

2016 CVO Pro Street Breakout - Owner's Manual

Safety First

Safe Operating Rules

WARNING

Motorcycles are different from other vehicles. They operate, steer, handle and brake differently. Unskilled or improper use could result in loss of control, death or serious injury. (00556c)

- 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.

- Know and respect the rules of the road. Carefully read and familiarize yourself with the motorcycle safety information provided by your country or state. Read the RIDING TIPS booklet in your owner's kit (in the U.S.) and the MOTORCYCLE HANDBOOK from your state or regional traffic authority. The RIDING TIPS booklet is also available on www.msf-usa.org. See Rules of the Road.
- Before starting engine, check for proper operation of brake, 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)

- 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.

WARNING

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

When refueling your motorcycle, 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)

⚠WARNING

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

⚠WARNING

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

- A new motorcycle must be operated according to the special break-in procedure. See Break-In Riding Rules.
- Operate motorcycle at moderate speed and out of traffic until you 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, both the Harley-Davidson Riding Academy (1-414-343-4056) and the Motorcycle Safety Foundation (1-800-446-9227) offer beginning and advanced rider safety courses.

⚠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. Keep both hands on the handlebar grips when riding the motorcycle. Any two-wheeled 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.
- 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 each saddlebag.

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

⚠WARNING

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

- When carrying passengers, it is your responsibility to instruct them on proper riding procedures. See the RIDING TIPS booklet included in your 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 that they are experienced and licensed riders. Make sure they 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.
- Proper care and maintenance, including tire pressure, tire condition, tread depth and proper adjustment to steering head bearings are important to the stability and safe operation of the motorcycle. Maintain your motorcycle in proper operating condition. Refer to Regular Service Intervals: 2016 FXSE.

⚠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 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should **NEVER** be used over 80 mph (130 km/h). Failure to follow this warning could 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)

CAUTION

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

- 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 which is on the frame downtube in some destinations. See Specifications.

⚠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

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

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)

⚠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)

⚠CAUTION

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

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

Anti-lock Brake System (ABS)

⚠WARNING

If ABS lamp continues flashing at speeds greater than 3 mph (5 km/h) or remains on continuously, the ABS is not

operating. The standard brake system is operational, but wheel lock up can occur. Contact a Harley-Davidson Dealer to have ABS repaired. A locked wheel will skid and can cause loss of vehicle control, which could result in death or serious injury. (00361b)

WARNING

ABS cannot prevent lockup of rear wheel due to engine braking. ABS will not aid in cornering or on loose/uneven surfaces. A locked wheel will skid and can cause loss of vehicle control, which could result in death or serious injury. (00362a)

To operate motorcycles equipped with an anti-lock brake system, see ABS Brakes.

Rules of the Road

- Always sound your horn, use your turn signals and exercise caution when passing other vehicles going in the same direction. Never pass 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 that it is your turn.
- Always signal when preparing to stop, turn or pass.
- Promptly obey all traffic signs, including those signs used for the control of traffic at intersections. Always obey traffic signs near schools and at railroad crossings.
- When intending to turn, signal at least 100 ft 30.5 m 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), slow down and wait for the light to change. Never run through a yellow or red traffic light.
- While turning, watch for pedestrians, animals, as well as vehicles.
- Do not leave the curb or parking area without signaling. Make sure that your way is clear to enter moving traffic. A moving line of traffic always has the right-of-way.
- Make sure that your license plate is installed in the position specified by law. Make sure that your license plate is always clearly visible. Keep the license 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 when installing accessories or carrying extra weight.

WARNING

See the Accessories and Cargo 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. (00021b)

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.
- See information label on frame steering head or frame downtube for GVWR and GAWR. Refer to weight tables. See Specifications.

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

Follow the following guidelines 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 always keep both hands on the handlebar grips when riding. Two-wheeled vehicles are subject to upsetting forces such as wind blasts from passing trucks, holes in the pavement, rough road surfaces, rider control error. These forces can 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 action can aggravate an unstable condition.
- Keep cargo weight concentrated close to the motorcycle and as low as possible. This position minimizes the change in the motorcycle's center of gravity.
- Distribute weight evenly on both sides of the vehicle.
- Do not load bulky items too far behind the rider or add weight to the handlebars or front

forks.

- If equipped with saddlebags, do not exceed maximum specified load in each saddlebag.
- If equipped, do not overload luggage racks. Luggage racks are designed for lightweight items.
- Make sure that cargo is secure and cannot shift while riding and recheck the cargo periodically. Accessories that change the operator's riding position can increase reaction time and affect handling.
- Extra electrical equipment can overload the motorcycle's electrical system. This overload can cause electrical system and/or component failure.

WARNING

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

- Large surfaces such as fairings, windshields, backrests and luggage racks can have an adverse effect on stability and handling.
- Only install Genuine Harley-Davidson accessories designed specifically for your motorcycle.
- Pay particular attention to the weights of accessories, cargo, riding gear, passenger and rider. These weights affect the loading requirements 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)

WARNING

Do not add sidecar to this motorcycle. Operating motorcycle with sidecar can cause loss of vehicle control, which could result in death or serious injury. (00590d)

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

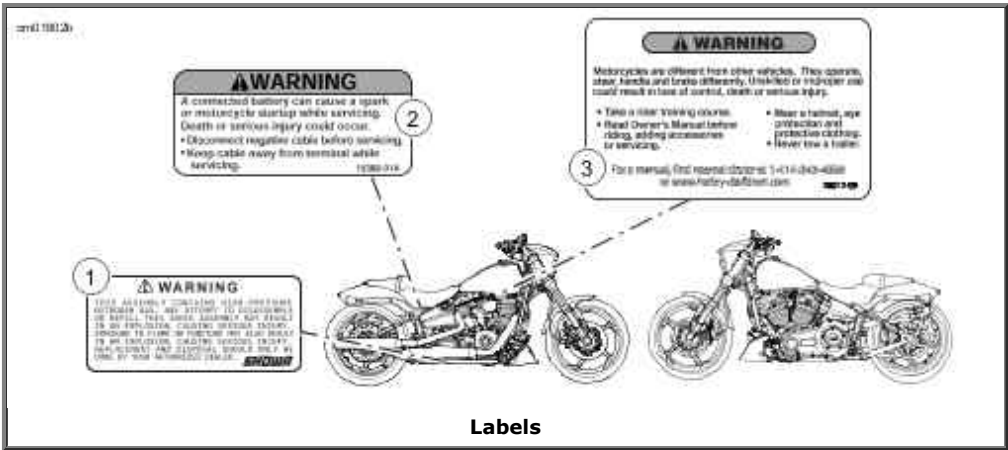
See Labels. The safety and maintenance labels on your motorcycle indicate compliance to

market regulations. Refer to Labels.

NOTE:

Some labels are available in different languages for destinations outside the United States.

If removed or damaged, replacement labels can be purchased. See a Harley-Davidson dealer for all available labels.



Labels

ITEM	PART NO.	DESCRIPTION	LOCATION	TEXT
1	Not sold separately	Shock label	On shock absorbers	WARNING: This assembly contains high-pressure nitrogen gas. Any attempt to disassemble or refill this shock assembly may result in an explosion, causing serious injury. Exposure to flame or puncture may also result in an explosion, causing serious injury. Replacement and disposal should only be done by your authorized dealer.
2	15368-01A	Battery warning	On left side of frame above oil tank	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	28012-09	General warning	Top of air cleaner	WARNING: Motorcycles are different from 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

Identification

Vehicle Identification Number (VIN)

General

See Harley-Davidson VIN: 2016 FXSE. 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 Harley-Davidson VIN Breakdown: 2016 FXSE CVO™ Pro Street Breakout®.

Location

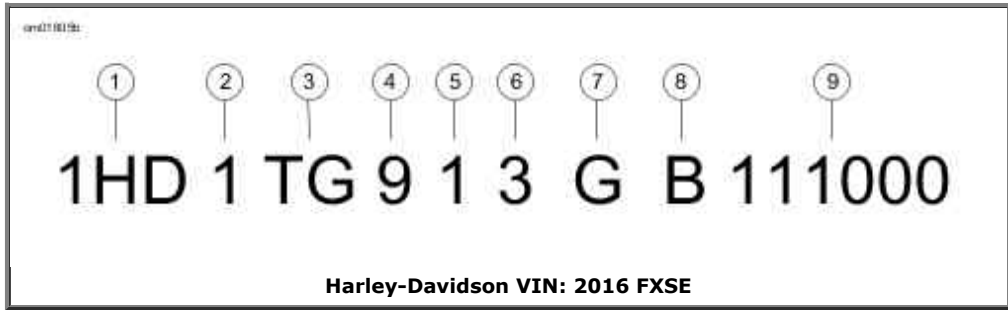
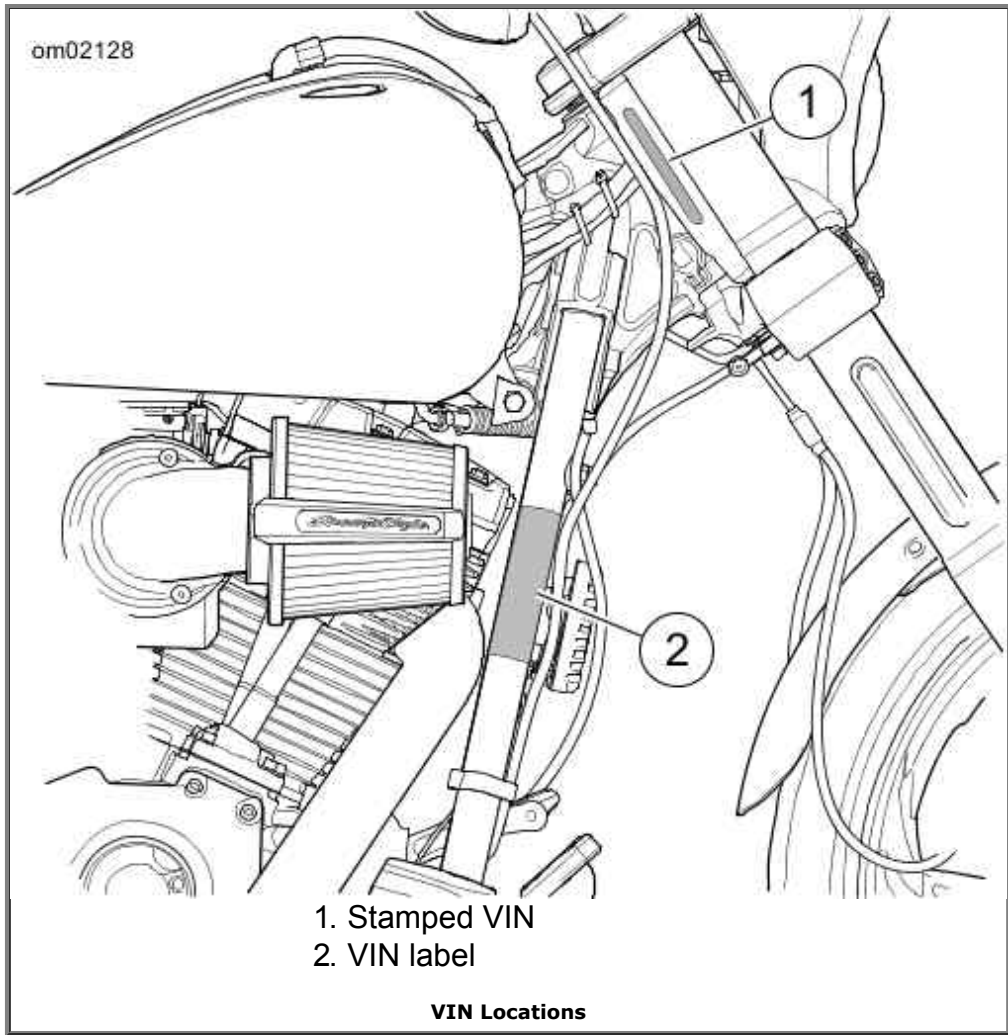
See VIN Locations. The full 17-digit VIN (1) is stamped on the right side of the frame near the steering head. In some destinations, a printed VIN label (2) is also attached to the front downtube.

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 the motorcycle.



Harley-Davidson VIN Breakdown: 2016 FXSE CVO™ Pro Street Breakout®

POSITION	DESCRIPTION	POSSIBLE VALUES	
1	World manufacturer identifier	1HD=Originally manufactured for sale in the United States 5HD=Originally manufactured in the United States for sale outside of the United States 932=Originally manufactured in Brazil MEG=Originally manufactured in India	
2	Motorcycle type	1=Heavyweight motorcycle (901 cm ³ or larger)	
3	Model	TG=FXSE CVO™ Pro Street Breakout®	
4	Engine type	9=Twin Cam 110B™ (1802 cm ³) air-cooled, fuel-injected, balanced	
5	Calibration/configuration, introduction	Normal Introduction	Mid-year or Special Introduction

		1=Domestic (DOM) 3=California (CAL) A=Canada (CAN) C=HDI E=Japan (JPN) G=Australia (AUS) L=Asia Pacific (APC)	2, 4=Domestic (DOM) 5, 6=California (CAL) B=Canada (CAN) D=HDI F=Japan (JPN) H=Australia (AUS)
6	VIN check digit	Can be 0-9 or X	
7	Model year	G=2016	
8	Assembly plant	B=York, PA U.S.A. D=H-D Brazil-Manaus, Brazil (CKD) N=Haryana India (Bawal District Rewari)	
9	Sequential number	Varies	

Premium CVO Items

The following items are included with your new motorcycle.

- Security fob/fork lock key
- ABS DVD
- Owner's Kit/Manual
- Rain Sock, Air Cleaner
- Motorcycle Indoor/Outdoor Cover

Specifications

Specifications

Engine: Twin Cam 110B

ITEM	SPECIFICATION	
Number of cylinders	2	
Type	4-cycle, 45 degree V-Type, air-cooled	
Compression ratio	9.2-1	
Bore	4.00 in	101.6 mm
Stroke	4.374 in	111.1 mm
Displacement	110.0 in ³	1801 cm ³

Electrical

COMPONENT	SPECIFICATION	
Ignition timing	Not adjustable	
Battery	12 V, 19 Ah, 315 CCA, sealed and maintenance-free	
Charging system	Three-phase, 38 A system (439 W @ 13 V, 2000 rpm, 489 W max power @ 13 V)	
Spark plug size	12 mm	
Spark plug gap	0.038-0.043 in	0.97-1.09 mm
Spark plug torque	12-18 ft-lbs	16.3-24.4 Nm

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.

Sprocket Teeth

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

Overall Drive Ratios

GEAR	RATIO
1st Gear	9.311
2nd Gear	6.454
3rd Gear	4.793
4th Gear	3.882
5th Gear	3.307
6th Gear	2.790

Capacities

ITEM	U.S.	LITERS
Fuel tank (total)	5.0 gal	18.93
Low fuel warning light on	1.0 gal	3.79
Oil tank with filter*	3.0 qt	2.84
Transmission** (approximate)	1.0 qt	0.95
Primary chaincase (approximate)	1.0 qt	0.95
* When refilling, initially add 2.0 qt 1.89 L . Bring vehicle to operating temperature. Add oil to bring level within specification. ** When refilling, initially add 28 oz 0.83 L . Bring vehicle to operating temperature. Add oil to bring level within specification.		

Dimensions

ITEM	in	mm
Length	92.1	2339
Overall width	36.2	919
Overall height	44.8	1138
Wheelbase	66.6	1692
Road clearance	5.1	130
Seat height*	25.1	638
*With 180 lb 82 kg rider on seat		

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 plate, located on the frame down tube.

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 1200 lbs 544 kg having a running weight of 800 lbs 363 kg, would allow a maximum of an additional 400 lbs 181 kg combined weight of the rider, passenger, riding gear, cargo and installed accessories.

Weights

ITEM	lb	kg
Running weight*	730	331
Maximum added weight allowed**	445	202
GVWR	1175	533
GAWR front	415	188
GAWR rear	760	345
* 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 cannot exceed this weight.		

Specified Tires

MOUNT	SIZE	SPECIFIED TIRE	TIRE PRESSURE COLD*	
			psi	kPa
Front	19 in	Dunlop D408F 130/60B19	36	248
Rear	18 in	Dunlop D407 240/40R18	42	290
* Tire pressure varies with changes in ambient and tire temperature. Check pressure with tires cold (68 °F 20 °C). Increase tire pressure by 1 psi 6.9 kPa for every 10 °F 5 °C in ambient air temperature above this point.				

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

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

Refer to Specified Tires 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 Specified Tires. Do not load tires beyond the GAWR specified in Weights. Under-inflated, over-inflated or overloaded tires can fail.

Harley-Davidson does not perform any testing with 100 percent 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 1/32 in (0.8 mm) tread depth remains. Riding with a worn tire could result in death or serious injury. (00090c)

Harley-Davidson tires have 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 1/32 in 0.8 mm tread depth remains, the tires can:

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

Gasoline Blends

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

CAUTION

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

- Gasoline/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.

Fuel

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

⚠ WARNING

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

⚠ WARNING

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

Modern service station pumps dispense a high flow of gasoline into a motorcycle fuel tank. This can cause air entrapment and pressurization.

Octane Rating

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

Catalytic Converters

All models are equipped with catalytic converters.

CAUTION

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

CAUTION

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

Controls and Indicators

Keyless Ignition

⚠ 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)

⚠ 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)

The motorcycle has keyless ignition. A key is not required to operate the motorcycle. Instead, an assigned security fob must be present or the PIN must be used before the motorcycle can be started.

The key supplied with the motorcycle is for the fork lock. See Fork Lock.

Ignition Mode

With security fob present, set the OFF/RUN switch to RUN. The lights and instruments become operational and the motor can be started. To disarm the security system using the PIN, see Arming and Disarming.

The motorcycle remains on (or the engine continues running) until the OFF/RUN switch is set to OFF. Taking the security fob out of range will not shut down the engine or turn off the motorcycle after it is turned on. However, if the motorcycle is driven off without the fob present, the speedometer temporarily displays a "NO FOB" message.

When parked, set the OFF/RUN switch to OFF and take the security fob to prevent theft or startup. With the security fob out of range, the starter, ignition system and OFF/RUN switch remain disabled, immobilizing the motorcycle.

Accessory Mode

With the security fob present, press and hold the trip switch. The instruments and accessory circuit are powered while the headlamp and turn signal lamps remain OFF. While in accessory mode, the instruments display the fuel gauge and odometer functions. The headlamp can be activated by pressing the headlamp flash to pass switch.

To turn the motorcycle back off, press and hold the trip switch.

To prevent discharging the battery, do not leave the motorcycle in accessory mode for an extended period. If the vehicle is left in accessory mode for 2 hours, the motorcycle automatically shuts off to prevent complete battery discharge. To resume accessory mode, press and hold the trip switch again.

Primary Controls

Familiarize yourself with the location of all the operational and maintenance controls on your motorcycle.

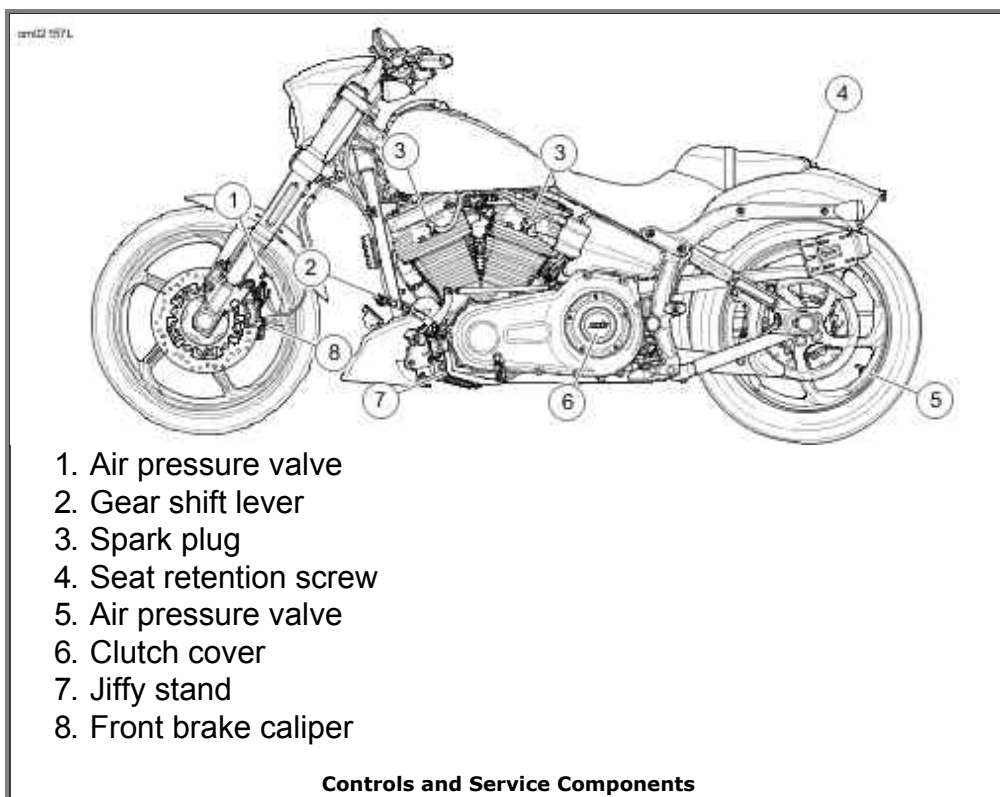
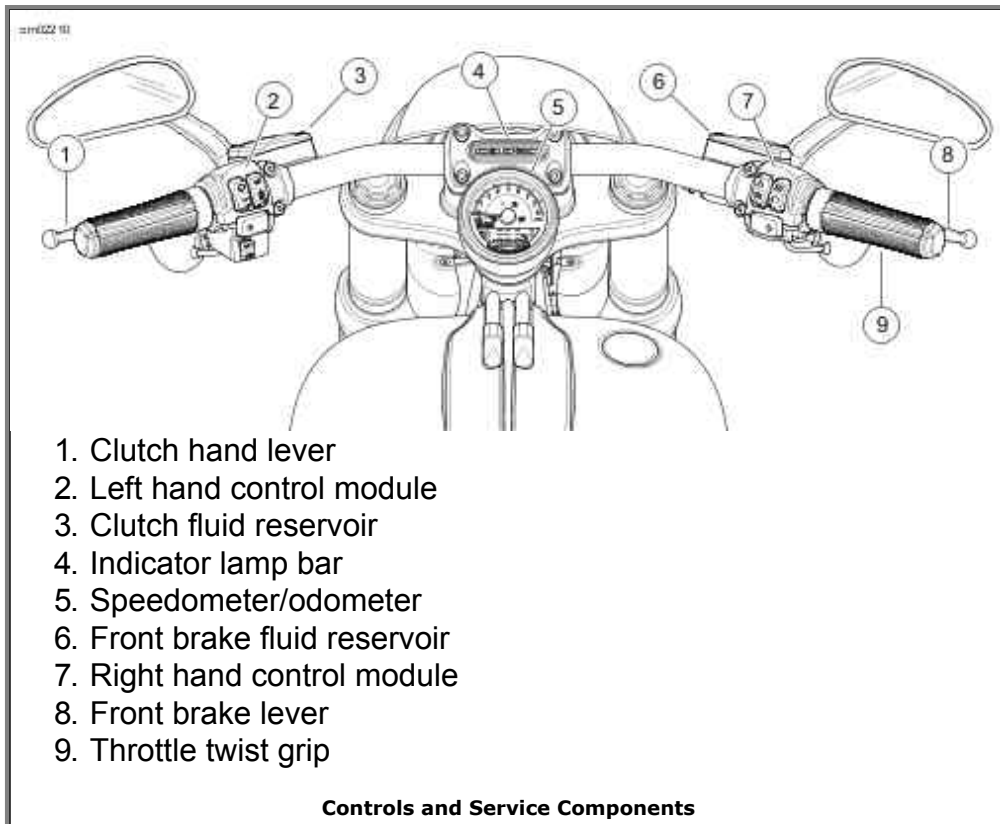
NOTES:

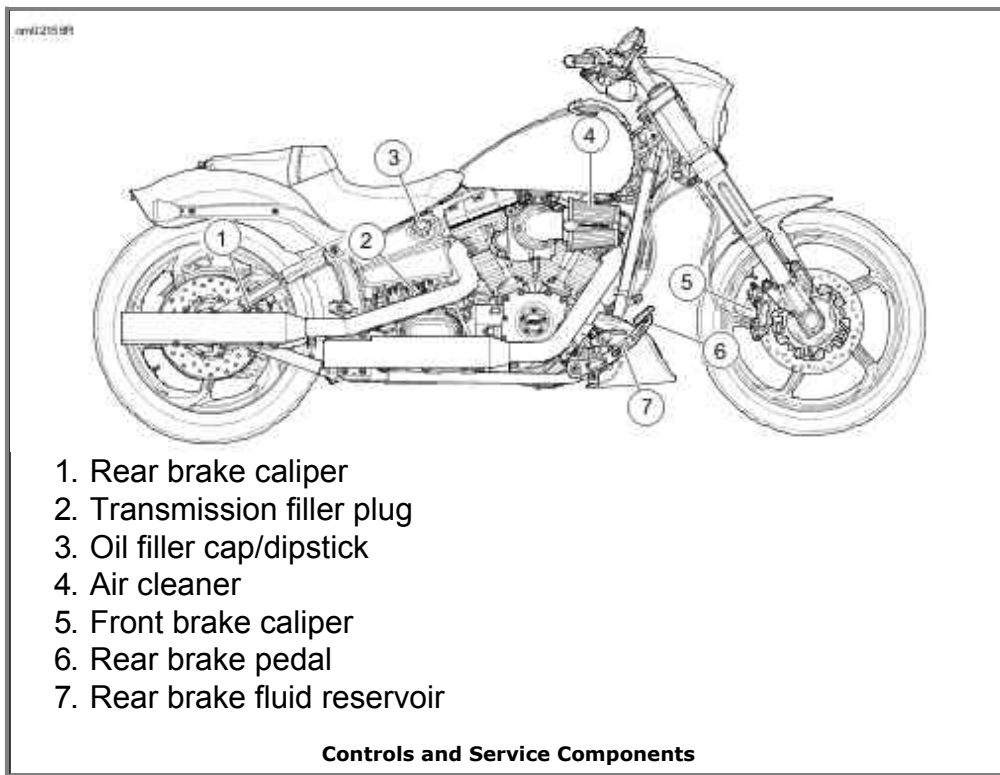
Harley-Davidson reserves the right to change specifications, equipment or designs at any time without notice and without incurring obligation.

See Controls and Service Components for rider controls and service components accessible when seated.

See Controls and Service Components for rider controls and service components accessible from the left.

See Controls and Service Components for rider controls and service components accessible from the right.





Left Hand Control Switches

Trip

See Left Hand Switch Module. The trip switch (1) activates the trip odometers. The trip switch also is used to scroll through the optional screens of the odometer display. With the ignition off, the trip switch can activate time or odometer displays. Refer to Left Hand Control Switches.

Horn

See Left Hand Switch Module. The horn is operated by pressing the horn switch (2). 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 automatically deactivates. Refer to Left Hand Control Switches.

High Beam

See Left Hand Switch Module. Press the high beam switch (3) to activate the high beam. The (blue) high beam indicator lamp is lit when the high beam is on. Refer to Left Hand Control Switches.

Low Beam/Flash to Pass

Low beam: See Left Hand Switch Module. Press the bottom of the switch to (4) activate the low beam.

Flash to pass: Press and release the flash to pass switch (4) to flash the high beam before passing another vehicle. The high beam indicator lamp in the speedometer face is illuminated as long as the flash to pass switch is pressed.

When in accessory, press the flash to pass switch to activate the headlamp. Refer to Left Hand Control Switches.

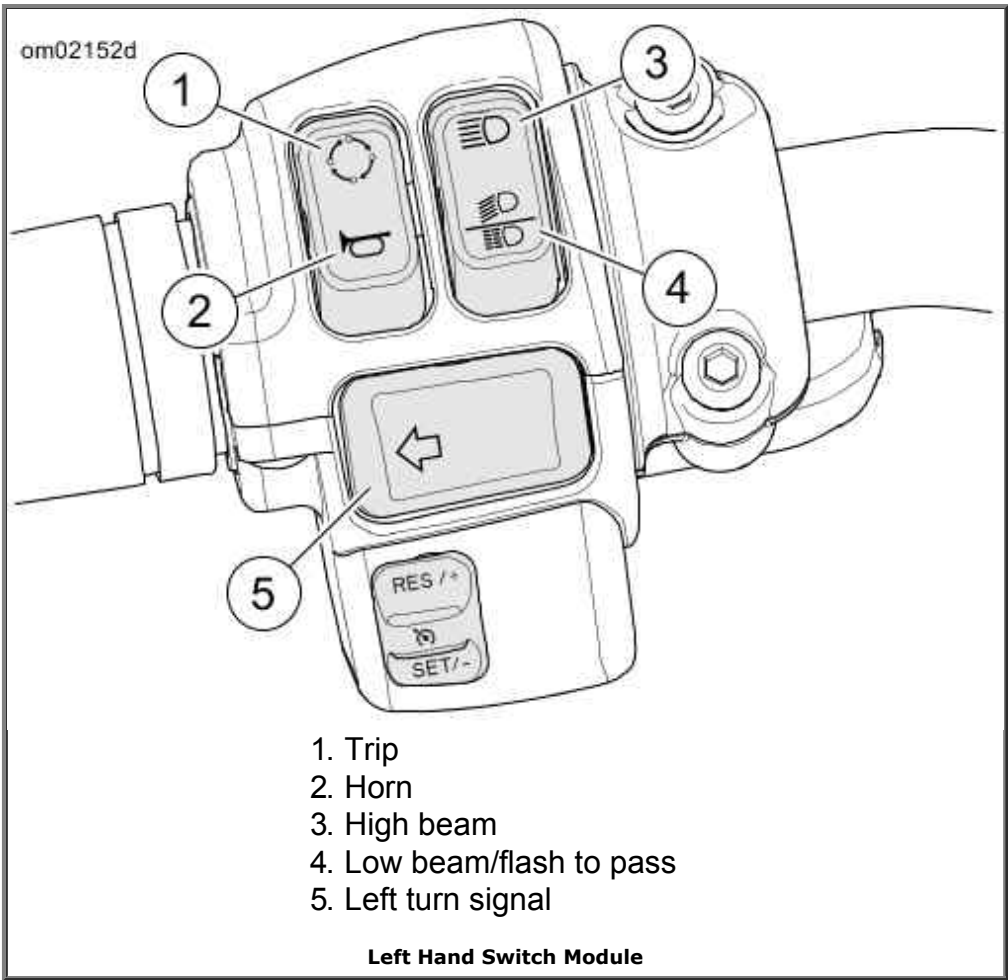
Left Turn Signal

Activate: See Left Hand Switch Module. Press the left turn signal switch (5) to activate the left turn signal. Refer to Left Hand Control Switches.

Cancel: Press the left turn signal switch to cancel the left turn signal.

NOTES:

- Front turn signal lamps also function as running lamps. This feature may not be available in all markets.
- The turn signals automatically cancel after 30 flashes or 10 seconds.



Left Hand Control Switches

SWITCH	NAME	FUNCTION
	Trip	Press to alternate odometer displays.
	Horn	Press to sound the horn.
	High beam	Press to switch the headlamp to high beam.
	Low beam/flash to	Press to switch the headlamp to low beam. Press and release to flash the high

	pass	beam.
		In ACC, press to activate the headlamp.
	Left turn	Press to activate the left turn signal.

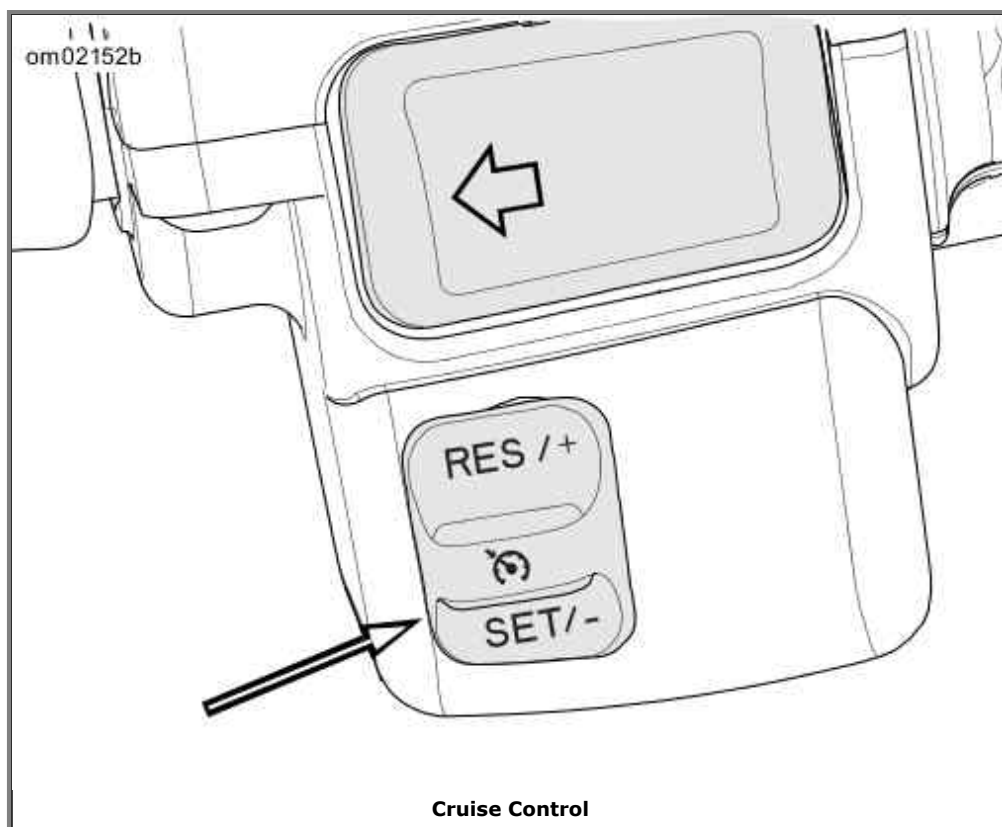
Cruise Control

See Cruise Control. The cruise control switch automatically controls the speed. Refer to Cruise Control Switch. See Cruise Control Operation.

Cruise: Press the cruise switch straight in to enable cruise control. The cruise control indicator lights amber. Pressing the 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.

RES/+: If cruise control is disengaged (after braking or rolling the throttle through the roll-off switch), press RES/+ to resume the previous cruising speed. While at cruising speed, press RES/+ to increase speed.



Cruise Control Switch

SWITCH	NAME	FUNCTION
	Cruise	Press to turn on cruise.
	Set	Press to set the cruise speed. Tap down to decrease speed in increments.
	Resume	Press to resume cruise

		Tap up to increase set speed in increments.
--	--	---

Right Hand Control Switches

Hazard Warning 4-Way Flasher

See Right Hand Control Switches. The hazard switch (1) is used to leave a stranded motorcycle in the 4-way flashing mode. With the flashers, the motorcycle can be left with the ignition locked until help is found. Refer to Right Hand Control Switches.

1. With the ignition switch in the IGNITION or ACC position, press on the hazard warning triangle to activate the 4-way flashers.

NOTE:

Security models: *The fob must be present when turning on the 4-way flashers and when canceling the flashers.*

2. Turn ignition off. The 4-way flashers continue for 2 hours or until cancelled by the rider.
3. To cancel, turn the ignition to ACC or IGNITION. Press the warning triangle above the start switch.

Start

See Right Hand Control Switches. The start switch (5) is on the right handlebar control module. Refer to Right Hand Control Switches.

1. Switch the OFF/RUN switch to the run position (3). Shift the transmission to neutral. The neutral (green) indicator illuminates. See Starting the Engine.
2. Turn ignition on. Press the start switch (5) to operate the starter motor.

NOTES:

- *When the starter is activated, the headlamp is momentarily turned off to reduce battery load.*
- *If the engine does not start, the starter motor runs for five seconds and stops. Release the start switch. Press the start switch to try again. After several unsuccessful attempts to start the engine, see a Harley-Davidson dealer.*

OFF

See Right Hand Control Switches. Press the engine OFF/RUN switch to OFF (2) to shut off the engine. Refer to Right Hand Control Switches.

