or see a Harley-Davidson dealer for service.*

3. If level is below "COLD" line on tank, remove rubber plug (2). Add GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT until fluid level reaches the "COLD" line.
4. Install the rubber plug on the coolant bottle.
5. Install access panel.

NOTICE

Clean the inlet surface of the radiator regularly. Leaves and other debris can collect on the radiator surface and degrade radiator performance which could lead to overheating and motorcycle damage. (00197d)



1. **Full line, vehicle level**
2. **Rubber plug**
3. **Pressure cap**

Figure 48. Coolant Level

CHECKING DRIVE BELT DEFLECTION

NOTE

Always use BELT TENSION GAUGE (PART NUMBER: HD-35381-A) to measure belt deflection. Failure to use tension

gauge may cause under-tensioned belts. Loose belts can fail due to "ratcheting" (jumping a tooth) which causes tensile cord crimping and breakage.

Check deflection:

- As part of pre-ride inspection.
- At every scheduled service interval.
- With transmission in neutral.
- With motorcycle at ambient temperature.
- With motorcycle upright or on jiffy stand with rear wheel on the ground.
- With the vehicle unladen: no rider, no luggage and saddlebags (if equipped) empty.

⚠ WARNING

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

1. Disarm security system and remove main fuse. See MAINTENANCE AND LUBRICATION > FUSES AND RELAYS (Page 166).
2. See Figure 49. Obtain BELT TENSION GAUGE (PART NUMBER: HD-35381-A).

NOTE

Customers may purchase gauge from an authorized Harley-Davidson dealer.

3. To use the belt tension gauge:
   a. Slide O-ring (4) to 0 kg (0 lb) mark (3).
   b. **Models equipped with belt deflection window:** Fit belt cradle (2) against bottom of drive belt inline with belt deflection window.
   c. **All other models:** Fit belt cradle (2) against bottom of drive belt half-way between drive pulleys.
   d. Press upward on knob (6) until O-ring slides down to 4.5 kg (10 lb) mark (5) and hold steady.

NOTE

Measure belt deflection on a motorcycle that is upright or on jiffy stand with rear wheel on the ground and unladen.

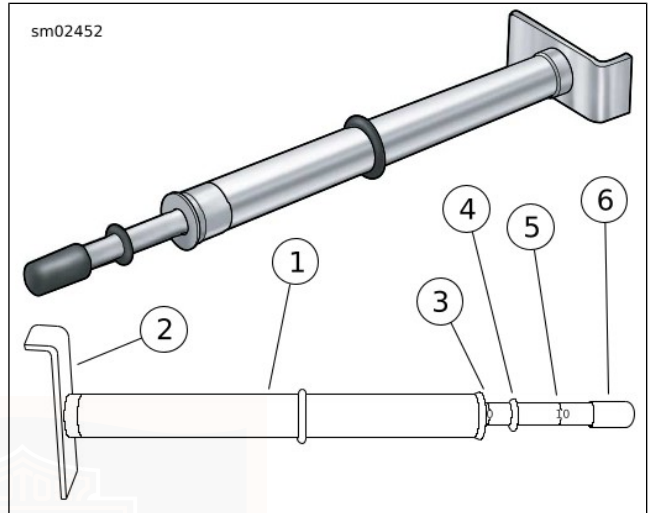
4. Measure belt deflection:
   a. **Models equipped with belt deflection window:** See Figure 51. Measure belt deflection as viewed through belt deflection viewing window while holding gauge steady. Each deflection graduation is approximately 1.59 mm (1/16 in).

b. **All other models:** See Figure 50. Measure belt deflection (4) while holding gauge steady.

5. Compare with specifications listed in Table 25. Adjust as necessary.
6. Install main fuse.

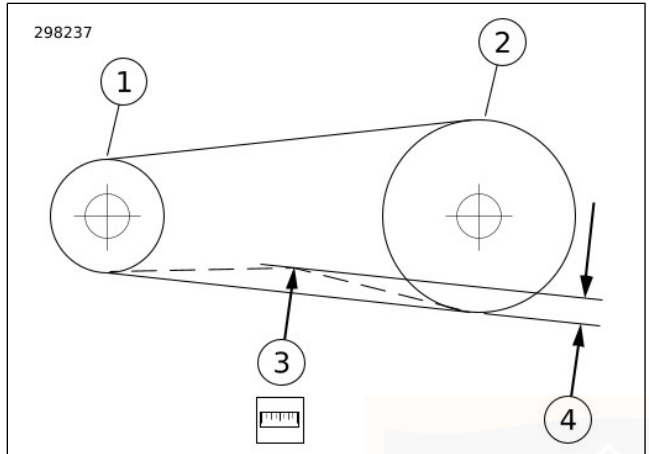
Table 25. Belt Deflection

MODELS	IN	MM
All models	3/8-7/16	9.5-11.1



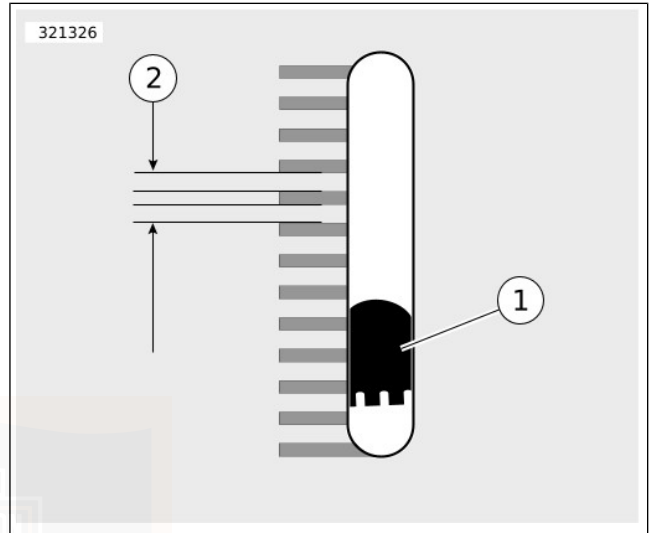
1. **Belt tension gauge**
2. **Belt cradle**
3. **0 lbs (0 kg) mark**
4. **O-ring**
5. **10 lbs (4.5 kg) mark**
6. **Knob**

Figure 49. Belt Tension Gauge



1. Transmission sprocket
2. Rear wheel sprocket
3. 10 lbs (4.5 kg) of force
4. Amount of deflection

Figure 50. Checking Belt Deflection



1. Drive belt
2. Deflection graduations (Approx. 1/16th each)

Figure 51. Belt Deflection Window

VEHICLE ALIGNMENT

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. Refer to Table 32.

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)

CHASSIS LUBRICATION

Refer to Table 32. Inspect and lubricate the following components according to the maintenance schedule. Use HARLEY LUBE for components unless otherwise specified. See the service manual for additional lubrication instructions.

If motorcycle is operated on muddy or dusty roads, clean and lubricate more frequently.

- Front brake lever
- Clutch control hand lever
- Foot shift lever pivot
- Rear brake lever pivot.
- Hinges (such as footrest hinges) as required
- Locks (luggage and ignition switch) as required

OIL APPLICATIONS

Refer to Table 32 for all control connections and parts. Vehicle should be lubricated at regular intervals, particularly after washing motorcycle or driving in wet weather.

FRONT FORK OIL

Refer to Table 32. Have a Harley-Davidson dealer service the front fork 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.

HYDRAULIC CLUTCH

General

The clutch is hydraulically actuated. The master cylinder creates pressure in the clutch fluid line. This pressure activates the secondary clutch actuator. The secondary clutch actuator piston extends and contacts a pushrod to disengage the clutch.

NOTICE

DOT 4 hydraulic brake fluid is used in the hydraulic clutch. Do not use other types of fluids as they are not compatible and could cause equipment damage. (00353b)

NOTICE

DOT 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. (00239c)

NOTE

If DOT 4 brake fluid contacts painted surfaces, IMMEDIATELY flush area with clear water.

Fluid Inspection

⚠ WARNING

Contact with DOT 4 brake fluid can have serious health effects. Failure to wear proper skin and eye protection could result in death or serious injury.

- **If inhaled: Keep calm, remove to fresh air, seek medical attention.**
- **If on skin: Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation develops, seek medical attention.**
- **If in eyes: Wash affected eyes for at least 15 minutes under running water with eye lids held open. If irritation develops, seek medical attention.**
- **If swallowed: Rinse mouth and then drink plenty of water. Do not induce vomiting. Contact Poison Control. Immediate medical attention required.**
- **See Safety Data Sheet (SDS) for more details available at sds.harley-davidson.com**

(00240e)

NOTICE

Do not allow dirt or debris to enter the master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation and equipment damage. (00205c)

Check clutch fluid level periodically. Refer to Table 32 for the recommended frequency. Check lubricant level.

1. Position vehicle on a flat, level surface. Turn handlebar so master cylinder is level.
2. See Figure 52. View reservoir sight glass (3). Verify fluid presence. Sight glass appears dark if fluid is present.

NOTE

- *Fluid should never need to be added or removed from the system during normal wear.*
- *Do NOT overfill clutch reservoir. Clutch fluid volume increases with clutch wear. Over-filling can damage seals and result in damage to clutch system.*
- *If fluid level is substantially above the FILL LEVEL, a worn clutch may be the cause.*

3. If sight glass is not dark:

   a. Check for fluid leaks in hydraulic clutch system.

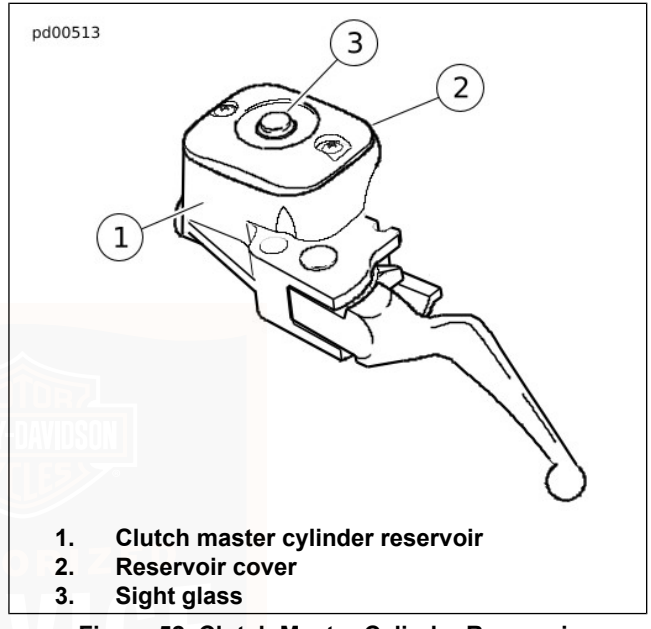
   b. Remove reservoir cover. Verify fluid level.

   c. If fluid level is below FILL LEVEL on ledge in reservoir, add DOT 4 BRAKE FLUID as necessary. Do not exceed FILL LEVEL.

   d. Inspect the clutch master cylinder cover gasket for rips, cuts, cracks and other signs of damage. Replace the gasket if necessary. Attach cover with screws. Tighten to 1.4–1.7 N·m (12–15 **in-lbs**).

NOTE

If the fluid level in the clutch master cylinder reservoir is correct but the clutch does not operate properly, refer to the service manual or see a Harley-Davidson dealer for service.



1. Clutch master cylinder reservoir
2. Reservoir cover
3. Sight glass

Figure 52. Clutch Master Cylinder Reservoir

HYDRAULIC LIFTERS

The hydraulic lifters are self-adjusting. They automatically adjust length to compensate for engine expansion and valve mechanism wear. This keeps the valve mechanism free of lash when the engine is running.

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

Always check the 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 32. 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.

STEERING HEAD BEARINGS

⚠ WARNING

Adjustments to steering head 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. (00051b)

Check for proper steering head bearing adjustment and lubricate bearings using SPECIAL PURPOSE GREASE at proper intervals. Refer to MAINTENANCE SCHEDULING > REGULAR SERVICE INTERVALS (Page 205).

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 movement indicating excessive bearing looseness. Steering head bearings should be adjusted according to service manual procedure, if necessary.

BRAKES

Refer to Table 32. Inspect brake fluid level and check brake pads and discs/rotors for wear at proper intervals.

Brake Fluid

⚠ WARNING

Clean reservoir filler cap or cover before removing. Use only DOT 4 brake fluid from a sealed container. Contaminated fluid can adversely affect braking or clutch disengagement, which could result in death or serious injury. (00504d)

⚠ WARNING

Contact with DOT 4 brake fluid can have serious health effects. Failure to wear proper skin and eye protection could result in death or serious injury.

- **If inhaled: Keep calm, remove to fresh air, seek medical attention.**
- **If on skin: Remove contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. If irritation develops, seek medical attention.**
- **If in eyes: Wash affected eyes for at least 15 minutes under running water with eye lids held open. If irritation develops, seek medical attention.**
- **If swallowed: Rinse mouth and then drink plenty of water. Do not induce vomiting. Contact Poison Control. Immediate medical attention required.**
- **See Safety Data Sheet (SDS) for more details available at sds.harley-davidson.com**

(00240e)

NOTICE

DOT 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. (00239c)

NOTICE

Do not allow dirt or debris to enter the master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation and equipment damage. (00205c)

1. See Figure 53. Check fluid level in brake master cylinder reservoir. Position vehicle on a flat level surface. Turn handlebar so master cylinder is level.

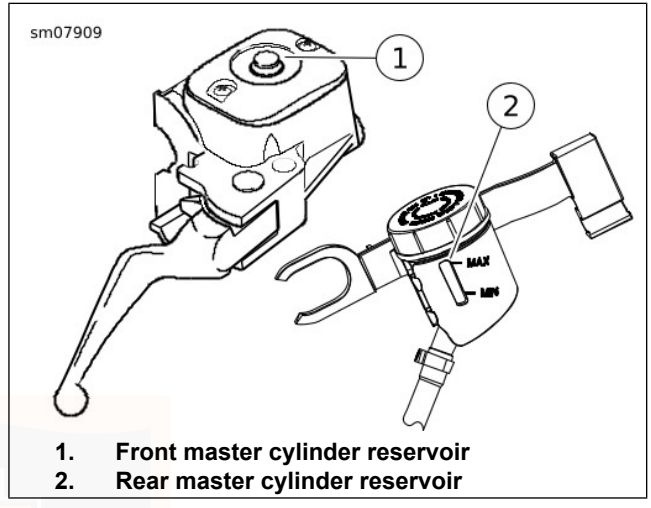
- Sight glass appears dark if fluid is present.
- If the front sight glass remains clear, see a Harley-Davidson dealer.

- The rear fluid level must be between the MIN and MAX lines.

NOTE

- *If the brake system is not leaking, there should never be a need to add fluid. If the fluid level is low, the pads are probably worn and must be replaced. By replacing the pads, the fluid level will rise.*
- *Use only DOT 4 brake fluid and replace the brake fluid every two years. See a Harley-Davidson dealer.*

2. Verify front brake hand lever and rear brake foot pedal have a firm feel when applied. If brakes are not firm, the brake system must be bled.



1. Front master cylinder reservoir
2. Rear master cylinder reservoir

Figure 53. Brake Fluid Sight Glass (typical)

Brake Pads

⚠ 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)

⚠ 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)

⚠ 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)

⚠ WARNING

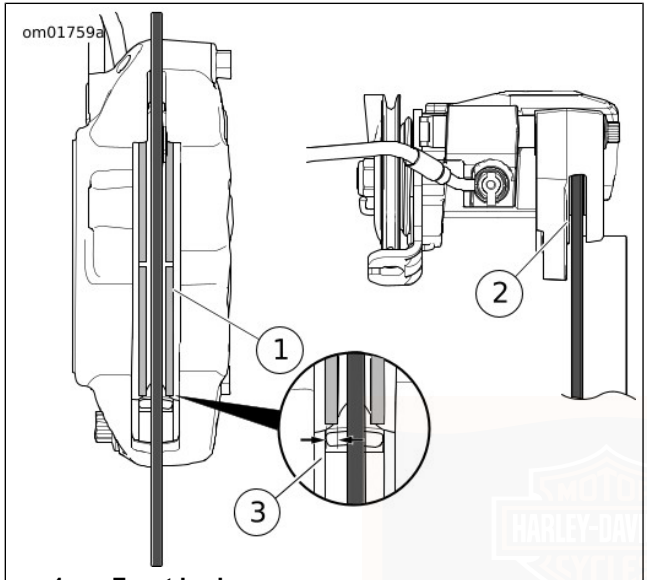
Perform routine scheduled brake maintenance. Lack of maintenance at recommended intervals can adversely affect brake performance, which could result in death or serious injury. (00055a)

⚠ WARNING

Be sure wheel and brake caliper are aligned. Riding with a misaligned wheel or brake caliper can cause the brake disc to bind and lead to loss of control, which could result in death or serious injury. (00050a)

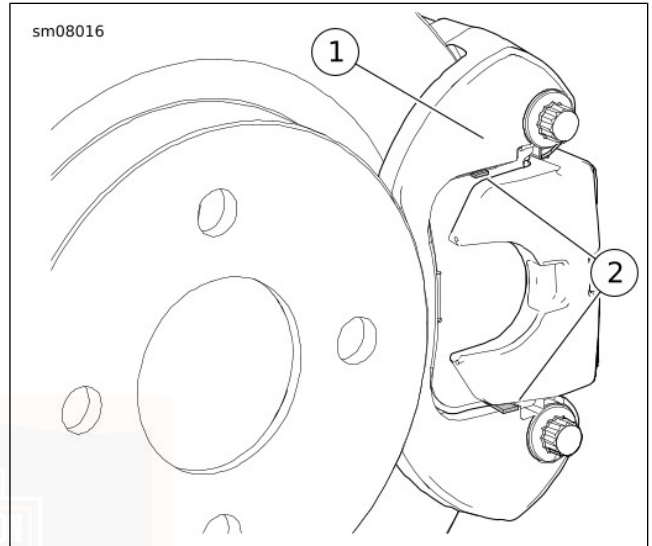
Harley-Davidson has provided your new motorcycle with the optimum brake pad friction material available. It is selected to give the best performance possible under dry, wet and high operating temperature conditions. It exceeds all regulatory requirements currently in effect. However, during some braking conditions you may experience noise. This is normal for this friction material.

1. See Figure 54. Check the brake disc or rotor as it spins. The disc/rotor should run true in the brake caliper.
2. Measure the thickness of the brake pad friction material. The pads may not necessarily wear evenly. Check each pad.
3. The rear brake pads have tabs to indicate brake pad wear. Rear pads can be visually inspected for wear without rear wheels removed. See Figure 55. Compare the end of tabs (2) to the surface of the outboard caliper bracket (1). If tab is flush or below surface, see a Harley-Davidson dealer.
4. Refer to Table 26. If the brake pad friction material is at the minimum thickness or less, replace the pads. Always replace brake pads in pairs. See a Harley-Davidson dealer.



1. Front brake
2. Rear brake
3. Brake pad friction material thickness

Figure 54. Brake Friction Material



1. Caliper bracket surface
2. Tabs

Figure 55. Rear Brake Pad Inspection

Table 26. Minimum Brake Pad Friction Material Thickness

BRAKE	IN	MM
Front	0.040	1.02
Rear	0.040	1.02

PARKING BRAKE

As brake pads begin to wear in, the parking brake pedal will move further when the parking brake is applied. Inspect and adjust the parking brake on the following occasions.

- At regular intervals. Refer to Table 32.
- Periodically after extensive rear brake usage.
- After replacement of rear brake pads or other rear brake service.

NOTE

The following inspection and adjustment procedures can 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 and cover rear brake pedal with right foot.
3. With the left foot, firmly push down the parking brake pedal until it cannot be pushed any further. The brake gives a number of clicks before reaching its maximum position. See Figure 20.
4. With parking brake applied, release the front brake and gradually pull in the clutch lever.
5. The rear brakes should hold securely and the vehicle should remain still. See ADJUSTMENT to adjust parking brake as necessary.

Adjustment

1. Place the vehicle on a flat level surface.
2. Release parking brake. Verify the vehicle moves easily when pushed by hand.
3. See Figure 56. Pull the boot back. Loosen jamnut.
4. Push the parking brake pedal to the **first** click. Attempt to roll the vehicle.
   a. If some resistance is felt, go to next step.
   b. If wheels turn freely, release parking brake and lengthen adjuster. Check and repeat until resistance is felt.

5. Push the parking brake pedal two more clicks to the **third** click. Vehicle should not move when pushed. If wheels turn, release parking brake and lengthen adjuster. Check and repeat until wheels will not turn.

6. Release the parking brake pedal. Verify vehicle moves freely.

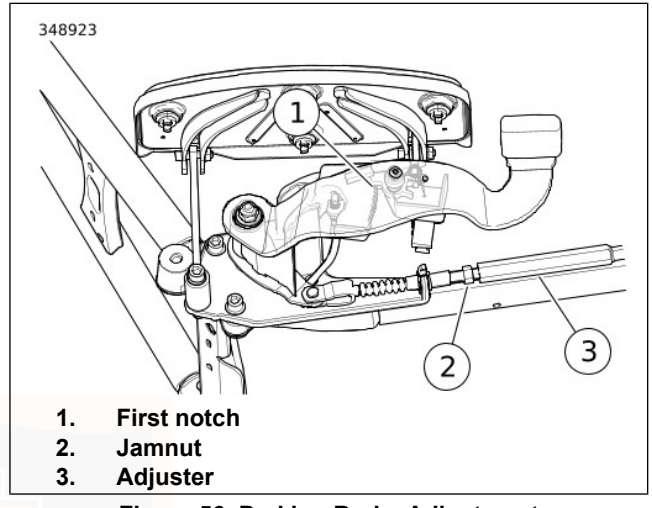
NOTE

Apply a coat of grease to the adjuster threads to ease future adjustments.

7. Hold adjuster and tighten jamnut to 8.1–13.6 N·m (72–120 **in-lbs**).

8. Install the boot over the adjuster.

9. See INSPECTION to check performance of the adjusted parking brake.



1. **First notch**
2. **Jamnut**
3. **Adjuster**

Figure 56. Parking Brake Adjustment

JACKING POINTS

NOTICE

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, mounting brackets, components or housings. Failure to comply can cause serious damage resulting in the need to perform major repair work. (00586d)

NOTE

- *Never use differential housing as lifting point.*
- *Set the parking 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 57. When lifting the front to remove the front tire or check steering head bearings, and so forth, engage the parking brake. Place the jack under the forward portion of the frame, approximately centered under the crankshaft, and make sure it contacts the frame tube forgings on both sides. Verify that the jack is not contacting the parking brake components.

See Figure 58. 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 make 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.

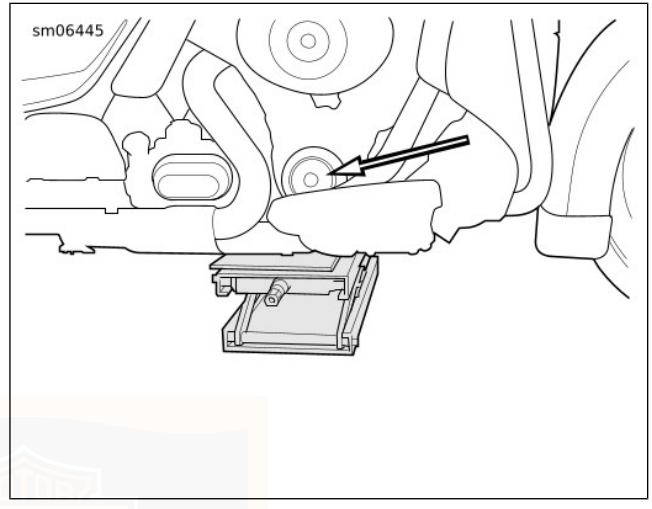


Figure 57. Jack Placement Under Front

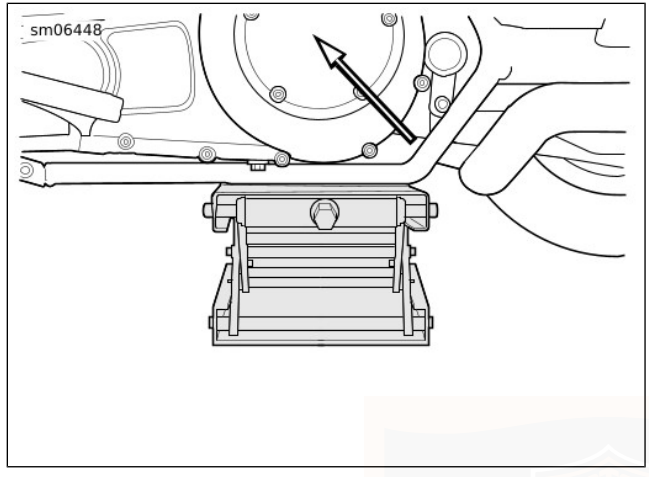


Figure 58. Jack Placement Under Rear

TIRES

Refer to Table 14 for tires and pressures.

- Be sure to keep tires properly inflated.
- Maintain correct tire pressure.
- Follow tire data for correct cold tire inflation pressure.
- Check before riding when tires are cold.

⚠ WARNING

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

⚠ WARNING

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

⚠ WARNING

Only install original equipment tire valves and valve caps. A valve, or valve and cap combination, that is too long or too heavy can strike adjacent components and damage the valve, causing rapid tire deflation. Rapid tire deflation can cause loss of vehicle control, which could result in death or serious injury. (00281a)

Check tires for correct pressure, excessive wear, or any signs of tire damage at least weekly if in daily use. Check before each trip if only used occasionally.

Use only Harley-Davidson specified tires. Refer to Table 14 Tire Specifications. Other tires may not fit correctly and could adversely affect stability, handling and performance.

⚠ 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 removed tire by a Harley-Davidson dealer. Speed should NOT exceed 80 km/h (50 mph) for the first 24 hours after repair, and the repaired tire should NEVER be used over 129 km/h (80 mph). Failure to follow this warning could lead to tire failure and result in death or serious injury. (00015b)

⚠ WARNING

Striking an object, such as a curb or pothole can cause internal tire damage. If an object is struck, have the tire inspected immediately inside and out by a Harley-Davidson dealer. A damaged tire can fail while riding and adversely affect stability and handling, which could result in death or serious injury. (00058b)

TIRE REPLACEMENT

Inspection

⚠ WARNING

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

⚠ WARNING

Replace tire immediately with a Harley-Davidson specified tire when wear bars become visible or only 1 mm (1/32 in) tread depth remains. Riding with a worn tire could result in death or serious injury. (00090c)

Harley-Davidson tires are equipped with wear bars that run horizontally across the tread. When a tire is worn to the point the tread wear indicator bars become visible on the tread surfaces, or 0.8 mm (1/32 in) tread depth remains, the tire can:

- Be more easily damaged leading to tire failure.
- Provide reduced traction.
- Adversely affect stability and handling.

See Figure 59 and Figure 61. Arrows on tire sidewalls pinpoint location of wear bar indicators.

See Figure 60 and Figure 62. Always replace tires before the tread wear indicator bars become visible on the tread surfaces.

When To Replace Tires

⚠ WARNING

Harley-Davidson recommends the use of its specified tires. Harley-Davidson vehicles are not designed for operation with non-specified tires, including snow, moped and other special-use tires. Use of non-specified tires can adversely affect stability, handling or braking and lead to loss of vehicle control, which could result in death or serious injury. (00024d)

New tires are needed if any of the following conditions exist (refer to Table 14 for the specified replacement tires):

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. Bumps, bulges or slits in the tire.
4. Punctures, cuts, or other damage to the tire that cannot be repaired.

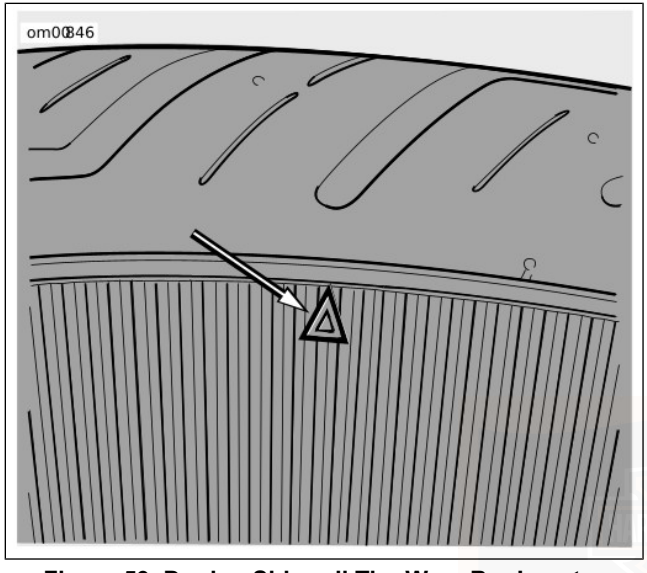


Figure 59. Dunlop Sidewall Tire Wear Bar Locator

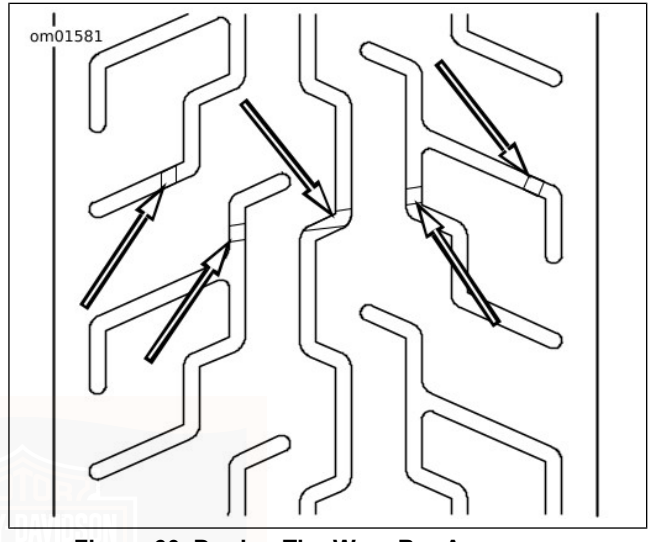


Figure 60. Dunlop Tire Wear Bar Appearance

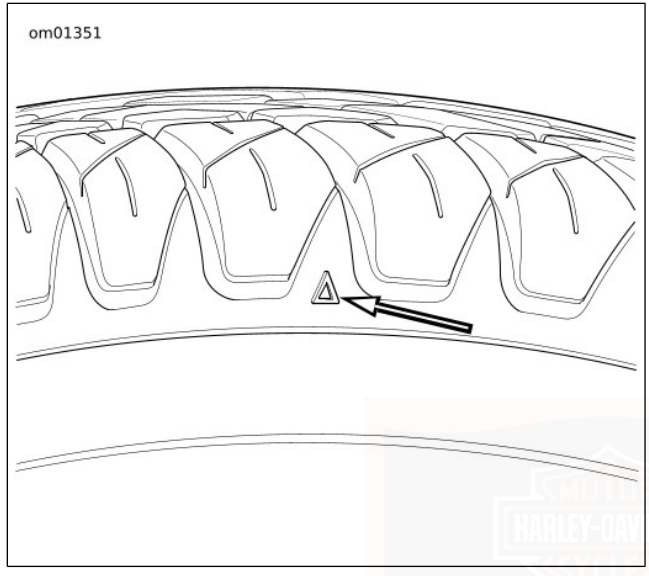


Figure 61. Rear Tire Tread Wear Bar Indicator

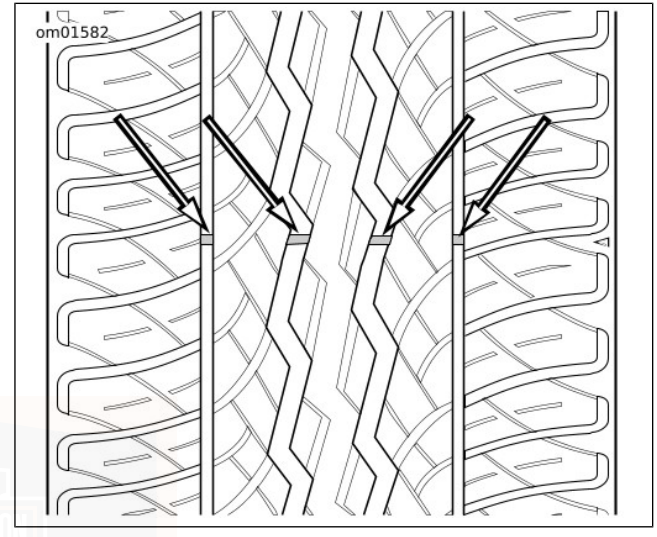


Figure 62. Dunlop Rear Tire Wear Bar Appearance

SHOCK ABSORBERS

Inspect shock absorbers for leaks and rubber bushings for 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)

Check the spark plugs at proper intervals. Refer to Table 32.