After turning off the engine. Turn the ignition switch to OFF to disconnect the electric power.

RUN

See Right Hand Control Switches. Push the engine OFF/RUN switch to RUN (3) to enable engine start and run. The engine OFF/RUN switch must be in the RUN position to start or operate the engine. Refer to Right Hand Control Switches.

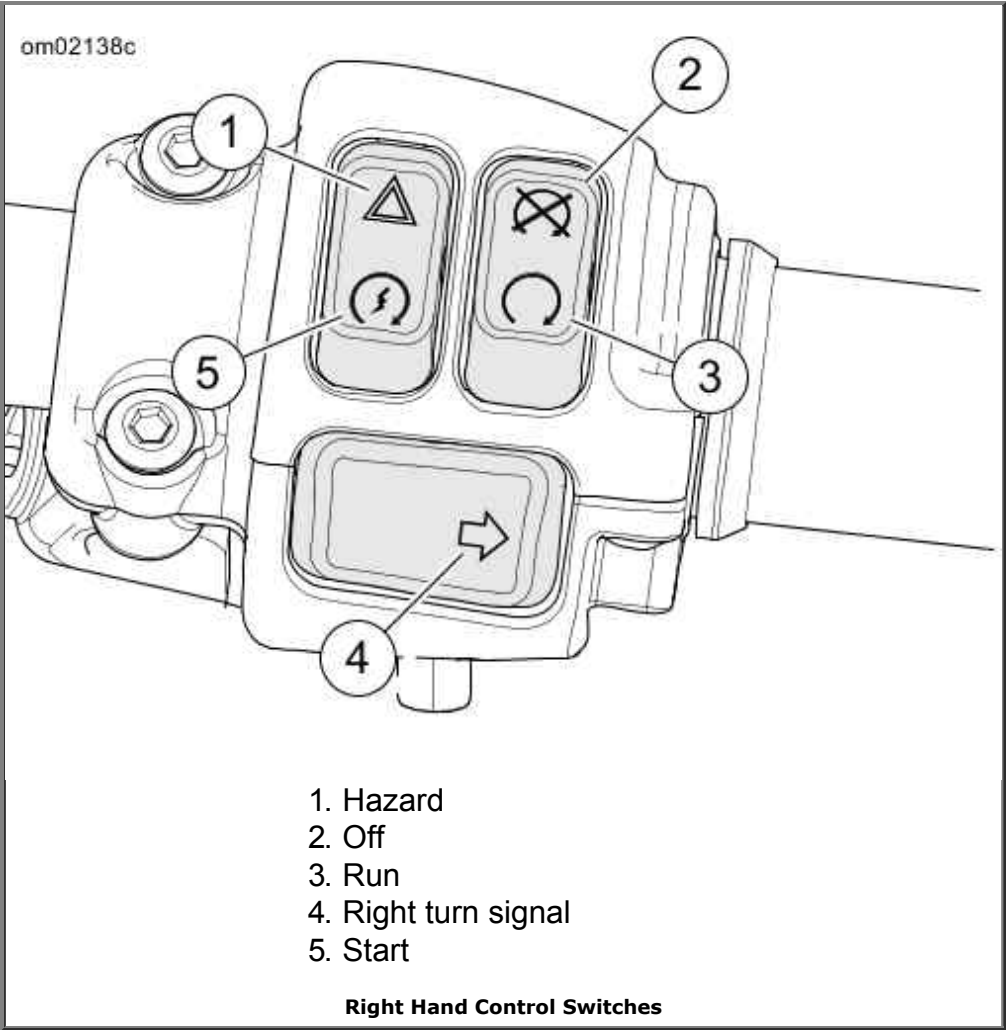
Right Turn Signal

Activate: See Right Hand Control Switches. Press the right turn signal switch (4) to activate the right turn signal. Refer to Right Hand Control Switches.

Cancel: Press the right turn signal switch to cancel the right turn signal. For detailed operation, see Turn Signal Switch Operation.

NOTE:

Front turn signal lamps also function as running lamps. This feature may not be available in all markets.



Right Hand Control Switches

SWITCH	NAME	FUNCTION
	Hazard	Press to activate the 4-way flashers.
	Start	Press to start the engine.
	Off	Press to stop the engine or to prevent the engine from starting.
	Run	Press to allow the engine to start.

	Right turn	Press to signal a right turn.
--	---------------	-------------------------------

Turn Signal Switch Operation

Operating

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.

NOTE:

If a turn signal indicator flashes rapidly, a turn signal is not operating. Exercise caution. Use hand signals. Immediately replace defective components.

Automatic Canceling

The turn signal lamps automatically cancel when a full turn has been detected based on speed, acceleration and turn completion.

The lamps also cancel if the turn signal has been activated for a prolonged period (20 flashes) while the motorcycle speed is greater than 7 mph 11 km/h . If the motorcycle is stopped or moving slower than this speed, the turn signal continues flashing.

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.

Cruise Control Operation

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)

Turn Cruise On

NOTE:

Cruise control only works at speeds between 30-90 mph 48-144 km/h in third gear or higher.

See Cruise Control. Press the cruise switch in to turn on cruise (1). When on, the cruise icon in the speedometer face glows amber.

Set Cruise Speed

See Cruise Control. When the motorcycle reaches your intended speed, press the SET/- switch down to set the cruise speed (2). The amber cruise icon changes to green.

If necessary, adjust the cruise speed to match the speed limit or traffic conditions:

Increase/Decrease Cruise

Tapping the RES/+ switch up increases speed by 1 mph 1.6 km/h . Holding up the RES/+ switch gradually increases cruise speed.

Tapping the SET/+ switch down decreases speed by 1 mph 1.6 km/h . Holding the switch down gradually decreases cruise speed.

Disengage Cruise

See Cruise Control. To drop out of cruise speed, roll the throttle closed through the roll-off switch (3).

Cruise also disengages, if the rider:

- Squeezes the front brake lever or presses the rear brake pedal.
- Squeezes the clutch lever.
- Rolls the throttle open more than 10 mph 16 km/h above the set speed.

Resume Cruise

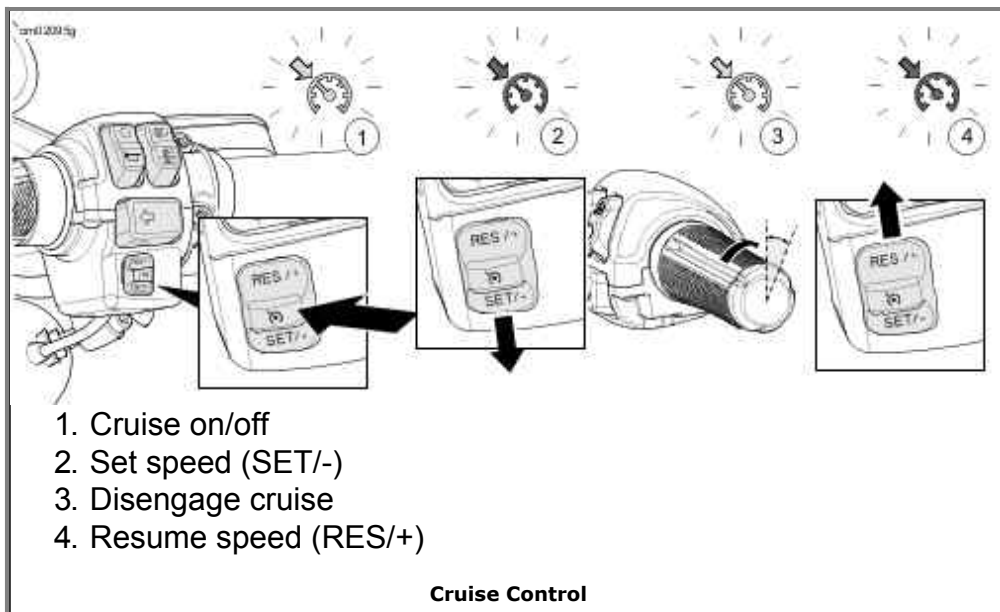
NOTE:

If the current speed is more than 15 mph 24 km/h below the cruise speed, cruise will not resume.

See Cruise Control. If cruise has been disengaged yet the cruise indicator is amber, pressing the RES/+ switch up resumes cruise (4). The icon glows green. The motorcycle automatically resumes cruise at the set speed.

Turn Cruise Off

Press the cruise switch in to turn off cruise control. The cruise icon goes blank.



Instruments

The instrument appearance, features and backlighting colors can be configured to suit each individual rider. See Configuring 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 Instruments. The digital speedometer (3) registers vehicle speed. To switch the speedometer units from miles per hour (mph) to kilometers per hour (km/h), see Configuring Speedometer Units.

Analog Tachometer

See Instruments. The analog tachometer (1) indicates the engine speed in revolutions per minute (rpm x 1000).

Fuel Gauge

See Instruments. The fuel gauge (5) displays four bars when the fuel tank is full. Each bar represents approximately one-fourth of the total fuel capacity.

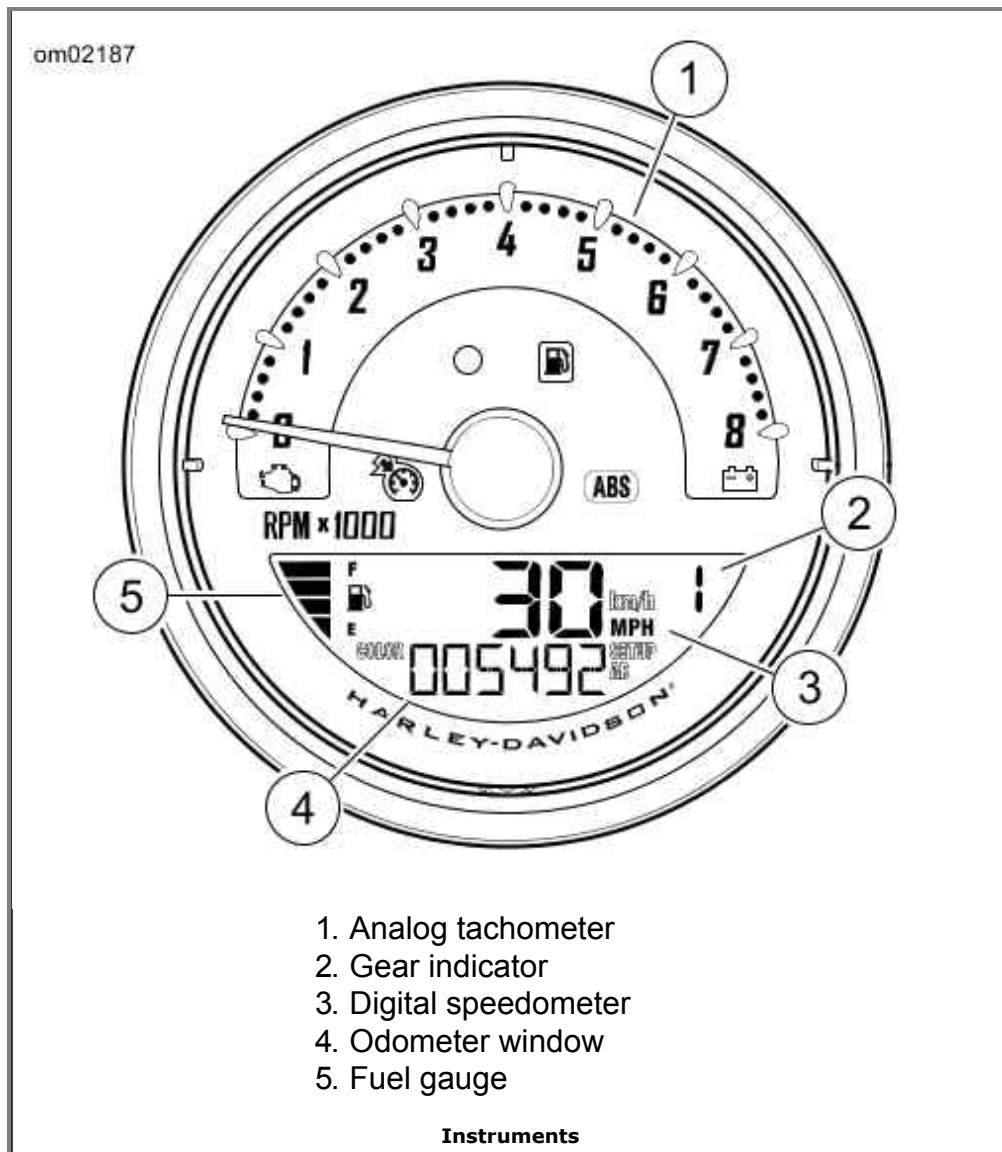
Gear Indicator

See Instruments. The digital gear indicator (2) displays the currently selected gear (1-6). The gear indicator remains blank when the transmission is in neutral, the clutch lever is pulled in or the

vehicle is not moving.

Odometer

See Instruments. The odometer window (4) can be cycle to display several functions. Pressing the trip switch cycles through the odometer functions. See Odometer.



Odometer

Press the trip switch to cycle through the odometer functions.

Odometer: Total Mileage

See Odometer Functions. The odometer shows the total accumulated mileage for the motorcycle.

Odometer: Trip A and B

See Odometer Functions. The two trip odometers (A and B) (4) display the total accumulated mileage since they were last reset. To check mileage, press and release the trip switch until the

desired trip odometer (A or B) is displayed.

To reset a trip odometer, have desired (A or B) odometer in display window. Press and hold the trip switch until the selected trip odometer resets to zero.

Clock

See Odometer Functions. Press and release the trip switch until the time (1) is displayed in the odometer window. To change the time settings, see Setting Time.

Digital Tachometer

See Odometer Functions. Press and release the trip switch repeatedly until the digital tachometer is displayed. The odometer window briefly displays an 'RPM' message (2) then displays the engine speed (3).

Fuel Range

See Odometer Functions. The fuel range display (5) shows the approximate mileage available with the amount of fuel left in the fuel tank.

With the OFF/RUN switch in the RUN position, press the trip switch until fuel range is displayed, as 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 tank. Range can be accessed at any time with the trip switch.

The fuel range is automatically displayed when the low fuel lamp is lit. After the fuel range drops to 10 mi (10 km), the fuel range displays "LO RNG" to indicate that the motorcycle will shortly run out of fuel. Refuel as soon as possible.

The range display is only updated when the vehicle is moving.

Disable: To disable the automatic low fuel warning range function while riding, press and hold the trip switch while in the fuel range display mode. The automatic range pop-up feature blinks twice to show that it is disabled.

Enable: To enable the automatic low fuel warning range display, press and hold the trip switch. The low fuel range blinks once when the automatic feature is enabled. The automatic fuel range display is also enabled after the OFF/RUN switch is turned to off then to run.

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

"No Fob"

See Odometer Functions. If the motorcycle is ridden off without the fob, "NO FOB" (6) appears in the odometer window for 10 seconds after the motorcycle starts moving. Without the fob, the motorcycle can only be started with a manual PIN entry to disarm the security system. See Arming and Disarming.

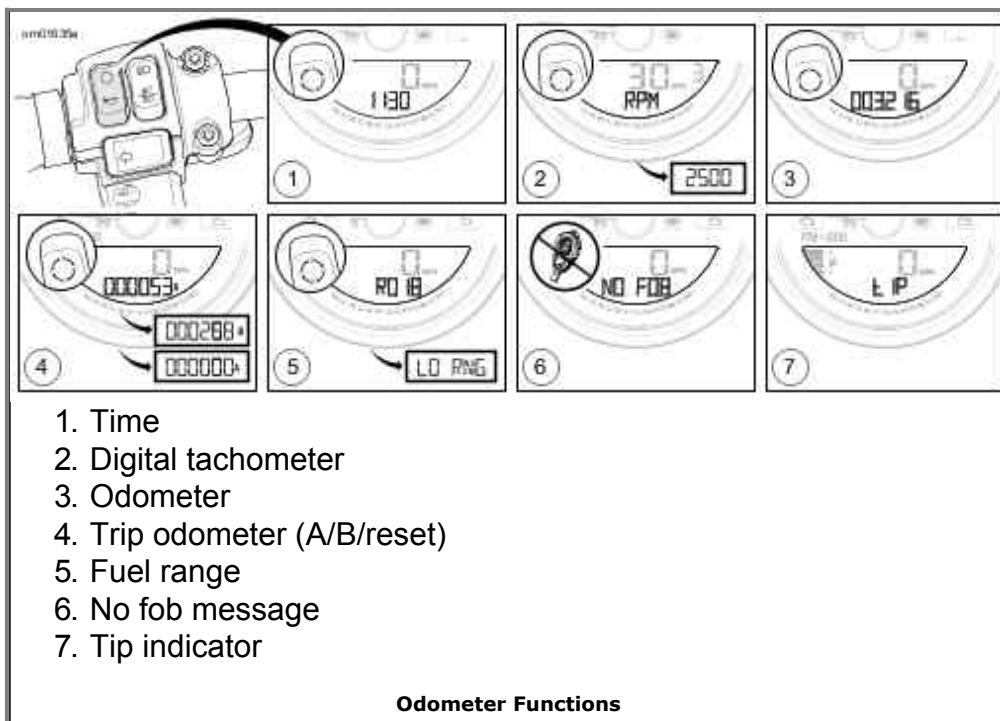
Tip Indicator

⚠ 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 Odometer Functions. If the motorcycle is tipped over, the word "tIP" (7) appears in the odometer window. The engine cannot start until the tip condition is reset.

Reset: Bring the motorcycle to the upright position. Set the OFF/RUN switch to off then back to run.



Instrument Lamps

ABS Lamp

Flashing: See Speedometer Face Indicator Lamps. On vehicles with ABS, the ABS lamp (3) begins flashing when the vehicle is turned on. The flashing lamp indicates that the system is in self-diagnosis mode. Refer to Speedometer Indicator Lamps.

The ABS lamp continues to flash until motorcycle speed exceeds 3 mph 5 km/h . ABS is not operational until the lamp turns off. See Anti-lock Brake System (ABS).

Solid: Continuous illumination of the lamp indicates an ABS malfunction. The ABS is disabled and the brakes are operating as if they were non-ABS brakes. See a Harley-Davidson dealer for service.

Battery

See Speedometer Face Indicator Lamps. The battery charging lamp (2) indicates either overcharging or undercharging of the battery. See Battery.

If the lamp remains illuminated, see a Harley-Davidson dealer.

Check Engine

See Speedometer Face Indicator Lamps. The check engine lamp (4) indicates whether the engine/engine management system is operating normally. The engine lamp color is amber.

The check engine lamp illuminates when the ignition is first turned on. The check engine lamp remains lit for four seconds, as the engine management system runs a series of self-diagnostics. Refer to Speedometer Indicator Lamps.

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

Cruise Control

See Speedometer Face Indicator Lamps. The cruise control icon (5) indicates the status of cruise control. Refer to Speedometer Indicator Lamps.

Amber: The cruise indicator is amber when cruise control is on.

Green: The indicator is green when cruise speed is set and the motorcycle is at cruise speed.

Low Fuel

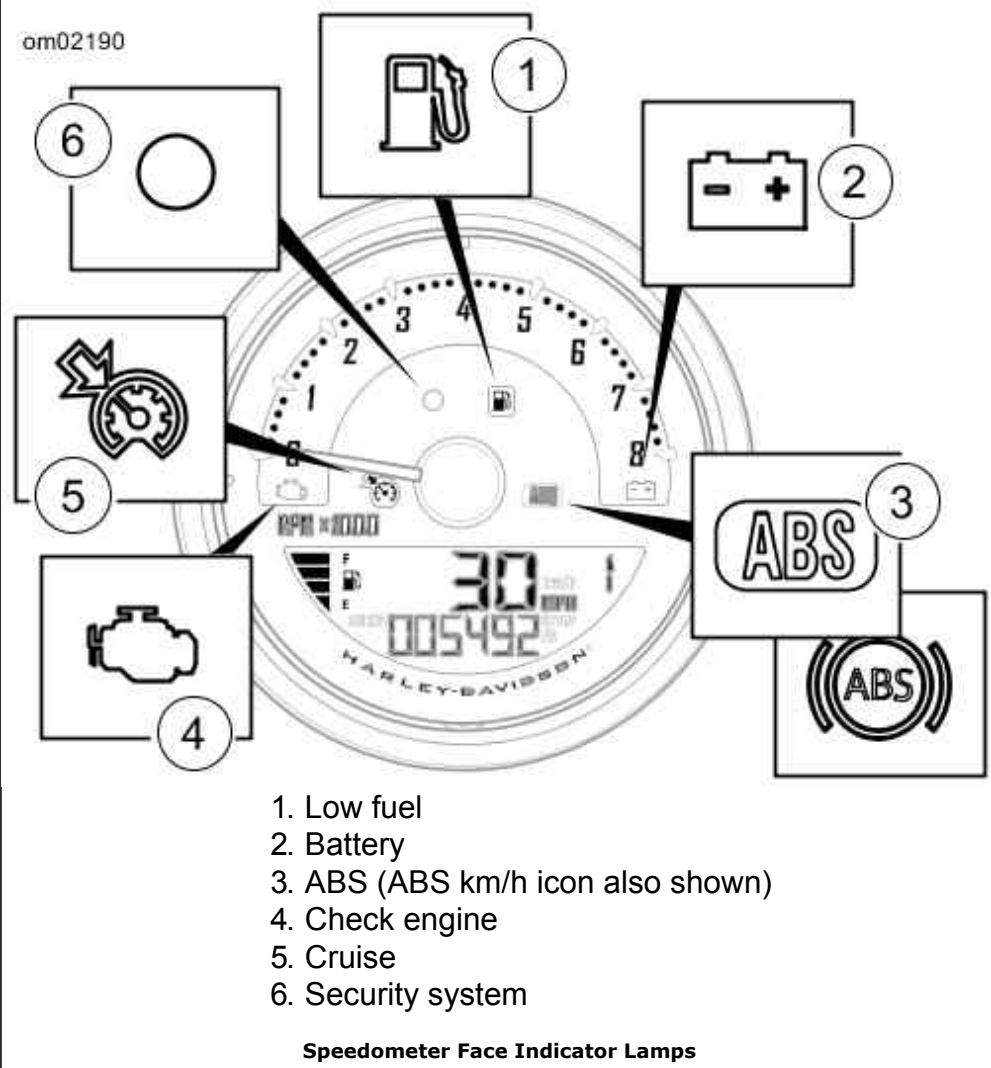
See Speedometer Face Indicator Lamps. The low fuel lamp (1) indicates when fuel falls below the reserve level in the fuel tank. The low fuel lamp color is amber. Refer to Capacities.

The low fuel lamp turns off when there is sufficient fuel, the ignition switch has been cycled (off-on), and the motorcycle is moving forward. If the low fuel lamp flashes at a steady rate, see a Harley-Davidson dealer.

Security Lamp

See Speedometer Face Indicator Lamps. The security lamp (6) indicates when the security system is armed. See Security System.

If the lamp remains lit continuously, see a Harley-Davidson dealer.



Speedometer Indicator Lamps

ICON	NAME	FUNCTION
	ABS	Flashes until 3 mph 5 km/h and ABS becomes operational.
	Battery discharge	Indicates either overcharging or undercharging of the battery.
	Check engine	Illuminates when engine diagnostics has detected an electrical fault.
	Cruise control	Amber: Amber color when cruise control is on. Green: Green when cruise speed is set and motorcycle is at cruise speed.
	Low fuel	Illuminates when fuel level is at approximately 0.8 gal 3.1 L or less. Fill with recommended fuel as soon as possible.
	Security system	A flashing lamp indicates that the security system is armed.

Indicator Lamps

Headlamp High Beam

See Indicator Lamps. The headlamp high beam indicator lamp (2) is lit when the high beam or flash to pass switch is activated. Refer to Indicator Bar Indicator Lamps.

Neutral

See Indicator Lamps. The neutral indicator lamp (3) is lit when the transmission is in neutral. Refer to Indicator Bar Indicator Lamps.

Oil Pressure

CAUTION

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

See Indicator Lamps. The oil pressure indicator lamp (4) is lit when sufficient oil is not circulating through the engine. Refer to Indicator Bar Indicator Lamps.

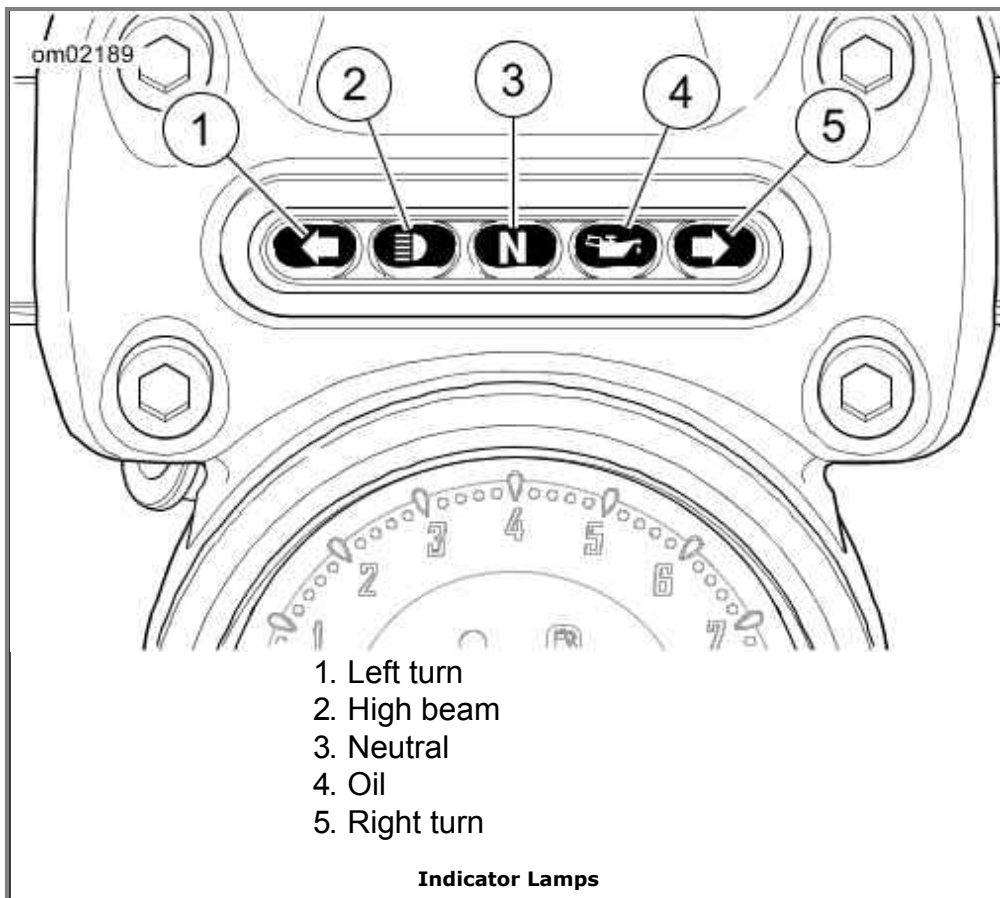
The lamp is lit when the ignition is turned on before starting the engine. With engine running, the lamp is off when engine speed is above idle.

Several conditions can cause the oil indicator lamp to illuminate. See Troubleshooting.

- Low oil level. Stop engine immediately. Add oil.
- Diluted oil. Change oil as soon as possible.
- Incorrect oil for the operating temperature. Change oil as soon as possible.

Turn Signals

See Indicator Lamps. The turn signal indicators (1, 5) flash when a turn signal is activated. When the 4-way hazard flashers are operating, both turn indicators flash simultaneously. Refer to Indicator Bar Indicator Lamps.



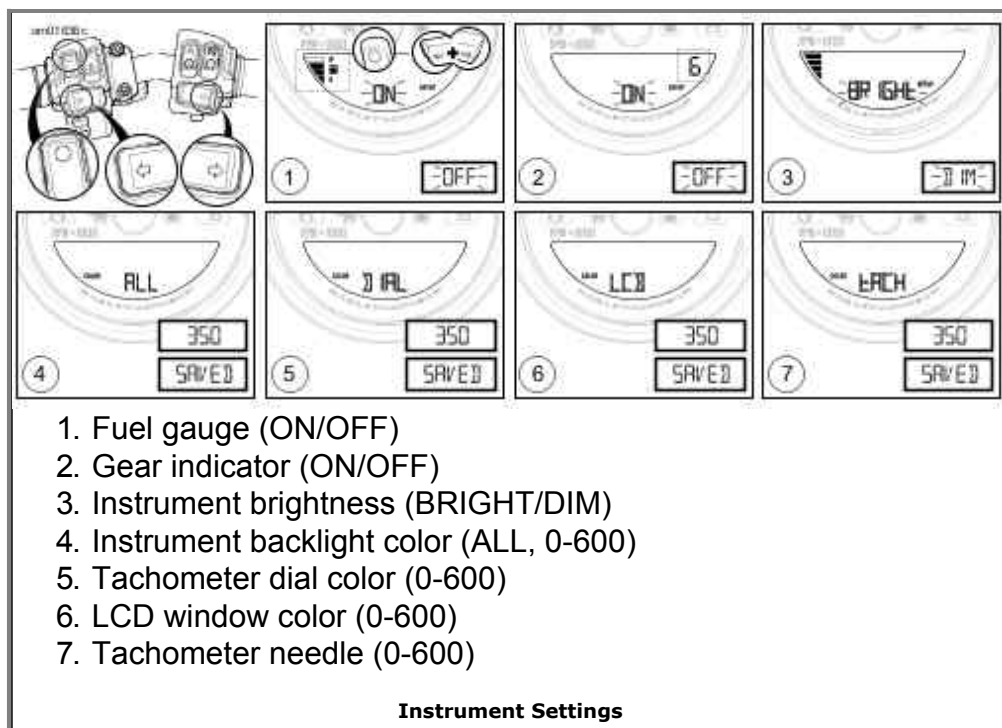
Indicator Bar Indicator Lamps

ICON	NAME	FUNCTION
	Left turn	Flashes when turn signal switch is activated for a left turn. Push left turn signal switch to cancel.
	High beam	Illuminates when high beams are on. Press the low beam switch to switch to low beam.
	Neutral	Illuminates when transmission is in neutral.
	Oil pressure	If indicator remains lit, stop engine and check oil level.
	Right turn	Flashes when turn signal switch is activated for a right turn. Push right turn signal switch to cancel.

Configuring Instruments

1. With the security system fob present, press and hold the trip switch to begin accessory mode.
2. See Instrument Settings. Press and hold both turn signal switches until "SETUP" is displayed in the LCD window.
3. Press the left or right turn signal switches to navigate through the following settings.

4. **Fuel Gauge:** Displays the fuel gauge. Press and hold both turn signal switches to toggle the fuel gauge ON or OFF.
5. **Gear Indicator:** Displays the gear indicator. Press and hold both turn signal switches to toggle the gear indicator ON or OFF.
6. **Brightness:** Controls the instrument backlighting brightness. Press and hold both turn signal switches to toggle between BRIGHT or DIM.
7. **ALL:** Controls the backlighting color for all the instruments. Press and hold both turn signal switches until a number appears. Press right or left turn signal switches to select a color (0-600). Press and hold both turn signal switches until "SAVED" is shown.
8. **DIAL:** Controls the backlighting color for the tachometer dial. Press and hold both turn signal switches until a number appears. Press right or left turn signal switches to select a color (0-600). Press and hold both turn signal switches until "SAVED" is shown.
9. **LCD:** Controls the backlighting color for the LCD window. Press and hold both turn signal switches until a number appears. Press right or left turn signal switches to select a color (0-600). Press and hold both turn signal switches until "SAVED" is shown.
10. **TACHOMETER:** Controls the backlighting color for the tachometer needle. Press and hold both turn signal switches until a number appears. Press right or left turn signal switches to select a color (0-600). Press and hold both turn signal switches until "SAVED" is shown.
11. When finished, press and hold the trip switch to turn off the motorcycle.



Setting Time

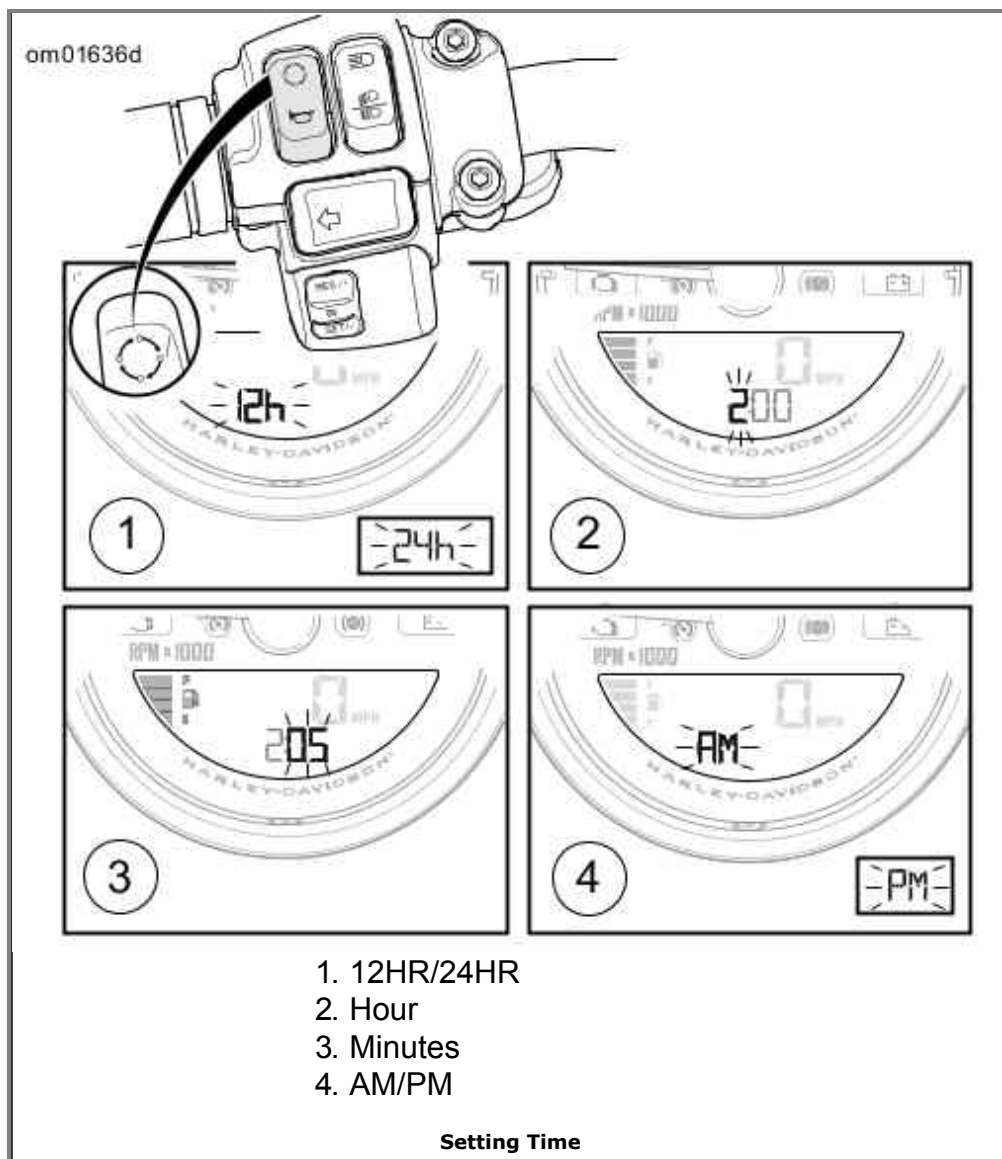
1. Press the OFF/RUN switch to RUN.
2. Press and release the trip switch until time is displayed.
3. **12HR/24HR:** See Setting Time. Press and hold the trip switch until 12HR (1) begins to flash. Press the trip switch to select between 12HR or 24HR (military style time).

4. **Hour:** Press and hold the trip switch until hours display (2) is flashing. Press the trip switch repeatedly to advance the hours to the correct time.
5. **Minutes:** Press and hold the trip switch until the minutes display (3) is flashing. Press the trip switch repeatedly to advance the minutes to the correct time.
6. **AM/PM:** Press and hold the trip switch until AM (4) begins to flash (if 12HR setting was selected). Press the trip switch to select between AM or PM.