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.
3. Check spark plug gap against specifications table.

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.*

4. Always tighten to the proper torque. Spark plugs must be tightened to the torque specified for proper heat transfer. Refer to Table 6.
5. Connect each molded connector cap until the cap snaps firmly into place over the spark plug.

AIR FILTER

Removal

1. See Figure 63. Remove screw and air cleaner cover with rubber seal.
2. Remove three screws to release cover bracket from filter element.
3. Remove filter element pulling breather tube from hole on inboard side.
4. Remove breather tube from breather bolts.
5. Inspect the breather tube and fittings for cuts, tears, holes or signs of deterioration. Replace or repair as necessary.

⚠ WARNING

Do not use gasoline or solvents to clean filter element. Flammable cleaning agents can cause an intake system fire, which could result in death or serious injury. (00101a)

⚠ 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)

6. Clean filter element.

   a. Wash the paper/wire mesh filter element (and breather tubes) in lukewarm water with a mild detergent. Do not strike filter element on a hard surface to dislodge dirt.

   b. Allow filter element to air dry or use low pressure compressed air blowing from the inside. Do NOT use air cleaner filter oil on the Harley-Davidson paper/wire mesh air filter element.

   c. Hold the filter element up to a strong light source. The element is sufficiently clean when light is uniformly visible through the media.

   d. Replace the filter element if damaged or if filter media cannot be adequately cleaned.

Installation

NOTE

Never mount air cleaner without installing breather tubes. Any crankcase vapor emissions may be in violation of emissions regulations.

1. See Figure 63. Install breather tube onto breather bolts.

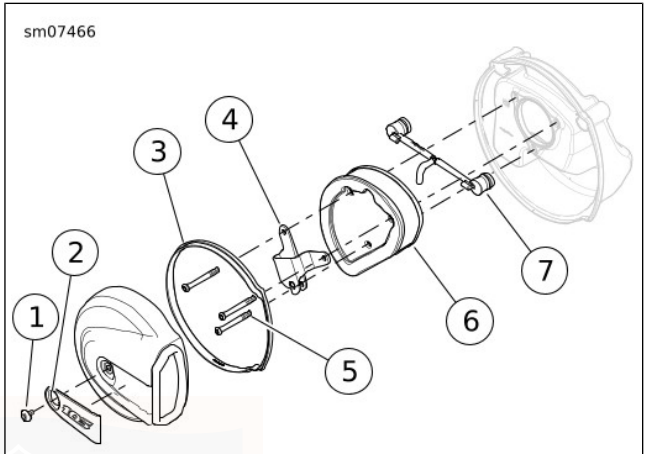
2. Insert breather tube into hole on inboard side of filter element.

3. Place filter element onto backplate with the flat side at the 4 o'clock position.

4. Install cover bracket. Tighten screws to 12.2–14.9 N·m (108–132 **in-lbs**).

5. Verify that rubber seal is not damaged and is properly seated around perimeter of air cleaner cover.

6. Place air cleaner cover onto backplate. Apply a drop of LOCTITE 243 MEDIUM STRENGTH THREADLOCKER AND SEALANT (blue) to the threads of each screw. Install screw. Tighten to 4.1–6.8 N·m (36–60 **in-lbs**).



1. **Cover screw**
2. **Insert with screw access**
3. **Rubber seal**
4. **Cover bracket**
5. **Cover bracket screw (3)**
6. **Filter element**
7. **Breather tube**

Figure 63. Air Cleaner Assembly

HEADLAMP : DOMESTIC / JAPAN

Removal

1. Remove screw at bottom of chrome headlamp door.
2. Rotate door counterclockwise a few degrees. Pull headlamp door straight forward to remove.
3. See Figure 64. Remove screws securing retaining ring.
4. Disconnect headlamp connector.

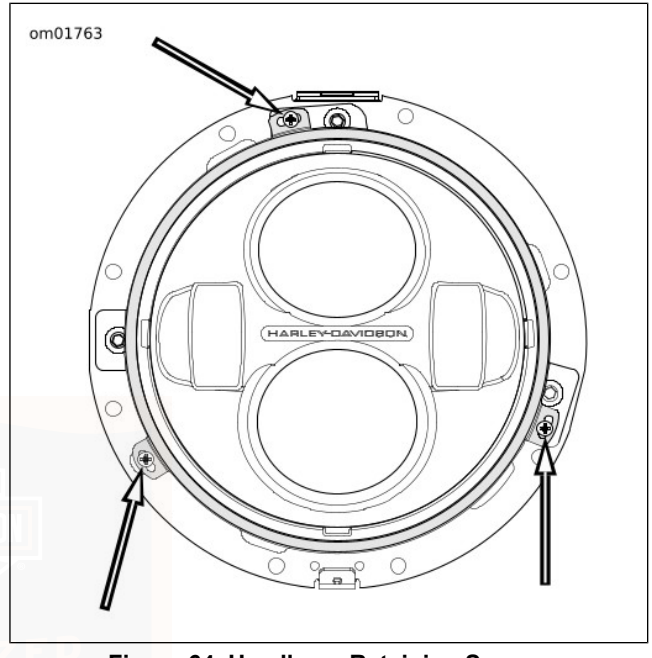


Figure 64. Headlamp Retaining Screws

Bulb Replacement

NOTICE

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)

NOTE

LED headlamp contains no replacement bulbs. Replace entire assembly if failure occurs.

Installation

1. Install headlamp connector.
2. Secure headlamp assembly with retaining ring and screws. Tighten screws to 2.5–3.6 N·m (22–32 **in-lbs**).
3. Install the chrome headlamp door:
   a. Verify that rubber seal is in place on headlamp door. Apply glass cleaner to seal to ease installation.
   b. With the headlamp door rotated a few degrees counterclockwise, push headlamp door straight onto headlamp.
   c. Rotate clockwise until screw can be installed. Tighten to 1–2 N·m (9–18 **in-lbs**).

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)

1. Check tire pressure.
2. Adjust rear shocks for the rider and intended load.
3. Fill fuel tank or add an equal amount of ballast.

NOTE

Choose a wall in minimum light.

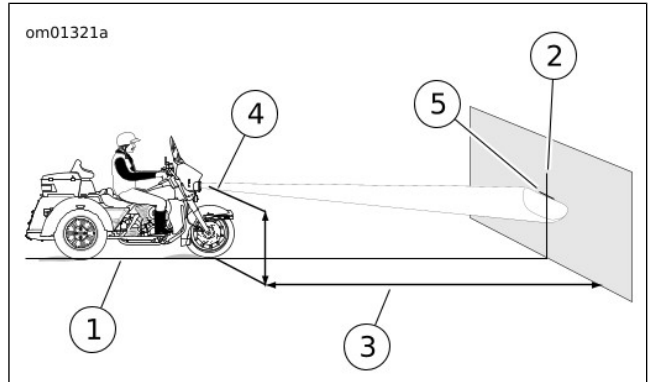
4. See Figure 65. Park the motorcycle on a line (1) perpendicular to the wall.
5. Position motorcycle so the front axle is 7.6 m (25 ft) from wall.

6. Draw a vertical centerline (2) on the wall.

NOTE

The upper lens is low beam on LED headlamps.

7. With the motorcycle loaded, point the front wheel straight forward at wall. Measure the distance (4) from the floor to the center of the low beam bulb.
8. See Figure 65. Draw a horizontal line (5) through the vertical line at low beam centerline.
9. See Figure 67. Verify headlamp alignment. See Figure 65. The headlamp is aligned when the top of light beam hot spot is located as shown with headlamp set to low beam.



1. **Perpendicular line**
2. **Vertical centerline**
3. **25 ft (7.6 m)**
4. **Low beam bulb centerline**
5. **Horizontal line at low beam centerline**

Figure 65. Headlamp Alignment: LED

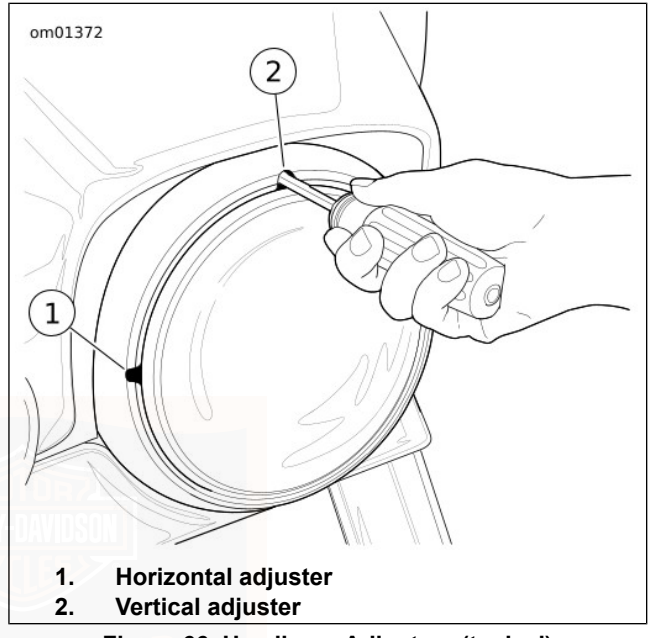
HEADLAMP ADJUSTMENT

NOTE

Do not remove trim ring for headlamp adjustment.

1. Set LED headlamp to low beam.

2. See Figure 66. Insert a 5/32 ball end hex wrench through adjuster slots in trim ring.
   a. **Horizontal:** Turn the horizontal adjusting screw (1) to adjust light beam left and right.
   b. **Vertical:** Turn the vertical adjusting screw (2) to adjust light beam up and down.
3. See Figure 67. Adjust headlamp to center light beam as shown.



1. **Horizontal adjuster**
2. **Vertical adjuster**

Figure 66. Headlamp Adjusters (typical)

AUXILIARY/FOG LAMP ALIGNMENT : DOMESTIC

1. Place the vehicle facing a target wall as described in MAINTENANCE AND LUBRICATION > HEADLAMP ALIGNMENT (Page 142).

NOTE

The weight of the rider compresses the suspension slightly. Have a person whose weight is roughly the same as the principal rider sit on the motorcycle.

2. With the vehicle upright and a rider seated, measure the distance from the floor to the centerline of each auxiliary/fog lamp.

3. Measure the horizontal distance from the headlamp vertical centerline to the vertical centerline of each auxiliary/fog lamp.

4. See Figure 67. Mark the auxiliary/fog lamp horizontal and vertical centerlines (2, 3) on the wall.

5. Remove the turn signal lamp from the mounting bracket.

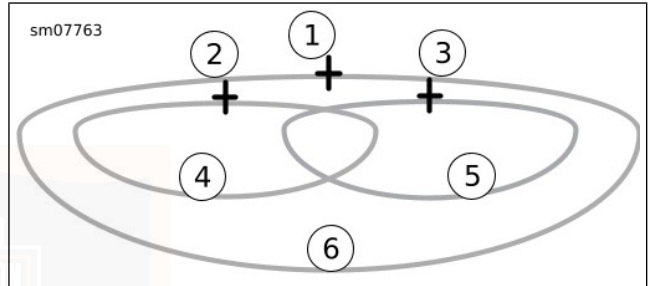
6. Using FLARE NUT SOCKET (PART NUMBER: FRX181), loosen the auxiliary/fog lamp flange nut only enough to allow movement of the lamp.

7. Turn on the headlamp low beam and cover both the headlamp and the right auxiliary/fog lamp. Adjust the left auxiliary/fog lamp so the entire high intensity zone (4) is below the centerline as shown in Figure 67.

8. Repeat procedure with right lamp.

9. Tighten auxiliary/fog lamp nut to 27.1–32.5 N·m (20–24 ft-lbs).

10. Install turn signal. Secure turn signal lamp to mounting bracket. Tighten to 10.9–13.5 N·m (96–120 **in-lbs**).



1. **Headlamp centerline**
2. **Left auxiliary lamp centerline**
3. **Right auxiliary lamp centerline**
4. **Left auxiliary lamp beam area**
5. **Right auxiliary lamp beam area**
6. **Headlamp beam area**

Figure 67. Properly Aim Lamps: LED Type

HEADLAMP ALIGNMENT: HDI

Check Alignment

1. Check tire pressure.
2. Adjust rear shocks for the rider and intended load.
3. Fill fuel tank or add an equal amount of ballast.

NOTE

Choose a wall in minimum light.

4. See Figure 68. Park the motorcycle on a line (1) perpendicular to the wall.
5. Position motorcycle front axle 7.6 m (25 ft) from wall.
6. Draw a vertical centerline (2) on the wall.

NOTE

The upper lens is low beam on LED headlamps.

7. With the motorcycle loaded, point the front wheel straight forward at wall. Measure the distance (4) from the floor to the center of the low beam bulbs.
8. Draw a horizontal line (5) at the measured bulb centerline.
9. Measure the horizontal distance from the vehicle vertical centerline to the vertical centerline of each headlamp.
10. See Figure 69. Mark the headlamp centerlines (1, 2) on the wall to intersect the horizontal line.

NOTE

LED headlamps create a beam that is nearly flat on the top.

11. Verify headlamp alignment:
    a. Set headlamps to low beam.
    b. The headlamp is aligned when the light beam hot spot is located as shown.

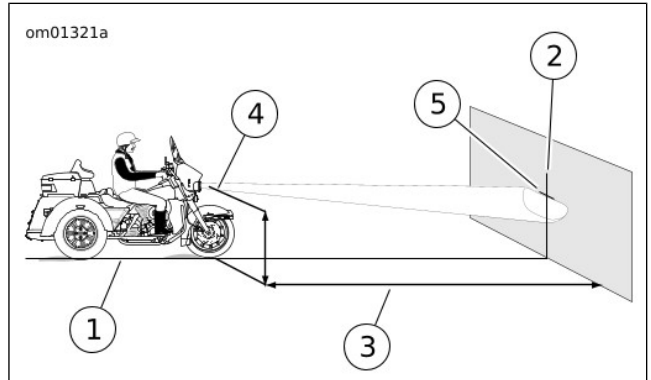
Adjust Alignment

1. Place the vehicle facing a target wall as described above.
2. Remove screw and lockwasher securing turn signal lamps. Remove turn signal lamps from the headlamp mounting brackets.
3. Loosen the headlamp nuts only enough to allow movement of the lamp.
4. Turn headlamps on low beam. Cover the right headlamp. Adjust left headlamp so the top of the high intensity zone (3) is below and approximately centered under the left centerlines as shown in Figure 69.

5. Cover the left headlamp. Adjust right headlamp so the top of the high intensity zone (4) is below and approximately centered under the right auxiliary/fog lamp centerlines as shown in Figure 69.