NOTE:

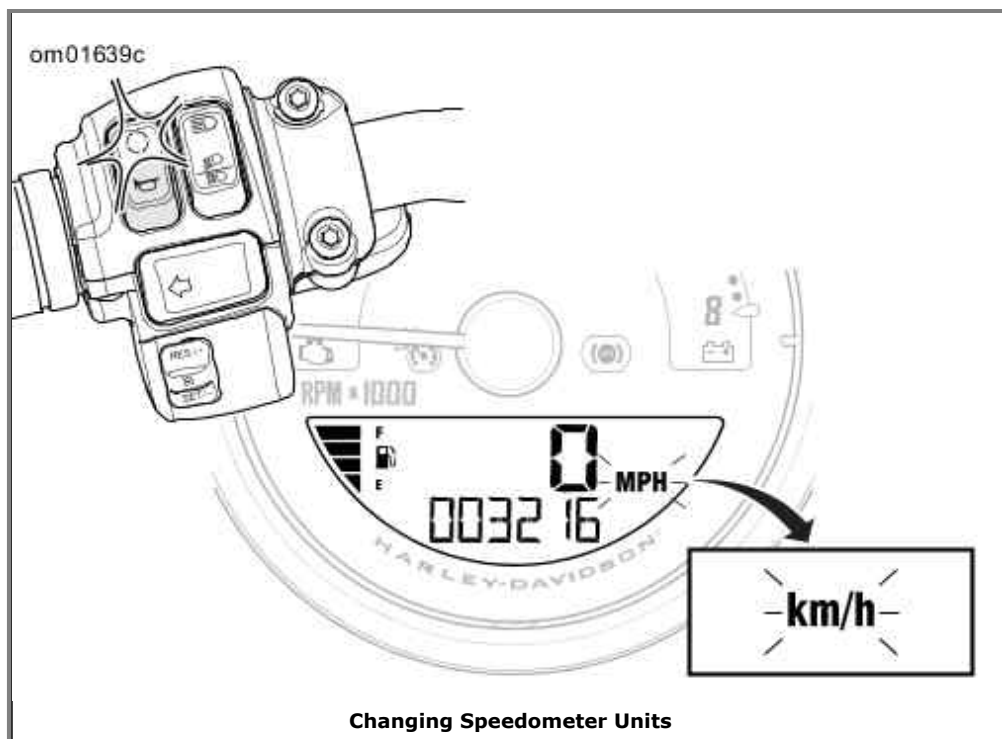
AM or PM does not appear in the regular time display. The motorcycle uses the selection for diagnostic purposes.

7. Press the OFF/RUN switch to OFF.



Configuring Speedometer Units

1. With the security system fob present, push the OFF/RUN switch to RUN.
2. See Changing Speedometer Units. Press and hold the trip switch until the speedometer units change (mph or km/h).



Throttle Control Grip

⚠ 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 Controls and Service Components. The throttle control grip is on the right handlebar and is operated with the right hand.

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

NOTE:

The roll-off position is pass the closed (idle) position. Turning to the roll-off position disengages cruise control and enables/disables EITMS.

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

Electronic Throttle Control (ETC)

The motorcycle has an 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 Electronic Control Module (ECM) monitors the status of the grip sensors, throttle plate actuation and airflow. If Trouble Codes are detected, the ECM disables cruise control, illuminates the check engine lamp and will transition to one of the following modes.

ETC Limited Performance Mode

The rider experiences near-normal operation. The motorcycle operates 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 provides enough torque to achieve speed of about 25 mph 40 km/h . The motorcycle's response to grip sensor input is reduced.

ETC Forced Idle Mode

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

ETC Forced Shut Down Mode

The engine is forced to shut down.

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 Controls and Service Components. The clutch hand lever is on the left handlebar and is operated with the fingers of the left hand.

1. Slowly pull the clutch hand lever in against the handlebar grip to fully disengage the clutch.
2. Shift to first gear using the gear shift lever.
3. slowly release the clutch hand lever to engage the clutch.

The motorcycle can be started in any gear as long as the clutch lever is pulled in. If the clutch is not disengaged, the motorcycle cannot start when in gear.

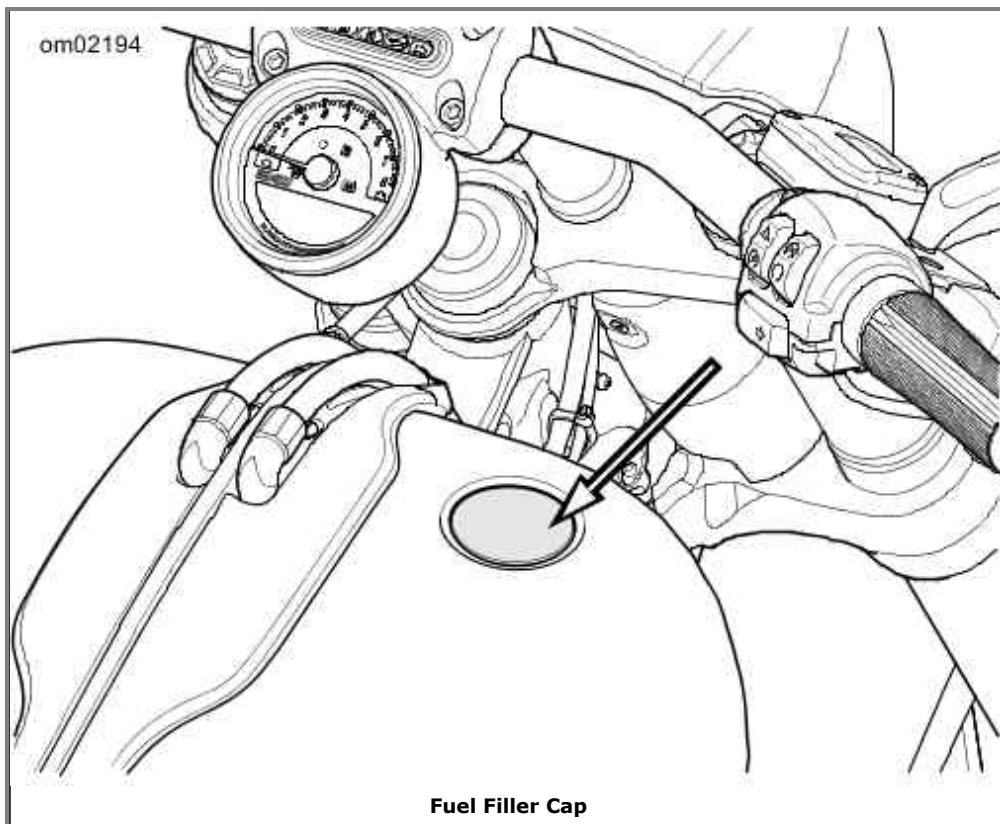
Fuel Filler Cap

Removing Fuel Filler Cap

NOTE:

Water cannot flow through the fuel filler cap into the tank. However, water can collect between the pop-up cap and the threaded body after extended exposure to rain or washing. Remove the fuel cap and tilt to drain water.

See Fuel Filler Cap. Press down on cap. Rotate one-eighth turn counterclockwise until cap pops up. Continue turning counterclockwise to remove.



Filling the Tank

⚠ WARNING

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

⚠ WARNING

Do not 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)

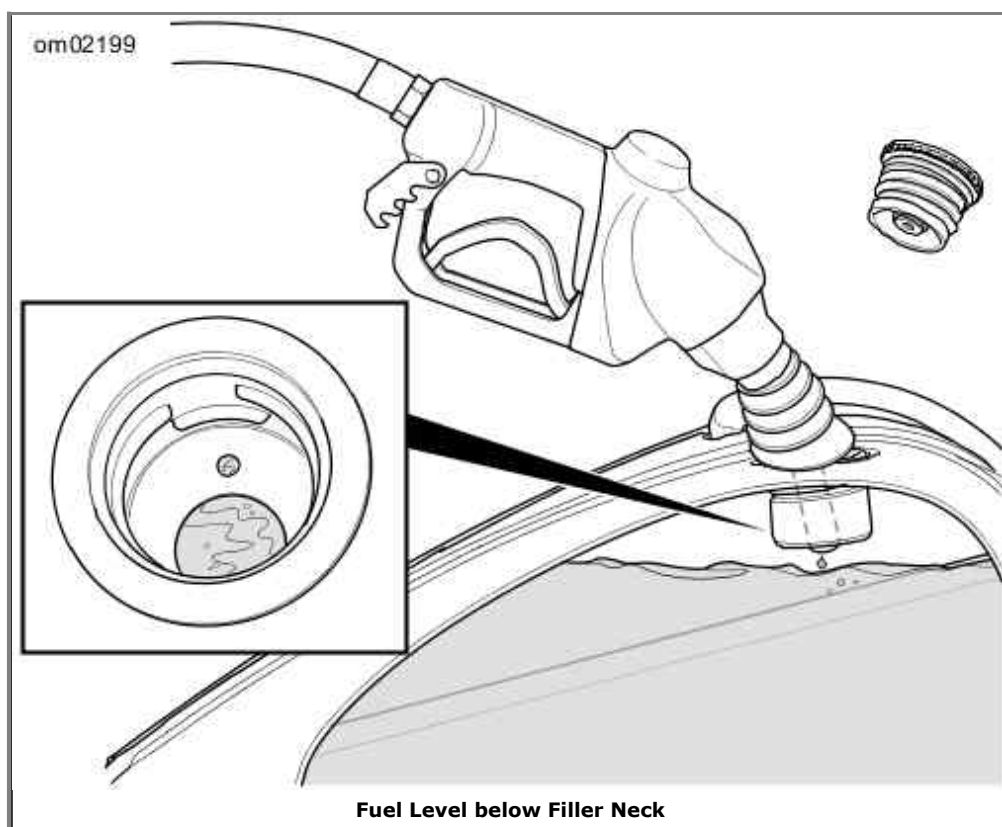
CAUTION

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

CAUTION

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

See Fuel Level below Filler Neck. Do not overfill the fuel tank. Insert the pump nozzle into the filler hole. Do not fill the tank beyond the bottom of the filler neck. A warm engine, the sun or extreme temperatures can cause the fuel to expand. Fuel can spill out of the tank and damage the finish. See Safe Operating Rules.



Installing Fuel Filler Cap

⚠ 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)

Turn fuel filler cap clockwise into fuel tank until tight. Press down on cap. Rotate one-eighth turn clockwise to secure cap in position.

Locking Fuel Filler Cap (Asia Pacific)

Replacement Keys

Find the four-digit key number stamped on the back of the key opposite the H-D logo. Write the ignition key number in the space provided at the front of this manual. With that number, your Harley-Davidson dealer can order a replacement.

Removal

1. See Locking Fuel Filler Cap. Rotate the lock cover to access the key lock.
2. Insert the key.
3. Hold the fuel filler cap in place. Turn the key counterclockwise until it stops.
4. Turn key back to its original position. Remove the key.
5. Turn cap counterclockwise until resistance is felt. Continue to turn cap counterclockwise to remove cap.

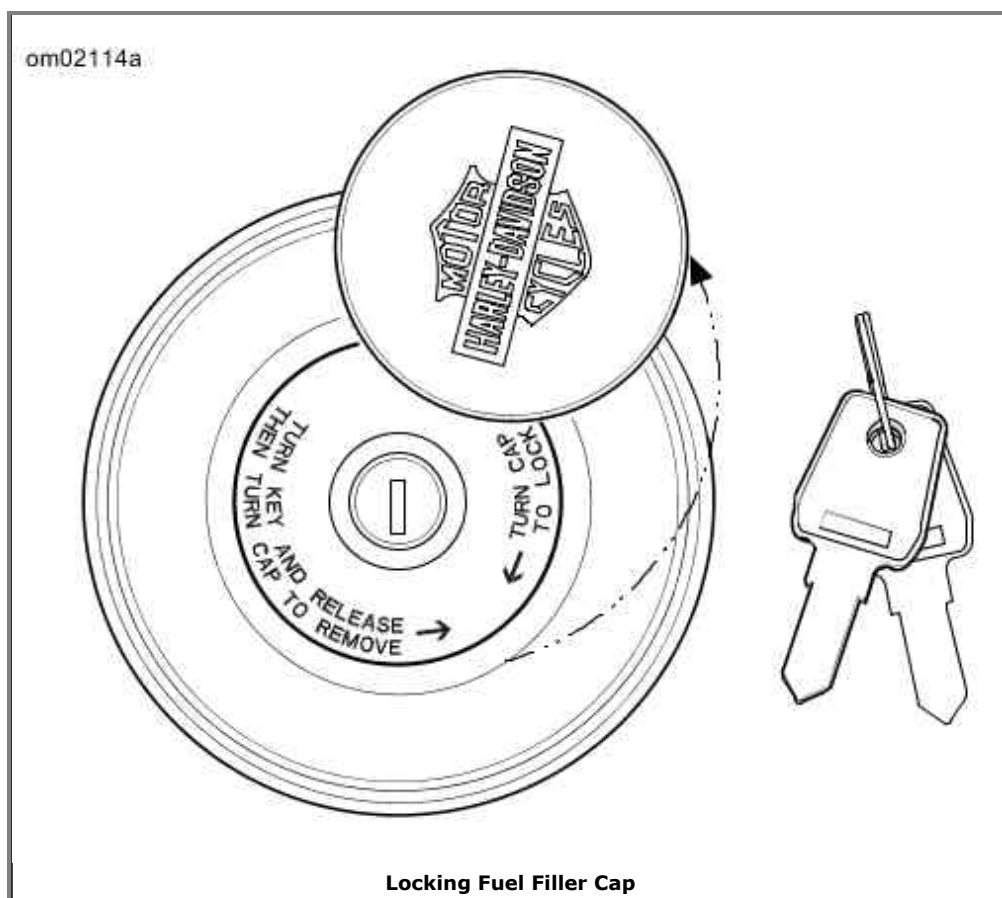
Installation

1. See Locking Fuel Filler Cap. Insert the key into the lock.
2. To make sure that the cap is unlocked, firmly, hold the cap. Turn the key counterclockwise until it stops.
3. Allow the key to return to a neutral position. Remove the key.

NOTE:

When installing the fuel cap, rotate the cap one full turn past the audible click.

4. Turn the cap clockwise to install the fuel cap.
5. Close the lock cover.



Fork Lock

⚠ WARNING

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

CAUTION

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

CAUTION

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

See Fork Lock. The fork lock is located in the steering head on the right side.

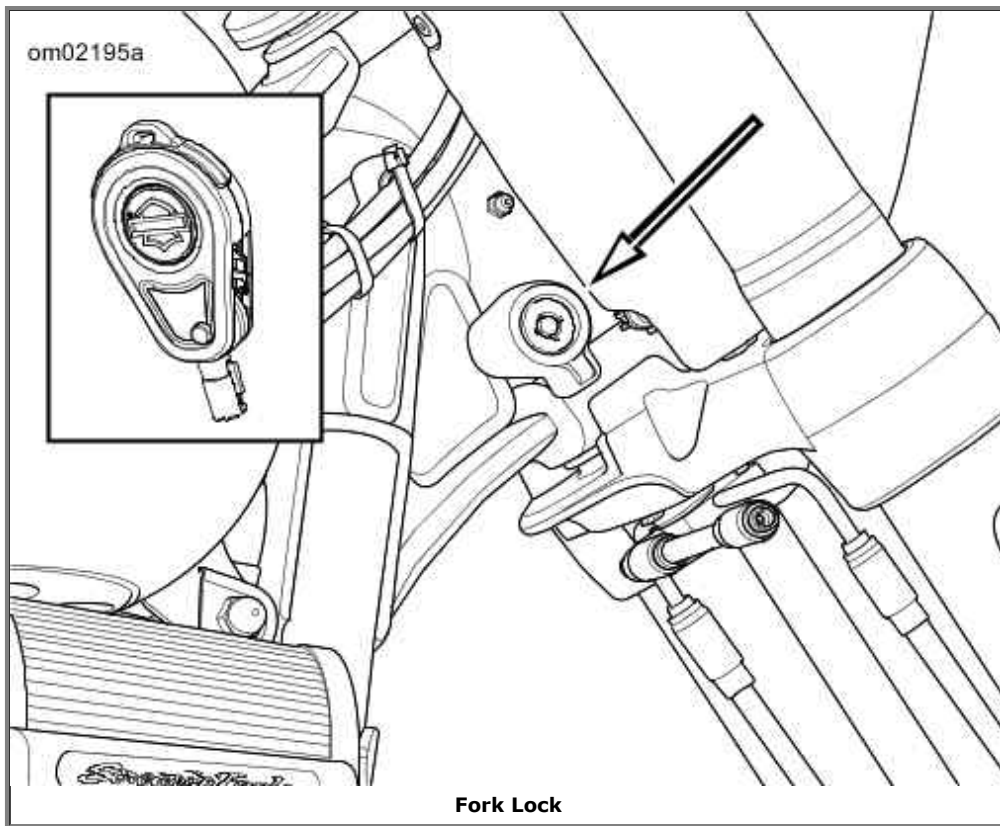
Using the fork lock immediately after parking your motorcycle will discourage unauthorized use or theft.

Lock Fork

1. Turn fork to full left position.
2. Insert key into fork lock.
3. Push in on fork lock and turn to left position.
4. Remove key.

Unlock Fork

1. Insert key into fork lock.
2. Push in on fork lock and turn to right position.
3. Remove key.



Gear Shift Lever

Location

See Shift Lever and Shift Pattern. The gear shift lever is on the left side. The gear shift lever is operated with the left foot. The shift lever changes gears in a sequential six-speed transmission.

Shift Pattern

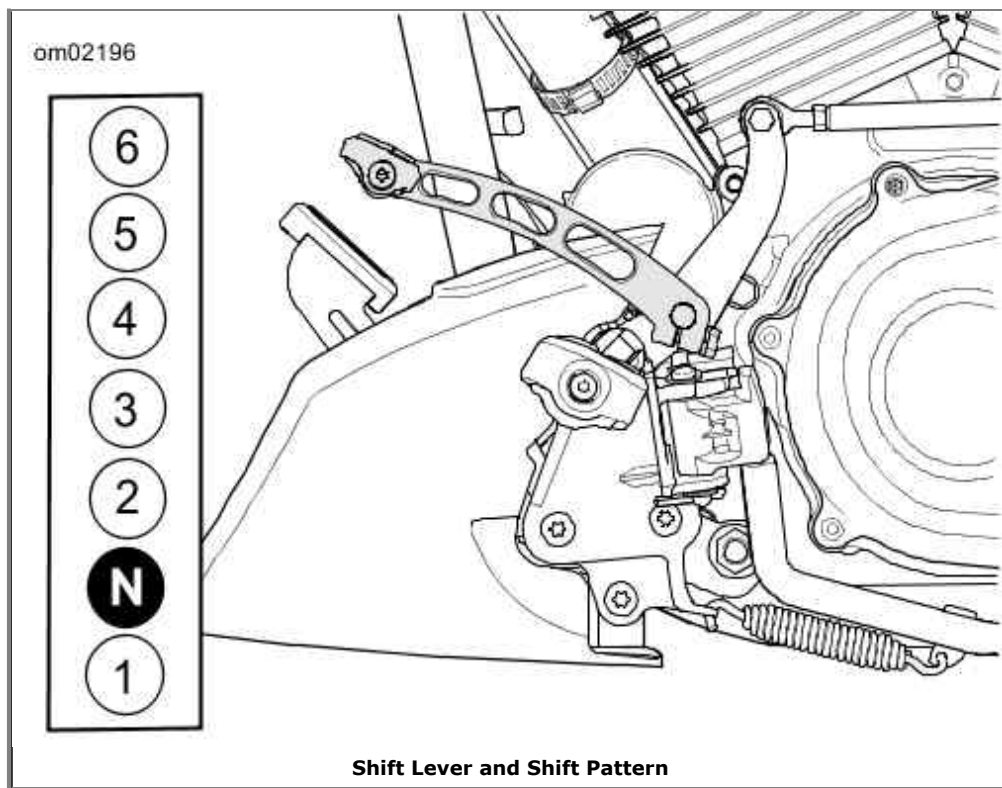
CAUTION

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

See Shift Lever and Shift Pattern. Each gear must be engaged in sequence. Lift the gear shift lever up to upshift. Press the lever down to downshift. After each gear change, release the gear shift lever to allow it to return to its resting position. See Shifting Gears.

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 one-half of its stroke. In neutral, the indicator lamp illuminates.



ABS Brakes

Anti-lock Brake System (ABS)

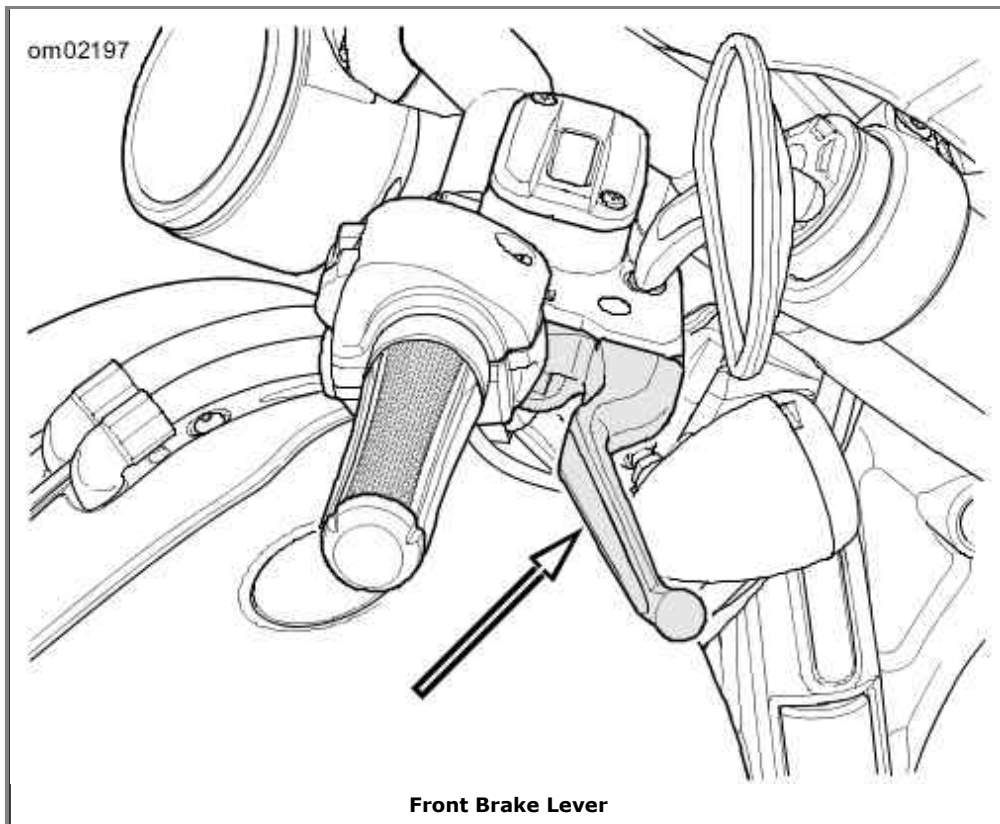
Harley-Davidson's anti-lock brake system assists the rider in maintaining control when braking in a straight-line emergency situation. ABS operates independently on front and rear brakes to keep the wheels rolling and prevent uncontrolled wheel lock-ups either on dry pavement or on slick surfaces such as gravel, leaves or when riding in wet conditions.

Front Brake Lever

⚠ WARNING

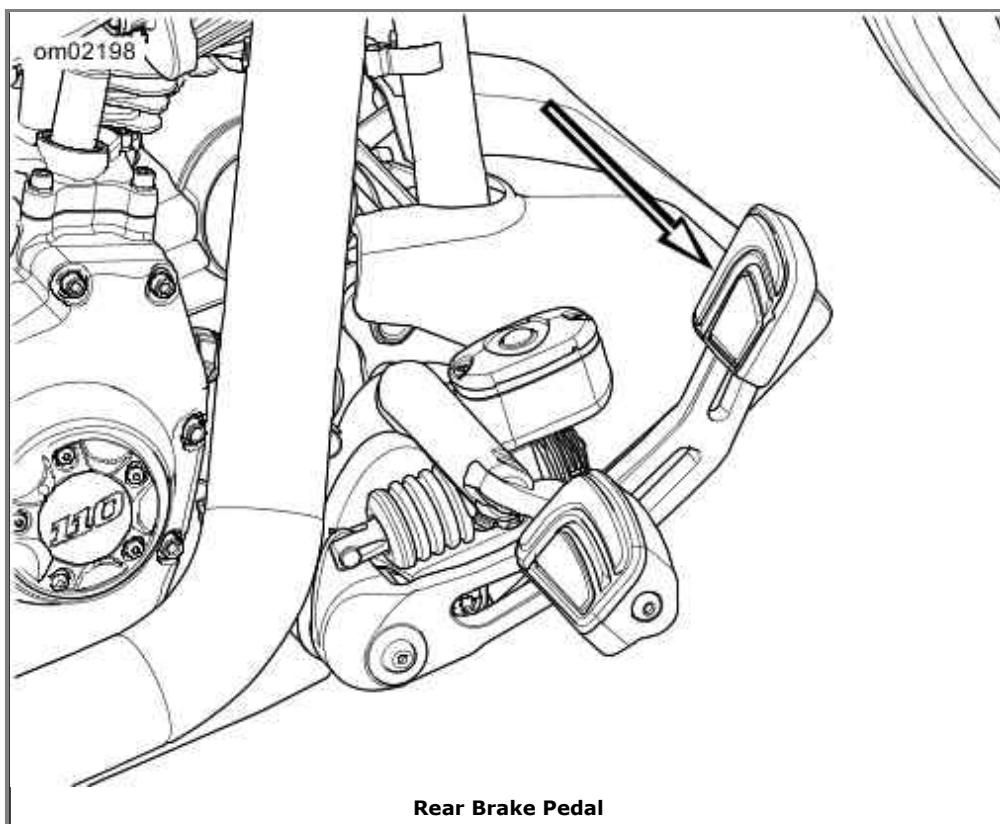
Do not position fingers between hand control lever and handlebar grip. Improper hand positioning can impair control lever operation and cause loss of vehicle control, which could result in death or serious injury. (00032a)

See Front Brake Lever. The front brake hand lever (1) controls the front wheel brake. The brake lever is on the right handlebar. Operate the hand lever with the fingers of the right hand.



Rear Brake Pedal

See Rear Brake Pedal. The rear brake pedal (2) controls the rear wheel brake. The brake pedal is on the right side. Operate the rear brake pedal with the right foot.



How ABS Works

The ABS monitors sensors at the front and rear wheels to determine wheel speed. If the system detects one or both wheels are slowing down too quickly, which indicates they are close to locking, the ABS reacts. If the deceleration rate does not match a criteria stored in memory, the ABS also reacts. The system rapidly opens and closes valves to modulate the brake caliper pressure utilizing only the brake lever/pedal pressure from the rider. During ABS activation, the system provides the electronic equivalent of manually pumping the brakes. ABS can cycle up to seven times per second.

The rider recognizes ABS activation by the slight pulsing sensation in the hand lever or the rear brake pedal. The pulsing sensation can also be accompanied by a clicking sound from the ABS module. Both are the result of normal operation. Refer to ABS Symptoms and Conditions.

How To Use ABS

While an advantage in emergency braking, ABS is not a substitute for safe riding. The safest way to stop a motorcycle is upright with both wheels straight.

Harley-Davidson ABS is a manual assist system. When stopping in an emergency stopping situation, maintain pressure on the brakes through all ABS events. Do not modulate or "pump" the brake controls. The wheels do not lock until the end of the stop when motorcycle speed reaches approximately 4 mph 6 km/h and ABS is no longer needed.



ABS cannot prevent lockup of rear wheel due to engine braking. ABS will not aid in cornering or on loose/uneven surfaces. A locked wheel will skid and can cause loss of vehicle control, which could result in death or serious injury. (00362a)

ABS: Tires and Wheels

Motorcycles equipped with ABS must always use Harley-Davidson tires and wheels. The ABS monitors the rotational speed of the wheels through individual wheel speed sensors. Changing to different diameter wheels or different-sized tires can alter the rotational speed. This can upset the calibration of the ABS and have an adverse effect on its ability to detect and prevent uncontrolled wheel lockups. Operating at tire pressures other than those specified in Specified Tires can reduce ABS braking performance.

ABS Symptoms and Conditions

SYMPTOM	CONDITION
ABS lamp continuously lit	ABS malfunction detected. See a Harley-Davidson dealer for service.
ABS lamp flashing	This indicates a normal self-diagnostics process when the motorcycle is first turned on and the speed is under 3 mph 5 km/h . ABS is not operational until the lamp turns off. If the lamp continues flashing at speeds greater than 3 mph 5 km/h , see a Harley-Davidson dealer for service.
Pulsing brake lever or pedal	Normal condition.

during an ABS event	
Clicking sound during an ABS event	Normal condition.
"Surge" sensation while braking	Normal condition. This is most noticeable when braking with one brake (front only or rear only). Result of a reduction in deceleration which can be caused by cracks or bumps in road, engine braking (high engine RPMs causing the rear wheel to slow down), hard braking at slow speeds, and other conditions. This is due to ABS modulating caliper brake pressure to prevent uncontrolled wheel lock.
Temporarily stiff rear brake pedal	Normal condition. Engine braking (high engine RPMs causing the rear wheel to slow down) or down shifting can activate ABS. If applying the rear brake at the same time or immediately after, the ABS may be closing a valve to prevent pressure to the rear brake. This is due to ABS modulating caliper brake pressure to prevent uncontrolled wheel lock.
Tire chirp	Normal condition. Depending on surface, tire can chirp without locking the wheel.
Black mark on pavement	Normal condition. Depending on surface, tire can leave a black mark without locking the wheel.
Wheel lock at low speed	Normal condition. ABS does not activate on front wheel below 3 mph 5 km/h or on rear wheel below 5 mph 8 km/h .

Jiffy Stand

WARNING

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

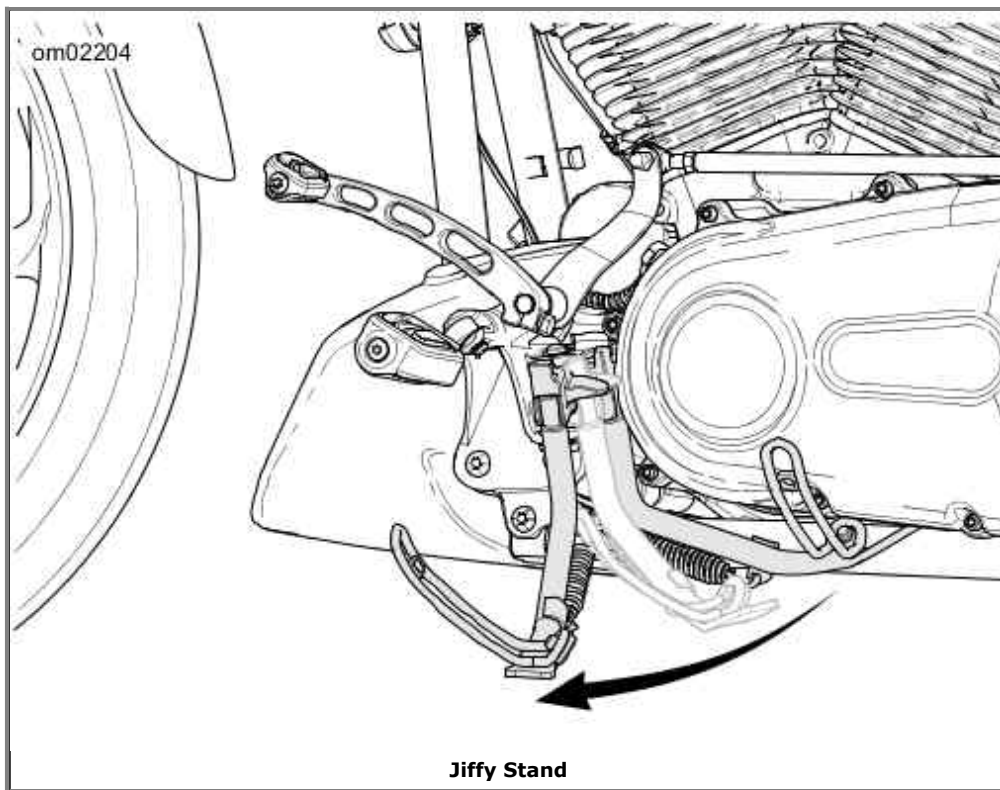
WARNING

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

WARNING

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

See Jiffy Stand. The jiffy stand is on the left side. The stand swings outward to support the motorcycle when parked.



Jiffy Stand Interlock: International Models

Some international models have a jiffy stand interlock.

If the transmission is in neutral, the motorcycle will start and run. If the jiffy stand is down and the transmission in gear, engaging the clutch stalls the motorcycle. The message "SidEStAnd" scrolls across the odometer. Raising the jiffy stand or putting the transmission in neutral will permit the engine to run. The odometer will clear the message.

If the stand lowers at a speed greater than 10 mph 15 km/h , the engine will continue to run. The indicators will flash twice. The message "SidEStAnd" will scroll across the odometer. The message remains until the system detects the jiffy stand in the fully retracted position again. The rider can continue to ride while in this mode.

The rider can clear the text messages at any time by pressing the trip/trigger switch once while the vehicle is powered up.

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 motorcycle has 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 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 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.

Shock Absorber Preload

Calculate Number of Turns

Softail models feature adjustable rear shock absorbers. Adjust the rear shock spring preload to the total load or to suit your own personal comfort.

1. Identify the number of preload turns for the weight of the rider. Refer to Recommended Shock Absorber Preload.
2. Calculate the number of turns for the intended passenger and cargo.
3. Add the number of turns for the rider to the number of turns required for the total of the passenger and/or cargo.

Adjustment

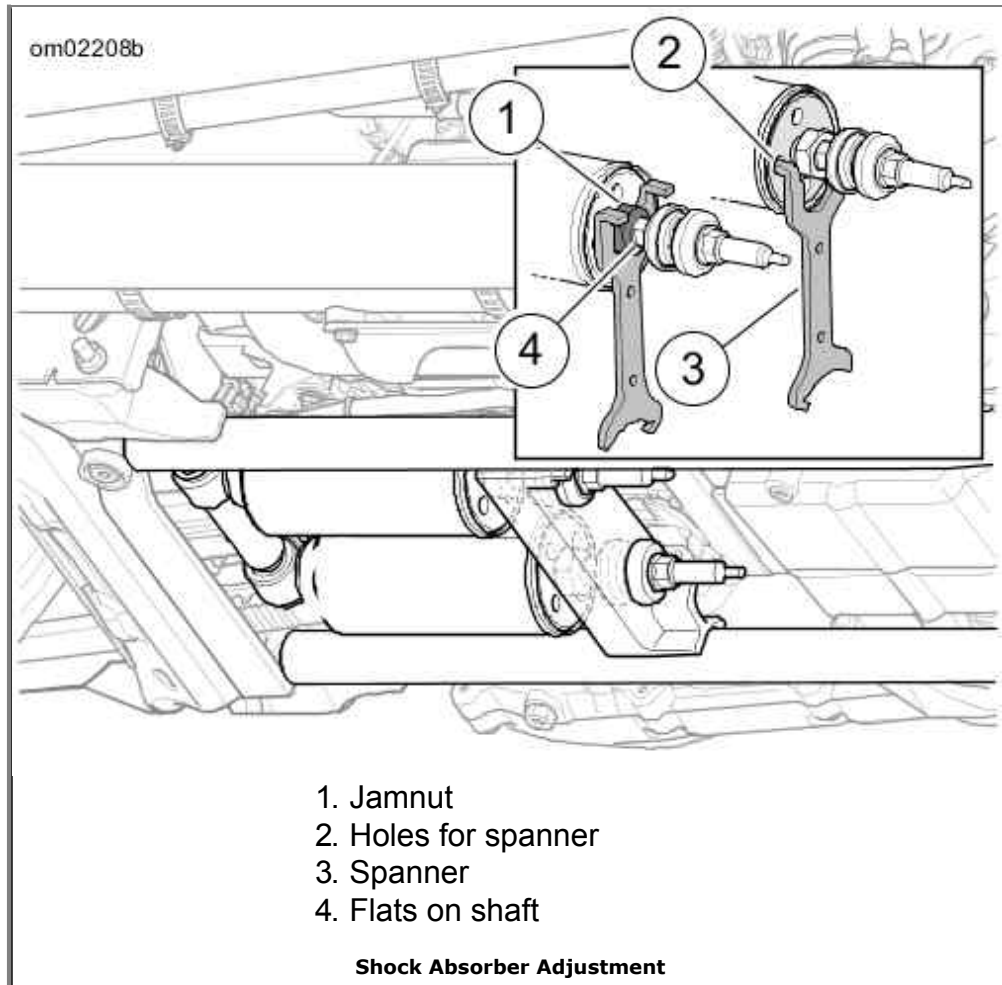
NOTES:

- *Adjust the shocks with the motorcycle resting on the jiffy stand.*
 - *Adjust both shocks the same number of turns.*
1. See Shock Absorber Adjustment. Hold the shaft with a wrench on the flats of the shock shaft (4) and loosen the jamnut (1) with the SHOCK ADJUSTMENT SPANNER 94448-82B (3).
 2. Use the tangs of the spanner in the holes (2) in the spring canister to turn the canister clockwise until it stops. This setting is the minimum preload position.
 3. Mark the face of the canister for reference.
 4. Turn the canister counterclockwise the number of turns calculated for the total load.
 5. Tighten the jamnut.

Recommended Shock Absorber Preload

RIDER WEIGHT*	TURNS FROM MINIMUM
Less than 185 lb 84 kg	0
185-235 lb 84-107 kg	1
235-285 lb 107-129 kg	2
285-340 lb 129-154 kg	3
340 lb 154 kg to maximum added weight allowed**	4
* Passenger/Cargo: For every 35 lb (16 kg), increase preload one turn.	

**Refer to Weights.



Security System

Security System

Components

The security system is a self-arming system with an audible battery-backed alarm. The system is disarmed by a hands-free fob which is carried by the rider.

After parking the motorcycle, set the OFF/RUN switch to OFF, 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 activate an alarm if someone tampers with the ignition or attempts to move the motorcycle.

When the fob is present, the security system will automatically **disarm** when the OFF/RUN switch is set to RUN, or when the trip switch is pressed (for accessory mode).

Options

Several options are available for the Harley-Davidson Smart Security System from the Harley-

Davidson Genuine Motor Accessories and Motor Parts catalog. Options include:

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

See a Harley-Davidson dealer for details.

FCC Regulations: Key Fob

FCC ID: L2C0056TR, IC ID: 3432A-0056TR

This device complies with Part 15 of the FCC Rules and with Industry Canada license-exempt RSS standard(s). 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.

Security System Fob

Fob Assignment

See Fob: Security System. Key fobs are electronically assigned to the security system by a Harley-Davidson dealer so that the motorcycle can recognize a fob's unique signal. Only 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.

NOTES:

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

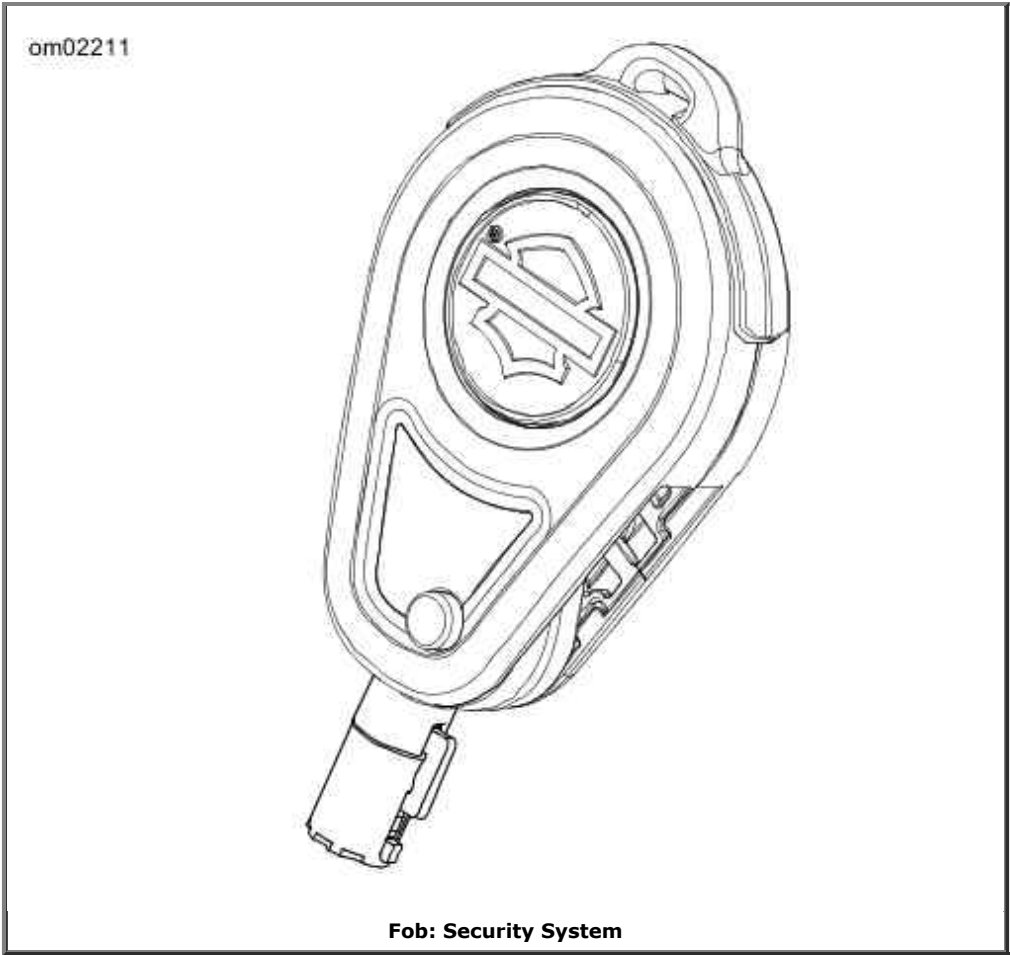
Riding with a Fob

- Always carry the fob when riding, loading, fueling, moving, parking or servicing the motorcycle. Carry the fob in a convenient pocket.
- Do not leave the fob attached to the handlebars or store the fob in a luggage compartment. Unintentionally leaving the fob with the motorcycle when it is parked prevents the system from activating the alarm.

- Do not ride with the fob stored in a metal case or with the fob closer than 3.0 in 76 mm to a 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." To restart a motorcycle without a fob, disarm the security system with the PIN.



Personal Identification Number (PIN)

The personal identification number (PIN) is a number that can be used to disarm the security system. Use the PIN in case the 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

The rider can change the PIN at any time. Refer to Changing the PIN.

Changing the PIN

STEP	ACTION	WAIT FOR CONFIRMATION	NOTES
------	--------	-----------------------	-------

NO.			
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 RUN .		
3	Cycle the OFF/RUN switch twice: OFF - RUN - OFF - RUN .		
4	Press left turn signal switch 2 times .	ENTER PIN scrolls through the odometer window.	
5	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.	
6	Enter first digit of new PIN by pressing and releasing the left turn signal switch until the selected digit appears.		
7	Press right turn signal switch 1 time and release.	The new digit will replace the current in odometer window.	
8	Enter second digit of selected PIN by pressing and releasing the left turn signal switch until the selected digit is present.		
9	Press right turn signal switch 1 time and release.	The new digit will replace the current in odometer window.	
10	Enter third digit of the selected PIN by pressing and releasing the left turn signal switch until the selected digit is present.		
11	Press right turn switch 1 time and release.	The new digit will replace the current in odometer window.	
12	Enter fourth digit of new PIN by pressing and releasing the left turn signal switch until the selected digit is present.		
13	Press right turn switch 1 time and release.	The new digit will replace the current in odometer window.	
14	Enter fifth digit of the new PIN by pressing and releasing the left turn signal switch until the selected digit is present.		
15	Press right turn switch 1 time and release.	The new digit will replace the current in odometer window.	
16	Push the OFF/RUN switch to OFF .		Pushing the OFF/RUN switch to OFF stores the new PIN in the module.

Security Status Indicator

See Speedometer Face Indicator Lamps. The security 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:** If the lamp remains lit continuously, see a Harley-Davidson dealer.

Arming and Disarming

Arming

When the motorcycle is parked and the OFF/RUN switch is set to OFF, 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 siren will chirp twice. While armed, the indicator lamp in the speedometer face will flash every three seconds.

NOTE:

The system must be in the Chirp Mode for the siren to chirp on arming or on disarming. See Siren Chirp Mode (Confirmation).

Disarming

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

Fob: An armed security system is automatically disarmed when the fob is present and the OFF/RUN switch is set to RUN.

When the system disarms, the 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, 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 Minimum Brake Pad Friction Material Thickness.

Disarming with a PIN

NOTES:

- *At any time during a PIN disarm, if the fob is brought within range of the motorcycle, the security system will disarm when the system receives the coded signal from the fob.*
- *If a mistake is made while entering PIN, wait two minutes before another disarming attempt.*

- The security system will remain disarmed until the OFF/RUN switch is set to OFF.

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	Push the OFF/RUN switch to RUN .	The odometer window display will show ENTER PIN.	
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.	
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 digit 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 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 digit 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 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 digit 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 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.	Smart Security System is disarmed.

Alarm

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 siren.

Within four seconds, if the motorcycle is back on its jiffy stand and no further motion is detected, 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 remain disabled.

Alarm Activation

If the security system is still detecting motion after a second warning, the system will activate the alarm.

When activated, the security system will:

- Alternately flash the four turn signals.
- Sound the 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 an optionally purchased Harley-Davidson Security Pager. The range of a pager can be up to 0.5 mi 0.8 km . See a Harley-Davidson dealer for details.

Alarm Deactivation

- **Key fob:** Bring the fob to the motorcycle. After the module identifies that the fob is present, the system will terminate the alarm.
- **PIN entry:** Enter the PIN to deactivate the alarm. If an error is made while entering the PIN, wait until the alarm is between cycles to enter the PIN.

Siren Chirp Mode (Confirmation)

Chirp Mode

Vehicles with a siren can be set to chirp upon arming and disarming. 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 the motorcycle is moved without the fob present.

Switching Modes

Perform the following to switch between chirp and chirpless modes.

1. With security fob present, set the OFF/RUN switch to RUN.
2. When the security lamp turns off, set the OFF/RUN switch to OFF.
3. When the security lamp turns off (but before the turn signals flash twice), immediately set the OFF/RUN switch to RUN.
4. When the security lamp turns off, immediately set the OFF/RUN switch to OFF.
5. When the security lamp turns off (but before the turn signals flash twice), immediately set the OFF/RUN switch to RUN. The system changes mode. The siren chirps or remains silent accordingly.

Transport Mode

It is possible to arm the security system without enabling the motion detector for one ignition cycle. The motorcycle can be moved in an armed state. The motorcycle cannot be turned on or started while in transport mode until the fob is present.

To Enter Transport Mode

1. With security fob present, set the OFF/RUN switch to RUN.
2. Set the OFF/RUN switch to OFF.
3. Simultaneously press both the left and the right turn signal switches within five seconds of turning the OFF/RUN switch to OFF.
4. Following a single flash, the turn signals flash three times to indicate that the system is armed in transport mode.

To Exit Transport Mode

With the fob present, set the OFF/RUN switch to RUN to disarm the system and exit transport mode.

Storage and Service Departments

Long-Term Parking

To maintain arming, store the fob beyond the range of the antenna. The antenna range is approximately 5 ft 1.5 m . Have the fob present before moving parked motorcycle.

If the motorcycle will not be operated for several months, such as during the winter season, see Motorcycle Storage.

Service Departments

When the motorcycle is 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.

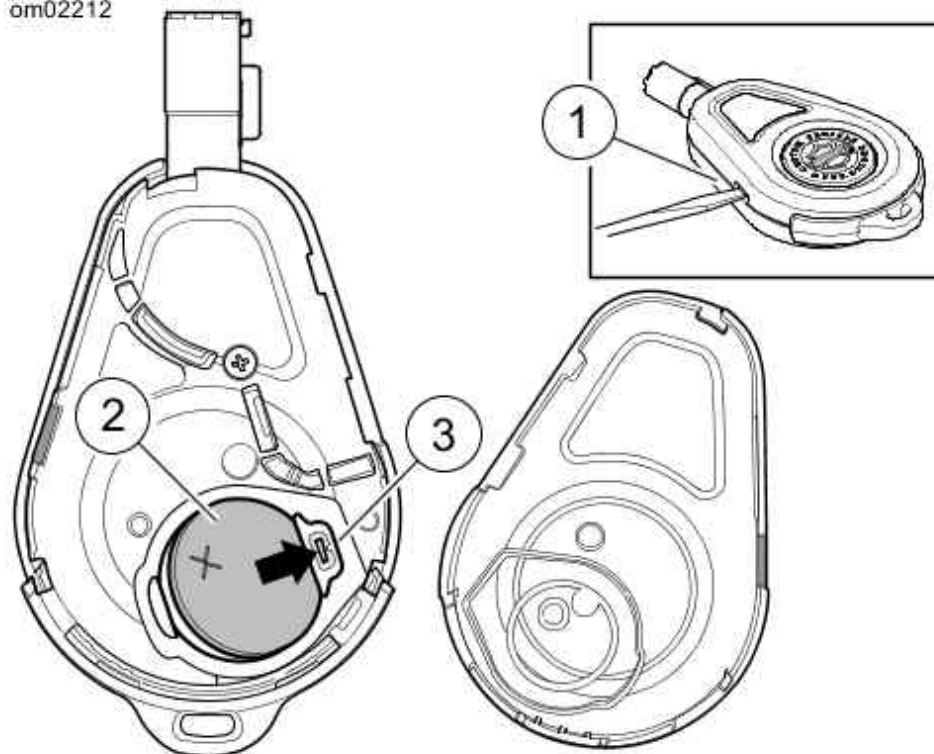
Fob Battery

Replacing the Battery

Replace the fob battery every year.

1. See Fob Battery. Slowly turn a thin blade in the slot (1) on the side of the fob to separate the two halves.
2. Holding the fob battery side down, use a small screwdriver or similar tool to press the spring latch (3) away from the battery (2).
3. Remove the battery and discard.
4. With the positive side down, press one edge of the **new** battery (3 V CR2032 or equivalent) against the spring latch. Drop the **new** battery into the cavity.
5. Align the two halves of the fob. Snap the halves together.

om02212



1. Opening slot
2. Installing battery
3. Spring latch

Fob Battery

Disconnecting Power

Siren

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

1. Verify that the fob is present.
2. Set the OFF/RUN switch to RUN.
3. Pull the main fuse from its holder or disconnect the battery.

NOTE:

Set the OFF/RUN switch back to OFF before installing main fuse.

Troubleshooting

Security Lamp

If the security 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, check for:

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 3.0 in 76 mm of any other electronic devices.
 - b. Place the fob on the seat and set the OFF/RUN switch to RUN. After the system disarms, return the fob to a convenient location.
 - c. Move motorcycle at least 15 ft 5 m from the spot of interference.
2. **Discharged fob battery:** Use the PIN to disarm the system. Replace the battery. See Fob Battery.
3. **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 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.

Operation

Operating Recommendations

WARNING

Motorcycles are different from other vehicles. They operate, steer, handle and brake differently. Unskilled or improper use could result in loss of control, death or serious injury. (00556c)

- 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.

⚠ WARNING

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

CAUTION

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)

CAUTION

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

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

CAUTION

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 distance at high speed must be given closer than ordinary attention to avoid overheating and possible engine damage.

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

⚠ WARNING

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

⚠ 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)

NOTES:

- *Have the engine checked regularly and keep it tuned.*
- *When descending a long, steep grade, downshift. Then use engine compression together with intermittent application of both brakes to slow the motorcycle.*

Break-In Riding Rules

The First 500 Miles (800 Kilometers)

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

To allow your engine to wear in its critical parts, we recommend that you observe the riding rules provided below for the first 500 mi 800 km .

1. During the first 50 mi 80 km 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 500 mi 800 km , 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 200 mi 300 km .

Pre-Riding Checklist

⚠ WARNING

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

Always inspect motorcycle condition before riding.

⚠ WARNING

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

⚠ WARNING

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

⚠WARNING

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

1. Check fuel level. 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, 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. For correct tire pressures, refer to Specified Tires.

⚠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 or hydraulic fluid leaks. Check for coolant leaks on applicable vehicles.
9. Check drive belt for wear or damage.

10. Service your motorcycle as necessary.

Starting the Engine

WARNING

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

CAUTION

The engine should be allowed to run slowly for 15-30 seconds. This will allow the engine to warm up and let oil reach all surfaces needing lubrication. Failure to comply can result in engine damage. (00563b)

NOTE:

Rolling the throttle before starting the motorcycle is unnecessary

1. See Right Hand Control Switches. With the security system fob present, turn the OFF/RUN switch (1) to RUN position. Do not roll the throttle.

NOTE:

The engine lamp lights for approximately four seconds and the fuel pump buzzes for approximately two seconds as it fills the fuel lines.

2. Raise the jiffy stand (required on international models, unless transmission is in neutral).
3. Squeeze the clutch lever in against the hand grip. Shift transmission to neutral.

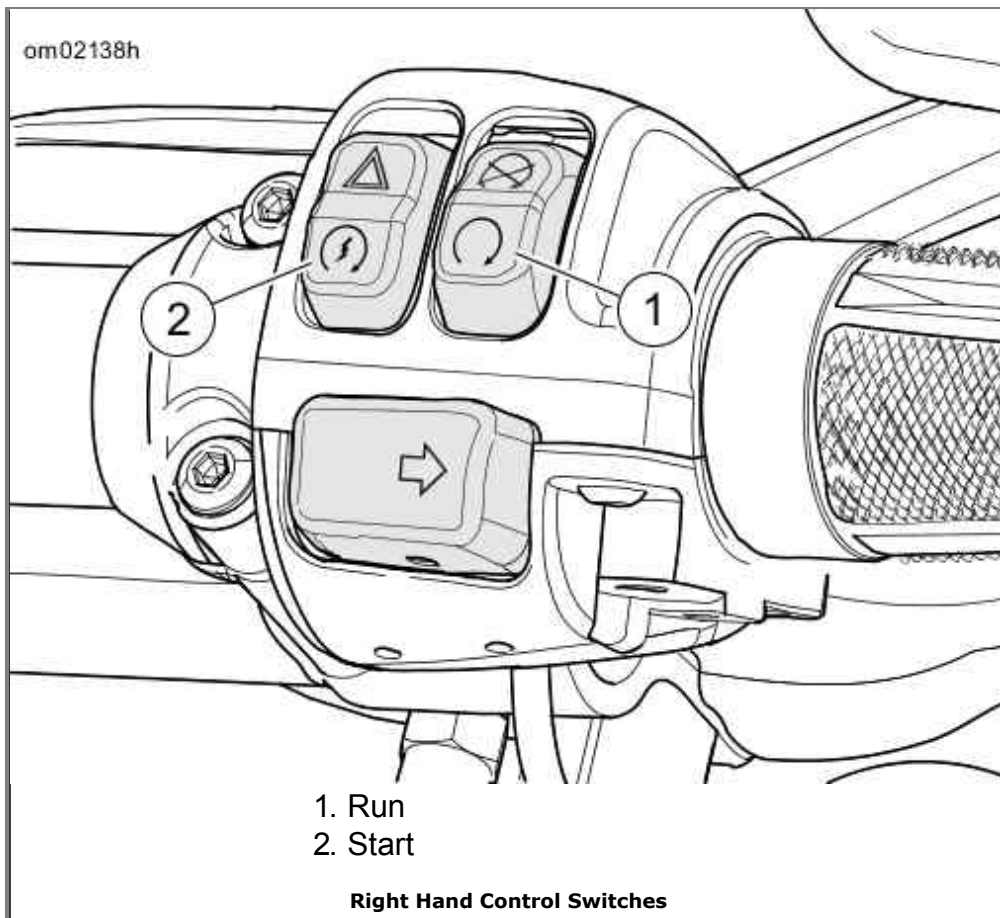
NOTE:

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). Apply the brake to prevent movement.

4. Press the starter switch (2) to start the motorcycle.
5. When the engine has started, you can operate your motorcycle as you normally would after raising the jiffy stand.

NOTE:

The ABS indicator lamp remains on until vehicle is moving approximately 3 mph 5 km/h .



Engine Idle Temperature Management System (EITMS)

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 pre-determined point, the EITMS turns off the rear cylinder fuel injector. Idle speed is maintained, however 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:

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

If **any one** of the following occurs, the EITMS disables (rear cylinder fires again).

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

When the engine is in EITMS operation, you can notice a difference in idle cadence. Additionally, there can also be a unique exhaust odor. Both are normal conditions.

Enabling/Disabling EITMS

Enabled: During elevated temperature conditions, EITMS automatically activates whenever the motorcycle comes to a complete stop while idling . Even with the feature enabled, it does not activate under cool riding conditions.

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

See Enabling/Disabling EITMS. Enable or disable EITMS by performing the following procedure.

1. Push the engine OFF/RUN switch on the right handlebar to the RUN position (1) (the engine can be running or not running).
2. Roll the throttle twist grip to the roll-off position and hold (2).

NOTE:

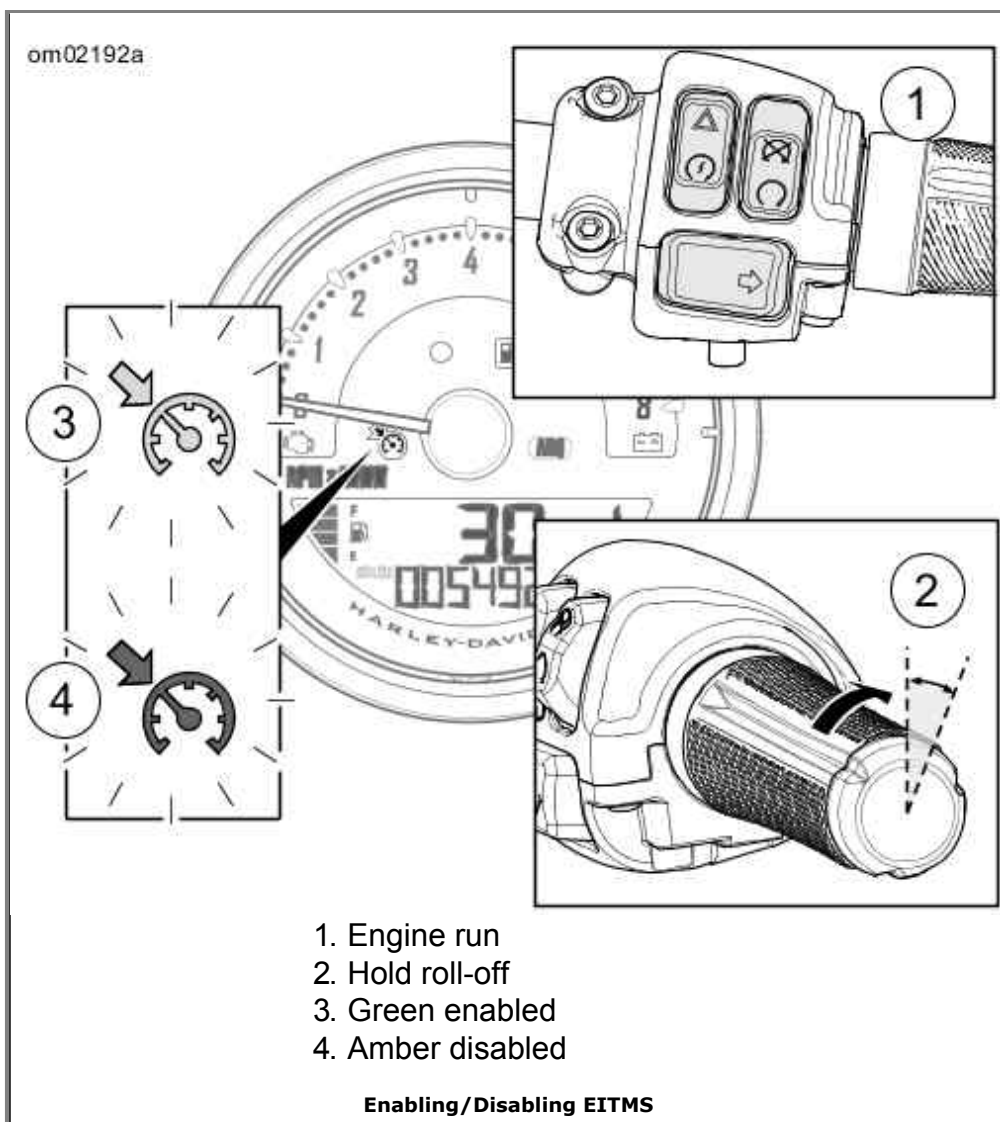
A flashing lamp indicates the EITMS setting. A solid (non-flashing) lamp indicates the cruise control setting.

3. See Indicator Lamps. After approximately three seconds, the cruise indicator lamp will either flash green (3) (EITMS enabled) or amber (4) (EITMS disabled).

NOTE:

The EITMS setting remains in effect until changed by the rider or dealer.

4. Repeat to enable or disable EITMS.



Stopping The Engine

1. Press the OFF/RUN switch to OFF position.
2. Take the key fob from the motorcycle. With the fob out of range, the security system remains armed. The motorcycle cannot be turned on or started.

Shifting Gears

CAUTION

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

Stopped, Engine Off

Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch. Gears do 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 the shift lever.

Starting from a Stop

NOTE:

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

1. With the engine running and the jiffy stand retracted, pull the clutch hand lever against the handlebar grip to disengage the clutch.
2. Press the gear shift lever down to the 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 Shifting Sequence: Upshift. Engage the next higher gear when the motorcycle reaches the shifting speed. Refer to Recommended Upshift Speeds.

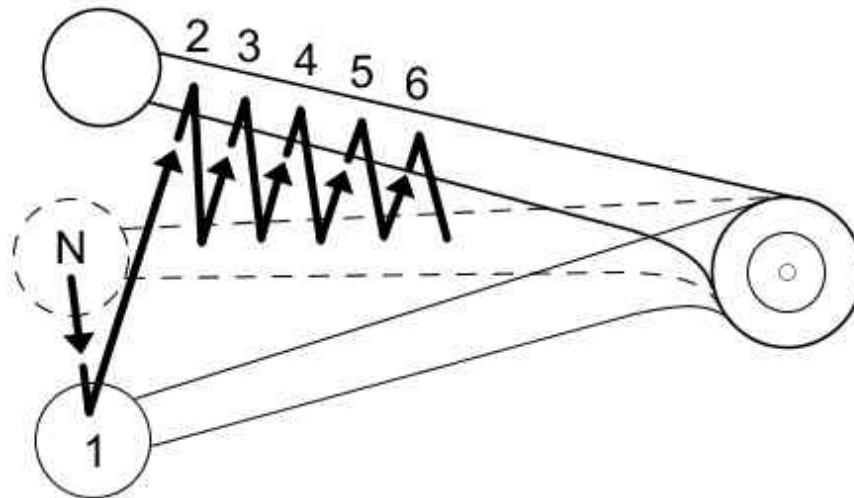
Recommended Upshift Speeds

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

1. Close the throttle.
2. Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch.
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.

NOTES:

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



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 Shifting Sequence: Downshift. When speed decreases, as when climbing a hill or slowing for a turn, shift to the next lower gear. Refer to Recommended Downshift Speeds.

Recommended Downshift Speeds

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. Individual shifting points can differ from the table.

1. Close the throttle.
2. Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch.

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.

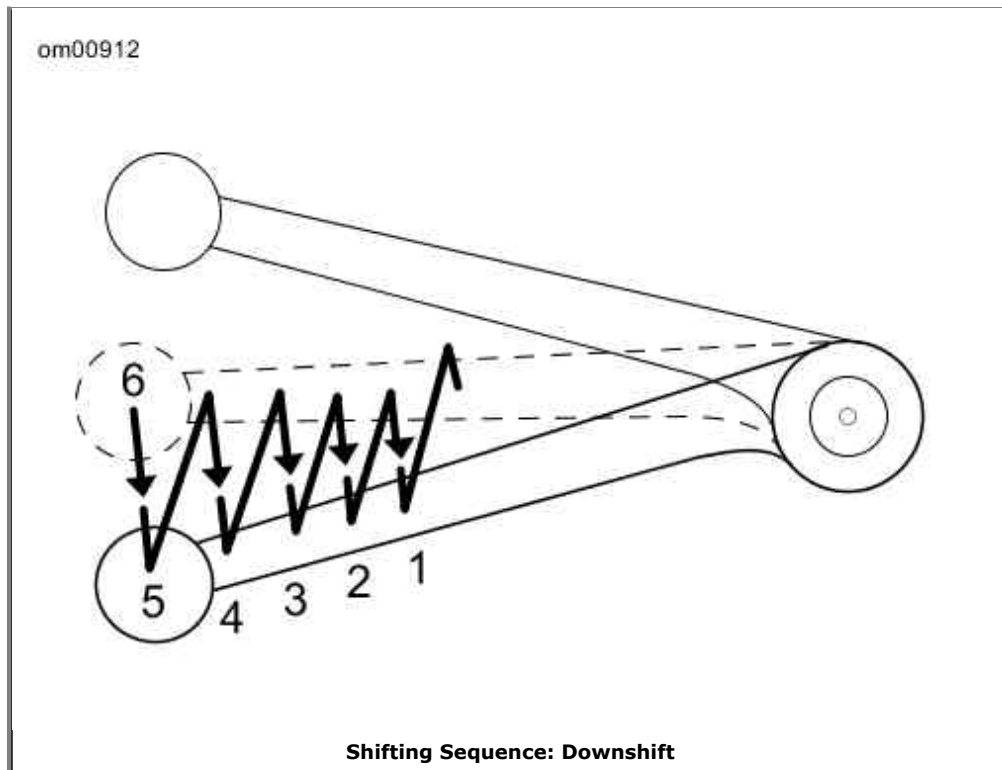
NOTES:

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

CAUTION

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

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



Maintenance and Lubrication

Safe Operating Maintenance

⚠ WARNING

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

WARNING

If you operate your motorcycle under adverse conditions (severe cold, extreme heat, very dusty environment, very bad roads, through standing water, etc.), you should perform the regular maintenance intervals more frequently to ensure the safe operation of your motorcycle. Failure to maintain your motorcycle could result in death or serious injury. (00094a)

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

Check the following items:

1. Tires for correct pressure, excessive wear or any signs of tire damage.
2. Drive belt for proper tension, wear or damage.
3. Brakes, steering and throttle for responsiveness and freedom from binding.
4. Brake fluid level and condition. Hydraulic lines and fittings for leaks. Also, check brake pads and discs for wear.
5. Cables for fraying or crimping and free operation.
6. Engine oil and primary chaincase/transmission fluid levels.
7. Headlamp, tail lamp, brake lamp and turn signals for proper operation.

Break-in Maintenance

NOTE:

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

After a new motorcycle has been ridden its first 1000 mi 1600 km , it should be taken to an authorized Harley-Davidson dealer for initial service operations. Refer to Regular Service Intervals: 2016 FXSE.

Engine Lubrication: Synthetic Oil

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. Your authorized dealer has the proper oil to suit your requirements. Refer to Recommended Engine Oils.

Motorcycles with a Twin Cam 110 engine are shipped from the factory with SCREAMIN' EAGLE SYN3 FULL SYNTHETIC MOTORCYCLE LUBRICANT 20W50. If SYN3 is not available and addition of motor oil is required, the first choice would be to add GENUINE HARLEY-DAVIDSON H-D 360 MOTORCYCLE OIL 20W50 to the SYN3 for engine lubrication. Although H-D 360 is compatible with SYN3, we suggest the mixture of the fluids be changed as soon as possible.

To switch lubricant to H-D 360, completely drain the SYN3 before filling with H-D 360. A residual amount of fluid will remain. It is not required to flush out the residual fluid.

If SYN3 or H-D 360 is not available, the third choice would be to add an acceptable diesel engine oil. We again suggest changing the mixture of the fluids as soon as possible. DO NOT add diesel engine oil to the primary chaincase or transmission.

Acceptable diesel engine oil designations include: SH, CH-4, CI-4 and CJ-4. The preferred viscosities for the diesel engine oils in descending order are: 20W50, 15W40 and 10W40.

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

CAUTION

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

Recommended Engine Oils

TYPE	VISCOSITY	RATING	LOWEST AMBIENT TEMPERATURE	COLD-WEATHER STARTS BELOW 50 °F (10 °C)
Screamin' Eagle SYN3 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 40 °F 4 °C	Good
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 50	HD 360	Above 60 °F 16 °C	Poor
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 60	HD 360	Above 80 °F 27 °C	Poor
Genuine Harley-Davidson H-D 360 Motorcycle Oil	SAE 10W40	HD 360	Below 40 °F 4 °C	Excellent

Checking Oil Level

Check the engine oil level only when engine is at normal operating temperature.

- Check engine oil supply at each complete fuel refill.
- Change oil at specified intervals in normal service at warm or moderate temperatures. Refer to Regular Service Intervals: 2016 FXSE.
- Shorten intervals between oil changes in cold weather. See Low Temperature Lubrication.

CAUTION

Oil level cannot be accurately measured on a cold engine. For pre-ride inspection, with motorcycle leaning on jiffy stand on level ground, oil should register on dipstick between arrows when engine is cold. Do not add oil to

bring the level to the FULL mark on a COLD engine.
(00185a)

CAUTION

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

CAUTION

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

NOTE:

Check the oil level with the motorcycle on the jiffy stand.

Oil Level Cold Check

Perform engine oil level cold check.

1. See Engine Oil Filler Cap/Dipstick. For pre-ride inspection with the vehicle on jiffy stand on level ground, remove and wipe off the dipstick. Install filler cap/dipstick back onto spout until tight.
2. See Engine Oil Level. Remove the filler cap/dipstick. Verify that oil registers on the dipstick between the two marks.
 - a. If oil level registers on the dipstick, proceed to Oil Level Hot Check.
 - b. If oil does not register on the dipstick, proceed to step 3.
3. With the dipstick removed, look into the dipstick opening. Verify that the oil level is near the filler neck.
 - a. If the oil level is at or near the filler neck, proceed to Oil Level Hot Check.
 - b. If the oil level is not present, add only enough oil to bring the level to the filler neck. Then proceed to Oil Level Hot Check.

Oil Level Hot Check

Perform engine oil level hot check.

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

NOTE:

The engine requires a longer warm-up period in colder weather.

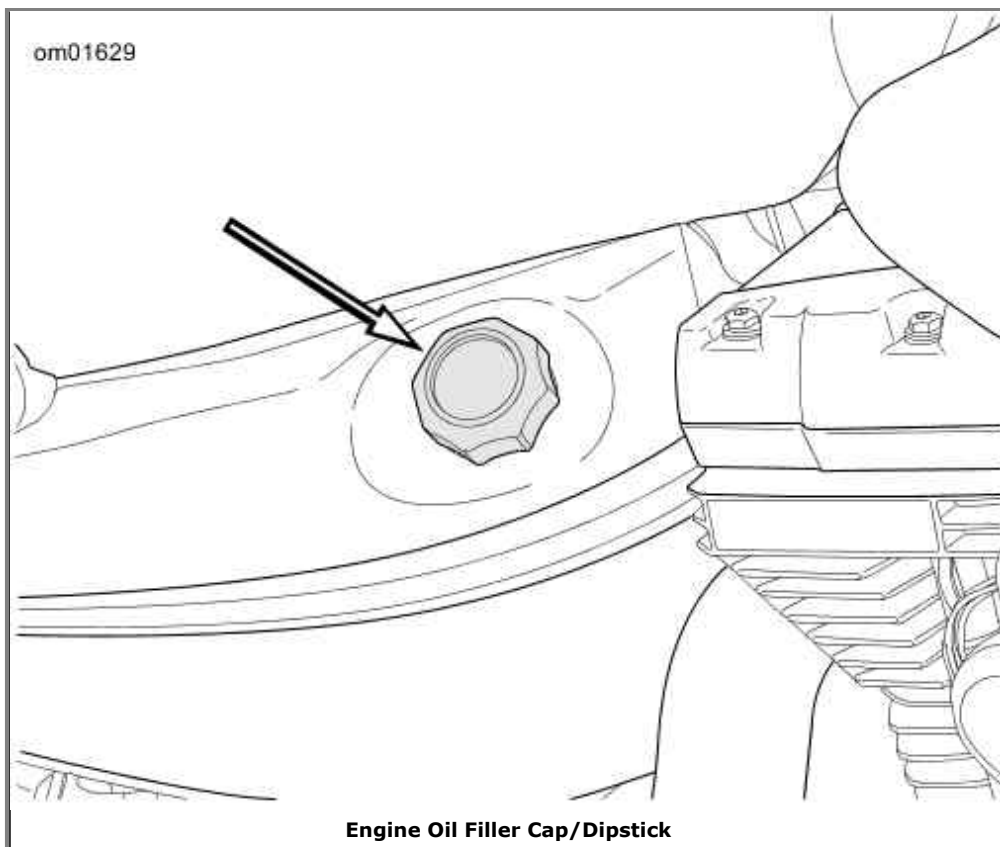
2. With the vehicle upright on level ground, allow engine to idle for 1-2 minutes. Turn off engine.