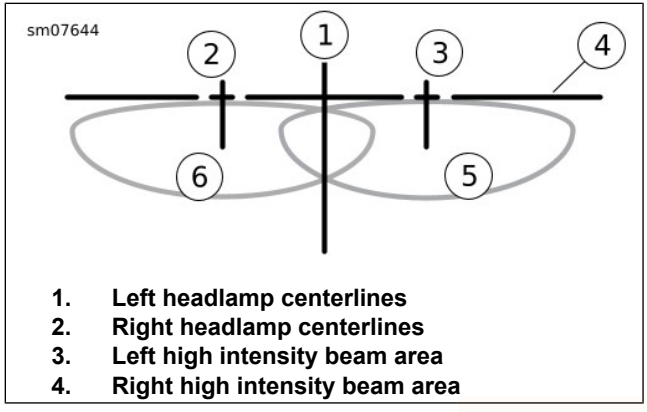
6. Tighten headlamp nut to 27.1–32.5 N·m (20–24 ft-lbs).

7. Secure turn signal lamps with screw and lockwasher. Tighten to 10.9–14.8 N·m (96–131 **in-lbs**).



1. **Perpendicular line**
2. **Vertical centerline**
3. **25 ft (7.6 m)**
4. **Low beam bulb centerline**
5. **Horizontal line at low beam centerline**

Figure 68. Headlamp Alignment: LED



1. **Left headlamp centerlines**
2. **Right headlamp centerlines**
3. **Left high intensity beam area**
4. **Right high intensity beam area**

Figure 69. Headlamp Alignment: HDI

HEADLAMP BULB REPLACEMENT: HDI

NOTE

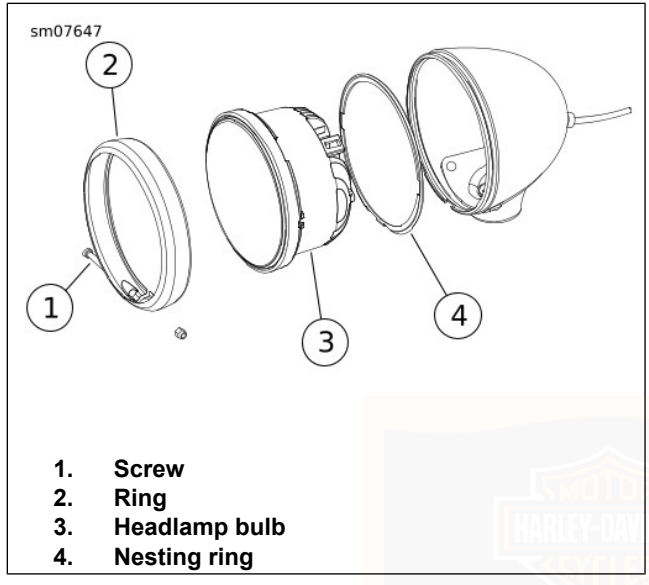
HDI models have LED headlamps. LED lamps contain no replacement bulbs. Replace the entire assembly if failure occurs.

Removal

1. See Figure 70. Remove screw (1). Remove trim ring (2) from lamp housing.
2. Disconnect headlamp connector.
3. Remove headlamp bulb assembly and nesting ring.

Installation

1. See Figure 70. Place nesting ring (4) on back of **new** bulb (3) with the index tab facing away from bulb.
2. Install bulb assembly.
3. Mate connector to bulb.
4. Engage index tab of nesting ring with slot at bottom of lamp housing.
5. Engage index tabs on bulb assembly with slots in nesting ring.
6. Install trim ring on lamp housing with screw centered at bottom. Tighten to 1–1.6 N·m (9–14 **in-lbs**).
7. Check headlamp alignment. See MAINTENANCE AND LUBRICATION > HEADLAMP ALIGNMENT: HDI (Page 146).



1. **Screw**
2. **Ring**
3. **Headlamp bulb**
4. **Nesting ring**

Figure 70. Headlamp Assembly

TURN SIGNAL BULB REPLACEMENT: DOMESTIC

1. See Figure 71. Insert coin in notch. Carefully twist until the lens cap pops out of the lamp housing.

2. While pushing bulb in, rotate counterclockwise to remove.

3. Inspect condition of electrical contacts in socket. If necessary, clean with a small wire brush and electrical contact cleaner.

4. Apply ELECTRICAL CONTACT LUBRICANT to contacts in socket and at bottom of **new** bulb.

5. Align pins on new bulb with guides in bulb socket. Push and rotate new bulb clockwise into socket.

6. Snap lens cap onto the lamp housing with notch at bottom.

⚠ 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. Check operation of all lamps.

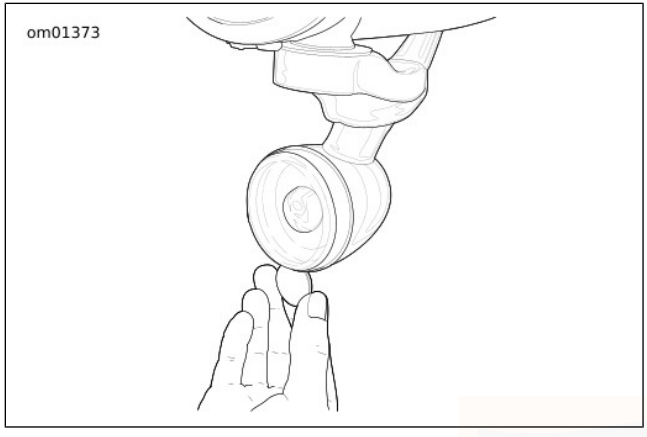


Figure 71. Lens Cap Notch

TURN SIGNAL BULB REPLACEMENT: HDI/JAPAN

NOTE

LED turn signals contain no service parts. Replace the entire assembly if an LED fails. See the service manual or a Harley-Davidson dealer.

TAIL LAMP BULB REPLACEMENT: DOMESTIC

Removal

1. Remove two screws to release tail lamp assembly from chrome base.
2. See Figure 72. Disconnect tail lamp connector (3).
3. Rotate bulb socket 1/4 turn counterclockwise and remove from tail lamp assembly.

Installation

1. Coat base of **new** bulb with ELECTRICAL CONTACT LUBRICANT. Install new bulb.
2. Insert socket (4) into tail lamp assembly. Rotate 1/4 turn clockwise.
3. See Figure 72. Connect tail lamp connector (3).
4. Place tail lamp into position against chrome base.

NOTE

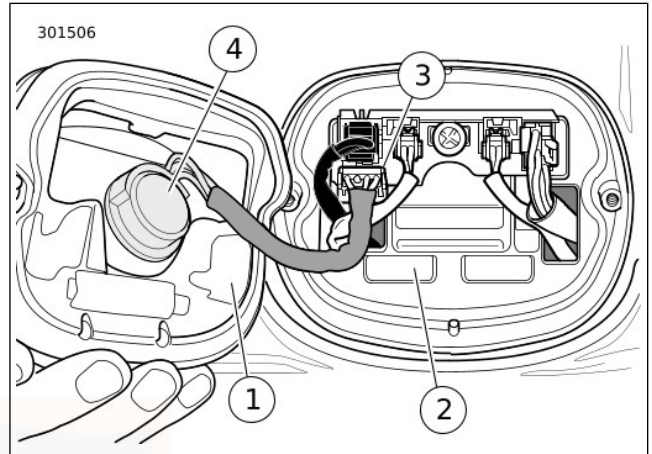
Do not over-tighten screws.

5. Install two screws. Tighten to 2.3–2.7 N·m (20–24 **in-lbs**).

⚠ 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)

6. Check operation of all lamps.



1. **Lens**
2. **Base**
3. **4-pin multilock connector**
4. **Bulb socket**

Figure 72. Tail Lamp Assembly

TAIL LAMP BULB REPLACEMENT: HDI/JAPAN

NOTE

LED tail lamps contain no service parts. Replace the entire assembly if an LED fails. See the service manual or a Harley-Davidson dealer.

BATTERY MAINTENANCE

Type

Your motorcycle uses an Absorbed Glass Mat (AGM) battery. The AGM battery is permanently sealed, valve regulated, maintenance-free, lead/calcium and sulfuric acid battery. All batteries are shipped precharged and ready for 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 from battery. Failure to read and understand all precautions contained in warning, could result in death or serious injury. (00064b)

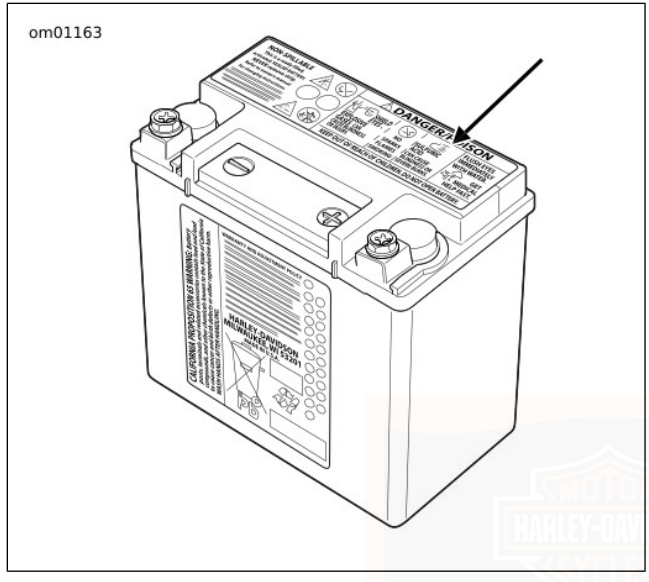
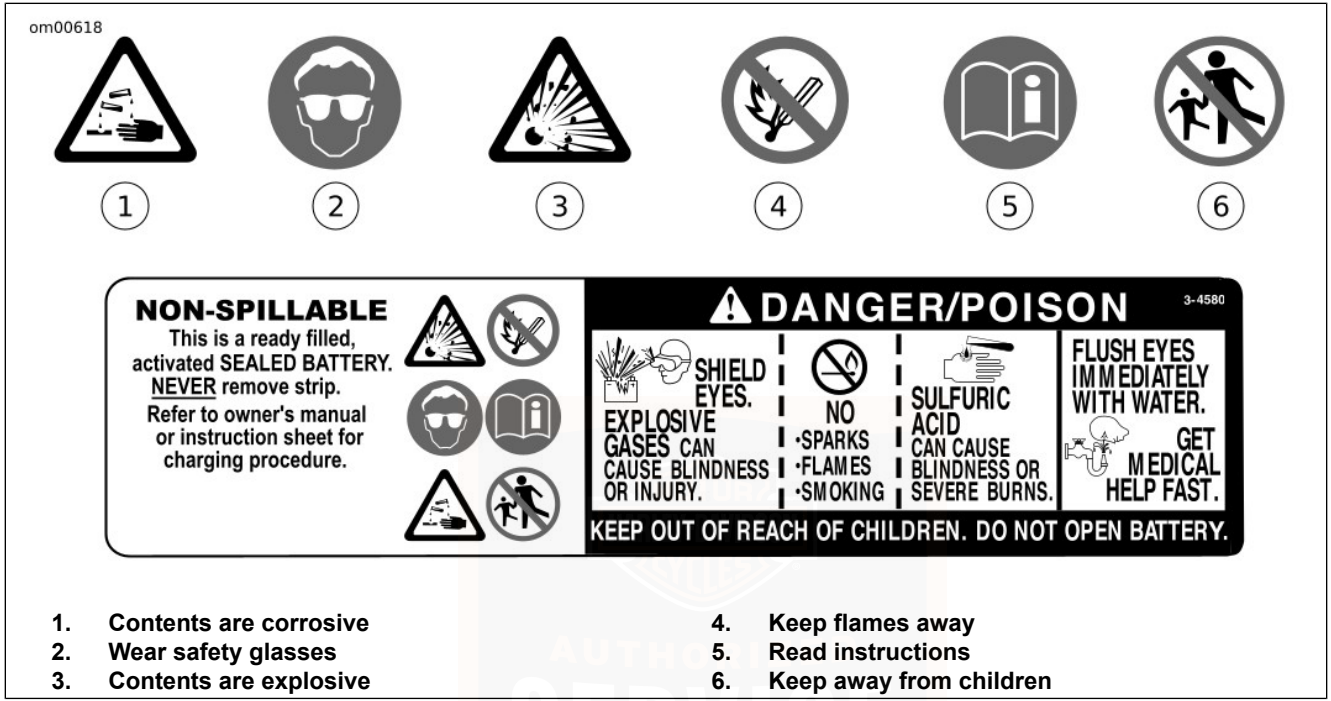


Figure 73. Battery Warning Label



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 74. Battery Warning Label

Voltmeter Test

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 12.7 V, charge the battery. Recheck the voltage after the battery has set for one to two hours. Refer to Table 28.

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 over-tightening.
5. Inspect the battery for discoloration, a raised top or a warped or distorted case. These conditions might indicate that the battery has been frozen, overheated or overcharged.
6. Inspect the battery case for cracks or leaks.

Charging

An automatic, constant monitoring battery charger/tender with a charging rate of 5 amps or less at less than 14.6 volts is recommended. The use of constant current chargers (including trickle chargers) to charge sealed AGM batteries is not recommended. Any overcharge will cause dry-out and premature battery failure. 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 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.

NOTE

- *Do not use chargers with excessively high voltage designed for flooded batteries or excessively high current designed for much larger batteries. Do not charge at more than 5 amps or more than 14.6 volts.*
- *Most automatic, constant monitoring battery chargers are completely automatic and can be left connected to both AC power and to the battery that is being charged. When leaving this type of charger connected for extended periods of time, periodically check the battery to see if it is unusually warm. This is an indication that the battery may have a weak cell or internal short. Read the manufacturers instructions for the charger being used.*

⚠ 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)

NOTICE

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

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. Disconnect the black battery charger lead from the negative terminal of the battery.

7. Disconnect the red battery charger lead from the positive terminal of the battery.

8. Mark the charging date on the battery.

Storage

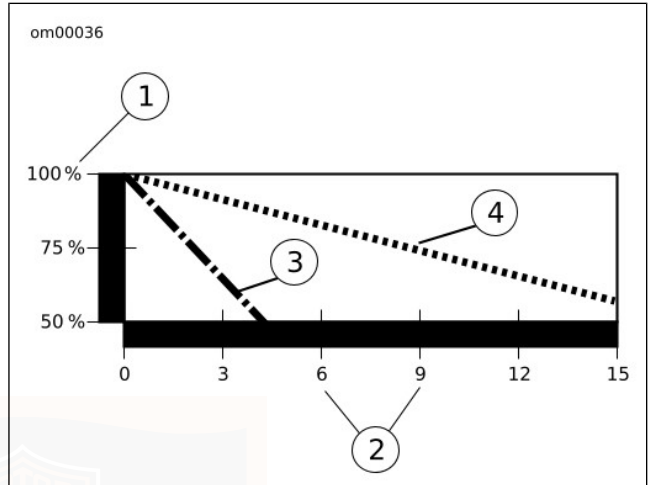
If the motorcycle will not be operated for several weeks, such as during the winter season, remove the battery from the motorcycle and fully charge.

If the motorcycle will be stored with the battery installed, connect an automatic, constant monitoring charger/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 every two weeks if stored in the vehicle.
- Charge the battery once per month if stored out of the vehicle.



1. **Capacity**
2. **Months of non-use**
3. **Measured at 105 °F (40 °C)**
4. **Measured at 77 °F (25 °C)**

Figure 75. Effective Rate of Temperature on Battery Self-discharging Rate

BATTERY TENDER CONNECTOR

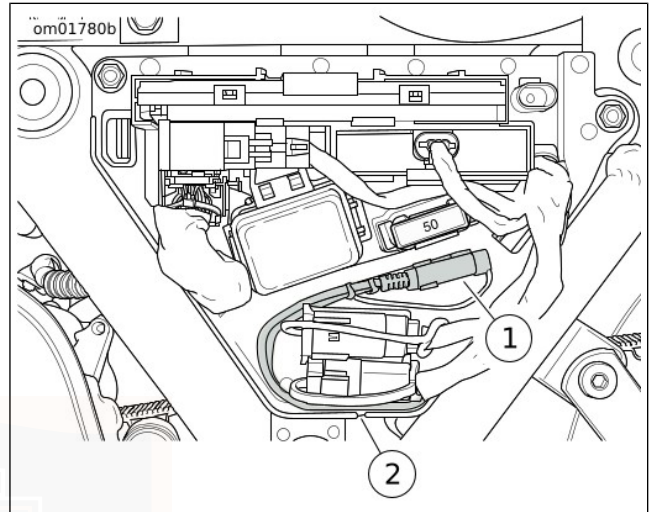
See Figure 76. The motorcycle has a quick disconnect battery tender connector under the left side cover below the main fuse. Connecting a battery tender between rides and during

storage can maintain battery charge and extend the life of the battery.