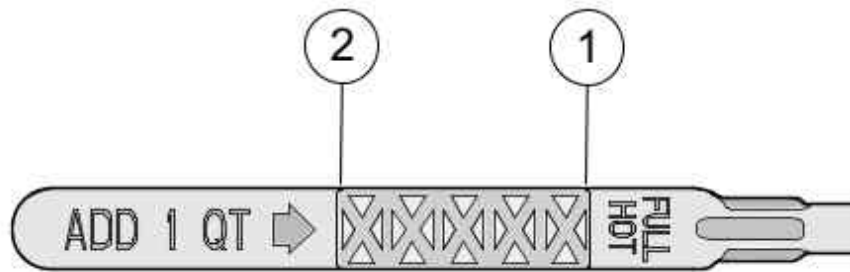
3. With vehicle on jiffy stand, remove and wipe off the dipstick. Install the filler cap/dipstick until fully seated in the spout.
4. See Engine Oil Level. Remove the dipstick and note the oil level. Add only enough oil to bring the level to the FULL mark on the dipstick. Do not overfill.

NOTE:

Use only recommended oil specified. See Engine Lubrication: Synthetic Oil. Refer to Recommended Engine Oils.

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





- 1. Full mark
- 2. Fill mark

Engine Oil Level

Changing Oil and Oil Filter

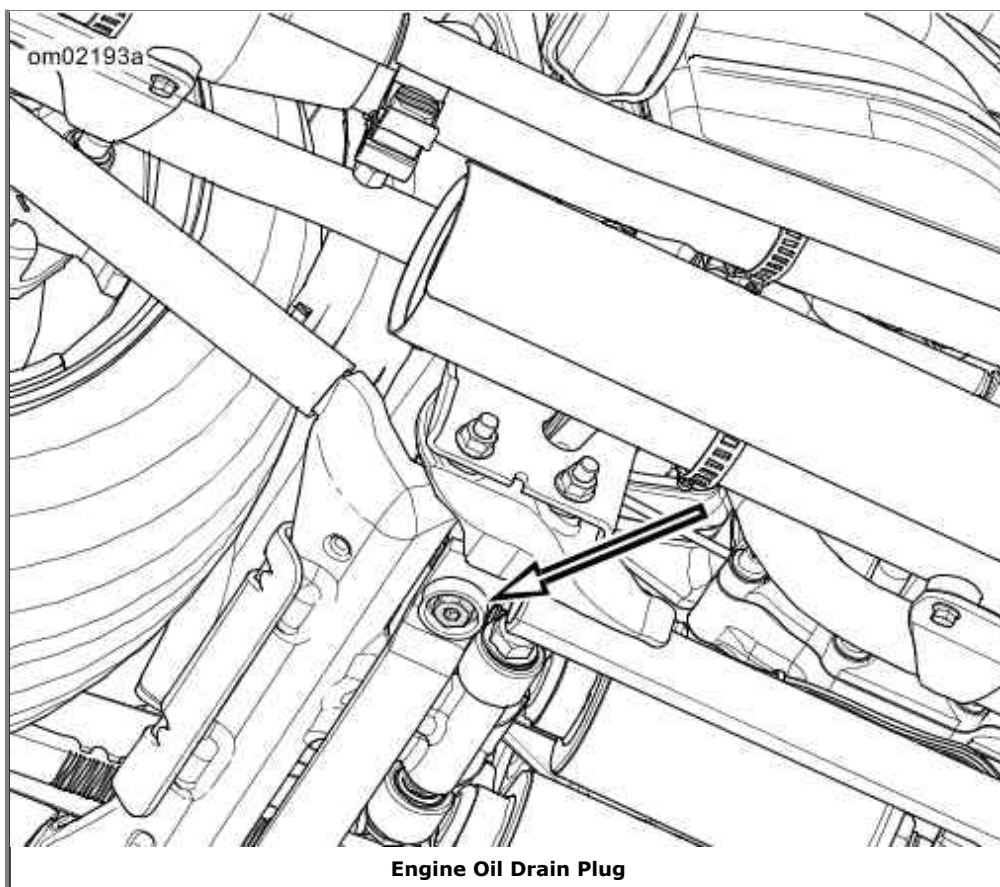
Drain Oil Tank

1. See Engine Oil Filler Cap/Dipstick. Unscrew and remove the filler cap/dipstick.

NOTE:

Dispose of used oil in accordance with local regulations.

2. See Engine Oil Drain Plug. Remove engine oil drain plug with O-ring. Drain engine oil.
3. Inspect O-ring for tears or damage. Replace if necessary. Clean magnetic drain plug.
4. Install O-ring and drain plug and tighten to 14-21 ft-lbs (19.0-28.5 Nm).



Remove Oil Filter

⚠ WARNING

Be sure that no lubricants or fluids get on tires, wheels or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047d)

CAUTION

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

NOTE:

The chin spoiler can be removed for easier access to the oil filter. See Chin Spoiler.

The oil filter is on the oil filter mount in front of the engine.

CAUTION

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

5. See Oil Filter Wrench (Part No. HD-44067). Remove the oil filter using the OIL FILTER

WRENCH HD-44067 .

6. Clean the oil filter mount flange of old gasket material. The surface must be smooth and free of any debris or old gasket material.

Install Oil Filter

Twin Cam 110B engines require the premium oil filter (Part No. 63798-99A Chrome or Part No. 63731-99A Black).

1. See Apply Oil Film. Apply a thin film of oil to gasket contact surface on mounting plate (1) and oil filter gasket (2).
2. Screw filter onto adapter (3) until gasket contacts plate surface. Apply another 3/4-1 full turn.

Fill Oil Tank

NOTE:

Use the proper grade of oil for the lowest temperature expected before the next oil change. Refer to Recommended Engine Oils.

1. Fill oil tank with no more than 2.0 qt 1.89 L of oil.

CAUTION

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

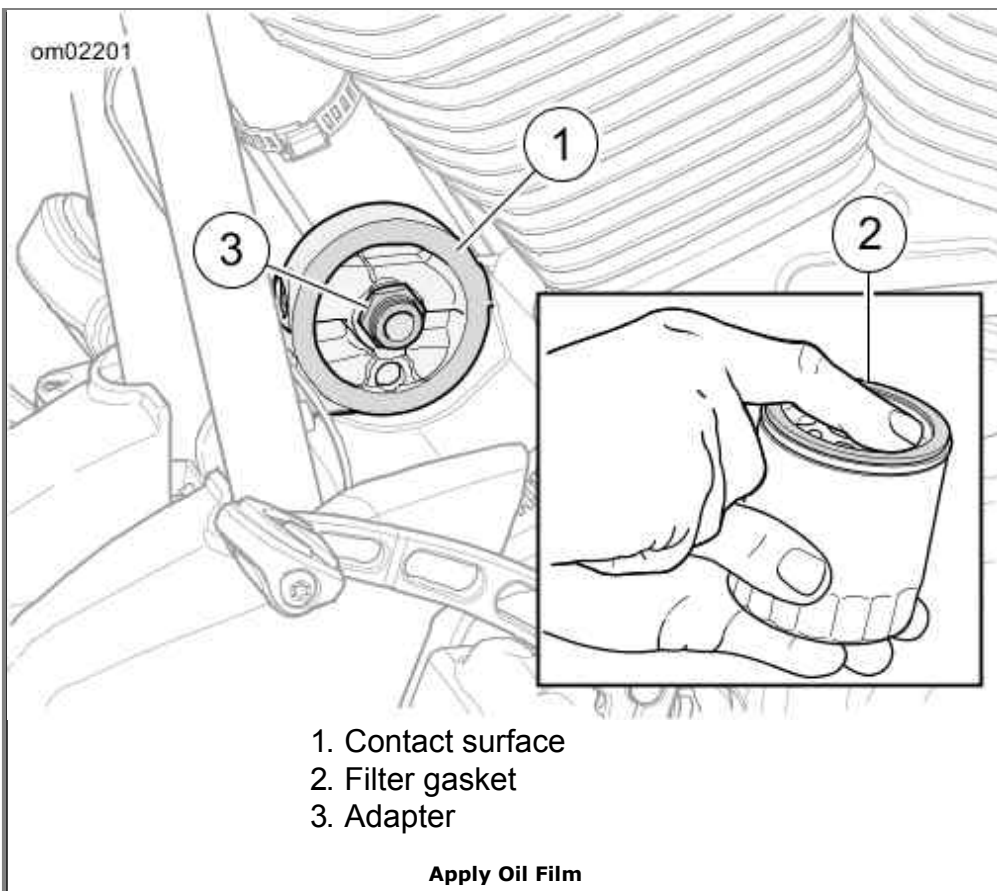
2. Start engine and carefully check for oil leaks around drain plug and oil filter.
3. See Engine Oil Level. Bring engine to operating temperature. Add oil to bring level to full hot (1) on dipstick.

om00106



Oil Filter Wrench (Part No. HD-44067)

om02201



Low Temperature Lubrication

Change engine oil often in colder climates. If motorcycle is frequently ridden less than 15 mi 24 km , in ambient temperatures below 60 °F 16 °C , reduce oil change intervals to 1500 mi 2400 km .

NOTE:

Lower ambient temperatures require more frequent oil changes.

Water vapor is a normal by-product of combustion. During cold-weather operation, some water vapor condenses to liquid form on the cool surfaces inside the engine. In freezing weather, this water becomes slush or ice. If the engine is not warmed to operating temperature, accumulated slush or ice blocks the oil lines and causes engine damage. Over time, water will accumulate, mix with the engine oil and form a sludge that is harmful to the engine.

If the engine is allowed to warm to normal operating temperature, most of the water evaporates and exits through the crankcase breather.

Transmission Lubrication

The transmission lubricant level should be checked monthly.

Your motorcycle comes equipped with Screamin' Eagle SYN3 Synthetic Motorcycle Lubricant. For transmission lubrication, it is not recommended to mix SYN3 with other lubricant products.

The transmission should be drained and refilled with fresh lubricant at proper intervals. Refer to Regular Service Intervals: 2016 FXSE.

NOTE:

When checking the transmission lubricant level, the motorcycle should be leaning on the jiffy stand. Allow a short time to equalize lubricant level in the transmission compartments.

Check Lubricant Level

1. Park motorcycle on a level surface on jiffy stand.
2. See Transmission Filler Plug/Dipstick Location. Remove the threaded filler plug/dipstick by turning the plug counterclockwise.
3. See Transmission Filler Plug/Dipstick Lubricant Level. Wipe off filler plug/dipstick and place it back in the filler hole. Do not screw in. (Dipstick should rest on threads of the case.)
4. Remove the plug/dipstick. Check the level. The lubricant level should be between the ADD and FULL lines on the dipstick.

⚠ WARNING

Be sure that no lubricants or fluids get on tires, wheels or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047d)

CAUTION

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

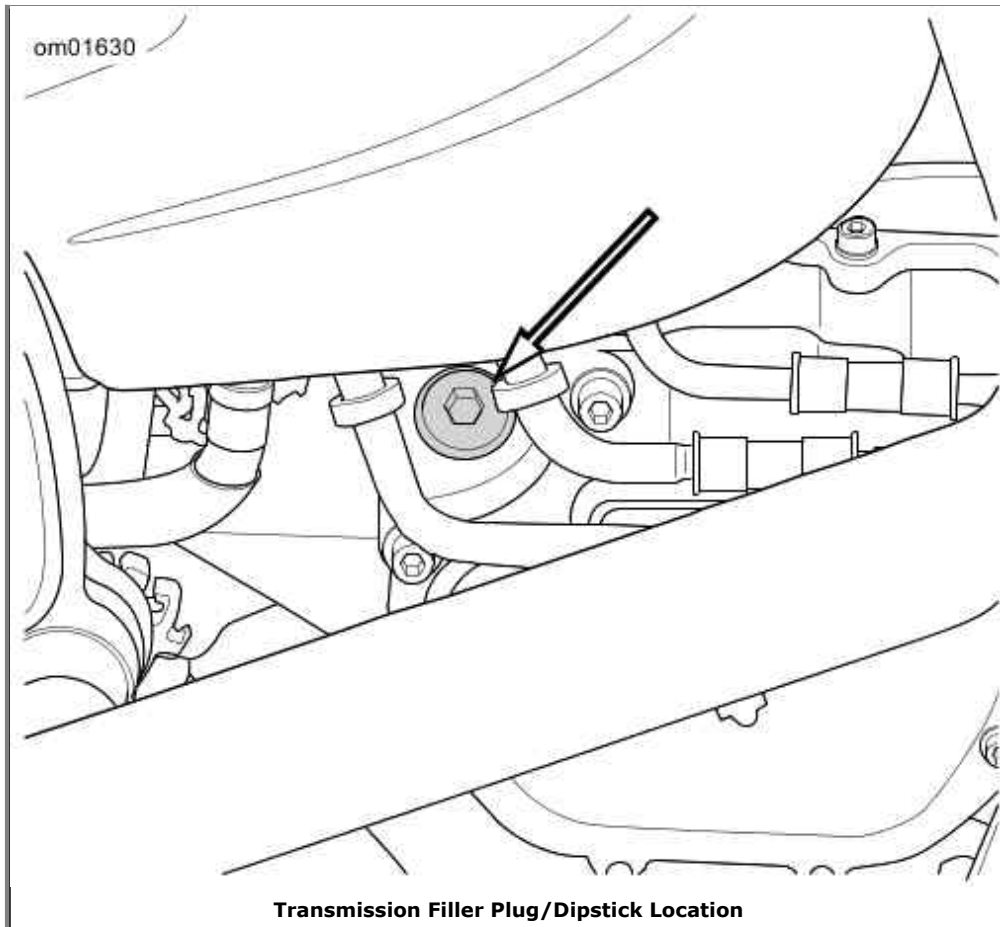
5. If the lubricant level is below the ADD mark, add lubricant. Do not overfill (bringing the level above the FULL mark) or leakage may occur. The transmission fluid capacity is approximately 28-32 fl oz 0.83-0.95 L .

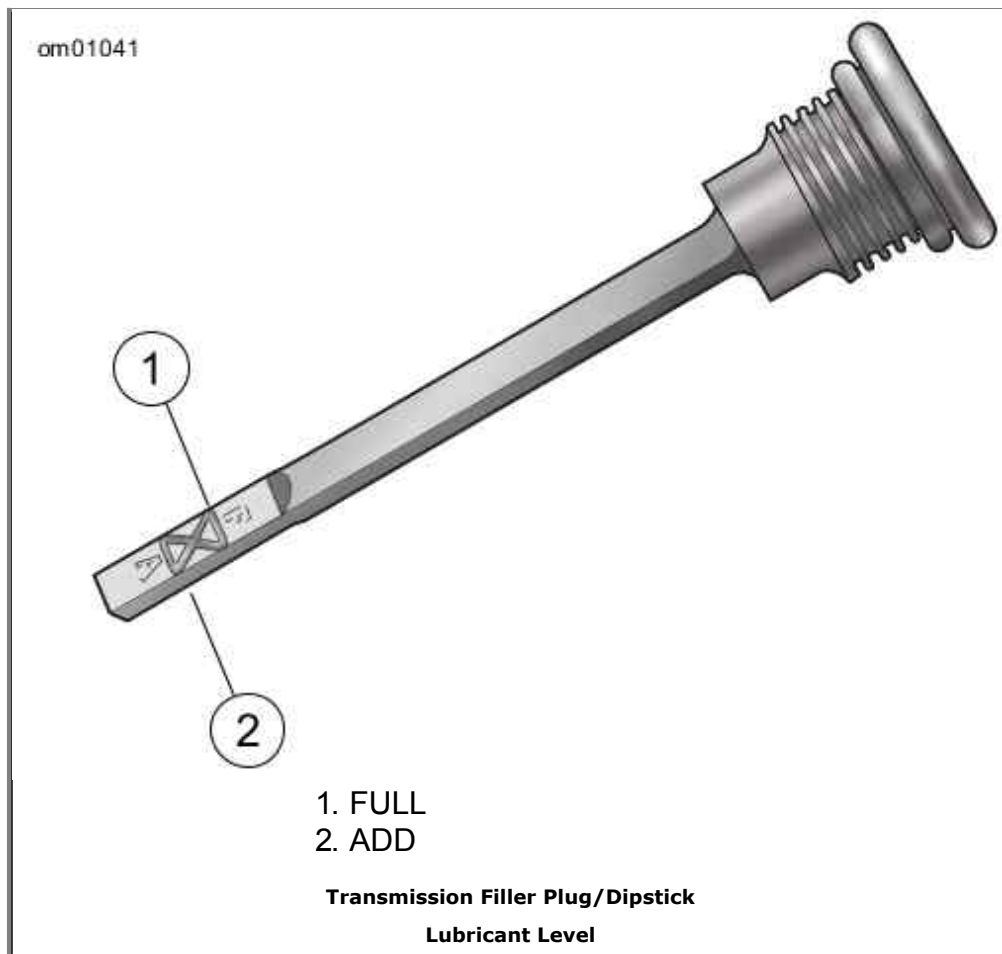
NOTES:

- *When filling the transmission, use Screamin' Eagle SYN3 Synthetic Motorcycle Lubricant (Part No. 99824-03, U.S. quart).*
- *If SYN3 is not available and addition of lubricant to the transmission is required, SYN3 must be completely drained before using other lubricant products. A residual amount of fluid will remain. It is not required to flush out the residual fluid.*

6. Inspect O-ring for tears or damage. Replace if required. Wipe any foreign material from plug.

7. Install threaded filler plug/dipstick. Tighten to 25-75 in-lbs (2.8-8.5 Nm).





Changing Transmission Fluid

1. See Transmission Filler Plug/Dipstick Location. Remove the transmission filler plug/dipstick.
2. See Transmission Drain Plug. Remove transmission drain plug and drain lubricant into a suitable container.

CAUTION

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

⚠WARNING

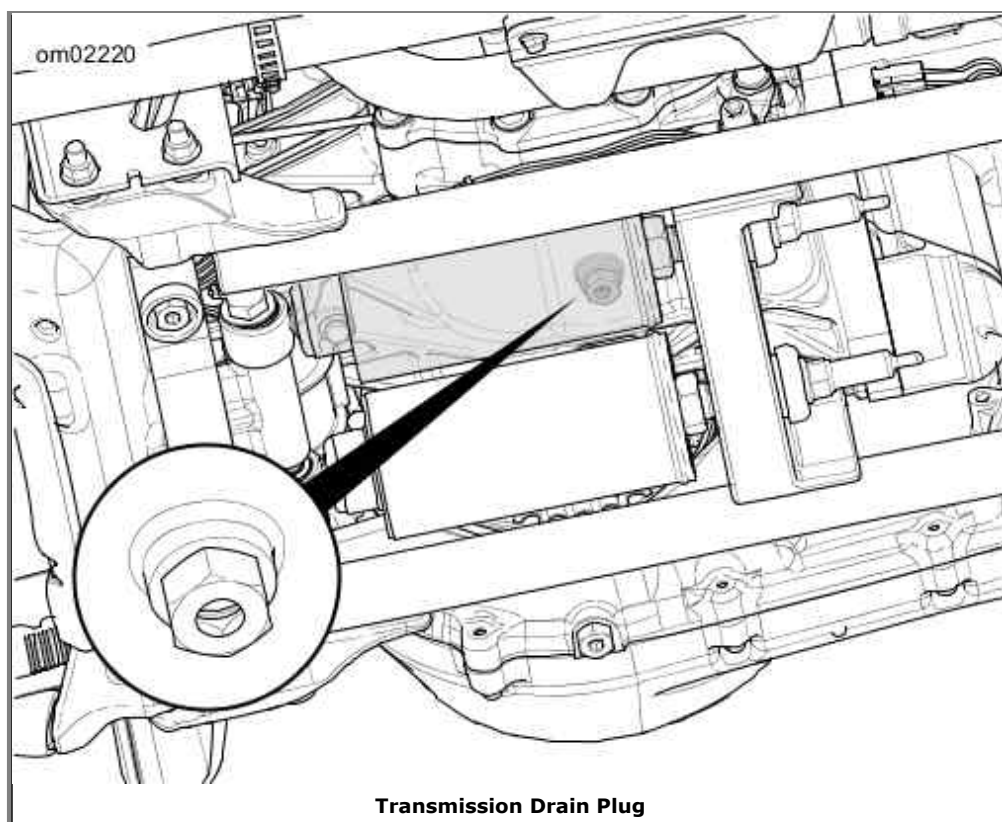
Be sure that no lubricants or fluids get on tires, wheels or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047d)

NOTE:

Dispose of lubricant in accordance with local regulations.

3. Replace drain plug O-ring if damaged. Wipe any foreign material from plug.
4. Install drain plug. Tighten to 14-21 ft-lbs (19.0-28.5 Nm).

5. Fill the transmission with 28-32 fl oz 0.83-0.95 L of Screamin' Eagle SYN3 Synthetic Motorcycle Lubricant (Part No. 99824-03, U.S. quart). Do not overfill or leakage may occur.
6. Install threaded filler/check plug. Tighten to 25-75 in-lbs (2.8-8.5 Nm).
7. Start engine and carefully check for oil leaks around drain plug.
8. See Transmission Filler Plug/Dipstick Lubricant Level. Bring vehicle to operating temperature. Add oil to bring level to full (1) on dipstick.
9. Install threaded filler/check plug. Tighten to 25-75 in-lbs (2.8-8.5 Nm).



Chaincase Lubricant

Drain the chaincase lubricant and refill with fresh lubricant at proper intervals. Refer to Regular Service Intervals: 2016 FXSE.

CAUTION

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

Changing Chaincase Lubricant

1. Run motorcycle until engine oil reaches at least 200 °F 93 °C .

CAUTION

When draining or adding lubricant, do not allow dirt, debris

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

2. See Clutch Cover. Using a T27 TORX drive head, remove five screws (3) (with captive washers) to free clutch inspection cover (2) from primary chaincase cover.
3. See Removing Chaincase Drain Plug. Remove magnetic drain plug at bottom of inner primary chaincase cover. Drain primary chaincase.

NOTE:

Dispose of lubricant in accordance with local regulations.

4. Clean drain plug. If plug has accumulated debris, inspect the condition of the chaincase components.
5. Install **new** O-ring on drain plug.
6. Install drain plug back into inner primary chaincase cover. Tighten plug to 14-21 ft-lbs (19-28 Nm).

CAUTION

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

7. Pour 34 fl oz 1.0 L of HARLEY-DAVIDSON SCREAMIN' EAGLE SYN3 SYNTHETIC MOTORCYCLE LUBRICANT (Part No. 99824-03 U.S. quart) through the clutch inspection cover opening.

⚠ WARNING

Be sure that no lubricants or fluids get on tires, wheels or brakes when changing fluid. Traction can be adversely affected, which could result in loss of control of the motorcycle and death or serious injury. (00047d)

CAUTION

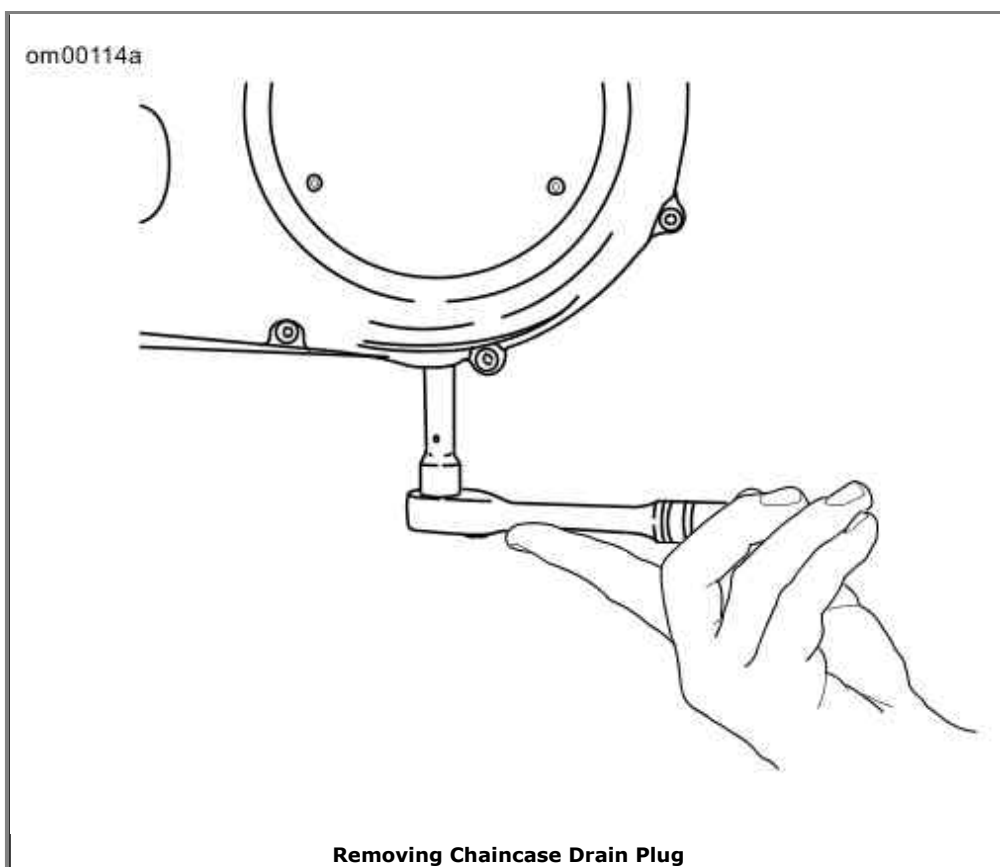
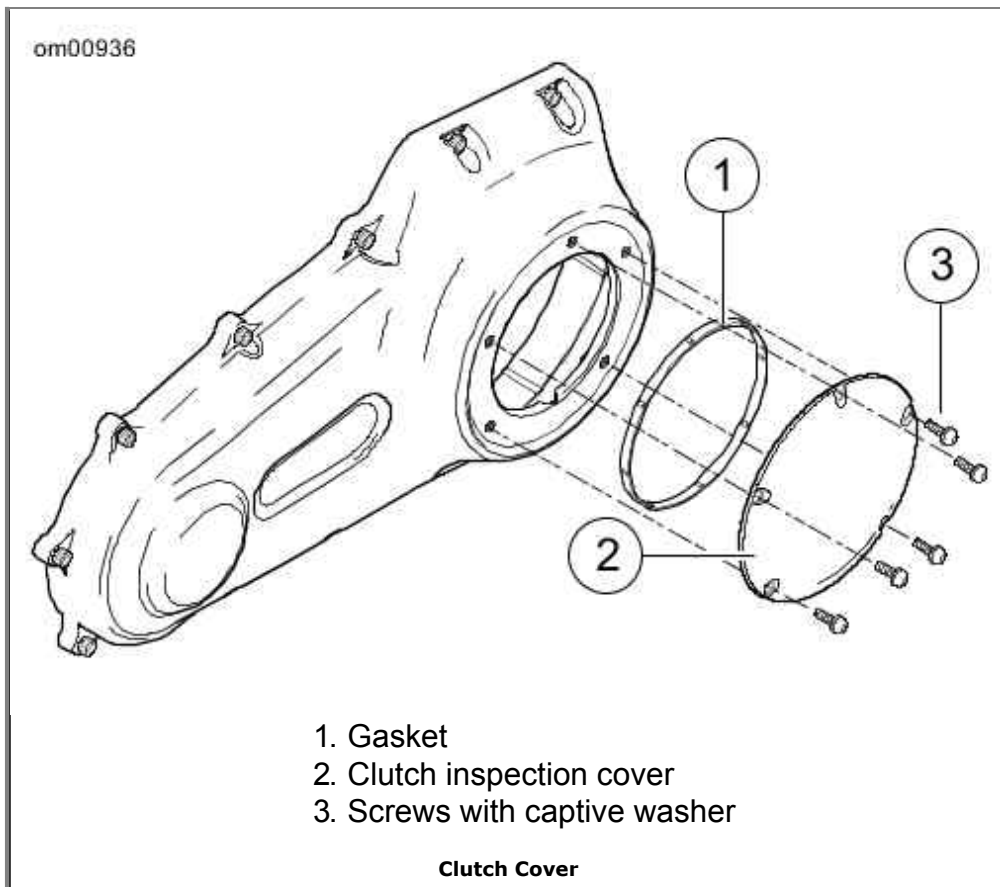
When draining or adding lubricant, do not allow dirt, debris or other contaminants to enter the engine. (00198a)

NOTE:

Use only HARLEY-DAVIDSON SCREAMIN' EAGLE SYN3 SYNTHETIC MOTORCYCLE LUBRICANT.

8. Install clutch inspection cover and **new** gasket:
 - a. Thoroughly wipe all lubricant from cover mounting surface and groove in chaincase.
 - b. Position gasket in groove in primary chaincase cover. Press each of the nubs on gasket into the groove. The nubs retain the seal in position.

- c. Insert screw (with captive washer) through clutch inspection cover. Thread it into the top cover screw hole.
- d. Start the remaining four screws (with captive washers).
- e. Using a T27 TORX drive head, alternately tighten screws to 84-108 in-lbs (9.5-12.2 Nm).



Drive Belt Deflection

NOTE:

Always use BELT TENSION GAUGE 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:

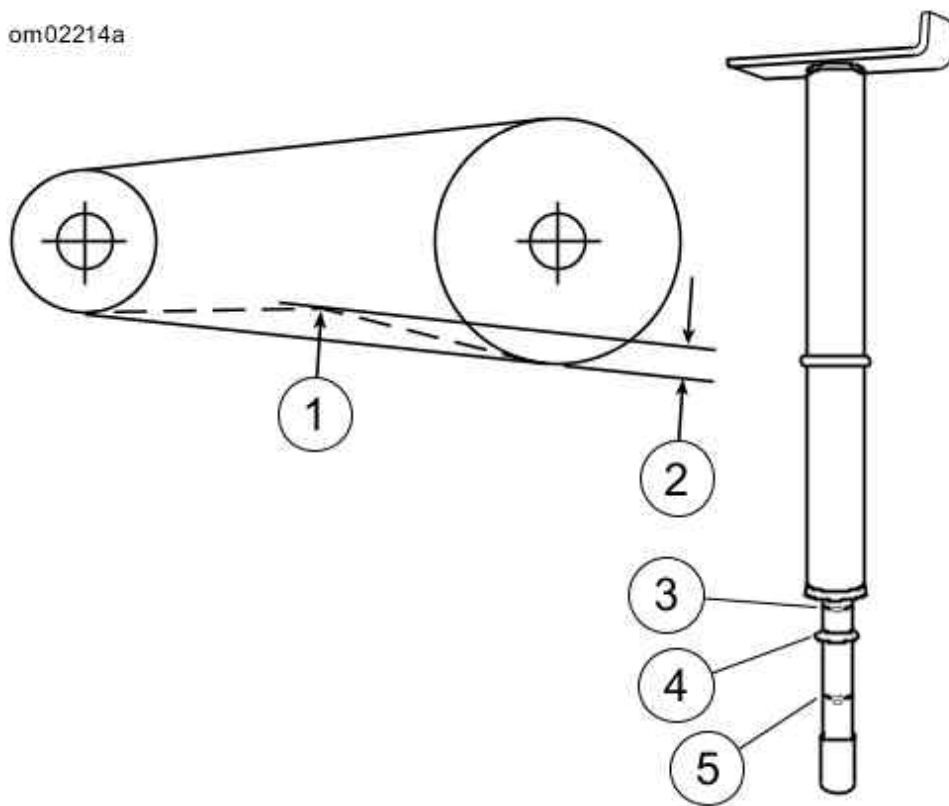
- As part of pre-ride inspection.
- At every scheduled service interval.
- With transmission in neutral.
- With motorcycle at ambient temperature.
- With motorcycle upright or on jiffy stand with rear wheel on the ground.
- With the vehicle unladen: no rider, passenger or cargo.

WARNING

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

1. Disarm security system. Remove main fuse. See Fuses.
2. See Belt Deflection. Measure belt deflection using H-D BELT TENSION GAUGE HD-35381-A :
 - a. Slide O-ring (4) to 0 lb 0 kg mark (3).
 - b. Fit belt cradle against bottom of drive belt halfway between drive pulleys (1).
 - c. Press upward on knob until O-ring slides down to 10 lb 4.5 kg mark (5) and hold steady.
3. Measure belt deflection (2) while holding gauge steady.
4. If the measurement is not within specification, see a Harley-Davidson dealer for service. Refer to Drive Belt Deflection: FXSE.
5. Install main fuse.

om02214a



1. 10 lb (4.5 kg) of force
2. 1/4-5/16 in (6.4-7.9 mm)
3. 0 lb (0 kg) mark
4. O-ring
5. 10 lb (4.5 kg) mark

Belt Deflection

Drive Belt Deflection: FXSE

MODEL	DEFLECTION	
	in	mm
FXSE	1/4-5/16	6.4-7.9

Chassis Lubrication

Refer to Regular Service Intervals: 2016 FXSE for all maintenance schedules.

NOTE:

Use recommended SPECIAL PURPOSE GREASE for steering head bearings. Use a multipurpose chassis grease for other applications.

1. Lubricate front brake hand lever and clutch control hand lever only if necessary.
2. Inspect rear fork pivot shaft bearings.
3. Pack the steering head bearings with SPECIAL PURPOSE GREASE at recommended service intervals.
4. Lubricate the jiffy stand mechanism with SILVER GRADE ANTI-SEIZE.

NOTE:

For model specific information regarding the chassis lubrication, see the service manual or a Harley-Davidson dealer.

Oil Applications

Lubricate motorcycle at regular intervals, particularly after washing motorcycle or driving in wet weather. Refer to Regular Service Intervals: 2016 FXSE.

Clutch Inspection

1. Park the motorcycle on a flat surface. Turn off engine.
2. In gear, squeeze the clutch lever against the hand grip. The lever should have a firm feel with minimum free play.
3. With the clutch lever held against the hand grip, rock the motorcycle. If motorcycle rolls, the clutch is disengaged.
4. In gear with the clutch lever released, rock the motorcycle. If the motorcycle does not roll, the clutch is engaged.