To access connector, remove left side cover. See MAINTENANCE AND LUBRICATION > SIDE COVERS (Page 165). Route the connector through the slot in the bottom of the electrical caddy. Secure the harness and connector with cable straps in a location that will prevent damage to the connector and surrounding areas.

See Figure 77. Connect an automatic, constant monitoring battery charger/tender as shown. The connector is compatible with all Harley-Davidson battery tenders.

See MAINTENANCE AND LUBRICATION > BATTERY MAINTENANCE (Page 152) for more charging information.



1. **Battery tender connector**
2. **Route connector through slot**

Figure 76. Battery Tender Connector (under left side cover)

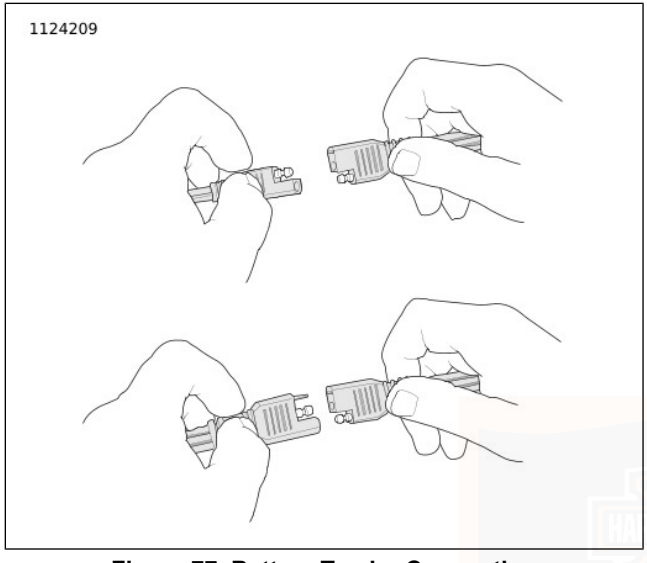


Figure 77. Battery Tender Connection

BATTERY

Disconnection and Removal

1. Remove seat.

2. Release ECM (1) from top caddy. Move out of the way.

3. See Figure 78. If present, move purge solenoid (2) forward to release from top caddy. Release HFSM antenna (3) from top caddy and move out of the way.

4. Release connectors (7) from anchors on top caddy.

5. Remove fasteners (5).

6. Cut cable straps (4). Move harnesses to allow more clearance for the top caddy.

7. Push top caddy forward to disengage front of caddy from front hold-down bracket. Lift and remove top caddy.

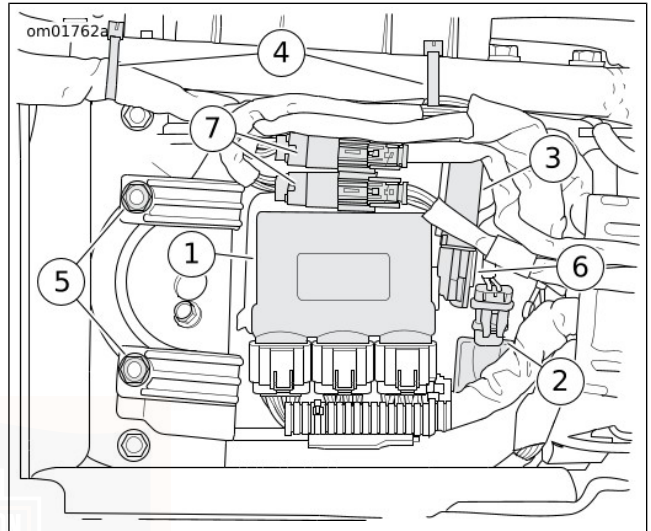
8. Disarm security system. See SECURITY SYSTEM > DISCONNECTING POWER (Page 90).

⚠ 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)

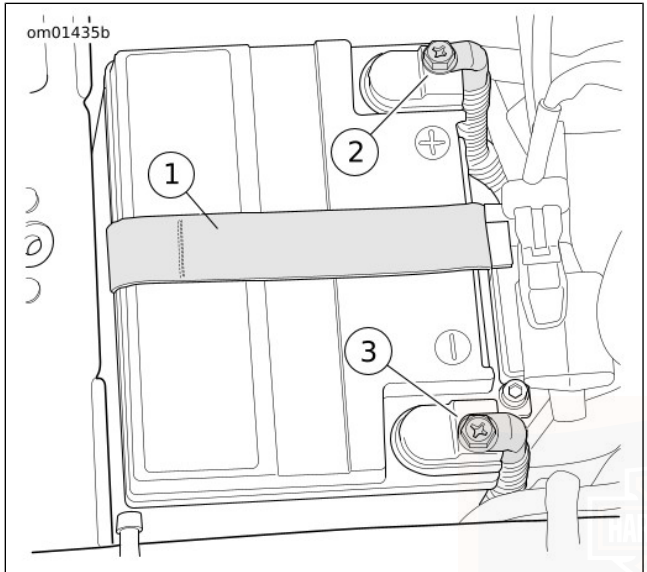
9. See Figure 79. Disconnect both battery cables, negative battery cable first.

10. Pull up lifting strap to raise battery. When battery is extracted far enough to get a good grip, grasp battery and remove the rest of the way.



1. ECM
2. Purge solenoid (if equipped)
3. HFSM antenna (if equipped)
4. Cable straps
5. Fastener
6. Hold-down (not visible)
7. Connectors

Figure 78. Top Caddy



1. **Battery strap**
2. **Positive (+) terminal**
3. **Negative (-) terminal**

Figure 79. Battery Compartment

Installation and Connection

1. Run lifting strap rearward across the bottom of the battery tray, then up and across the frame crossmember.
2. See Figure 79. Place the battery into the battery tray, terminal side forward.

NOTICE

Connect the cables to the correct battery terminals. Failure to do so could result in damage to the motorcycle electrical system. (00215a)

⚠ WARNING

Connect positive (+) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00068a)

NOTICE

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)

3. Connect both battery cables, positive battery cable first. Tighten to 6.8–7.9 N·m (60–70 **in-lbs**).

NOTICE

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 to both battery terminals.

5. Fold lifting strap forward over top of battery.

6. See Figure 78. Place top caddy into position and engage latch on hold-down bracket.

7. Fasten top caddy to frame crossmember with screws (5). Tighten to 8.1–10.9 N·m (72–96 **in-lbs**).

8. If equipped, engage HFSM antenna (3) and purge solenoid (2) on top caddy. Verify that all other connectors and harnesses are routed below the purge solenoid mounting tongue.

9. Secure connectors (7) to anchors on top caddy.

10. Latch ECM (1) into place on top caddy.

11. Secure harnesses to frame with cable straps (4).

⚠ 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)

12. 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)

NOTICE

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

NOTE

- *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

1. See Figure 80. Connect one end of a jumper cable to the DISCHARGED battery positive terminal (1).
2. Connect the other end of the same cable to the BOOSTER battery positive terminal (2).

Negative Cable

⚠ WARNING

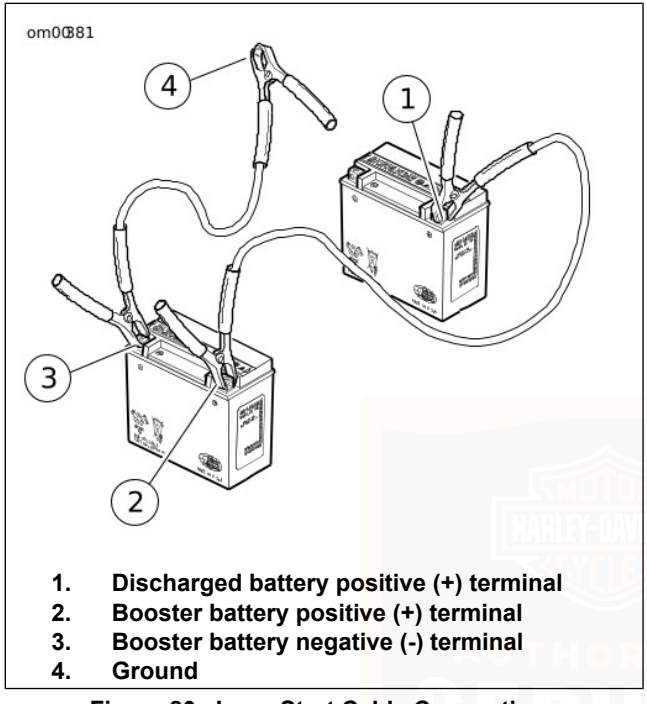
Do not connect negative (-) cable to or near the discharged battery negative (-) terminal. Doing so could cause a spark and explosion, which could result in death or serious injury. (00073a)

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

NOTICE

Do not connect the negative (-) cable to painted or chrome parts. Doing so could result in discoloration at the attachment point. (00221a)

2. Connect other end of the same cable (4) to a safe ground, (away from the DISCHARGED battery).
3. Start motorcycle.
4. Disconnect cables in reverse order of Steps 2, 3, 4, 5; that is: Steps 5, 4, 3, 2.



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

Figure 80. Jump Start Cable Connections

SIDE COVERS

See Figure 81. The side covers can be removed to access fuses and other components.

Remove: Pull side cover off.

Install: Align barbed studs on side cover with grommets in frame. Push in to secure cover.

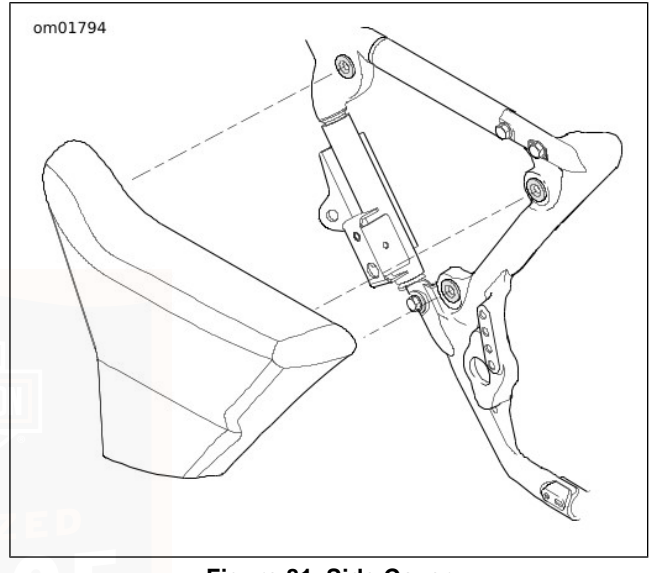


Figure 81. Side Cover

FUSES AND RELAYS

Main Fuse

See Figure 82. A 50 amp main fuse is located near the fuse block. Removing the main fuse disconnects 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 or siren will sound.

NOTE

Place the ignition switch in the OFF position before installing the main fuse.

System Fuses

NOTICE

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 82. 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 switch in the OFF position.
2. Remove left side cover. See MAINTENANCE AND LUBRICATION > SIDE COVERS (Page 165).
3. Press in tabs on the left and right sides of fuse block cover. Remove the cover.
4. See Figure 83. Remove fuse and inspect the element.

NOTICE

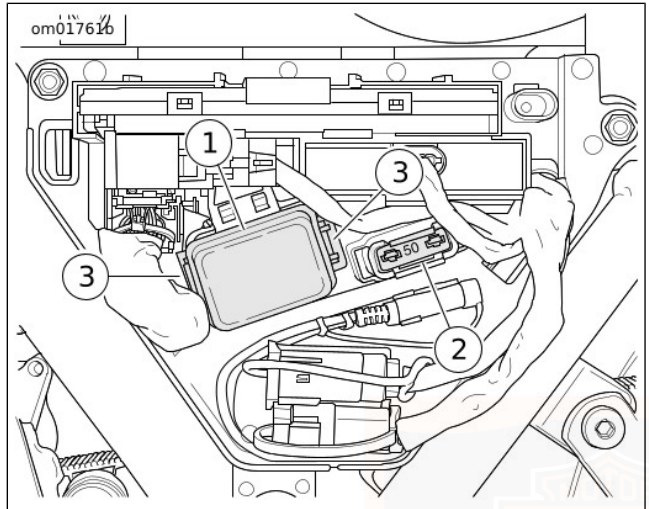
Always use replacement fuses that are of the correct type and amperage rating. Use of incorrect fuses can result in damage to electrical systems. (00222a)

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

NOTE

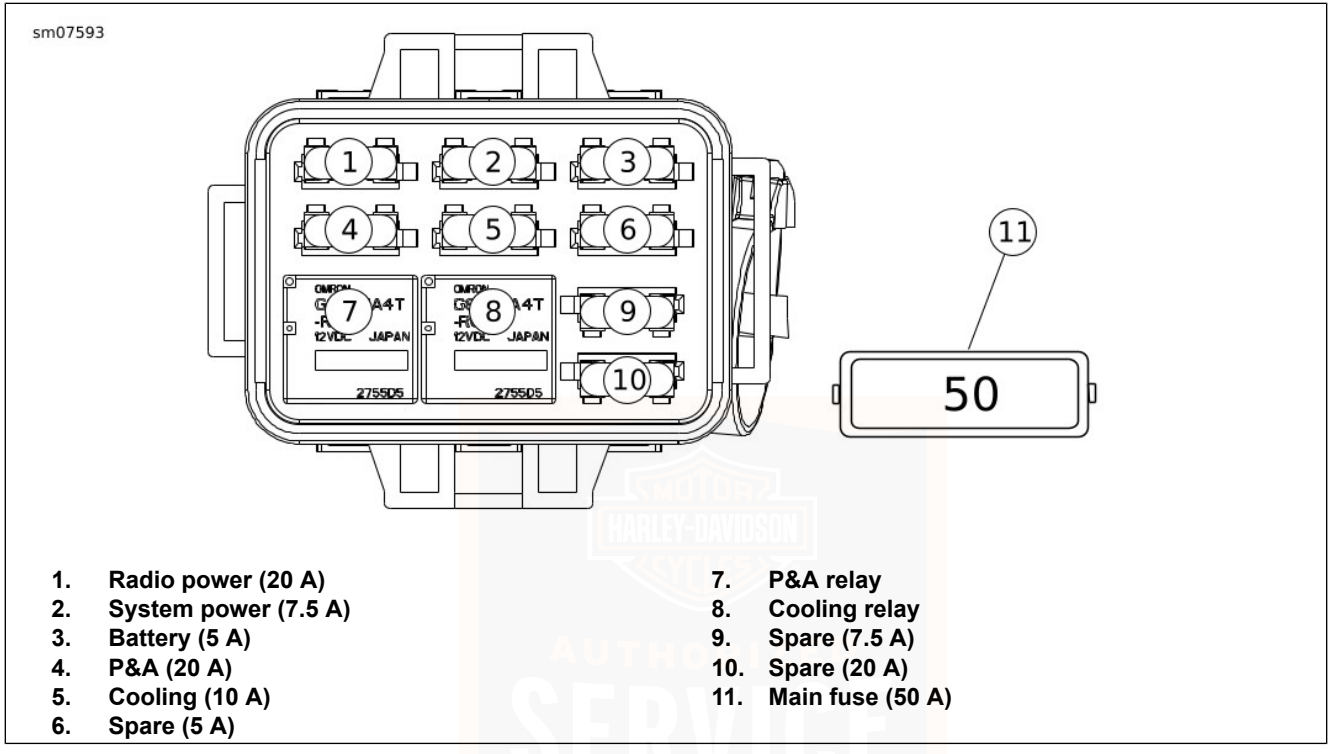
Use automotive-type fuses for replacements. Two spare fuses can be found in the fuse block.