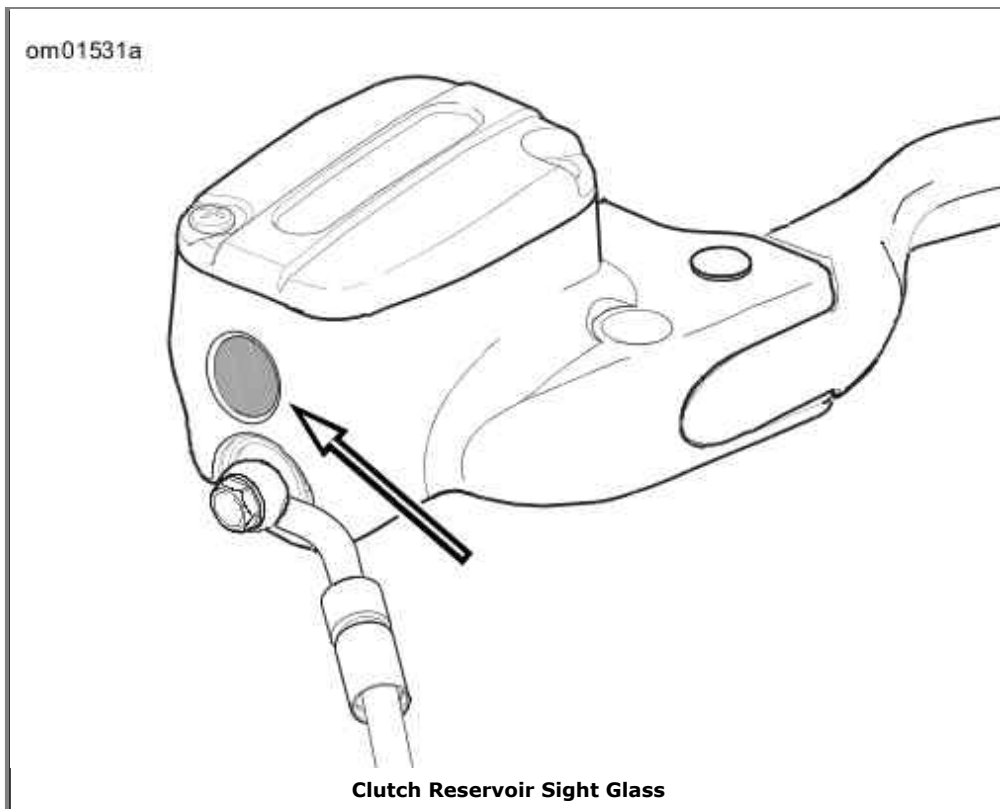
CAUTION

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)

NOTE:

Sight glass appears dark if fluid is present.

5. See Clutch Reservoir Sight Glass. Check sight glass in clutch reservoir.
6. If there is excessive lever free play, no fluid in the sight gauge, the clutch does not disengage or the clutch does not engage, see a Harley-Davidson dealer.



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 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 Regular Service Intervals: 2016 FXSE.

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

Inspect brake fluid level and check brake pads and discs for wear at proper intervals. Refer to Regular Service Intervals: 2016 FXSE.

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)

CAUTION

Direct contact of D.O.T. 4 brake fluid with eyes can cause irritation. Avoid eye contact. In case of eye contact flush with large amounts of water and get medical attention. Swallowing large amounts of D.O.T. 4 brake fluid can cause digestive discomfort. If swallowed, obtain medical attention. Use in well ventilated area. KEEP OUT OF REACH OF CHILDREN. (00240a)

CAUTION

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

CAUTION

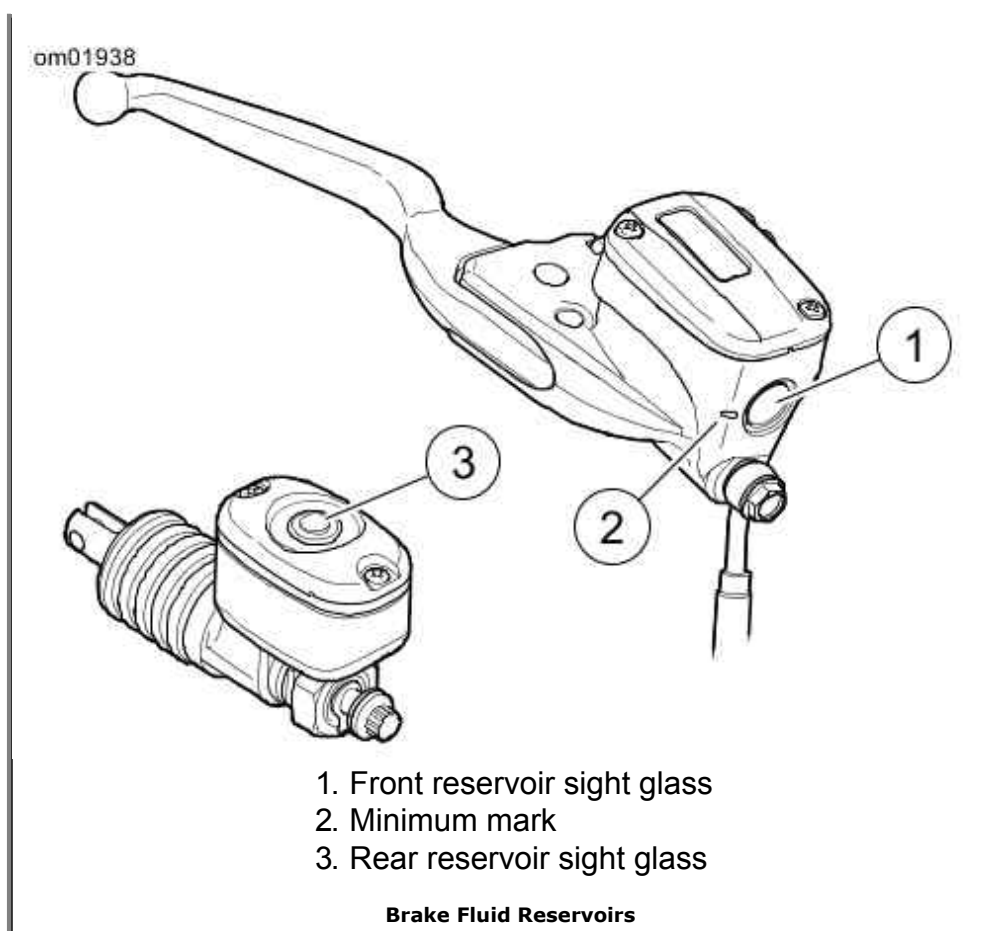
Do not allow dirt or debris to enter the master cylinder reservoir. Dirt or debris in the reservoir can cause improper operation and equipment damage. (00205c)

NOTES:

- *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. By replacing the pads, the fluid level returns to its normal level.*
- *Use only DOT 4 brake fluid and replace the brake fluid every two years. See a Harley-Davidson dealer.*

1. Place vehicle on a flat level surface.

- a. **Front brake:** Level the master cylinder by turning the handlebar and/or standing the motorcycle upright (not leaning on jiffy stand).
 - b. **Rear brake:** Position the motorcycle so the master cylinder reservoir is level.
2. See Brake Fluid Reservoirs. View reservoir sight glass.
- a. **Front:** Verify that fluid is visible in the sight glass (1). If the fluid level is below the minimum mark (2) or not present, see a Harley-Davidson dealer.
 - b. **Rear:** Verify fluid presence. If fluid is present, the sight glass (3) appears dark. If the sight glass is clear, see a Harley-Davidson dealer.
3. 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. See a Harley-Davidson dealer.



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

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's brake pad friction material 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 can hear a brake noise. This noise is normal for this friction material.

Minimum Brake Pad Friction Material Thickness

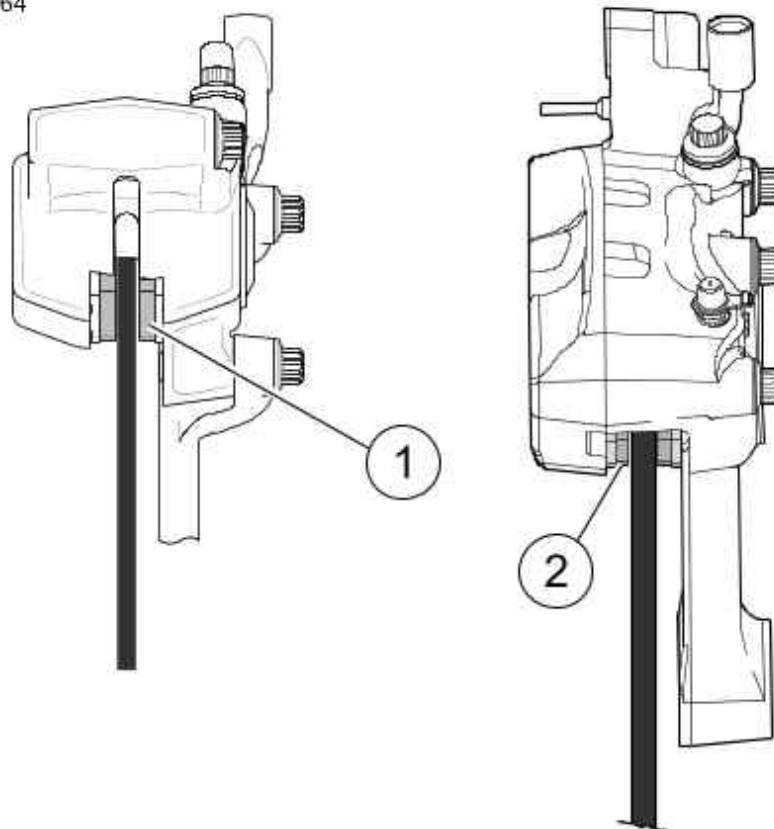
in	mm
0.040	1.020

1. See Brake Friction Material. Check the brake disc as it spins. The disc should run true in the brake caliper.

NOTE:

On the front, the grooves on the brake pads are no longer visible when the pads are near the end of service life.

2. Measure the thickness of the brake pad friction material. The pads do not necessarily wear evenly. Check each pad.
3. Replace brake pads before friction material reaches minimum thickness. Always replace brake pads in pairs. See a Harley-Davidson dealer. Refer to Minimum Brake Pad Friction Material Thickness.



1. Front brake
2. Rear brake

Brake Friction Material

Tires

Refer to Specified Tires for tires and pressures.

- Keep tires properly inflated.
- Follow tire data for correct cold tire inflation pressure.
- Check tire pressures 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 ride if only ridden occasionally.

Use only Harley-Davidson specified tires. Other tires may not fit correctly and could adversely affect stability, handling and performance. Refer to Specified Tires.

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 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 80 mph (130 km/h). Failure to follow this warning could 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 1/32 in (0.8 mm) tread depth remains. Riding with a worn tire could result in death or serious injury. (00090c)

Harley-Davidson tires have tread wear indicator 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 1/32 in 0.8 mm tread depth remains, the tire can:

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

See Tire Sidewall Wear Bar Locator. Arrows on tire sidewalls pinpoint location of tread wear indicator bars.

See Wear Bar Appearance. Always replace tires before the tread wear indicator bars appear.

When To Replace Tires

⚠ WARNING

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

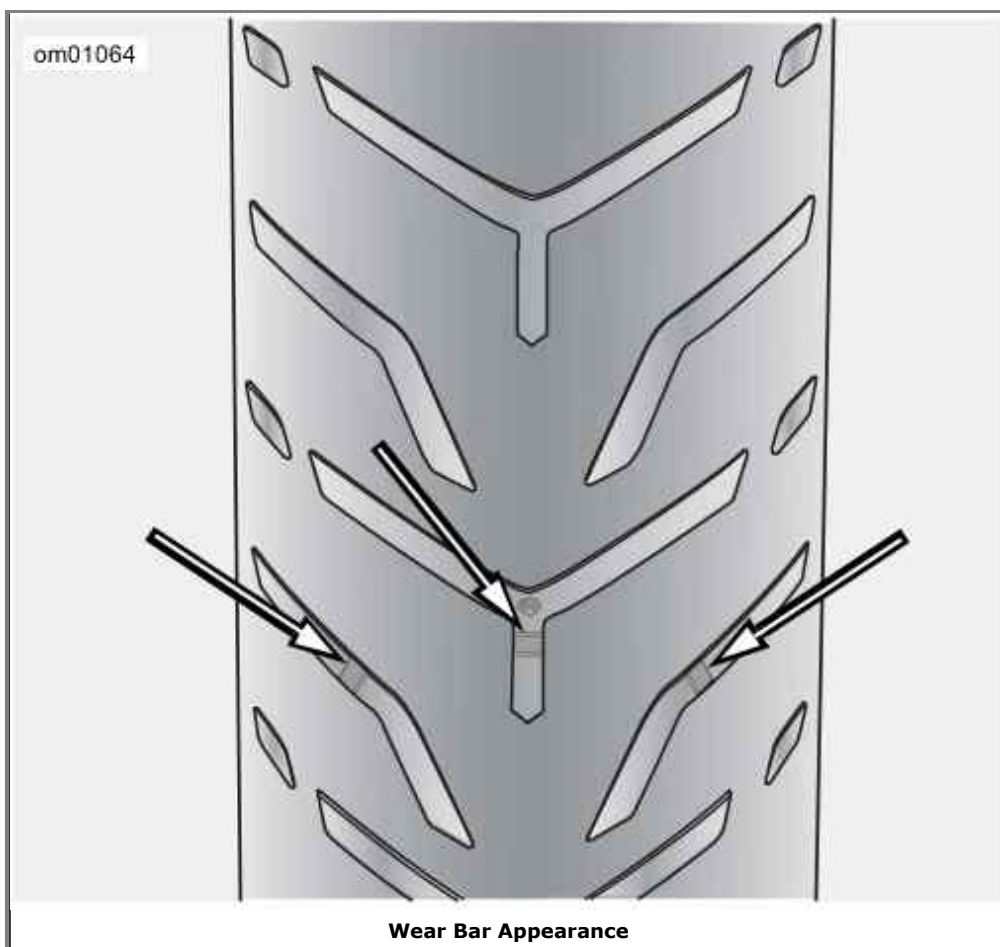
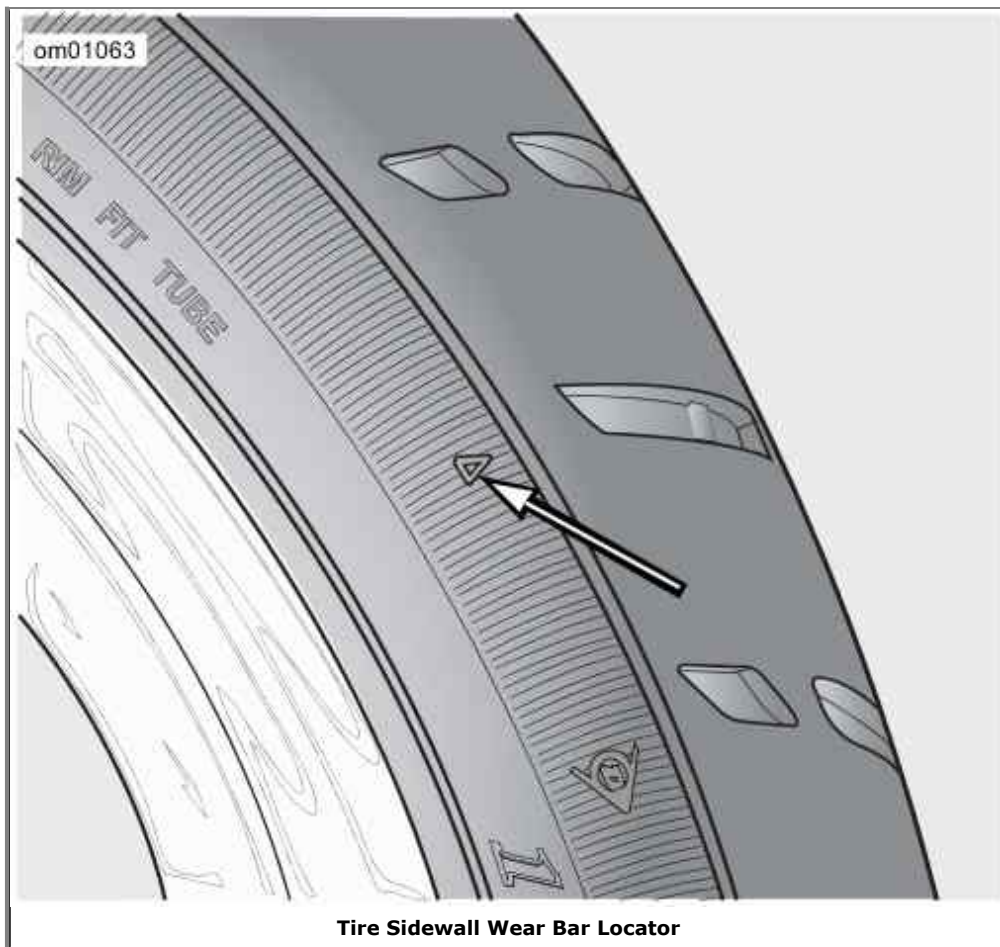
NOTE:

Always replace tires with the specified tires. Refer to Specified Tires.

New tires are needed if:

- Tread wear indicator bars become visible on the tread surfaces.
- Tire cords or fabric become visible through cracked sidewalls, snags or deep cuts.
- Bumps, bulges or slits in the tire.
- Punctures, cuts or other damage to the tire that cannot be repaired.

When installing tires on rims, do not rely on tread design to determine direction of rotation. Always make sure that the rotational arrows molded into the sidewalls point in the direction of rotation when the vehicle is moving forward.



Shock Absorbers

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

intervals.

WARNING

Shock absorber cannot be serviced. Attempting service can cause an explosion, which could result in death or serious injury. (00602d)

- Do not refill, disassemble, puncture or expose shock to flames.
- Replacement and disposal should only be done by an authorized Harley-Davidson dealer.

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 Regular Service Intervals: 2016 FXSE.

1. Disconnect spark plug cables from plugs by pulling up on the molded connector caps.
2. Check spark plug type. Only use spark plugs specified for your model motorcycle.
3. Check spark plug gap against specifications. Refer to Electrical.

NOTE:

*If a torque wrench is not available, tighten **new** spark plugs finger-tight. Tighten an extra 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 Electrical.
5. Connect each molded connector cap until the cap snaps firmly into place over the spark plug.

Air Filter

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)

CAUTION

Install air filter before running engine. Failure to do so can draw debris into the engine and could result in engine damage. (00207a)

Inspect filter element at proper intervals and service as required. Under dusty conditions, inspect more often. Refer to Regular Service Intervals: 2016 FXSE.

Rain Sock

In wet or rainy conditions, because the filter is exposed, water can enter the engine. When parked, water can cause internal engine corrosion or damage. When running, water can cause the engine to misfire.

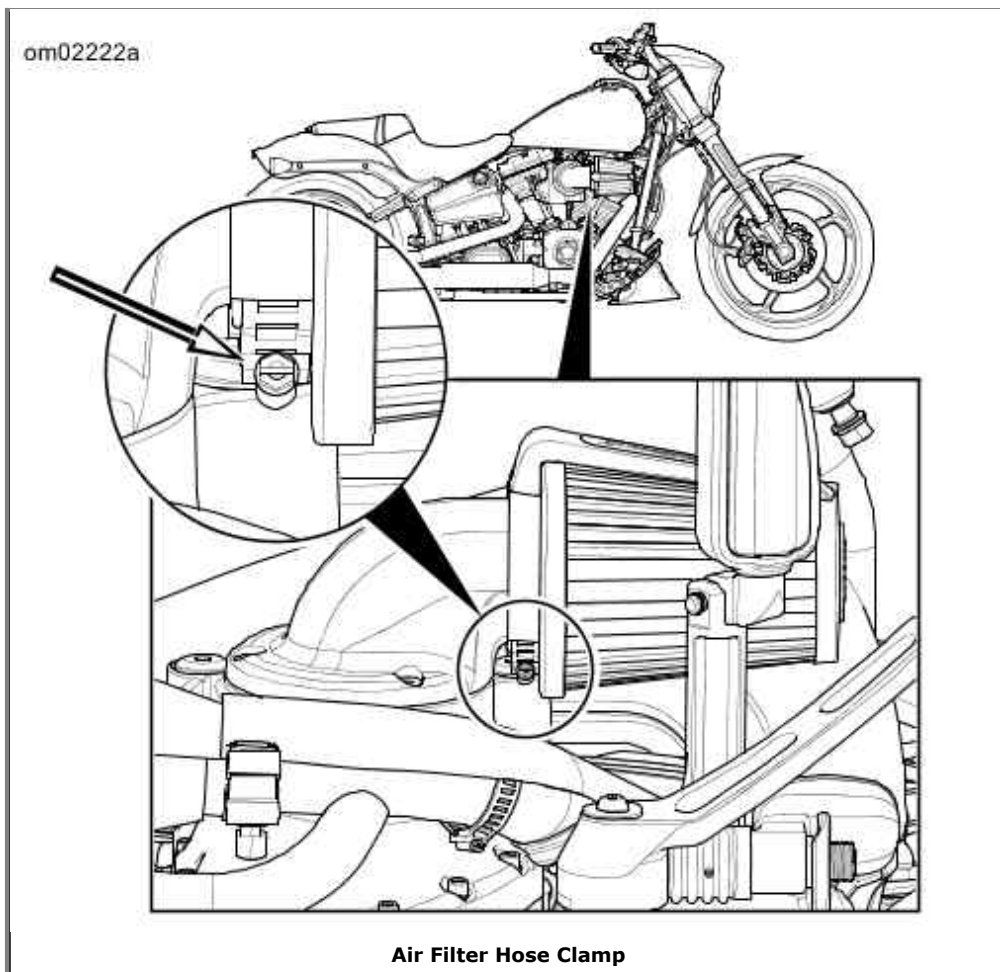
In wet or rainy conditions, install the rain sock over the air cleaner assembly to prevent water intrusion.

Removal

NOTES:

- *The backplate is glued to the paper element.*
- *See Air Filter Hose Clamp. A slot in the backside of the clamp cover allows screwdriver access.*

1. Loosen clamp.
2. See Air Filter. Separate the filter from the air tube (1).
3. Remove screw (3) and medallion bar (4).



Clean and Oil Filter

1. Gently tap the filter to dislodge any loose dirt.
2. Gently brush with a soft bristle brush.

NOTES:

- *The use of cleaning, drying or oiling methods or products other than the following can damage the filter and void the manufacturer's warranty.*
- *K&N POWER KEEN AIR FILTER and K&N AIR FILTER OIL are available at your Harley-Davidson dealer.*

3. Clean the filter:
 - a. Spray air filter cleaner liberally or roll the filter in a shallow pan of cleaner.
 - b. Remove immediately, and let soak for ten minutes.

NOTE:

DO NOT use compressed air or a heat gun to speed drying.

4. Rinse and dry the filter. the filter media from the inside with low-pressure tap water.
 - a. Rinse off the filter from the clean side to the dirty side with low-pressure tap water.
 - b. Shake off the excess water.
 - c. Let the filter air dry.

NOTE:

See Air Filter. If air filter requires replacement, remove CVO medallion(5) from old air filter. Install the CVO medallion on the new filter. See a Harley-Davidson dealer.

5. Inspect filter. Hold the filter up to a strong light source.
 - a. The filter is clean is light is uniformly visible through the filter.
 - b. If damaged or cannot be cleaned, replace the filter.

Oil the Filter

NOTE:

DO NOT OVER-OIL THE AIR FILTER. Over-oiling impacts performance of the engine and/or certain engine components. If oil is still draining or dripping from the element 20 minutes after oiling, clean the filter element.

1. Oil the filter.
2. Spray or use a squeeze bottle to apply oil along each pleat.
3. Allow the filter to absorb the oil for 20 minutes.
4. After 20 minutes, inspect the filter. Carefully apply oil to any remaining white spots on the filter. Allow the filter to absorb the oil.

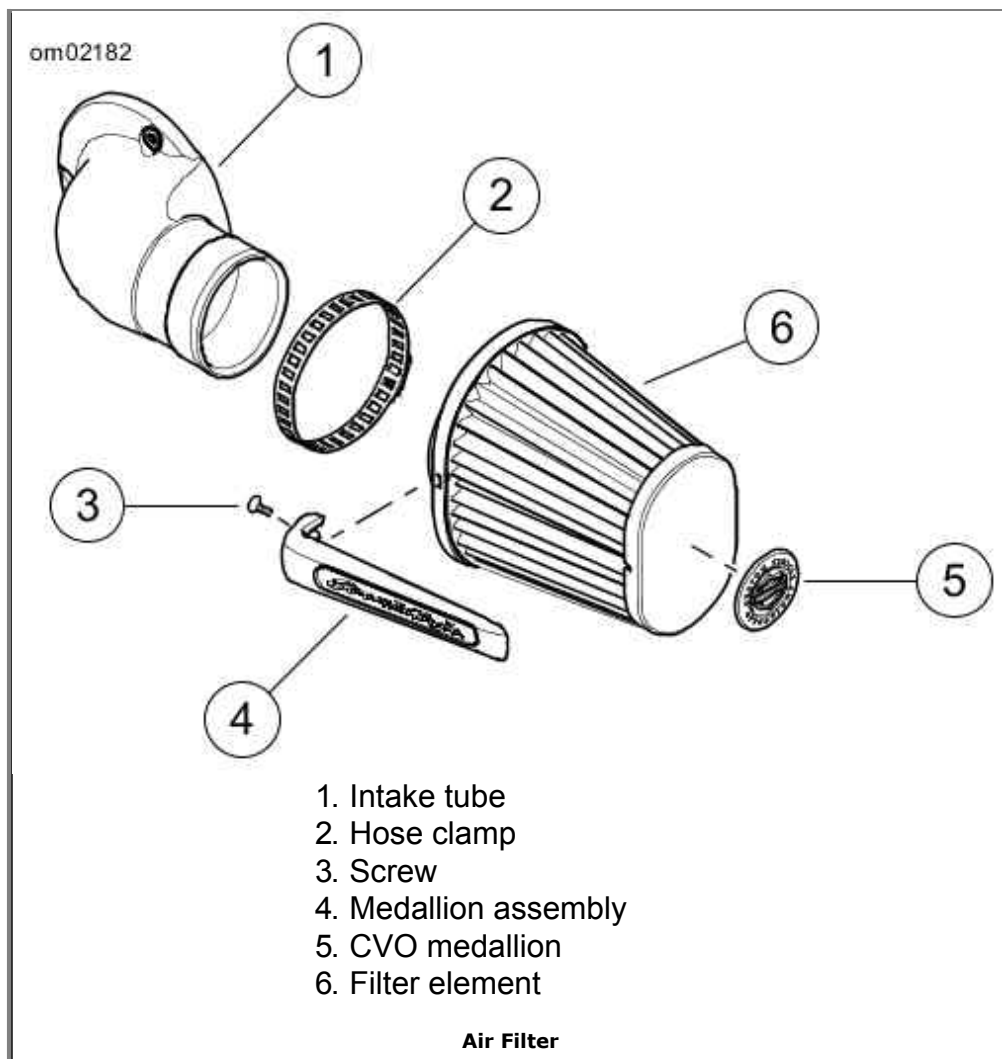
Installation

1. See Air Filter. Install medallion bar (4) and screw (3).
2. Install air filter (6) with clamp onto the intake tube (1) until it is fully seated in the groove.

NOTE:

To prevent damage to the filter backplate, hold worm drive in approximate center of notch when tightening clamp.

3. Align the air filter element so the symbol on the front cover aligns properly. Tighten the clamp to 45-55 in-lbs (5.1-6.2 Nm).



Headlamp Replacement

The headlamp is an LED. Replace assembly upon failure. Refer to the service manual for removal and installation or see your Harley-Davidson dealer.

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)

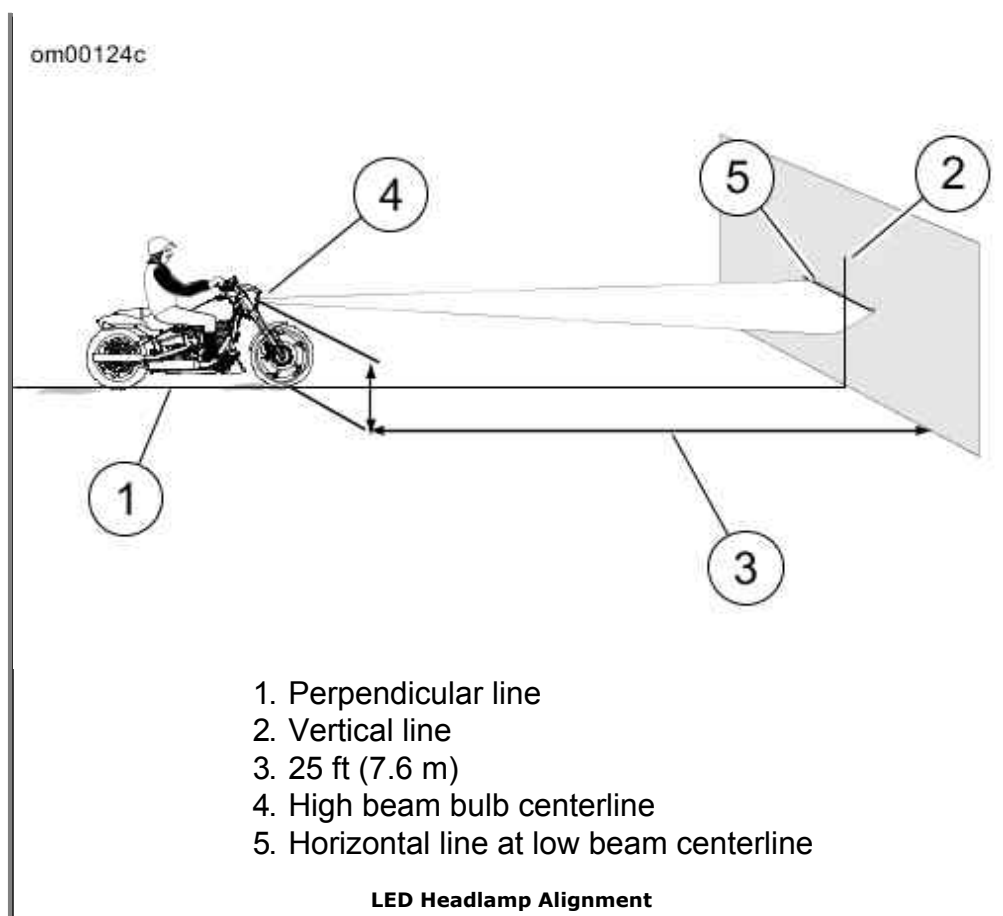
1. Check tire pressure.
2. Adjust rear shocks for the rider and intended load.
3. Fill fuel tank or add an equal amount of ballast.

NOTE:

Choose a wall in minimum light.

4. See LED Headlamp Alignment. Park the motorcycle on a line (1) perpendicular to the wall.

5. Position motorcycle with the front axle 25 ft 7.6 m from wall.
6. Draw a vertical centerline (2) on the wall.
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 high beam bulb.
8. Draw a horizontal line (5) through the vertical line at high beam centerline.
9. Align the top of the high beam hot spot to the intersection of the vertical line (2) and the horizontal line (5). See Headlamp Adjustment.



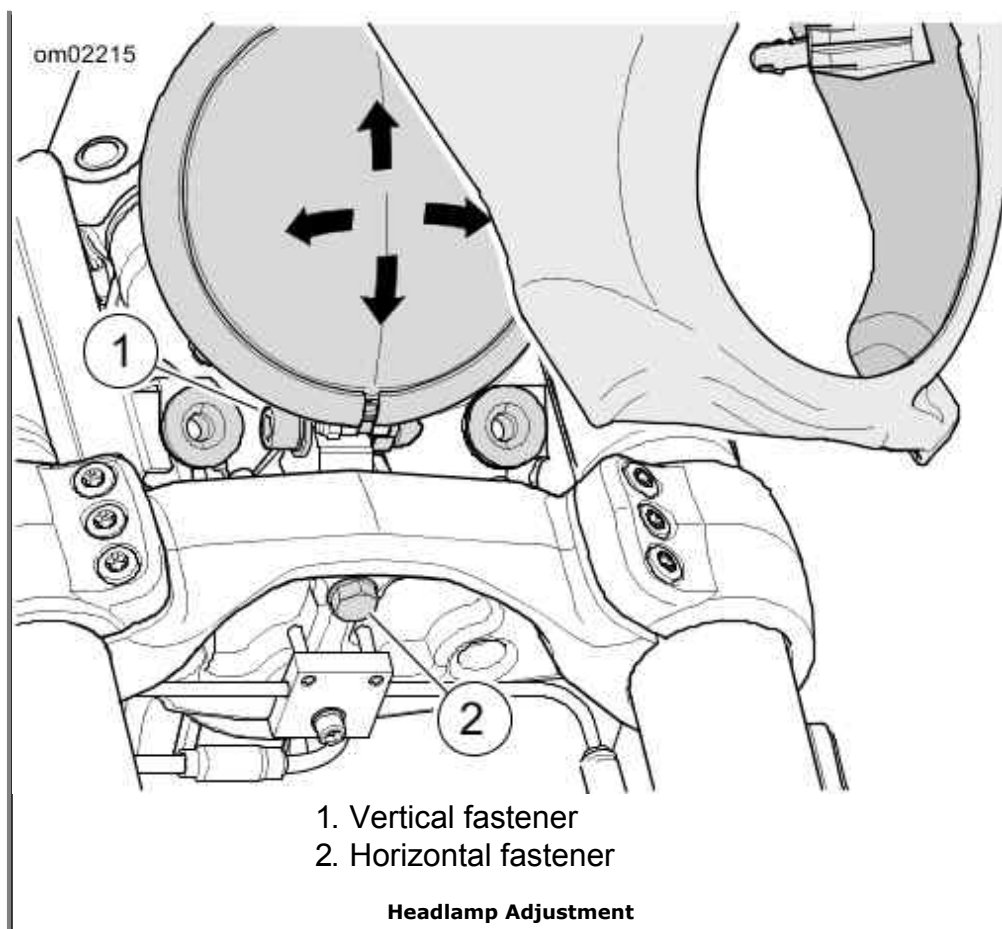
Headlamp Adjustment

1. If necessary, remove the speed screen. See Speed Screen.
2. See Headlamp Adjustment. Loosen horizontal adjustment fastener (2). Tilt headlamp left or right to direct light beam straight ahead.
3. Tighten horizontal adjustment fastener to 30-35 ft-lbs (40.7-47.5 Nm).

NOTE:

The vertical adjustment fastener (1) may be more easily accessed from the rear of the panel.

4. Loosen vertical adjustment fastener. Tilt headlamp up or down in relationship to the horizontal line from the headlamp alignment inspection.
5. Tighten vertical adjustment fastener to 35-45 ft-lbs (47.5-61.0 Nm).
6. If removed, install the speed screen. See Speed Screen.



Turn Signal Replacement

Turn signals are illuminated with LEDs. Replace assembly upon failure. Refer to the service manual for removal and installation or see your 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.

Antidotes for Battery Acid

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

⚠ WARNING

Batteries contain sulfuric acid, which could cause severe burns to eyes and skin. Wear a protective face shield, rubberized gloves and protective clothing when working with batteries. **KEEP BATTERIES AWAY FROM CHILDREN.** (00063a)

⚠ WARNING

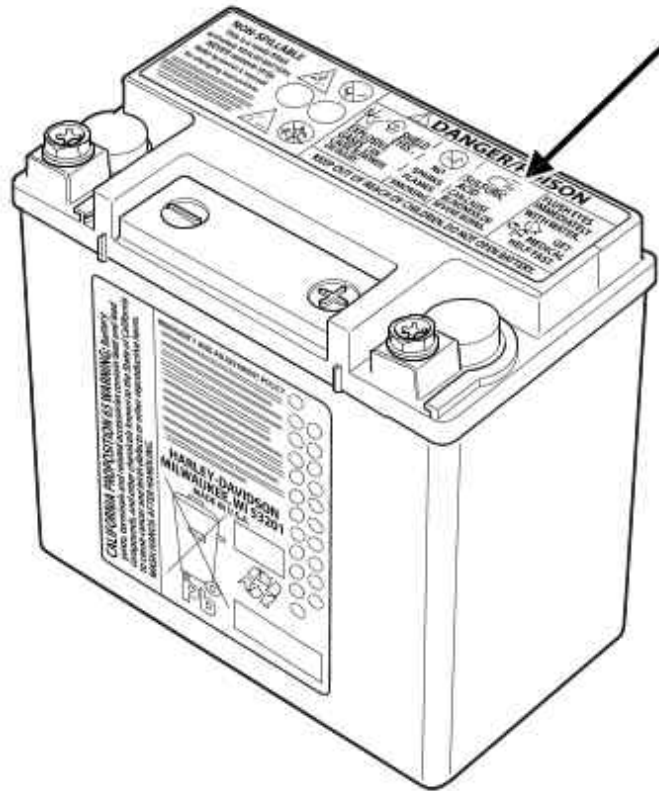
Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well-ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. **KEEP BATTERIES AWAY FROM CHILDREN.** (00065a)

⚠ WARNING

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

⚠ WARNING

Never remove warning label attached to top of battery. Failure to read and understand all precautions contained in warning, could result in death or serious injury. (00064a)



Battery Warning Label

om01163

NON-SPILLABLE This is a ready filled, activated SEALED BATTERY. NEVER remove strip. Refer to owner's manual or instruction sheet for charging procedure.	⚠ DANGER/POISON <table border="0"> <tr> <td> EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY. </td> <td> SHIELD EYES. NO SPARKS, FLAMES, SMOKING </td> <td> SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS. </td> <td> FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST. </td> </tr> </table> KEEP OUT OF REACH OF CHILDREN. DO NOT OPEN BATTERY.	EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.	SHIELD EYES. NO SPARKS, FLAMES, SMOKING	SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.	FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST.
EXPLOSIVE GASES CAN CAUSE BLINDNESS OR INJURY.	SHIELD EYES. NO SPARKS, FLAMES, SMOKING	SULFURIC ACID CAN CAUSE BLINDNESS OR SEVERE BURNS.	FLUSH EYES IMMEDIATELY WITH WATER. GET MEDICAL HELP FAST.		

1. Contents are corrosive
2. Wear safety glasses
3. Contents are explosive
4. Keep flames away
5. Read instructions
6. Keep away from children

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 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.

⚠ WARNING

Unplug or turn OFF battery charger before connecting charger cables to battery. Connecting cables with charger ON can cause a spark and battery explosion, which could result in death or serious injury. (00066a)

⚠ WARNING

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

⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

CAUTION

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

NOTES:

- *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 manufacturer's instructions for the charger being used.*

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.

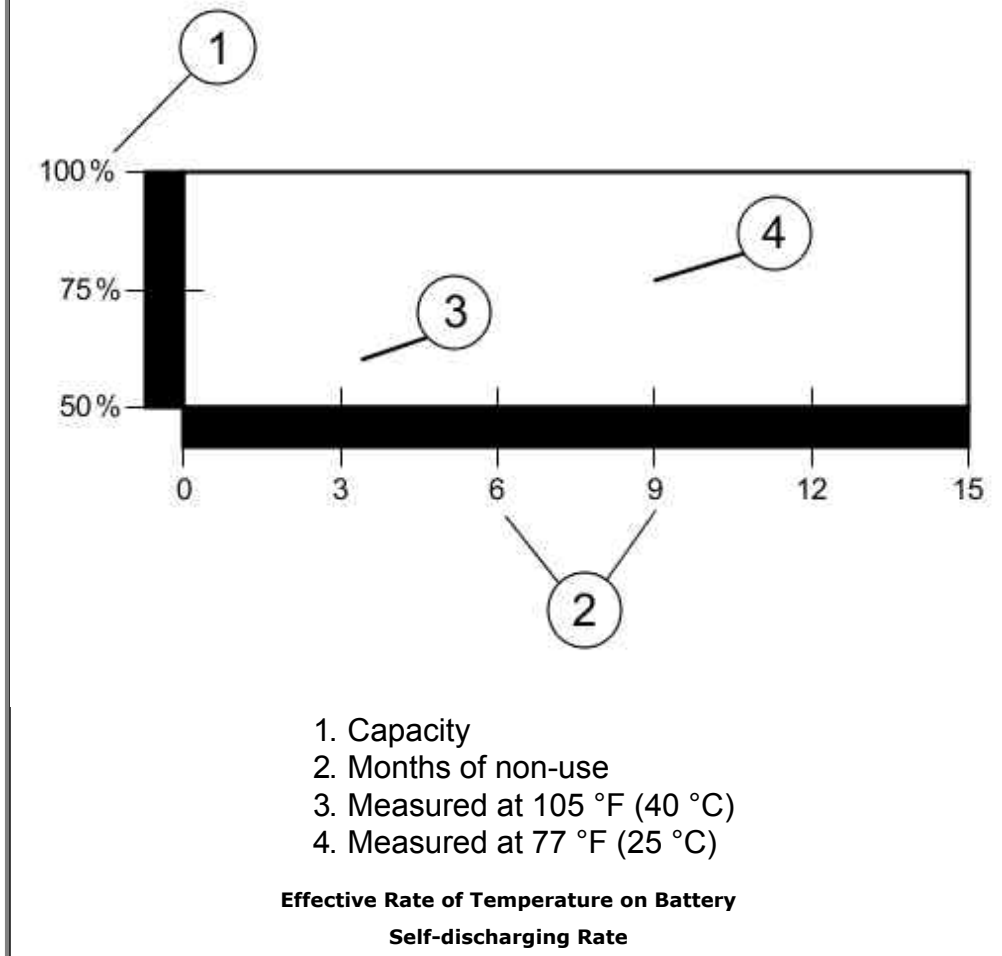
Storage

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 Harley-Davidson 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.

- 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.



Battery

Disconnection and Removal

1. Remove the seat. See Seat and Pillion.
2. If equipped with security system siren, turn the OFF/RUN switch to RUN with the hands-free fob present to disarm the security system.

⚠ 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)

3. See Battery. Loosen bolt and remove battery negative cable (black) (2) from battery negative terminal.
4. Loosen bolt and remove battery positive cable (red) (1) from battery positive terminal.
5. Lift battery from battery box within oil tank cavity.

Installation and Connection

⚠ WARNING

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

⚠ WARNING

Do not allow positive (+) battery cable to contact ground with negative (-) cable connected. Resulting sparks can cause a battery explosion, which could result in death or serious injury. (00069a)

CAUTION

Do not over-tighten bolts on battery terminals. Use recommended torque values. Over-tightening battery terminal bolts could result in damage to battery terminals. (00216a)

1. See Battery. Place the fully charged battery into the battery box located within oil tank cavity, terminal side forward.
2. Install battery positive cable (red) (2) to battery positive terminal.
3. Tighten fastener to 60-70 in-lbs (7-9 Nm).
4. Install battery negative cable (black) (1) to battery negative terminal.
5. Tighten fastener to 60-70 in-lbs (7-9 Nm).

CAUTION

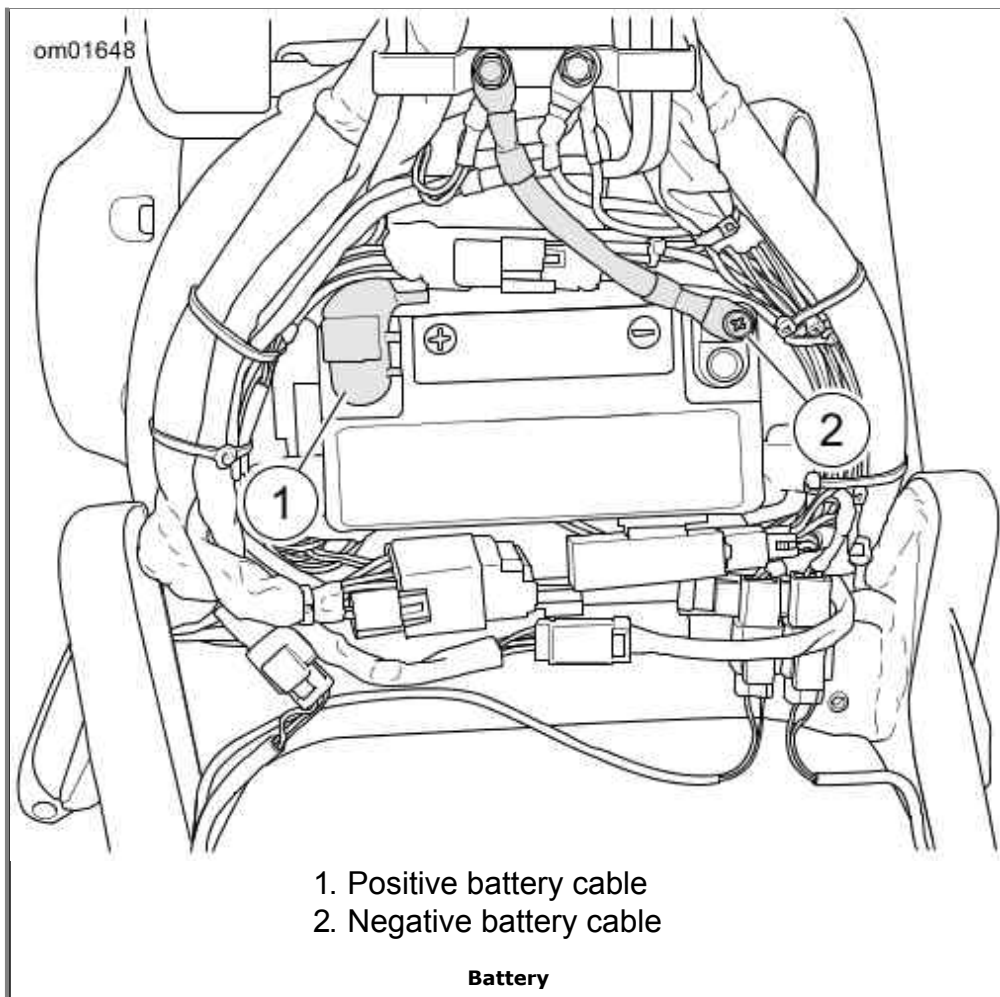
Keep battery clean and lightly coat terminals with petroleum jelly to prevent corrosion. Failure to do so could result in damage to battery terminals. (00217a)

6. Apply a light coat of petroleum jelly or corrosion retardant material to battery terminals.

⚠ WARNING

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

7. Install seat. See Seat and Pillion.



Jump Starting

Jump starting a motorcycle is not recommended. However, in circumstances when a jump-start is necessary, use the following procedure.

⚠ WARNING

Be sure jumper cables touch only appropriate battery terminals or ground. Allowing jumper cables to touch each other can result in sparks and a battery explosion, which could result in death or serious injury. (00072a)

⚠ WARNING

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

CAUTION

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

NOTES:

- *DO NOT jump-start from a running BOOSTER vehicle. The high output charging systems on some vehicles can damage the motorcycle's electrical components.*
- *Make sure the motorcycle and the BOOSTER vehicle are not touching one another.*

Connection

1. Turn off all unnecessary lamps and accessories.
2. See Jump-Start Cable Connections. Connect one end of a jumper cable to the motorcycle DISCHARGED battery positive terminal (1).
3. Connect the other end of the same cable to the BOOSTER vehicle battery positive terminal (2).

⚠ WARNING

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

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

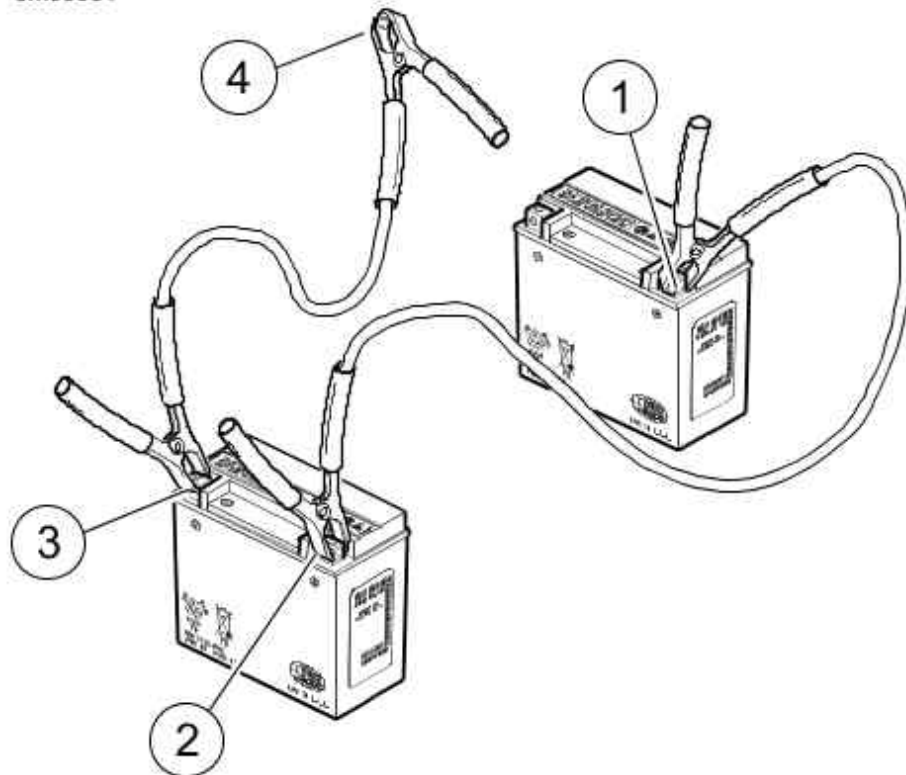
CAUTION

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

5. Connect other end of the same cable (4) to a safe motorcycle ground away from the DISCHARGED battery.
6. Start the motorcycle.

Disconnection

1. See Jump-Start Cable Connections. With the motorcycle continuing to run, remove the negative jumper cable motorcycle ground (4).
2. Remove the negative jumper cable from the BOOSTER vehicle battery negative terminal (3).
3. Remove the positive jumper cable from the BOOSTER vehicle battery positive terminal (2).
4. Remove the positive jumper cable from the DISCHARGED motorcycle battery positive terminal (1).



1. Discharged battery positive terminal
2. Booster battery positive terminal
3. Booster battery negative terminal
4. Ground

Jump-Start Cable Connections

Fuses

See Fuse Block. The motorcycle has the following three fuses to protect electrical systems.

Main fuse: A 40A fuse (1) that protects all the circuits including those circuits protected by the 15A Battery fuse. Failure of this fuse causes the motorcycle to stop running. See a Harley-Davidson dealer.

P&A fuse: A 15A fuse (2) that protects the circuits of any installed accessories.

Battery fuse: A 15A fuse (3) that protects all the circuits. If the battery fuse fails while the engine is running, the engine continues to run and critical circuits like the ABS brakes continue to function. However, the failure of this fuse triggers a diagnostic code. See a Harley-Davidson dealer.

The Body Control Module (BCM) protects all other electrical circuits. The BCM senses the condition of individual circuits, interrupts power as needed, and resets the circuit. If replacing a fuse or cycling power does not resolve the problem, see a Harley-Davidson dealer.

Fuse Replacement

CAUTION

Always use replacement fuses that are of the correct type

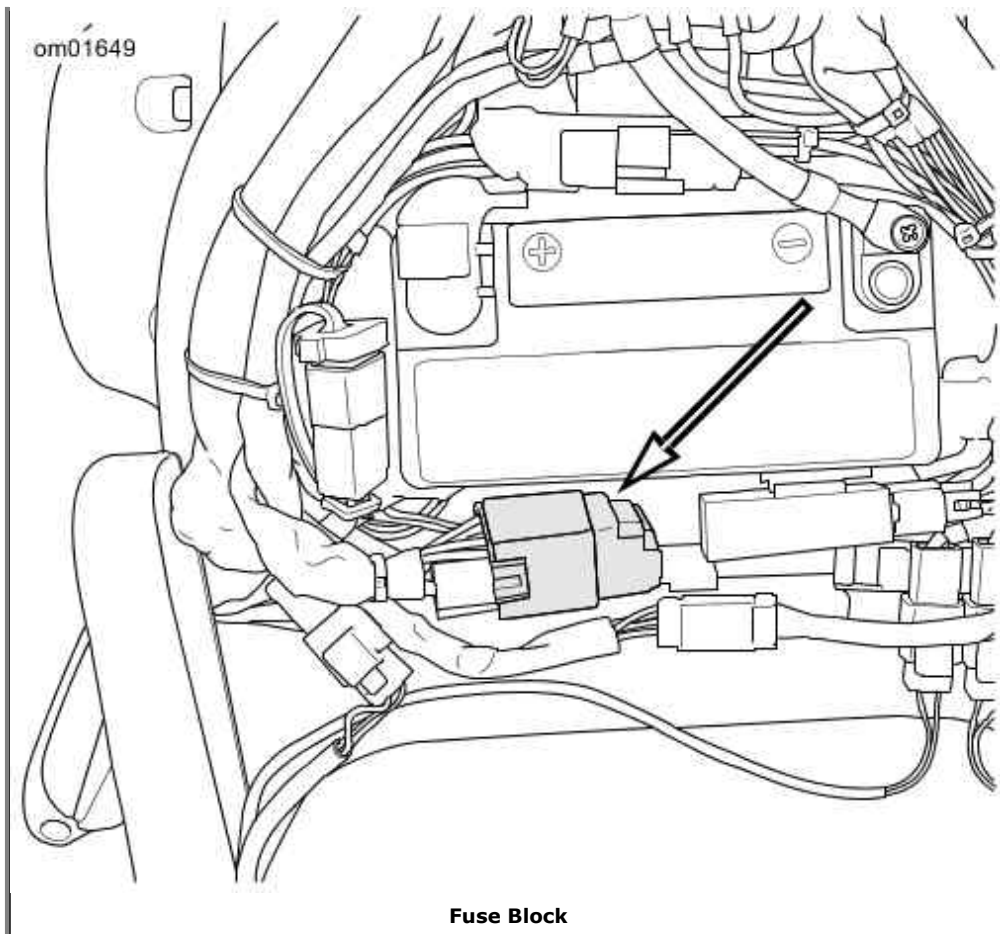
and amperage rating. Use of incorrect fuses can result in damage to electrical systems. (00222a)

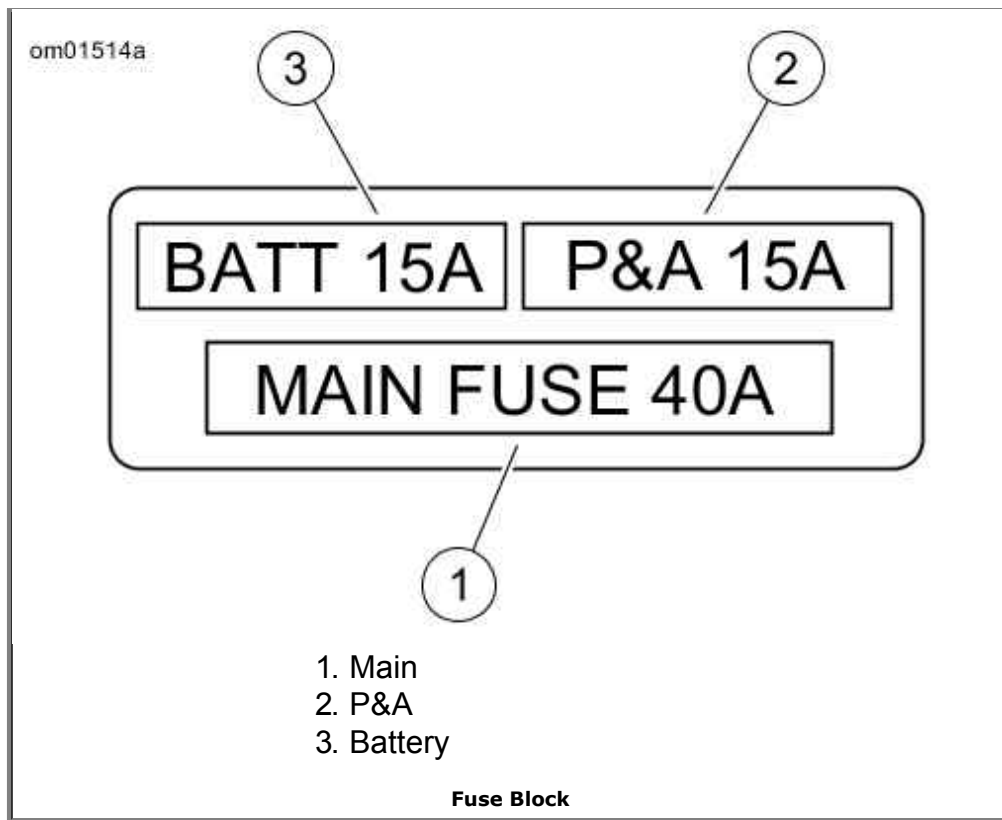
1. Remove seat. See Seat and Pillion.
2. See Fuse Block. Pull cover off fuse block.
3. See Fuse Block. Replace suspect fuse with a **new** fuse.
4. Place cover on fuse block.

⚠ WARNING

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

5. Install seat. See Seat and Pillion.





Seat and Pillion

Pillion Removal

1. Remove the thumb screw and washer from top of rear fender.
2. Slide the pillion back from the seat thumb nuts.

Riding without the Pillion

See Install Seat and Pillion. If you prefer the look of a solo seat, the seat strap can be removed. Cover the thumbscrew boss with the decorative plug (4) found under the pillion.

Seat Removal

1. Remove the pillion.
2. Remove the two thumb nuts from the rear of the seat.
3. Lift the rear of the seat. Pull rearward to remove seat tongue from the slot in the frame.
4. Remove the seat strap.

Seat Installation

1. See Install Seat and Pillion. Install seat strap (3) on fender seat mounting studs.
2. Slide seat toward front of motorcycle to engage the tongue into the slot in the frame (1) back

while lowering the rear of the seat onto the seat mounting studs (2).

3. Install seat mounting thumb screws (3). Tighten securely.
4. Install the pillion, if desired.

⚠WARNING

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

5. Pull up on seat and pillion to verify that it is properly secured.

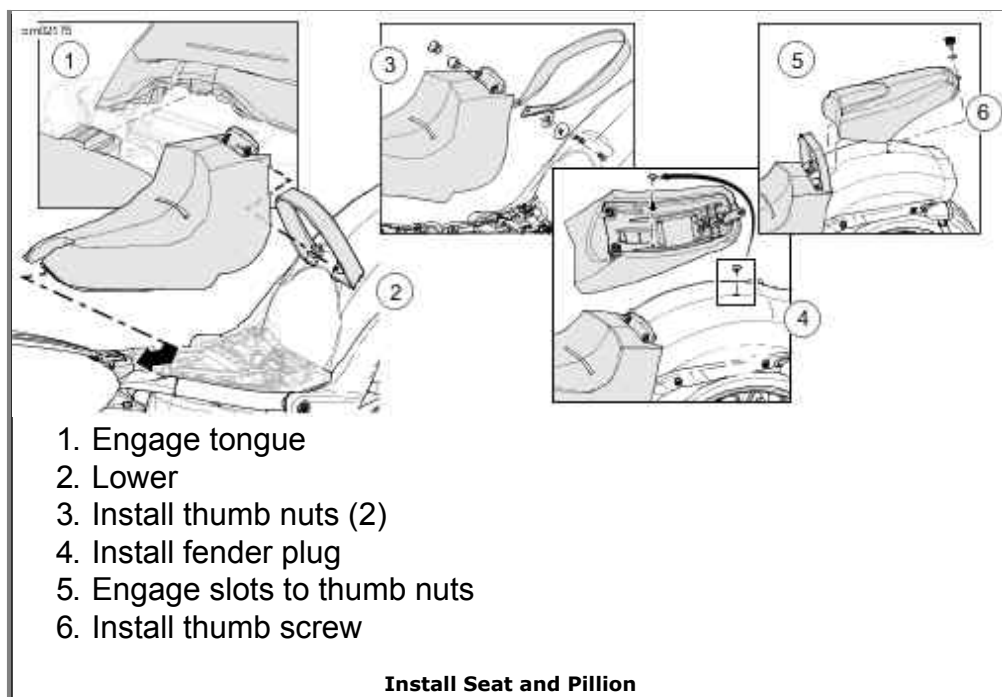
Pillion Installation

1. See Install Seat and Pillion. Slide the front of the pillion to engage the notches in the pillion bracket with the seat thumb nuts (5).
2. Tighten thumb screw with washer (6) to secure pillion to rear fender.

⚠WARNING

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

3. Pull up on pillion to verify that it is properly secured.



Motorcycle Storage

Placing Motorcycle in Storage

CAUTION

Proper storage is important for the trouble-free operation of your motorcycle. See your Owner's Manual for storage recommendations or see a Harley-Davidson dealer. Improper storage procedures can lead to equipment damage. (00046a)

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

If possible, store the motorcycle in a dry area with a stable temperature. 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 Specified Tires for specified pressure.
5. Protect the body panels, engine, chassis and wheels from corrosion. Follow the cosmetic care procedures described in the Care and Cleaning section before storage.
6. Prepare battery for storage. See Battery Maintenance.

⚠ 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)

NOTES:

- *If the motorcycle is being stored with the security system armed, connect a 750mA*

SUPERSMART BATTERY TENDER 66000038 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 operation prevents the optional siren from sounding. Disconnect the negative battery cable and prepare battery for storage. See Battery Maintenance.*

7. Use a material such as light canvas that can breathe to cover the motorcycle. Plastic materials that do not breathe promote the formation of condensation.
8. Remove the antennas or allow them to protrude through the cover, if equipped. Do not bend or tuck antennas under 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:

*Lubricants contaminated with water have a milky white appearance. Replace contaminated lubricants with the appropriate **new** Harley-Davidson lubricant.*

1. Charge the battery.
2. Install battery. See Battery Maintenance.
3. Run motorcycle until engine is at normal operating temperature. Turn off engine.
4. Check engine oil level.
5. Check lubricant level.
6. Check controls to make sure that they are operating properly. Operate the front and rear brakes, throttle, clutch and shifter.
7. 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)

8. Check tire pressure. Refer to Specified Tires for specified pressure.

9. Check overall tire condition. See Tire Replacement.
10. Test all switches and lights for proper operation.
11. Check for any fluid leaks.

CAUTION

Turn engine over a few times to be sure there is no oil in the crankcase and that all oil has been pumped back into the oil tank. Stop engine and re-check oil level. Failure to do so can result in engine damage. (00071a)

Care and Cleaning

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 barrier of protection against the weather and harsh substances.

Harley-Davidson cleaning products are tested extensively for use on vehicle surfaces. These products are formulated to be compatible with one another. See a Harley-Davidson dealer to purchase recommended cleaning products. Refer to Recommended Cleaning and Care Products and Recommended Surface Care Products.

NOTES:

- *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.*
- *Dirty cleaning materials can scratch finished surfaces. Use only clean sponges and detailing cloths to prevent damage to the motorcycle.*
- *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)

CAUTION

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

CAUTION

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

Recommended Cleaning and Care Products

PRODUCT PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
BARE ALUMINUM WHEEL PROTECTANT - INDIVIDUAL WIPES 93600063	Corrosion control for bare aluminum surfaces.	No	No	Yes	No	"Burst" collection
BARE METAL POLISH 93600028 (U.S.) 93600083 (Non-U.S.)	Polishes non-clear coated polished aluminum or polished stainless steel surfaces.	As applicable				
BLACK LEATHER REJUVENATOR 93600033 (U.S.) 93600081 (Non-U.S.)	Rejuvenates black leather products so they look brand new.	No	No	No	No	Black leather goods
BOOT MARK REMOVER 93600001 (U.S.) 93600069 (Non-U.S.)	Removes boot marks from chrome exhaust components.	No	No	No	No	Exhaust system
BUG REMOVER 93600022 (U.S.) 93600075 (Non-U.S.)	Removes bugs from metal, plastic or painted surfaces. Also available as individual wipes (93600065).	Yes	Yes	Yes	Yes	
CHROME CLEAN & SHINE 93600031 (U.S.) 93600082 (Non-	Shines chrome-plated surfaces and cleans brushed aluminum or stainless steel surfaces.	As applicable				

U.S.)						
DENIM PAINT CLEANER 93600064 (U.S.) 93600078 (Non- U.S.)	Waterless quick cleaner and detailer.	Yes	Yes	Yes	Yes	
ENGINE BRIGHTENER 93600002 (U.S.) 93600068 (Non- U.S.)	Rejuvenates wrinkle black engine finish.	No	No	No	No	Wrinkle black engines
GLAZE POLY SEALANT 93600026 (U.S.) 93600079 (Non- U.S.)	Provides a protective barrier for glossy paint surfaces and chrome.	Yes	Yes	As applicable	No	
GLOSS DETAILER 93600062 (U.S.) 93600073 (Non- U.S.)	Produces high gloss with UV protection. Allows chrome to breathe, unlike wax. Good for windshields. Also available as individual wipes (97401-10).	Yes	Yes	Yes	No	
HARLEY TRAVEL CARE KIT 93600007	Travel size cleaning and care products.	Yes	Yes	Yes	Yes	
LEATHER PROTECTANT 93600034 (U.S.) 93600080 (Non- U.S.)	Weatherproofs and preserves leather products.	No	No	No	No	Leather goods
QUICK WASH 93600012 (U.S.) 93600071 (Non- U.S.)	A quick wash for a lightly soiled motorcycle. Cleans all surfaces, sheeting action prevents spots.	Yes	Yes	Yes	Yes	
SCRATCH & SWIRL REPAIR 93600025 (U.S.) 93600074 (Non- U.S.)	Removes fine scratches and swirls.	Yes	Yes	No	No	
SEAT,	Cleans and conditions	No	No	No	No	Seats,

SADDLEBAG & TRIM CLEANER 93600010	vinyl, leather and plastic. Use on seats, saddlebags, inner fairings and any other trim.					saddlebags and trim
SPRAY CLEANER & POLISH 93600029 (U.S.) 93600084 (Non-U.S.)	Aerosol quick cleaner and detailer. Reduces static attraction to dust. Works great for removing bugs.	Yes	Yes	Yes	No	
SUNWASH BIKE SOAP 93600023 (U.S.) 93600077 (Non-U.S.)	Thorough washing of all surfaces with a wash mitt. Reduces hard water spots when washing a motorcycle in the sun.	Yes	Yes	Yes	Yes	
WHEEL & TIRE CLEANER 93600024 (U.S.) 93600076 (Non-U.S.)	Removes brake dust and road grime from wheels, tires and whitewalls. Do not use on frames or anodized parts.	No	No	Yes	No	Black-coated exhaust pipes and mufflers
WINDSHIELD CLEANER 93600067	Quick windshield cleaner in convenient single use wipe.	Yes	Yes	No	No	Windshield
WINDSHIELD WATER REPELLENT 93600032 (Global)	Allows water to bead and dissipate from the windshield.	No	No	No	No	Windshield

Recommended Surface Care Products

PRODUCT PART NO.	PURPOSE
BUG EATER SPONGE 93600110	When paired with water and BUG REMOVER, the BUG EATER SPONGE breaks down and dissolves baked on bugs and road grime.
CLEANING BRUSH KIT 94844-10	Brush kit for detailing your motorcycle.
DETAILING SWABS	Large cotton swabs for cleaning crevices and detailed surfaces.

93600107	
DISPOSABLE DETAILING SOFT CLOTH 93600114	Non-absorbent cloth for applying and buffing SWIRL & SCRATCH REPAIR and GLAZE POLY SEALANT to painted surfaces or chrome.
HARLEY WASH BUCKET 94811-10	Wash bucket with apron to hold your supplies. Includes GRIT GUARD insert.
HOG BLASTER MOTORCYCLE DRYER 94651-09 (120 V) 94865-09 (220 V)	Blows a stream of warm dry filtered air. Reduces streaks and water spots.
MICROFIBER DETAILING CLOTH 94663-02	Highly absorbent detailing cloth for polishing and sealing. Contains no nylon fibers.
SYNTHETIC DRYING CHAMOIS 94791-01	Extra-absorbent, non-streaking synthetic towel for drying. Dampen towel and wring out before using for greatest absorbency.
WASH MITT 94760-99	Absorbent wool-blended washing mitten.
WHEEL & SPOKE BRUSH 43078-99	Cone-shaped scrub brush for wheels.

Washing the Motorcycle

Use only recommended cleaning and care products. Refer to Recommended Cleaning and Care Products and Recommended Surface Care Products.

NOTE:

During rinsing and washing, avoid direct spray on electrical components and any luggage or saddlebag 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 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 BUG EATER SPONGE or WHEEL & SPOKE BRUSH. 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:

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

1. If necessary, use BUG REMOVER to remove bug splatters.
 - a. Rinse the affected surfaces during preparation.
 - b. Spray the area with BUG REMOVER.
 - c. Wait one minute while the BUG REMOVER penetrates the bug splatters.
 - d. Use the BUG EATER SPONGE while washing to easily remove bugs.
2. Prepare the wash.
 - a. Fill a HARLEY WASH BUCKET with clean water.
 - b. Add SUNWASH BIKE SOAP, following the directions on the package.
 - c. Soak the WASH MITT and/or a BUG EATER SPONGE in the SUNWASH solution.
3. Wash all surfaces starting at the top working down toward the ground.
4. Rinse the motorcycle twice in both directions:
 - 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 SYNTHETIC DRYING CHAMOIS or a HOG BLASTER MOTORCYCLE DRYER. Avoid using any type of forced air on speakers or other sensitive components.
2. Dampen chamois in clean water and wring out the excess. The chamois is more absorbent when wet.
3. Wipe across the vehicle surface.

4. Repeat as necessary until surface is dry.

Polishing and Sealing

NOTE:

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

1. Apply GLAZE POLY SEALANT with a DISPOSABLE DETAILING SOFT CLOTH or MICROFIBER DETAILING CLOTH, following the instructions on the package.
2. Buff with a DISPOSABLE DETAILING SOFT CLOTH.
3. Polish and seal the wheels to prevent corrosion.

Leather and Vinyl Care

CAUTION

Do not use bleach or detergents containing bleach on saddlebags, seats, tank panels or painted surfaces. Doing so can result in equipment damage. (00229a)

Do not use ordinary soap to clean leather or fur. It could dry or remove the oils from the leather.

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. Protect these surfaces with an 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. 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 gain "character", such as wrinkles, with age. Leather is porous and organic and each leather product settles into its own distinct form with use. Your leather product matures into its own custom shape and style from the sun, rain and time. This maturing is natural and enhances the custom quality of your Harley-Davidson motorcycle.

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 guards against pitting, corrosion, spots and stains. Harley-Davidson recommends that wheels be cared for weekly. Corrosion to wheels is not considered a defect in materials or workmanship.

NOTE:

Bare aluminum wheels do not have a protective coating and corrode unless properly treated. Apply BARE ALUMINUM WHEEL PROTECTANT when purchasing the motorcycle and at least twice per year to prevent cosmetic damage.

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 according to the type of wheels. Refer to Wheel Polish and Sealing Products.

Wheel Polish and Sealing Products

WHEELS	PRODUCT	DESCRIPTION
Anodized	GLAZE POLY SEALANT	Cleans surface, removes fine scratches. Provides a breathable sealant against acid, chemicals, salt and brake dust.
	GLOSS DETAILER	Seals and protects against harsh chemicals, salt and other sediments to prevent corrosion.
Bare aluminum	BARE ALUMINUM WHEEL PROTECTANT	Creates a protective coating for bare aluminum wheels to prevent oxidation. Individual wipe.
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.
Polished aluminum or stainless steel	BARE METAL POLISH	Microabrasive polish to refurbish polished wheels. Do not use on chrome.

Windshield Care

CAUTION

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

CAUTION

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

- Powdered, abrasive or alkaline cleanser can damage windscreen/windshields. Ammonia-based window cleaners cause permanent yellow effects to windshields.

- Do not use gas station windshield cleaner as finish can be damaged.
- Do not use a brush or squeegee as finish can be damaged.
- Do not clean in hot sun or high temperature.

Windshields require special care. However, windshields can be washed with WINDSHIELD CLEANER - INDIVIDUAL WIPES, SUNWASH BIKE SOAP or QUICK WASH when washing the entire motorcycle. Refer to Recommended Cleaning and Care Products.

NOTES:

- *To treat windshields with water repellent use WINDSHIELD WATER REPELLENT.*
- *Use BUG REMOVER to soft bug splatters. Wipe clean with a BUG EATER SPONGE.*
- *Covering windshields with a clean, wet cloth for approximately 15-20 minutes before washing makes dried bug removal easier.*

1. Use WINDSHIELD CLEANER to detail windshields.
2. Wipe dry with a clean MICROFIBER DETAILING CLOTH.

NOTE:

To minimize swirl marks, clean windshield when the motorcycle is cool and parked in the shade. Faint swirl marks are normal. Swirl marks are more visible on tinted windshields.