6. Install the fuse block cover.
7. Install left side cover.



1. Fuse block cover
2. Main fuse
3. Press tabs to remove

Figure 82. Fuse Block (under left side cover)



1. **Radio power (20 A)**
2. **System power (7.5 A)**
3. **Battery (5 A)**
4. **P&A (20 A)**
5. **Cooling (10 A)**
6. **Spare (5 A)**
7. **P&A relay**
8. **Cooling relay**
9. **Spare (7.5 A)**
10. **Spare (20 A)**
11. **Main fuse (50 A)**

Figure 83. Fuses

REVERSE MOTOR CIRCUIT BREAKER

The reverse motor circuit has a circuit breaker to prevent current overload conditions to the motor and power cabling.

Perform reverse operation as explained in CONTROLS AND INDICATORS > REVERSE OPERATION (Page 50). If reverse motor will not run or cuts off during operation, turn off the engine and check the condition of the circuit breaker.

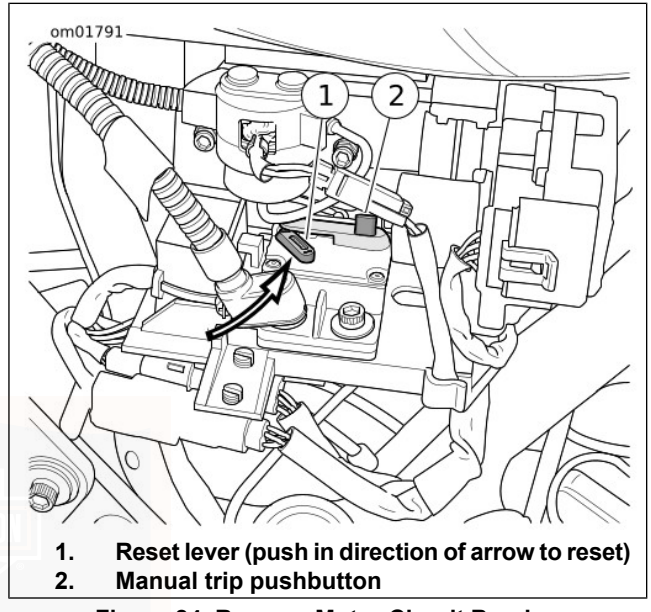
See Figure 84. The circuit breaker is located in the electrical caddy. This manually resettable circuit breaker has a red trip pushbutton (2) and a reset switch (1). To manually trip the circuit breaker, push down on the trip pushbutton (which causes the reset switch to extend out).

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, see a Harley-Davidson dealer.

NOTE

- *The reverse lamp in the instrument cluster illuminates even if the circuit breaker is tripped/open.*
- *It is a normal function that the pinion on the reverse motor engages the ring gear when the circuit breaker is tripped.*



1. Reset lever (push in direction of arrow to reset)
2. Manual trip pushbutton

Figure 84. Reverse Motor Circuit Breaker

SEAT

Removal

1. See CONTROLS AND INDICATORS > TOUR-PAK (Page 71). Open Tour-Pak to move passenger seat backrest out of the way.

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 85. 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 86. Place seat on frame backbone.
2. To protect finish of Tour-Pak, cover rear seat mounting bracket with palm of hand.
3. While raising rear of seat approximately 76.2 mm (3.0 in), use other hand to firmly push front of seat downward and forward until tongue engages slot in seat.
4. Push seat rearward until rear fender seat retention nut is centered in hole of mounting bracket.
5. Install seat mounting fastener. Tighten to 5.4–8.1 N·m (48–72 **in-lbs**).

⚠ WARNING

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

6. Pull up on the front and rear of seat to verify that it is properly secured.

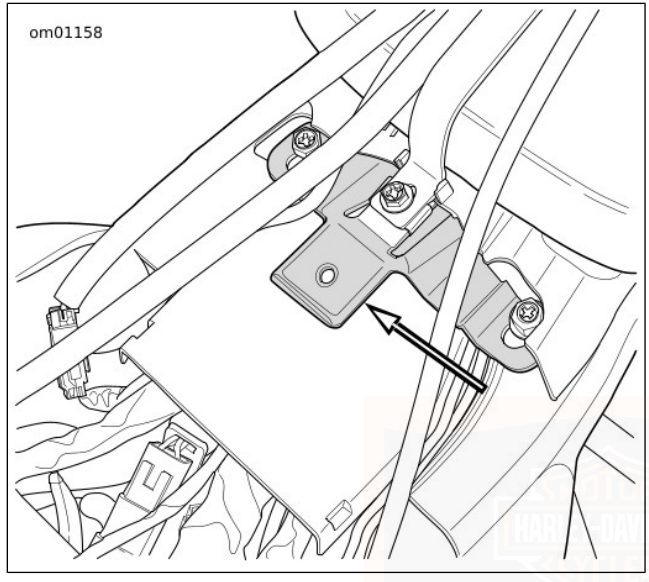


Figure 85. Seat Tongue

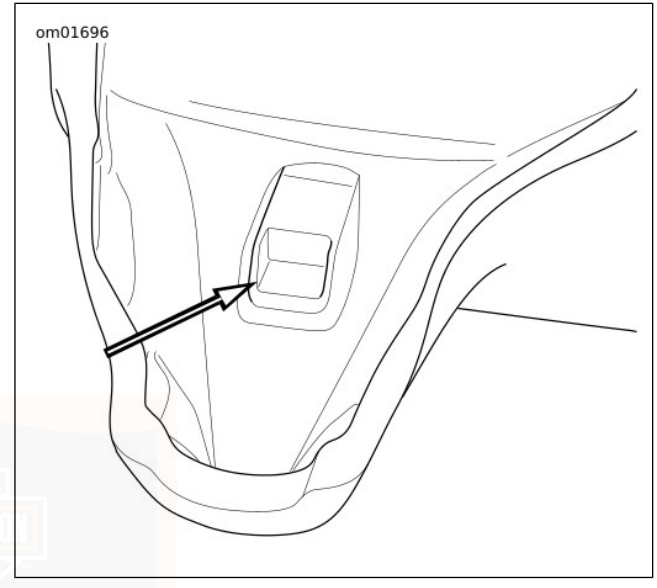


Figure 86. Seat Mounting Slot

REAR AXLE TIE DOWN LOOPS

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 ANTENNA

The radio antenna mast is threaded on a mount at the rear of the vehicle. Unscrew the antenna to remove. When installing, hand-tighten only.

MOTORCYCLE STORAGE

Placing Motorcycle in Storage

NOTICE

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 protect parts against corrosion, preserve the battery and prevent the build-up of gum and varnish in the fuel system.

Store the motorcycle in a dry area with a stable temperature (if possible). Keep the motorcycle away from harsh chemicals or other substances such as fertilizers or salt.

⚠ WARNING

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

NOTE

Make a list of everything you do and fasten it to a hand grip. When you take the motorcycle out of storage, this list is your reference/checklist to get your motorcycle in operating condition.

1. Fill fuel tank. Add fuel stabilizer following 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 pressure. Refer to Table 14 for specified pressure.

5. Protect the vehicle's body panels, engine, chassis and wheels from corrosion. Follow the cosmetic care procedures described in the OWNER MANUAL > CARE AND CLEANING (Page 177) section of this owner's manual before storage.

6. Prepare battery for winter storage. See MAINTENANCE AND LUBRICATION > BATTERY MAINTENANCE (Page 152).

NOTE

- *If the motorcycle is being stored with the security system armed, connect a 750MA SUPERSMART BATTERY TENDER (PART NUMBER: 94654-98B) to maintain battery charge.*
- *If the motorcycle is being stored with the security system disarmed, turn on the motorcycle while the hands-free fob is present. This prevents the optional siren from sounding. Disconnect the negative battery cable and prepare battery for storage. See MAINTENANCE AND LUBRICATION > BATTERY MAINTENANCE (Page 152).*

⚠ 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 motorcycle is to be covered, use a material such as light canvas that can breathe. Plastic materials that do not breathe promote the formation of condensation. Do not bend or tuck antennas under the cover. Either remove the antennas (if equipped) or allow them to protrude through the cover.

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)

NOTE

*When lubricants are contaminated by water, they often take on a milky white appearance. Replace contaminated lubricants with the appropriate **new** Harley-Davidson lubricant.*

1. See MAINTENANCE AND LUBRICATION > BATTERY MAINTENANCE (Page 152) for proper battery care. Charge and install the battery.
2. Run motorcycle until engine is at normal operating temperature. Turn off engine.
3. Check engine oil level.
4. Check the transmission lubricant level.
5. Check controls to make sure that they are operating properly. Operate the front and rear brakes, throttle, clutch and shifter.
6. Check steering for smoothness by turning the handlebars through the full operating range.

⚠ WARNING

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

7. Check tire pressure. Refer to Table 14 for specified pressure.
8. Check overall tire condition. See MAINTENANCE AND LUBRICATION > TIRE REPLACEMENT (Page 134).
9. Test all switches and lights for proper operation.
10. Check for any fluid leaks.

NOTICE

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)

MOTOR
HARLEY-DAVIDSON
CYCLES
AUTHORIZED
SERVICE

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 29 and Table 30. 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.

NOTE

- *Use recommended surface care products. Do not use paper towels, terry cloths, cloth diapers or other materials with nylon fibers which can create fine scratches to surfaces.*
- *Some painted finishes and other surfaces may be scratched if gravel, dirt or grime are scraped across the surface during washing. Use clean towels and avoid rubbing sediments across gloss finishes.*
- *For repair of scratched surfaces, see a Harley-Davidson dealer.*

⚠ 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)

NOTICE

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

NOTICE

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 29. Recommended Cleaning and Care Products

PRODUCT	PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
Sunwash® Bike Soap	93600023 (U.S. Market) 93600077 (Non-U.S. Market)	Thorough washing of all surfaces with a wash mitt. Reduces hard water spots when washing a motorcycle in the sun.	Yes	Yes	Yes	Yes	
Quick Wash	93600011 (16 oz) 93600012 (32 oz) (U.S. Market) 93600071 (16 oz) (Non-U.S. Market)	A quick wash for a lightly soiled motorcycle. Cleans all surfaces, sheeting action prevents spots.	Yes	Yes	Yes	Yes	
Bug Remover	93600022 (U.S. Market) 93600075 (Non-U.S. Market)	Removes bugs from metal, plastic or painted surfaces. Also available as individual wipes (93600065).	Yes	Yes	Yes	Yes	
Glaze Poly Sealant	93600026 (U.S. Market) 93600079 (Non-U.S. Market)	Polishes windshields, painted surfaces and chrome.	Yes	Yes	As applicable	No	

Table 29. Recommended Cleaning and Care Products

PRODUCT	PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
Gloss Detailer	93600062 (U.S. Market) 93600073 (Non-U.S. Market)	Produces high gloss with UV protection. Allows chrome to breathe, unlike wax. Good for windshields. Also available as individual wipes (93600066).	Yes	Yes	Yes	No	
Spray Cleaner & Polish	93600029 (U.S. Market) 93600084 (Non-U.S. Market)	Aerosol quick cleaner and detailer. Reduces static attraction to dust. Works great for removing bugs.	Yes	Yes	Yes	No	
Wheel & Tire Cleaner	93600024 (U.S. Market) 93600076 (Non-U.S. Market)	Cleans wheels, tires, whitewalls and black-coated exhaust pipes and mufflers. Do not use on frames or anodized parts.	No	No	Yes	No	
Chrome Clean & Shine	93600031 (U.S. Market) 93600082 (Non-U.S. Market)	Shines chrome-plated surfaces and cleans brushed aluminum or stainless steel surfaces.	As applicable				
Bare Metal Polish	93600028 (U.S. Market) 93600083 (Non-U.S. Market)	Polishes non-clear coated polished aluminum or polished stainless steel surfaces.	As applicable				
Scratch & Swirl Repair	93600025 (U.S. Market) 93600074 (Non-U.S. Market)	Removes fine scratches and swirls.	Yes	Yes	No	No	

Table 29. Recommended Cleaning and Care Products

PRODUCT	PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
Denim Paint Cleaner	93600064 (U.S. Market) 93600078 (Non-U.S. Market)	Waterless quick cleaner and detailer.	Yes	Yes	Yes	Yes	
Windshield Cleaner Individual Wipes	97406-10	Quick windshield cleaner in convenient single use wipe.	Yes	Yes	No	No	Windshield
H-D Black Tire Sidewall Protectant	94628-05	Restores luster to black tire sidewalls.	No	No	No	No	Tires
Harley Preserve Bare Aluminum Corrosion Protectant	99845-07	Corrosion control for bare aluminum surfaces. Also available as individual wipes (93600063).	As applicable				
Windshield Water Repellent	93600032 (Global)	Allows water to bead and dissipate from the windshield.	No	No	No	No	Windshield
Leather Protectant	93600034 (U.S. Market) 93600080 (Non-U.S. Market)	Weatherproofs and preserves leather products.	No	No	No	No	Leather goods
Black Leather Rejuvenator	93600033 (U.S. Market) 93600081 (Non-U.S. Market)	Rejuvenates black leather products so they look brand new.	No	No	No	No	Black leather goods
Engine Brightener	93600002 (U.S. Market) 93600068 (Non-U.S. Market)	Rejuvenates wrinkle black engine finish.	No	No	No	No	Wrinkle black engines

Table 29. Recommended Cleaning and Care Products

PRODUCT	PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
Boot Mark Remover	93600001 (U.S. Market) 93600069 (Non-U.S. Market)	Removes boot marks from chrome exhaust components.	No	No	No	No	Exhaust system
Travel Care Kit	93600007	Travel size cleaning and care products.	Yes	Yes	Yes	Yes	
Seat, Saddlebag & Trim Cleaner	93600010 (U.S. Market) 93600070 (Non-U.S. Market)	Cleans and conditions vinyl, leather and plastic. Use on seats, saddlebags, inner fairings, and any other trim.	No	No	No	No	Seats, saddlebags and trim
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 30. Recommended Surface Care Products

PRODUCT	PART NO.	DESCRIPTION
Wash Mitt	94760-99	Absorbent 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-absorbent cloth for applying and buffing Swirl & Scratch treatment and Harley Glaze to painted surfaces or chrome.

Table 30. Recommended Surface Care Products

PRODUCT	PART NO.	DESCRIPTION
Soft Drying Towel	94791-01	Extra-absorbent, non-streaking synthetic towel for drying. Dampen towel and wring out before using for greatest absorbency.
Harley-Davidson Hog Blaster Motorcycle Dryer	94651-09	Blows a stream of warm dry filtered air. Reduces streaks and water spots.
Wheel & Spoke Brush	43078-99	Cone-shaped scrub brush for wheels.
Microfiber Detailing Cloth	94663-02	Highly absorbent detailing cloth for polishing and sealing. Contains no nylon fibers.
Detailing Swabs	93600107	Large cotton swabs for cleaning crevices and detailed surfaces.
Cleaning Brush Kit	94844-10	Brush kit for detailing your motorcycle.
H-D Bike Wash Bucket and Apron	94811-10	Wash bucket with apron to hold your supplies. Includes grit guard.

TRUNK

Before washing the motorcycle, make sure the trunk door is securely closed with the latch engaged.

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

WASHING THE MOTORCYCLE

Use only recommended cleaning and care products. Refer to Table 29 and Table 30.

NOTE

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

Preparation

1. Allow motorcycle to cool before rinsing or washing. Spraying water on hot surfaces can leave water spots and mineral deposits.
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 & TIRE CLEANER. Allow cleaner to set for one minute.
3. Clean the wheel with a SOFT DETAILING PAD or WHEEL & SPOKE BRUSH. Use SOFTSTRIPS to clean wheel spokes. Thoroughly scrub all brake dust and other sediments off the wheel. Accumulated brake dust can trap moisture and dirt, which leads to wheel corrosion.
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 an H-D WASH BUCKET with water and add SUNWASH BIKE SOAP, 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. Spray BUG REMOVER to remove any bugs.
5. Rinse the motorcycle:
   a. Rinse from the bottom up.
   b. Rinse from the top down.

Drying the Motorcycle

1. Dry the surfaces from the top down using a SOFT DRYING TOWEL or a HARLEY-DAVIDSON HOG BLASTER MOTORCYCLE DRYER. Avoid using any type of forced air on speakers or other sensitive components.
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 GLAZE POLY SEALANT with a SOFTCLOTH or MICROFIBER DETAILING CLOTH, following the instructions on the package.
2. Buff with a SOFTCLOTH.
3. Polish and seal the wheels as described in CARE AND CLEANING > WHEEL CARE (Page 186) to prevent corrosion.

NOTE

Bare aluminum wheels do not have a protective coating. The wheels corrode if not properly treated. Apply HARLEY PRESERVE BARE ALUMINUM CORROSION PROTECTANT when purchasing the motorcycle and at least twice per year to prevent cosmetic damage to bare aluminum wheels.

Finishing Tires

Apply H-D BLACK TIRE SIDEWALL PROTECTANT to tires, following the instructions on the package.

AUDIO SYSTEM CARE

Use only Harley-Davidson recommended products and methods to keep the radio, speakers and other audio system components clean and in good condition. Do not use any abrasives, polishes or rubbing compounds to clean the screen or other components. Do not use any ammonia-based cleaners on the screen. Use of other products or methods may cause damage to components.

Replaceable Screen Protector

BOOM! Box 6.5T/GT radios have a replaceable screen protector. Keep the protector on the screen at all times. Damage to the screen due to use without the protector will not be covered under warranty. Remove and replace the protector if it becomes dull, scratched or worn.

Cleaning the Radio

Spray a light amount of HARLEY GLOSS on a MICROFIBER DETAILING CLOTH. Be careful to gently remove any sediments without rubbing them into the screen. Apply circular motions from the center and outwards. Use a dry MICROFIBER DETAILING CLOTH to dry the screen. Repeat the process as necessary.

NOTE

Do not use any screen enhancing chemicals or products. These can damage the screen surface.

Speaker Care

If a haze develops on speakers with a protective grille, use HARLEY SEAT, SADDLEBAG, AND TRIM CLEANER and a

SOFTCLOTH or SOFT DETAILING PAD to clean. Do not apply wax or any other similar products on speaker grilles.

Do not use compressed or forced air on speakers.

Vehicles with saddlebag speakers are designed to prevent water intrusion and to allow water to drain during washing or riding in all weather. To remove any standing water from saddlebag speakers, open the saddlebags and gently shake any remaining water from the speakers.

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 29 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

For light deposits: Use DENIM PAINT CLEANER and a SOFTCLOTH. This helps remove finger prints and light soil.

For heavier deposits: Use either SUNWASH BIKE SOAP and a clean H-D WASH MITT or QUICK WASH. Rinse thoroughly with clean water.

LEATHER AND VINYL CARE

NOTICE

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.

Leather, vinyl and other synthetic surfaces must be periodically cleaned and treated to maintain its appearance and extend its life. Clean and treat these surfaces once a season or more frequently under adverse conditions.

These 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).

1. Vacuum or blow dust off surface.
2. Thoroughly clean surfaces with SEAT, SADDLEBAG & TRIM CLEANER, following directions on the bottle.

3. Allow the material to dry naturally and completely at room temperature before applying other products to the material. Do not use artificial means to dry the material quickly.
4. For leather only, rejuvenate faded black surfaces with BLACK LEATHER REJUVENATOR, and apply LEATHER PROTECTANT to weatherproof and preserve the leather.

NOTE

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.

FAIRING SPLITSTREAM VENT CARE

Keep the vent free of foreign objects. Periodically clean the vent mechanism to remove dirt, bugs and leaves, and to keep all parts from sticking. Clean the button and vent door if they become difficult to open or close.

1. With the vent door closed (button up), spray clean water into the area under the button.

⚠ 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)

2. Blow low-pressure air in the same direction.
3. Using mild soapy water and a soft brush, remove dirt, leaves and bugs from vent duct and vent door.
4. Operate vent and repeat cleaning as necessary.

WHEEL CARE

Wheels can corrode or be cosmetically damaged if they are not properly cleaned, polished and preserved. Cleaning and sealing wheels with the proper treatment will guard against pitting, corrosion, spots and stains. Harley-Davidson recommends that wheels be cared for weekly. Corrosion to wheels is not considered to be a defect in materials or workmanship.

NOTE

Bare aluminum wheels do not have a protective coating and will corrode if not properly treated. Apply HARLEY PRESERVE

BARE ALUMINUM CORROSION PROTECTANT when purchasing the motorcycle and at least twice per year to prevent cosmetic damage to bare aluminum wheels.

Keep wheels clean from harsh chemicals, acid based wheel cleaners, salt, and accumulated brake dust. After washing wheels with WHEEL & TIRE CLEANER, use the polish and sealing products in Table 31 according to the type of wheels on your motorcycle.

Table 31. Wheel Polish and Sealing Products

WHEELS	PRODUCT	DESCRIPTION
Bare aluminum	Harley Preserve Bare Aluminum Corrosion Protectant	Creates a protective coating for bare aluminum wheels to prevent oxidation.
Polished aluminum or stainless steel	Bare Metal Polish	Microabrasive polish to refurbish polished wheels. Do not use on chrome.
	Gloss Detailer	Seals and protects against harsh chemicals, salt, and other sediments to prevent oxidation.
Anodized	Glaze Poly Sealant	Cleans surface, removes fine scratches, and provides a breathable sealant against acid, chemicals, salt, and brake dust.
Chrome	Chrome Clean & Shine	Non-abrasive cleaner to brighten chrome wheels.
	Gloss Detailer	Seals and protects against harsh chemicals, salt, and other sediments to prevent oxidation.

WINDSHIELD CARE

NOTICE

Polycarbonate windshields/wind deflectors require proper attention and care to maintain. Failure to maintain polycarbonate properly can result in damage to the windshield/wind deflector. (00483e)

NOTICE

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)

- Powdered, abrasive or alkaline cleanser will damage the windscreen/windshield. Ammonia-based window cleaners cause permanent yellow effects to windshields.
- Do not use gas station windshield cleaner as finish may be damaged.
- Do not use a brush or squeegee as finish may be damaged.
- Do not clean in hot sun or high temperature.

Windshields require special care. Harley-Davidson recommends using WINDSHIELD CLEANER to clean your windshield. Refer to Table 29 for recommended cleaning products.

NOTE

- *Use NOVUS 2 SCRATCH REMOVER to remove minor scratches.*
- *To treat the windshield with water repellent use WINDSHIELD WATER REPELLENT.*
- *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 in IGNITION position.
3. Discharged battery or loose or corroded connections (solenoid chatters).
4. Clutch lever not squeezed against handlebar and front or rear brake applied or transmission not in neutral.
5. Blown fuse.

Engine Turns Over but Does Not Start

1. Fuel tank empty.
2. Fuel filter is 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 connections at coil or battery.
7. Fuel pump is 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. Damaged or loose wire or cable connections at one of the battery terminals or at ignition coil.
5. Engine oil too heavy (cold-weather operation).
6. Water or dirt in fuel system.

7. Fuel pump is 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 wire connection at ignition coil, battery or ECM connector.
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.

Engine Oil Not Circulating (Oil Pressure Lamp Lit)

1. Insufficient or diluted oil supply.
2. Oil feed clogged with ice and sludge in freezing weather.

3. Grounded oil signal switch wire or faulty signal switch. See dealer.
4. Damaged or improperly installed check valve. See dealer.
5. Oil pump problem. 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.

COOLING SYSTEM: TWIN-COOLED MODELS

Overheats

1. Low coolant level.
2. Restricted radiator air flow.
3. Faulty thermostat. See dealer.
4. Coolant pump or fans inoperative. See dealer.
5. Vent hose crimped.
6. Air in coolant.

REVERSE MOTOR

Reverse Motor Does Not Operate/Cannot Enable

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

GENUINE MOTOR PARTS AND ACCESSORIES

Stop at your Harley-Davidson dealer to pick up a copy of the Genuine Motor Parts and Accessories catalog or go to www .harley-davidson.com to view thousands of Genuine Motor Accessories that are available for Harley-Davidson motorcycles.

The website includes the following tools and resources for accessorizing and personalizing your motorcycle.

Online Catalog

The full Genuine Motor Parts and Accessories catalog is available online in PDF format. The catalog includes hundreds of pages of Harley-Davidson accessories and maintenance products. For performance parts, check out the Screamin' Eagle Pro Racing Parts catalog.

Shop For Your Bike

Browse through categories of accessories and options available specifically for your motorcycle. View product descriptions, pricing, fitment and online instruction sheets for many of the available products.

Customizer

Virtually redesign your motorcycle with parts and accessories using the Customizer. This tool allows you to experiment with different accessory and color combinations and shows how your motorcycle would look with the accessories installed. You can easily create a custom list of accessories to print out for your dealer.

Fit Shop

Learn how to customize your motorcycle to fit you personally. See how making changes to the suspension, seat, handlebars or foot controls can enhance the ergonomics and comfort of your motorcycle.

Custom Seats

Create a custom seat using selected designs, colors and textured materials. Custom seat specifications can be easily printed out for your dealer.

CUSTOM COVERAGE

Add Accessories To Your New Motorcycle

NOTE

Custom Coverage is not offered in some regions. See an authorized Harley-Davidson dealer to determine the parts and

accessories warranty policies, terms and conditions in your area.

Harley-Davidson offers the Custom Coverage extended limited warranty for parts and accessories that are purchased and installed at an authorized Harley-Davidson dealer within 60 days after retail purchase of the motorcycle.

This limited warranty provides coverage for eligible *street legal* Genuine Harley-Davidson Motor Parts and Genuine Harley-Davidson Motor Accessories. This extended coverage on parts and accessories remains in effect for the remainder of the Harley-Davidson Motorcycle Limited Warranty for the vehicle. See OWNER MANUAL > LIMITED MOTORCYCLE WARRANTY (Page 199).

Purchases qualifying for Custom Coverage must be made at an authorized Harley-Davidson dealership within 60 days after retail purchase. Additional parts and accessories may be purchased and installed as often as desired within 60 days after retail purchase of the motorcycle.

Parts and accessories must be purchased and installed at an authorized Harley-Davidson dealership to qualify for Custom Coverage. Parts and accessories purchased via the internet are not eligible.

WARRANTY AND MAINTENANCE

This owner's manual contains your new motorcycle limited warranty and your owner's maintenance record.

It is your responsibility as the owner to follow the maintenance schedule at the mileage intervals as specified in the owner's manual. All of the specified maintenance services must be performed on schedule to keep your limited warranty valid.

Some countries, states or other locations may require all regular maintenance and service work to be done by an authorized Harley-Davidson dealer for your limited warranty to remain in effect. Check with your authorized Harley-Davidson dealer for local requirements.

1. Make an appointment with a Harley-Davidson dealer for inspection and service prior to the first 1,600 km (1000 mi), and as soon as possible after any problem arises.
2. Bring this owner's manual with you when you visit your authorized Harley-Davidson 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. These 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.

Use only Harley-Davidson approved parts and accessories that have been designed, tested and approved for your model and model year motorcycle.

Use of certain manufacturers' aftermarket performance parts may void all or parts of your limited warranty. See an authorized Harley-Davidson dealer for details.

Harley-Davidson authorized dealerships are independently owned and operated and may sell parts and accessories that are not manufactured or approved by Harley-Davidson for use on your motorcycle. Therefore, you should understand that Harley-Davidson is 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 authorized Harley-Davidson dealerships.

KEEPING IT ALL HARLEY-DAVIDSON

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

your Harley-Davidson motorcycle and its limited warranty intact. Not all Harley-Davidson parts and accessories are appropriate for your model or model year motorcycle.

NOTE

Installing off-road or competition parts to enhance performance may void all or parts of your new motorcycle limited warranty. See the Harley-Davidson Motorcycle Limited Warranty in this owner's manual or an authorized Harley-Davidson dealer for details.

NOTICE

It is possible to overload the vehicle's charging system by adding too many electrical accessories. If the combined electrical accessories operating at any one time consume more electrical current than the vehicle's charging system can produce, the electrical consumption can discharge the battery and cause damage to the vehicle's electrical system. (00211d)

CALIFORNIA AND SELECT INTERNATIONAL MARKETS EVAPORATIVE EMISSION CONTROLS: 2014 MODELS

All new 2014 Harley-Davidson motorcycles sold in the State of California and select international markets are equipped with an evaporative emission control system. This system is designed to meet CARB and local regulations in effect at the time of manufacture.

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

WARRANTY/SERVICE INFORMATION

Any authorized Harley-Davidson dealer may provide warranty repair work on your motorcycle. The fact that an authorized Harley-Davidson dealership performs warranty repairs does not create an agency relationship between Harley-Davidson and the authorized dealership. If you have any questions regarding warranty obligations contact your authorized Harley-Davidson dealer.

For normal service work or warranty work under the above conditions, you may obtain the name and location of your nearest U.S. authorized Harley-Davidson dealer by calling 1-800-258-2464 (U.S. only). To find dealers worldwide, see www.harley-davidson.com.

REQUIRED DOCUMENTATION FOR IMPORTED MOTORCYCLES

If a Harley-Davidson motorcycle is imported into the United States, additional documentation is required for that motorcycle to be eligible for the United States Harley-Davidson Motorcycle Limited Warranty. An authorized 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 motorcycle, see an authorized Harley-Davidson dealer to update your owner contact information.

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

The rights and benefits conferred upon you and the obligations of Harley-Davidson as set forth herein are separate and distinct from any rights and duties set forth in any service contract you may have purchased from a dealership and/or third-party insurance company. Harley-Davidson does not authorize any entity to expand Harley-Davidson's warranty obligations in connection with your motorcycle or this limited warranty.

When updating your contact information, your authorized Harley-Davidson dealer will need your Vehicle Identification Number (VIN), odometer mileage, and date of vehicle transfer (if applicable).

QUESTIONS AND CONCERNS

If you have questions or concerns regarding the performance of your motorcycle or the application of the limited warranty described here, or are not satisfied with the service you are receiving from an authorized Harley-Davidson dealership, do the following:

1. Contact the selling and/or servicing dealership and speak to the sales and/or service manager.
2. If your concern cannot be addressed to your satisfaction by the dealership, contact the Harley-Davidson Customer Support Center by mailing your concern to the following address or calling the phone number below.

In the U.S., state warranty laws, often referred to as lemon laws, may provide you with certain rights not specifically mentioned here. To the extent allowed by your state, Harley-Davidson requires that you first send written notification of any defect or warranty non-conformity that you have experienced with your motorcycle to Harley-Davidson. Harley-Davidson appreciates the opportunity to investigate your concerns and restore your satisfaction in your motorcycle by making the necessary repairs consistent with the terms of Harley-Davidson's limited warranty. Harley-Davidson requests that you send your complaint to the Harley-Davidson Customer Support Center.

- Harley-Davidson Motor Company Attention: Harley-Davidson Customer Support Center P.O. Box 653 Milwaukee, Wisconsin 53201 1-800-258-2464 (U.S. only) 1-414-343-4056

NOTES

2014 HARLEY-DAVIDSON MOTORCYCLE LIMITED WARRANTY

24 Months/Unlimited Miles

Harley-Davidson warrants for any new 2014 Harley-Davidson motorcycle 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 or replacement of defective parts will be Harley-Davidson's sole obligation and your sole and exclusive remedy under this limited warranty. This limited warranty applies only for the duration identified below.

THERE IS NO OTHER EXPRESS WARRANTY (OTHER THAN THE SEPARATE EMISSIONS, NOISE, AND RADIO LIMITED WARRANTIES) ON THE MOTORCYCLE. Any implied warranty of merchantability or fitness for particular purpose is limited to the duration of the express warranty, or to the duration set forth in your state's warranty statutes, whichever is shorter. Any implied warranty is not transferred to subsequent purchasers/buyers of the motorcycle.

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, NEITHER HARLEY-DAVIDSON NOR ITS AUTHORIZED DEALERS SHALL BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, LOSS OF MOTORCYCLE USE, COMMERCIAL LOSS OR ANY 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 also have other rights which vary from state to state.