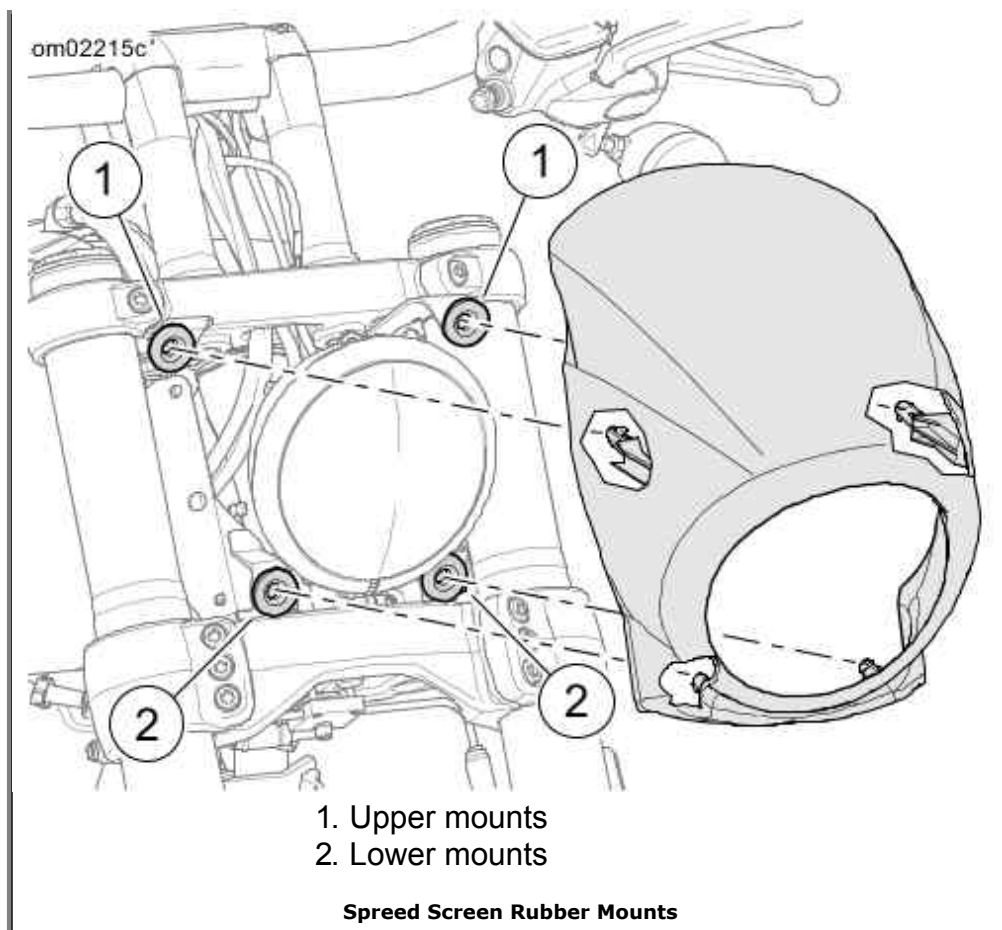
Speed Screen

Removal

1. Hold the speed screen with both hands.
2. See Spread Screen Rubber Mounts. Remove the speed screen in two steps:
 - a. First, pull the top two studs from the upper rubber mounts (1).
 - b. Second, pull the bottom two studs from the lower rubber mounts (2).

Installation

1. See Spread Screen Rubber Mounts. Align the four studs of the speed screen with the four rubber mounts on the front forks.
2. Install the speed screen in two steps:
 - a. First, press the two lower studs into the lower rubber mounts (2).
 - b. Second, press the two upper studs into the upper rubber mounts (1).



Chin Spoiler

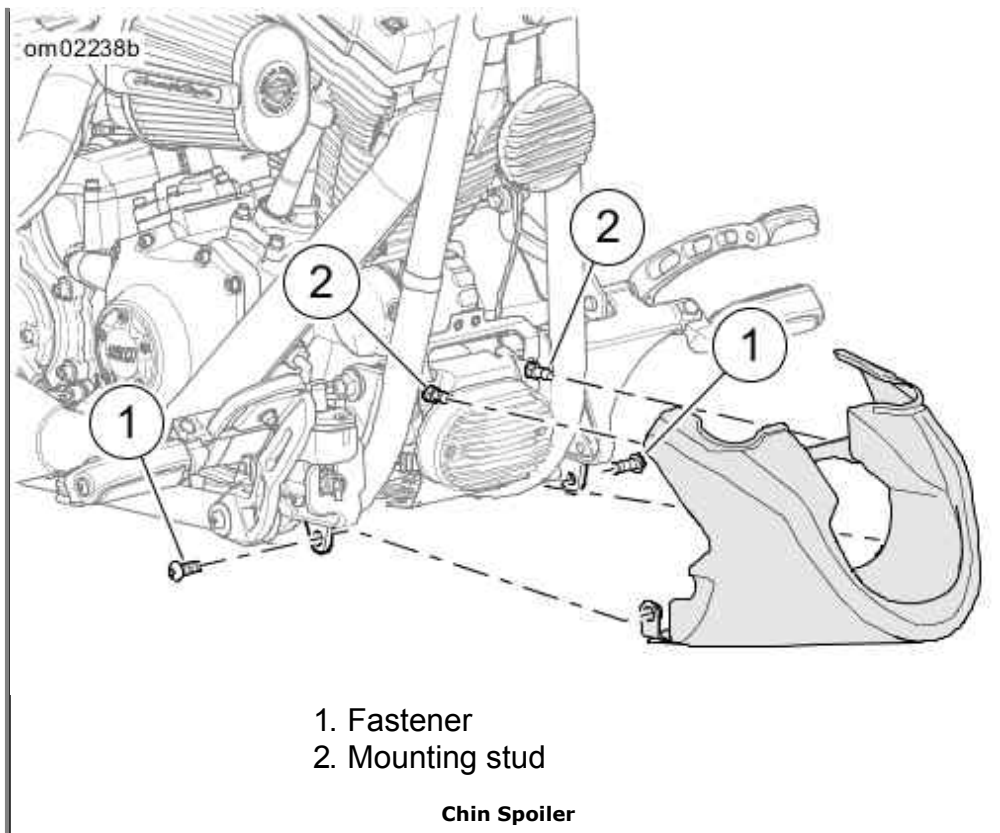
If it is necessary when washing and detailing the motorcycle, remove the chin spoiler.

Removal

1. See Chin Spoiler. Remove the two lower fasteners (1) from the chin spoiler.
2. Pull the chin spoiler forward off the two mounting studs (2).

Installation

1. See Chin Spoiler. Align the two mounting studs (2) to the two rubber grommets on the chin spoiler.
2. Press the spoiler into place.
3. Install the two fasteners (1). Tight to 50-60 in-lbs (5.7-6.7 Nm).

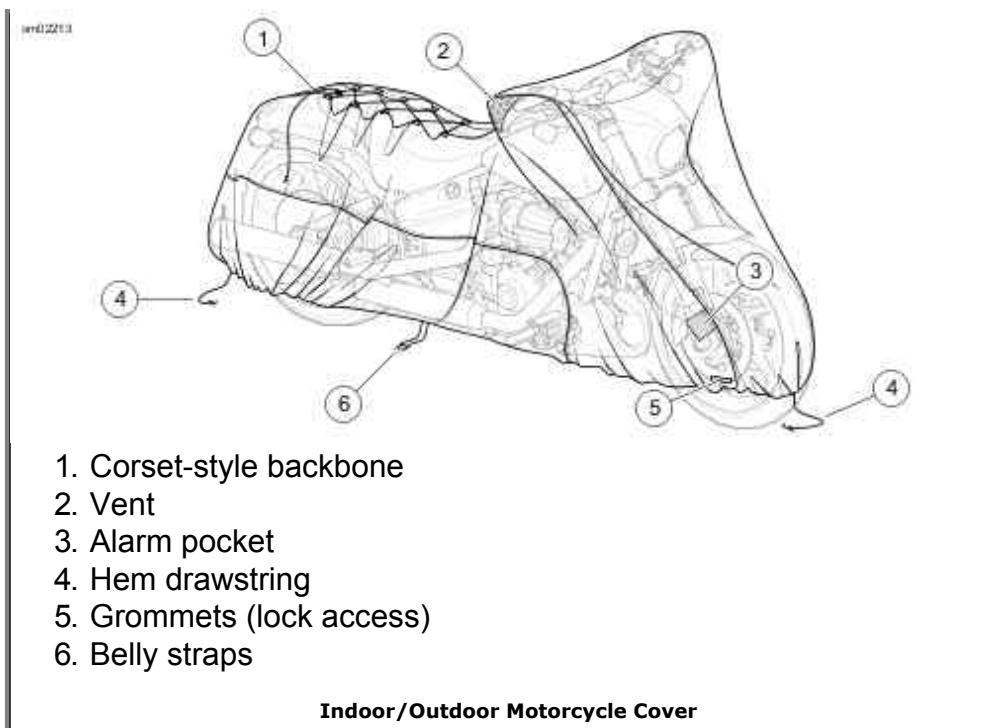


Indoor/Outdoor Motorcycle Cover

To protect the custom finish on your CVO, cover the motorcycle. Use the Indoor/Outdoor Motorcycle Cover that comes as a premium with this motorcycle.

See Indoor/Outdoor Motorcycle Cover. Use the pull cord on the backbone cinching (1) to fit the cover. Pull the drawstring (4) to fit the cover around the wheels. Cinch the cover with the quick-release belly straps (6). The sewn-in grommets (5) near the front wheel allow the use of a cable lock or security chain. While a hidden alarm pocket (3) can store an optional battery-powered alarm.

See your Harley-Davidson dealer for a complete range of cleaning, service, security and storage products.



Troubleshooting

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)

Use the following checklists for troubleshooting. Carefully check each cause because more than one condition can cause trouble.

Engine

Starter Does Not Operate or Does Not Turn Engine Over

1. Engine run switch in OFF position.
2. Discharged battery or loose or corroded connections (solenoid chatters).
3. Clutch lever not squeezed against handlebar or transmission not in neutral.
4. Jiffy stand not in retracted position (required for international models).
5. Blown fuse.

Engine Turns Over but Does Not Start

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

Starts Hard

1. Automatic Compression Release (ACR) not functioning properly.
2. Spark plugs in bad condition, have improper gap, or are partially fouled.
3. Spark plug cables in bad condition and leaking.
4. Battery nearly discharged.
5. Loose wire or cable connection(s) at one of the battery terminals or at coil.
6. Engine oil too heavy (winter operation).
7. Fuel tank vent plugged or fuel line closed off, restricting fuel flow.
8. Water or dirt in fuel system.
9. Fuel pump inoperative.

Starts but Runs Irregularly or Misses

1. Spark plugs in bad condition or partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Spark plug gap too close or too wide.
4. Battery nearly discharged.
5. Damaged wire or loose connection at battery terminals or coils.
6. Intermittent short circuit due to damaged wire insulation.
7. Water or dirt in fuel system or filter.
8. Fuel vent system plugged. See dealer.
9. One or more injectors fouled.

A Spark Plug Fouls Repeatedly

1. 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.

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. Worn friction discs. See dealer.
2. Insufficient clutch spring tension. See dealer.

Clutch Drags or Does Not Release

1. Primary chaincase overfilled.
2. 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 cylinder piston worn. See dealer.

4. Brake pads contaminated with grease or oil. See dealer.
5. Brake pads badly worn. See dealer.
6. Brake disc badly worn or warped. See dealer.
7. Brake fades because of heat build up. Excessive braking or brake pads dragging. See dealer.
8. Brake drags. Insufficient hand lever free play. See dealer.

Accessories

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.

NOTE:

Performance parts may not be available in some countries due to local restrictions. See your Harley-Davidson dealer for more information.

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 Limited Motorcycle Warranty.

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.

Warranties and Responsibilities

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 1000 mi 1600 km , and as soon as possible after any issue 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 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 and install 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.

CAUTION

It is possible to overload your 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. See an authorized Harley-Davidson dealer for advice about the amount of current consumed by additional electrical accessories or for necessary wiring changes. (00211c)

NOTE:

Installing off-road or competition parts to enhance performance may void all or parts of your limited warranty. See the Harley-Davidson Motorcycle Limited Warranty in this owner's manual or an authorized Harley-Davidson dealer for details.

EPA Noise Regulations in the United States

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

EPA Regulations

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

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE FOLLOWING:

1. Replacing the muffler(s) and/or the entire exhaust system with parts not certified to be noise legal for street use.
2. Removing or modifying the muffler internal baffles in any way.
3. Replacing the air intake/cleaner assembly with one not certified to be noise legal for street use.
4. Modifying the air intake/cleaner assembly in such a way as to make the vehicle no longer noise legal for street use.

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

California and Select International Markets Evaporative Emission Controls: 2016 Models

All new 2016 Harley-Davidson motorcycles sold in the State of California and select international markets have 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. Periodically inspect system to verify that hoses are properly routed, not kinked or blocked and that all fittings are secure. Periodically check mounting hardware 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.

Reporting Safety Defects in the United States

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

NHTSA Statement

If you believe that your motorcycle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration

(NHTSA) in addition to notifying Harley-Davidson.

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

You can contact NHTSA through the following means. Additional information about motor vehicle safety is available through the website.

Telephone: Vehicle Safety Hotline (toll-free) at 1-888-327-4236 (TTY: 1-800-424-9153).

Website: www.safercar.gov

Address: Administrator, NHTSA, 400 Seventh Street SW, Washington, DC 20590

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

requests 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

This warranty does not mean that each Harley-Davidson motorcycle is free from defects. Defects may be unintentionally introduced into motorcycles during the design and manufacturing processes and such defects could result in the need for repairs. For this reason, Harley-Davidson provides the Limited Warranty in order to remedy any such defects that result in a component malfunction or failure during the warranty period. The remedy under this written warranty, and any implied warranty, is limited to repair, replacement or adjustment of the defective part. This exclusive remedy shall not be deemed to have failed its essential purpose so long as Harley-Davidson, through its authorized dealers, is willing and able to repair, replace or adjust defective parts in the prescribed manner. Harley-Davidson's liability, if any, shall in no event exceed the cost of correcting any defect as herein provided and upon expiration of this warranty, any such liability shall terminate.

Limited Motorcycle Warranty

2016 Harley-Davidson Motorcycle Limited Warranty

24 Months/Unlimited Miles

Harley-Davidson warrants for any new 2016 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.

No person, including Harley-Davidson dealers, may modify, extend or waive any part of this warranty.

As a condition of this warranty, you are responsible for properly using, maintaining, and caring for your motorcycle as outlined in your Owner Manual. Harley-Davidson recommends that you maintain copies of all maintenance records and receipts.

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.

The implied warranty of fitness for a particular purpose does not apply if your motorcycle is used for racing, even if the motorcycle is equipped for racing.

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.

Harley-Davidson and your dealer are not responsible for any time or income that you lose, any inconvenience, the loss of your transportation or use of your motorcycle, the cost of a rental motorcycle, fuel, travel, meals, or lodging, or for any other incidental or consequential damages you may have.

Punitive, exemplary, or multiple damages may not be recovered unless applicable law prohibits their disclaimer. You may not bring any warranty-related claim as a class representative, a private attorney general, a member of a class of claimants or in any other representative capacity. Harley-Davidson shall not be liable for any damages caused by delay in delivery or furnishing of any products and/or services.

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 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, a trailer hitch, 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, trailer hitches, non-approved tires, lowering kits, handlebars, and add-ons connected to the factory electrical system.

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.

Limited Motorcycle Warranty (Australia)

2016 Australia/New Zealand Harley-Davidson Motorcycle Manufacturer's Limited Warranty

24 Months/Unlimited Miles

This motorcycle limited warranty, referred to below as the "H-D Motorcycle Warranty" applies to all persons who purchase a new 2016 or prior-model Harley-Davidson motorcycle in Australia and New Zealand only after 1st January 2016.

Your Consumer Rights

The benefits given to you under this H-D Motorcycle Warranty are additional to, and do not detract from, other rights and remedies that you may have in respect of the motorcycle under Australian and New Zealand laws, including consumer protection laws.

In Australia, our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

In New Zealand, our goods also come with guarantees that cannot be excluded under the New Zealand Consumer Guarantees Act.

Warranty

This H-D Motorcycle Warranty, is provided by **Harley-Davidson, Motor Company**, P.O. Box 653, Milwaukee, Wisconsin 53201, U.S.A, phone: +1 (414) 343-4056, ("Harley-Davidson").

Harley-Davidson warrants for any new 2016 Harley-Davidson motorcycle that an authorised Harley-Davidson dealer will repair or replace without charge any parts found to be defective in factory materials or workmanship under normal use during the warranty period set out below.

Such repair or replacement of parts will be Harley-Davidson's sole obligation and your sole remedy under this H-D Motorcycle Warranty, however you may have other rights under Australian and New Zealand laws, as described above.

Note: Goods presented for repair may be replaced by refurbished goods of the same type rather than being repaired. Refurbished parts may be used to repair goods.

The following terms and conditions apply to this H-D Motorcycle Warranty:

Warranty Period

The duration of this H-D Motorcycle Warranty is twenty-four months, starting from the earlier of:

- (a) the date of delivery by an authorised Harley-Davidson dealer to the first retail purchaser; or
- (b) the third anniversary of the last day of the model year of the motorcycle (if not sold to a retail purchaser before that date).

Your authorised Harley-Davidson dealer will submit an electronic Sales and Warranty Registration form to initiate your H-D Motorcycle Warranty.

Note: If the motorcycle was used as a demonstrator or company motorcycle, then the warranty period may have started and/or expired prior to the initial retail sale. See an authorised Harley-Davidson dealer for details.

Any unexpired portion of this H-D Motorcycle Warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period. See the OWNER CONTACT INFORMATION section of the Owner's Manual for information regarding notification of ownership changes.

Obtaining Warranty Service

To obtain warranty service, return your motorcycle at your expense within the warranty period to an authorised dealer. Harley-Davidson's network of authorised dealers is large, and continues to expand. To find current contact information for your nearest authorised dealer, visit our website at www.h-d.com.au.

The authorised Harley-Davidson dealer should be able to provide warranty service during normal business hours and as soon as possible, depending upon the workload of the authorised dealer's service department and the availability of necessary parts

You are responsible for collecting the motorcycle from the authorized dealer once the warranty service has been completed, at your expense.

Exclusions

This H-D Motorcycle Warranty will not apply to any motorcycle (or part or accessory):

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 was not originally manufactured for use or sold in Australia and New Zealand and/or does not comply with Australian and New Zealand homologation requirements.
4. Which has off-road or competition parts installed to enhance performance, or has unapproved modifications. These modifications may void all or part of your new H-D Motorcycle Warranty. See an authorised Harley-Davidson dealer for details.
5. Where damage is caused by, or Harley-Davidson is unable to honour this H-D Motorcycle Warranty due to, acts of God, war, riot, insurrection, natural disasters, including, but not limited to, nuclear contamination, lightning, forest fires, dust storms, hail storms, ice storms, earthquakes, floods, or other circumstances out of Harley-Davidson's control.
6. Which has been in an accident, collision, dropped or struck.

Note: Even though this H-D Motorcycle Warranty does not apply in the circumstances set out above, you may still have rights under Australian and New Zealand laws, including the Australian Consumer Law in such circumstances.

Other Limitations

This H-D Motorcycle Warranty does not cover:

1. Parts and accessories not manufactured by Harley-Davidson, or any damage caused to the motorcycle by the installation of such parts and accessories, even if such parts and accessories are installed on the motorcycle at the date of initial retail purchase. A separate third party warranty may apply to such parts and accessories. See an authorised Harley-Davidson dealer for details.
2. Parts and labour 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: tyres, lubrication, oil and filter change, fuel system cleaning, battery maintenance, engine tune-up, spark plugs, brake, clutch, chain/belt adjustment and chain replacement.
3. Cosmetic or other 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 H-D Motorcycle Warranty for the duration of the warranty period).
4. Any cosmetic condition existing at the time of retail delivery that has not been documented by the authorised Harley-Davidson selling dealer prior to retail delivery.
5. Defects or damage to the motorcycle caused by alterations outside of Harley-Davidson's factory specifications, including the installation of competition or closed course parts and accessories and the addition of loads and stresses to the motorcycle above those recommended by Harley-Davidson.
6. Damage caused by installation or use of non-Harley-Davidson components, even those installed by an authorised 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 tyres, lowering kits, handlebars, add-ons connected to the factory electrical system, tow bars, etc.

Note: Even though this H-D Motorcycle Warranty does not cover the circumstances set out above, you may still have rights under Australian and New Zealand laws, including the Australian Consumer Law.

Important: Read Carefully

1. Authorised 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 WHICH MAY BE SOLD AND/OR INSTALLED BY AUTHORISED HARLEY-DAVIDSON DEALERS OR LABOUR CARRIED OUT BY DEALERS.
2. This H-D Motorcycle Warranty is a contract between you and Harley-Davidson. It is separate and apart from any warranty you may receive or purchase from an authorised Harley-Davidson dealer. An authorised Harley-Davidson dealer is not authorised to alter, modify, or in any way change the terms and conditions of this H-D Motorcycle Warranty.

Any warranty work or parts replacement authorised by Harley-Davidson will not preclude Harley-Davidson from later relying on any exclusion where Harley-Davidson later becomes aware that an exclusion applied or the warranty claim did not otherwise comply with the terms of this H-D Motorcycle Warranty.

Limited Noise Warranty

2016 Harley-Davidson Motorcycle Noise Control System Limited Warranty

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

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

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

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

The limited warranty period shall begin on the date the motorcycle is delivered to the first retail purchaser or, if the motorcycle is placed in service as a demonstrator or company motorcycle

prior to sale at retail, on the date it is first placed in service.

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

1. Failures which arise as a result of misuse, alteration, or non-performance of maintenance as specified in the Owner's Manual.
2. Replacing, removing, or modifying any portion of the NOISE CONTROL SYSTEM (consisting of the exhaust system and air intake/cleaner assembly) with parts not certified to be noise legal for street use.
3. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.
4. TO THE FULLEST EXTENT ALLOWED BY LAW, NEITHER HARLEY-DAVIDSON NOR ITS AUTHORIZED DEALERS SHALL BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, LOSS OF MOTORCYCLE USE, COMMERCIAL LOSS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Other Rights

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

Recommendations for Required Maintenance

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

Limited Emission Warranty

2016 Harley-Davidson Emission Control System Limited Warranty

The following limited warranty applies to the emission control system, is in addition to the MOTORCYCLE LIMITED WARRANTY and NOISE CONTROL SYSTEM LIMITED WARRANTY, and applies only to Harley-Davidson motorcycles certified for sale, registered, and normally operated in the U.S. Refer to the CALIFORNIA EMISSIONS CONTROL WARRANTY STATEMENT for additional warranty provisions applicable to California motorcycles.

Harley-Davidson Motor Company warrants to the first owner and each subsequent owner that this vehicle is designed, built, and equipped so as to conform at the time of sale with applicable regulations under section 7521 of Title 42 of the United States Code, and that it is free from defects in materials and workmanship which would cause this motorcycle to fail to conform with applicable regulations for five (5) years from the initial retail purchase and delivery from an authorized Harley-Davidson dealer (or five (5) years from the date the motorcycle is first placed in service, if it is first placed in service as a "demonstrator" or "company" motorcycle prior to

delivery), or 18,641 miles 30,000 kilometers , whichever occurs first. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period.

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

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

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

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

1. Failures which arise as a result of misuse, tampering, alterations, accident, acts of nature, or improper or inadequate maintenance as specified in the Owner's Manual.
2. Required maintenance services (as specified in the Owner's Manual) and the replacement of parts (such as spark plugs, fuel and oil filters, etc.) used in required maintenance.
3. Any motorcycle on which the odometer mileage has been changed so that the mileage cannot be determined.
4. TO THE FULLEST EXTENT ALLOWED BY LAW, NEITHER HARLEY-DAVIDSON NOR ITS AUTHORIZED DEALERS SHALL BE LIABLE FOR LOSS OF TIME, INCONVENIENCE, TOWING OF THE VEHICLE, LOSS OF MOTORCYCLE USE, COMMERCIAL LOSS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Items Covered by this Emission Warranty

The emission control system warranty may cover the following parts if the defect is deemed to be emissions-related:

- Air cleaner assembly
- Cam shaft
- Spark plug
- Ignition coil
- Ignition wires
- Vapor valve
- Catalytic converter
- Crankcase breather
- MAP sensor
- TMAP sensor
- Intake air temperature sensor
- Throttle position sensor
- Fuel injectors
- Induction module or throttle body
- Engine temperature sensor

- Electronic control unit
- Regulator/fuel pump (for leaks and/or high and low-pressure failures)
- Fuel filter
- Oxygen sensors

Fuel Tank (non-cosmetic failures only)

- Leaks
- Fuel vapor separator
- Fuel cap

If used on the above: hoses, clamps, fittings, tubing, sealing gaskets and mounting hardware.

Detailed instructions for proper maintenance and use of this motorcycle, including the time and/or mileage intervals at which such maintenance is to be performed, may be found in this Owner's Manual under Service Records.

Other Rights

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

Recommendations for Required Maintenance

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

California Emissions Control Warranty

California Emissions Control Warranty Statement

Your Warranty Rights and Obligations

The California Air Resources Board and Harley-Davidson Motor Company are pleased to explain the emission control system warranty on your 2016 model year motorcycle. In California, new motor vehicles must be designed, built and equipped to meet the State's stringent anti-smog standards. Harley-Davidson Motor Company must warrant the emission control system on your motorcycle for the periods of time listed below provided there has been no abuse, unapproved modification, neglect or improper maintenance of your motorcycle.

Your emission control system may include parts such as the carburetor or fuel-injection system, the ignition system, catalytic converter, and engine computer. Also included may be hoses, connectors and other emission-related assemblies.

Where a warrantable condition exists, within the warranty period noted below, your authorized Harley-Davidson dealer will repair your motorcycle at no cost to you including diagnosis, parts and labor.

Manufacturer's Warranty Coverage

For a period of use of five years or 18,641 miles 30,000 kilometers , whichever first occurs, beginning on the date the motorcycle is delivered to the ultimate purchaser or, if the motorcycle is placed in service as a demonstrator or company motorcycle prior to sale at retail, the date it is first placed in service.

If any emission related part on your motorcycle is defective, the part will be repaired or replaced by Harley-Davidson Motor Company. This is your emission control system DEFECTS WARRANTY.

Owner's Warranty Responsibilities

As the motorcycle owner, you are responsible for the performance of the required maintenance listed in your Owner's Manual. Harley-Davidson recommends that you retain all receipts covering maintenance on your motorcycle, but Harley-Davidson cannot deny emissions warranty coverage solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

You are responsible for presenting your motorcycle to an authorized Harley-Davidson dealer as soon as a problem exists. The warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

As the motorcycle owner, you should also be aware that Harley-Davidson may deny you warranty coverage if your motorcycle or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

If you have any questions regarding your warranty rights and responsibilities, you should contact Harley-Davidson Customer Service Department at 1-800-258-2464 (U.S. only) or 1-414-343-4056, or the California Air Resources Board at 9528 Telstar Ave., El Monte, California 91731.

Additional Warranty Terms

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

The emission control system of each new Harley-Davidson motorcycle was designed, built and tested using only Genuine Harley-Davidson parts and with these parts the motorcycle is certified as being in conformity with California emission control regulations.

We recommend that you take your motorcycle to an authorized Harley-Davidson dealer for repairs under this warranty. The dealer has factory-trained mechanics and genuine Harley-Davidson parts. However, in the case of an "emergency" (as defined below), you could have repairs performed at any available service establishment or by the owner, using any replacement part. An authorized Harley-Davidson dealer not being reasonably available, or a part not being available within a reasonable time period (not to exceed 30 days from the time the motorcycle is initially presented to a Harley-Davidson dealer for repair) constitutes an emergency. Harley-Davidson will reimburse the owner for such repairs, including diagnosis, only if it is established that the repairs are covered under this emission warranty. Harley-Davidson's parts reimbursement, however, will not exceed our suggested retail price for all warranted parts replaced and our labor reimbursement will be limited to our recommended time allowances for emission system repairs at the geographically appropriate hourly labor rate.

To obtain reimbursement from Harley-Davidson for such emergency repairs, you must keep all failed parts and original receipts, so you can present them to an authorized Harley-Davidson dealer for inspection. Harley-Davidson recommends that you bring your motorcycle to an authorized dealer for inspection to ensure that the emergency repairs were done properly.

Remember: Use of non-Harley-Davidson replacement parts may impair the effectiveness of the emission control system or otherwise damage your motorcycle. If other than genuine Harley-Davidson parts are used for maintenance, replacement or repair of components affecting emission control, you should obtain written assurances that such non-Harley-Davidson parts are warranted by their manufacturer to be equal in quality to Genuine Harley-Davidson parts in both performance and durability. The use of non-Harley-Davidson replacement parts does not invalidate the existing warranty, if any, on other Harley-Davidson components unless the non-Harley-Davidson parts cause damage to warranted parts or result in the creation of an emissions non-compliant motorcycle. However, HARLEY-DAVIDSON ASSUMES NO LIABILITY UNDER THIS WARRANTY WITH RESPECT TO ANY PARTS WHICH ARE NOT GENUINE HARLEY-DAVIDSON PARTS, unless Harley-Davidson parts cause damage to non-genuine Harley-Davidson parts.

What Is Covered by this Emission Warranty

The emission control system warranty covers the following "warranted parts" only:

- Air cleaner assembly
- Cam shaft
- Spark plug
- Ignition coil
- Ignition wires
- Vapor valve
- Catalytic converter
- Crankcase breather
- MAP sensor
- TMAP sensor
- Intake air temperature sensor
- Throttle position sensor
- Fuel injectors
- Induction module or throttle body
- Engine temperature sensor
- Electronic control unit
- Regulator/fuel pump (for leaks and/or high and low pressure failures)
- Fuel filter
- Oxygen sensors
- Carbon canister
- Purge control valve

Fuel Tank (non-cosmetic failures only)

- Leaks
- Fuel vapor separator
- Fuel cap

If used on the above: hoses, clamps, fittings, tubing, sealing gaskets and mounting hardware.

What Is Not Covered by this Emission Warranty

The emission control system warranty does not cover:

Malfunctions in any "warranted parts" caused by any of the following: abuse, misuse, unapproved modification or alteration, tampering, disconnection, or improper or inadequate maintenance. The warranty also does not cover replacement of listed parts in the event that the vehicle has been rendered emissions non-compliant in the state of California through actions noted above.

Damage resulting from accident, acts of nature or other events beyond the control of Harley-Davidson.

The repair or replacement of "warranted parts" which are scheduled for replacement prior to 18,641 mi 30,000 km , once these parts have been replaced at the first replacement interval as part of required maintenance services.

Repairs and services performed by anyone other than an authorized Harley-Davidson Dealer (except in case of emergency as defined above).

Loss of time, inconvenience, loss of use of the motorcycle, towing of the vehicle, or commercial loss and/or consequential damages.

Repairs on any motorcycle of which odometer mileage has been changed so that mileage cannot be readily determined.

Maintenance Scheduling

Service Records

Regular Service Intervals

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)

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 are scheduled at least once per year, even if the next mileage interval has

not been reached. In severe riding conditions, some maintenance items need to be performed more frequently. Refer to Regular Service Intervals: 2016 FXSE.

NOTES:

- *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, require additional annual (or semi-annual) regular maintenance steps to keep your limited warranty in effect and/or comply with vehicle regulations. Check with your authorized Harley-Davidson dealer and the motorcycle regulations in your country for local requirements.*
- *After completing the final service interval, repeat the service schedule starting at the 5000 mi 8000 km interval. Refer to Regular Service Intervals: 2016 FXSE.*
- *Whenever a vehicle is in for maintenance, always check for and complete open recalls and product programs.*
- *Whenever a vehicle is in for maintenance, always verify that the latest calibration is installed.*

Regular Service Intervals: 2016 FXSE

[illegible]

[illegible]

[illegible]

exhaust shields												
Check battery, terminal torque and clean connections annually. Lubricate terminals with ELECTRICAL CONTACT LUBRICANT												7
Replace spark plugs every two years or every 30,000 mi 48,000 km , whichever comes first.												
Rebuild front forks											X	1, 6
Replace fuel filter element every 100,000 mi 160,000 km .												1, 4
Road test to verify component and system functions	X	X	X	X	X	X	X	X	X	X	X	
NOTES:	1. Should be performed by an authorized Harley-Davidson dealer, unless you have the proper tools, service data and are mechanically qualified. 2. Disassemble, lubricate and inspect every 30,000 mi 48,000 km . 3. Change DOT 4 brake fluid and flush system every two years. 4. 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). 5. For torque instructions, see Shop Practices in the service manual. 6. Disassemble, inspect, rebuild forks and replace fork oil every 50,000 mi 80,000 km . 7. Perform annually or at specified intervals, whichever comes first. 8. Clutch fluid level rises as clutch wears.											

Maintenance Records

Maintain a record of all service. Refer to Owner's Maintenance Records.

Owner's Maintenance Records

SERVICE MILE INTERVAL	DATE	DEALER NUMBER	TECHNICIAN NAME	TECHNICIAN SIGNATURE
1,000 mi 1,600 km				
5,000 mi 8,000 km				
10,000 mi 16,000 km				
15,000 mi 24,000 km				
20,000 mi 32,000 km				
25,000 mi 40,000 km				
30,000 mi 48,000 km				
35,000 mi 56,000 km				
40,000 mi 64,000 km				
45,000 mi 72,000 km				
50,000 mi 80,000 km				

Service Literature

Visit any Harley-Davidson dealer 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. Refer to Service Literature: 2016 FXSE CVO Pro Street.

Service Literature: 2016 FXSE CVO Pro Street

DOCUMENT	PART NUMBER
Softail Models Service Manual	99482-16
Softail Models Electrical Diagnostic Manual	99498-16
FXSE Service Manual Supplement	94000375
FXSE Parts Catalog	94000366
Publication numbers listed are English language manuals. Other languages are available from a Harley-Davidson dealer.	

Glossary

Acronyms and Measurement Symbols

Acronyms and Measurement Symbols (A-C)

ITEM	DEFINITION
A	Amperes
ABS	Anti-lock braking system
AC	Alternating current
AGM	Absorbed glass mat (battery)
Ah	Ampere-hour
BAS	Bank angle sensor
BCM	Body control module
°C	Celsius (Centigrade)
CCA	Cold cranking amps
cm	Centimeters
cm ³	Cubic centimeters (cc)
CVO	Custom vehicle operations

Acronyms and Measurement Symbols (D-F)

ITEM	DEFINITION
DC	Direct current
DLC	Data link connector
DOM	Domestic
DTC	Diagnostic trouble code
ECM	Electronic control module
EHC	Electro hydraulic control unit
EITMS	Engine Idle Temperature Management System
EHC	Electro hydraulic control unit
ETC	Electronic throttle control
EVAP	Evaporative emissions control system
°F	Fahrenheit
fl oz	Fluid ounce
ft	Feet
ft-lbs	Foot pounds
FTP	Flash to pass

Acronyms and Measurement Symbol (G-Z)

ITEM	DEFINITION
g	Gram
gal	Gallon

GAWR	Gross axle weight rating
GND	Ground (electrical)
GPS	Global positioning system
GVWR	Gross vehicle weight rating
H-DSSS	Harley-Davidson Smart Security System
HCU	Hydraulic control unit
HDI	Harley-Davidson International
IGN	Ignition light/key switch position
in	inch
in ³	Cubic inch
in-lbs	Inch pounds
kg	Kilogram
km	Kilometer
km/h	Kilometers per hour
kPa	Kilopascal
kW	Kilowatt
L	Liter
lb	Pounds
LED	Light emitting diode
mA	Milliampere
mi	Mile
mL	Milliliter
mm	Millimeter
mph	Miles per hour
ms	Millisecond
Nm	Newton-meter
oz	Ounce
P&A	Parts and Accessories
PA	Public address
Part No.	Part number
PIN	Personal identification number
psi	Pounds per square inch
qt	Quart
rpm	Revolutions per minute
TPMS	Tire pressure monitoring system
USB	Universal serial bus
V	Volt
VAC	Volts of alternating current
VDC	Volts of direct current
VIN	Vehicle identification number
VR	Voice recognition
W	Watt

H-D U.S.A., LLC Trademark Information

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