The following terms and conditions apply to this limited 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 of the motorcycle from an authorized Harley-Davidson dealer, or (b) the third anniversary of the last day of the model year of the motorcycle. Your authorized Harley-Davidson dealer will submit an electronic Sales and Warranty Registration form to initiate your limited warranty.
2. Any unexpired portion of this limited express warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the limited warranty period.

Owner's Obligations

To obtain warranty service, return your motorcycle at your expense within the limited warranty period to an authorized Harley-Davidson dealer. The authorized Harley-Davidson dealer should be able to provide warranty service during normal business hours, depending upon the workload of the authorized dealer's service department and the availability of necessary parts.

Exclusions

This limited warranty will not apply to any motorcycle.

1. Which has not been operated or maintained as specified in the owner's manual.
2. Which has been abused, neglected, 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. Which has off-road or competition parts installed to enhance performance, or has other unapproved modifications (even if these modifications include genuine Harley-Davidson parts and accessories that are not approved for use on your motorcycle). These modifications may void all or parts of your new motorcycle limited warranty. See an authorized Harley-Davidson dealer for details.
5. Which has been subjected to an act of God, war, riot, insurrection, nuclear contamination, natural disasters, including, but not limited to, lightning, forest fires, dust storms, hail storms, ice storms, earthquakes, or floods, or other circumstances out of Harley-Davidson's control.
6. Which has been in an accident or collision or has been dropped or struck.

Other Limitations

This limited 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, but not limited to, 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 factory materials or workmanship, which are covered by this limited warranty for the duration of the limited warranty period).
3. Any cosmetic condition existing at the time of retail delivery that has not been documented by the authorized Harley-Davidson selling dealer prior to retail delivery.
4. Defects or damage to the motorcycle caused by alterations outside of Harley-Davidson's factory specifications or caused by alterations or use of parts or accessories not approved for the make and model year of your motorcycle.
5. Damage caused by installation or use of non-Harley-Davidson components, even those installed by an authorized Harley-Davidson dealership, that cause a Harley-Davidson part to fail. Examples include, but are not limited to performance-enhancing powertrain components or software, exhaust systems, non-approved tires, lowering kits, handlebars, add-ons connected to the factory electrical system, and so on.

Important: Read Carefully

1. Authorized Harley-Davidson dealers are independently owned and operated and may sell non-Harley-Davidson products. Because of this, HARLEY-DAVIDSON IS NOT RESPONSIBLE FOR THE SAFETY, QUALITY, OR SUITABILITY OF ANY NON-HARLEY-DAVIDSON PART, ACCESSORY OR DESIGN MODIFICATION INCLUDING, BUT NOT LIMITED TO, LABOR WHICH MAY BE SOLD AND/OR INSTALLED BY AUTHORIZED HARLEY-DAVIDSON DEALERS.
2. This limited warranty is a contract between you and Harley-Davidson. It is separate and apart from any warranty you may receive or purchase from an authorized Harley-Davidson dealer. An authorized Harley-Davidson dealer is not authorized to alter, modify, expand, or in any way change the terms and conditions of this limited warranty.
3. Any warranty work or parts replacement authorized by Harley-Davidson will not preclude Harley-Davidson from later relying on any exclusion where applicable.

4. Harley-Davidson and its authorized dealers reserve the right to modify or service motorcycles designed and manufactured by Harley-Davidson at any time without incurring any additional obligation to make the same alteration or change to a motorcycle previously built and sold. Harley-Davidson reserves the right to provide post-warranty repairs, conduct repair campaigns, offer good-will or customer satisfaction repairs or extend the warranty coverage for certain motorcycles at its sole discretion. Said repairs or extensions of warranty coverage in no way obligates Harley-Davidson to provide similar accommodations to other owners of similar motorcycles. Sometimes Harley-Davidson may offer a special adjustment program to pay all or part of the cost of certain repairs beyond the terms of your limited warranty. Check with your authorized Harley-Davidson dealer to learn whether such programs are available to you. Your state may prohibit these types of offers, in which case, they may not be available to you.
5. The fact that a part is labeled or branded Harley-Davidson does not necessarily make it appropriate or warranted for the make and model of your motorcycle. The use of parts not designed and tested for your motorcycle may have negative consequences on the performance of your motorcycle and may create conditions not covered by this limited warranty.

2014 LIMITED RADIO WARRANTY

Harley-Davidson warrants that your Harley-Davidson radio will be free from factory defects in factory materials 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 on which the radio is installed, or (b) the third anniversary of the last day of the model year of the motorcycle on which the radio is installed. Any unexpired portion of this limited warranty will be transferred to subsequent owner(s), upon the resale of the motorcycle during the limited warranty period. If the motorcycle was used as a demonstrator or company motorcycle, then the limited warranty period may have started and/or expired prior to the initial retail sale. See an authorized Harley-Davidson Dealer for details.

This limited 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 as a collector's vehicle. See an authorized Harley-Davidson dealer for details.

To obtain warranty service, return your motorcycle with sound system intact, at your expense, within the limited warranty period to an authorized Harley-Davidson dealer. Authorized Harley-Davidson dealers should be able to provide warranty service during normal business hours depending upon the workload of the authorized dealer's service department and the availability of necessary parts.

The remedy for breach of this warranty is expressly limited to the repair or replacement **(which may include a refurbished replacement radio)**, 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, COMMERCIAL LOSS, 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 OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, IS EXPRESSLY LIMITED TO THE DURATION OF THIS LIMITED WARRANTY.

TO THE FULLEST EXTENT ALLOWED BY LAW, HARLEY-DAVIDSON AND ITS AUTHORIZED DEALERS SHALL NOT BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, LOSS OF MOTORCYCLE USE, COMMERCIAL LOSS OR ANY 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 also have other rights which vary from state to state.

REGULAR SERVICE INTERVALS

Refer to Table 32. Regular maintenance must be performed at specified intervals to help keep your new Harley-Davidson motorcycle operating at peak performance and keep your new motorcycle limited warranty in force. Your authorized Harley-Davidson dealer knows best how to service your motorcycle with factory approved methods and equipment assuring you of thorough and competent workmanship.

Some maintenance items should be done at least once per year as specified, even if the next mileage interval has not been reached. In severe riding conditions, some maintenance items may need to be performed more frequently. Refer to the notes in Table 32.

NOTE

- *The use of parts and service procedures other than Harley-Davidson approved parts and service procedures may void the limited warranty. Any alterations to the emission system components, such as the intake and exhaust system, may be in violation of motor vehicle laws.*
- *Some countries, such as Brazil, may require all regular maintenance to be performed by an authorized Harley-Davidson dealer for your limited warranty to remain in effect. Check with your authorized Harley-Davidson dealer.*
- *Some countries, such as Brazil, may require additional annual (or semi-annual) regular maintenance steps to be performed to keep your limited warranty in effect and/or comply with vehicle regulations. Check with your authorized Harley-Davidson dealer and check the motorcycle regulations in your country for local requirements.*
- *After completing the final service interval in Table 32, repeat the service schedule starting at the 8,000 km (5000 mi) interval.*

⚠ 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 32. Regular Service Intervals: 2014 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
Electrical equipment and switches	Check operation	X	X	X	X	X	X	X	X	X	X	X	
Front tire	Check pressure, inspect tread	X	X	X	X	X	X	X	X	X	X	X	1
Front brake fluid	Inspect sight glass	X	X	X	X	X	X	X	X	X	X	X	2, 3
Clutch (hydraulic operated)	Inspect sight glass	X	X	X	X	X	X	X	X	X	X	X	2, 4
Reservoir cover screw: front brake and hydraulic clutch	Check torque	X		X		X		X		X		X	1, 5, 6
Hand control fasteners	Check switch housing screw torque	X		X		X		X		X		X	1, 5, 6
	Check clutch handlebar clamp screw torque	X		X		X		X		X		X	1, 5, 6
	Check front brake handlebar clamp screw torque	X		X		X		X		X		X	1, 5, 6
Steering head bearings	Disassemble, inspect, lubricate and adjust						X					X	5, 7
Hydraulic steering damper	Check for leaks smooth damper action, mounting fastener torque	X	X	X	X	X	X	X	X	X	X	X	8

Table 32. Regular Service Intervals: 2014 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
Air cleaner	Inspect, service as required		X	X	X	X	X	X	X	X	X	X	9
Engine oil and filter	Replace	X	X	X	X	X	X	X	X	X	X	X	1, 9
Engine coolant	Check freeze point, inspect for leaks	X	X	X	X	X	X	X	X	X	X	X	
	Replace coolant	Replace every 48,000 km (30000 mi)											5
	Clean radiators	X	X	X	X	X	X	X	X	X	X	X	
Primary chaincase lubricant	Replace	X		X		X		X		X		X	9
Transmission lubricant	Replace	X				X				X			9
Right front engine mount end cap screws	Check torque	X		X		X		X		X		X	1, 5, 10
Engine mount to front crankcase screws	Check torque	X		X		X		X		X		X	1, 5, 6
Engine stabilizer link screw torque including bracket to head screws	Check torque	X		X		X		X		X		X	1, 5, 10
Oil lines and brake system	Inspect for leaks, contact or abrasion	X	X	X	X	X	X	X	X	X	X	X	1, 5
Fuel lines and fittings	Inspect for leaks, contact or abrasion	X	X	X	X	X	X	X	X	X	X	X	1, 5
Rear brake fluid	Inspect sight glass	X	X	X	X	X	X	X	X	X	X	X	2, 3
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	X	X	X	X	X	

Table 32. Regular Service Intervals: 2014 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
Front brake and clutch master cylinder banjo bolts	Check torque	X		X		X		X		X		X	1, 5, 6
Front circuit manifold banjo bolt (12 mm)	Check Torque	X		X		X		X		X		X	1, 5, 6
Front caliper banjo bolts	Check Torque	X		X		X		X		X		X	1, 5, 6
Rear master cylinder banjo bolt	Check Torque	X		X		X		X		X		X	1, 5, 6
Rear caliper banjo bolt	Check Torque	X		X		X		X		X		X	1, 5, 6
Rear circuit manifold banjo bolt (10 mm)	Check Torque	X		X		X		X		X		X	1, 5, 6
Brake and clutch controls	Check, adjust and lubricate with HARLEY LUBE	X	X	X	X	X	X	X	X	X	X	X	5
Parking brake	Inspect and adjust	X	X	X	X	X	X	X	X	X	X	X	5
Rear tires	Check pressure, inspect tread	X	X	X	X	X	X	X	X	X	X	X	1
Drive belt and sprockets	Inspect, adjust belt	X	X	X	X	X	X	X	X	X	X	X	5
Rear sprocket isolators	Inspect for wear					X				X			5
Rear lug nuts	Check torque	X		X		X		X		X		X	1, 5, 6, 11

Table 32. Regular Service Intervals: 2014 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
Rear fork	Check pivot shaft nut torque	X		X		X		X		X		X	1, 5, 10
Air suspension	Check pressure, operation and leakage	X	X	X	X	X	X	X	X	X	X	X	1, 5, 9
Exhaust system	Inspect for leaks, cracks, and loose or missing fasteners or exhaust shields	X	X	X	X	X	X	X	X	X	X	X	1, 9
Battery Check battery and clean connections annually.	Battery terminal torque	Check annually											1
	Clean and lubricate terminals with ELECTRICAL CONTACT LUBRICANT	Perform annually											1
Spark plugs		Replace every two years or every 30,000 mi (48,000 km), whichever comes first.											
Fuel door	Lubricate hinge and latch with HARLEY LUBE	X	X	X	X	X	X	X	X	X	X	X	
Front forks	Rebuild											X	5, 12
Fuel filter element		Replace every 160,000 km (100000 mi).											5

Table 32. Regular Service Intervals: 2014 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
Road test	Verify component and system functions	X	X	X	X	X	X	X	X	X	X	X	13
NOTES:	1. Perform annually or at specified intervals, whichever comes first. 2. Replace DOT 4 hydraulic fluid and flush system every two years. 3. Brake fluid level will drop as brake pads wear. 4. Clutch fluid level will rise as clutch wears. 5. Should be performed by an authorized Harley-Davidson dealer, unless you have the proper tools, service data and are mechanically qualified. 6. Attempt to turn the fastener using a torque wrench set to the minimum torque specification for that fastener. If the fastener does not rotate, the fastener torque has been maintained. No further attention is necessary. If fastener moves, tighten to specification. 7. Disassemble, inspect, lubricate and adjust every 40,000 km (25000 mi). 8. Replace or have rebuilt at 80,000 km (50000 mi). 9. Perform maintenance more frequently in severe riding conditions such as extreme temperatures, dusty environments, mountainous or rough roads, long storage conditions, short runs, heavy stop/go traffic or poor fuel quality. 10. Attempt to turn the fastener using a torque wrench set to the minimum torque specification for that fastener. If the fastener does not rotate, the fastener torque has been maintained. No further attention is necessary. If the fastener moves, clean all locking material from the threaded hole. Replace the fastener with a new one or clean the original fastener threads and apply the appropriate locking agent (see appropriate procedure). Install fastener. Tighten to specification. 11. Always check lug nut torque within 805–1,610 km (500–1,000 mi) after wheel installation. 12. Disassemble, inspect, rebuild forks and replace fork oil every 80,000 km (50000 mi). 13. Check reverse operation at each service interval.												

Table 33. Owner's Maintenance Records

SERVICE MILE INTERVAL	DATE	DEALER NUMBER	TECHNICIAN NAME	TECHNICIAN SIGNATURE
1,600 km (1000 mi)				
8,000 km (5000 mi)				
16,000 km (10000 mi)				
24,000 km (15000 mi)				
32,000 km (20000 mi)				
40,000 km (25000 mi)				
48,000 km (30000 mi)				
56,000 km (35000 mi)				
64,000 km (40000 mi)				
72,000 km (45000 mi)				
80,000 km (50000 mi)				

SERVICE LITERATURE

Refer to Table 34. 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 34. Service Literature: 2014 Trike Models

DOCUMENT	LANGUAGE	PART NUMBER
Boom! Box Owners Kit	English	99517-14EN
	French	99517-14FR
	German	99517-14DE
	Spanish	99517-14ES
	Italian	99517-14IT
	European Portuguese	99517-14PT
Touring Models Service Manual	English	99483-14
	French	99483-14FR
	German	99483-14DE
	Spanish	99483-14ES
	Italian	99483-14IT
	Japanese	99483-14JA
Touring Models Electrical Diagnostics Manual	English	99497-14
	French	99497-14FR
	German	99497-14DE
	Spanish	99497-14ES
	Italian	99497-14IT
	Japanese	99497-14JA
Trike Service Manual Supplement	English	99601-14
	French	99601-14FR
	German	99601-14DE
	Spanish	99601-14ES
	Italian	99601-14IT
	Japanese	99601-14JA
Trike Parts Catalog	English	99602-14

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Bar & Shield, Boom!, Cross Bones, Cruise Drive, CVO, Digital Tech, Digital Technician, Digital Technician II, Dyna, Electra Glide, Evolution, Fat Bob, Fat Boy, Forty-Eight, Glaze, Gloss, H-D, H-Dnet.com, Harley, Harley-Davidson, HD, Heritage Softail, Iron 883, Low Rider, Night Rod, Nightster, Night Train, Profile, Reflex, Revolution, Road Glide, Road King, Road Tech, Rocker, Screamin' Eagle, Seventy-Two, Softail, Sportster, Street Glide, Street Rod, Sun Ray, Sunwash, Super Glide, SuperLow, Switchback, SYN3, TechLink, TechLink II, Tour-Pak, Tri Glide, Twin Cam 88, Twin Cam 88B, Twin Cam 96, Twin Cam 96B, Twin Cam 103, Twin Cam 103B, Twin Cam 110, Twin Cam 110B, Twin-Cooled, Ultra Classic, V-Rod, VRSC and Harley-Davidson Genuine Motor Parts and Genuine Motor Accessories are among the trademarks of H-D U.S.A., LLC.

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