

LIVEWIRE ONE™ MODEL

2023 LIVEWIRE™ OWNER'S MANUAL

LiveWire EV, LLC
Service Communications
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SERVICE

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YOUR OWNER'S MANUAL

We Care About You

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

This manual has been prepared to acquaint you with the operation, care and maintenance of your motorcycle and to provide you with important safety information. Follow these instructions carefully for maximum motorcycle performance and for your personal motorcycling safety and pleasure. Your Owner's Manual contains instructions for operation and minor maintenance. Major repairs are covered in the LiveWire Service Manual. Such major repairs require the attention of a skilled technician and the use of special tools and equipment. Your Authorized LiveWire dealer has the facilities, experience and Genuine LiveWire parts necessary to properly render this valuable service. We recommend that any maintenance be performed by an Authorized LiveWire dealer. You may obtain the name and location of your nearest U.S. Authorized LiveWire dealer by calling 1-414-343-4122 (U.S. only). To find Authorized LiveWire dealers worldwide, see www.LiveWire.com.

Attend a rider safety course. To enroll in a Harley-Davidson Riding Academy course, call 1-414-343-4056 (U.S.) or visit www.harley-davidson.com/learntoride. In the United States, for information about Motorcycle Safety Foundation rider courses, call 1-800-446-9227 or visit www.msf-usa.org.

United States Owners

Your LiveWire motorcycle conforms to all applicable U.S. Federal Motor Vehicle Safety Standards and regulations effective on the date of manufacture. Protect your privilege to ride by joining the American Motorcyclist Association. Visit www.americanmotorcyclist.com for more information.

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

CUSTOMER SERVICE ASSISTANCE

Most sales or service issues are resolved at the dealership.

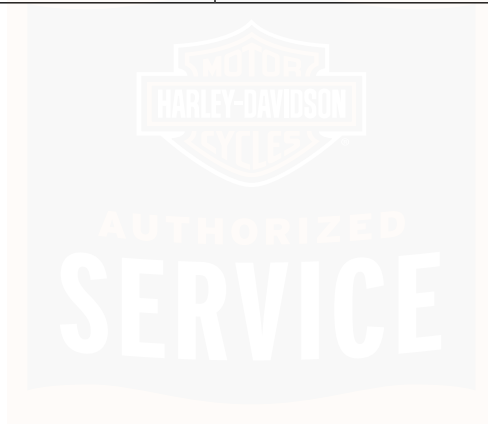
1. Discuss your problem with the appropriate personnel at the dealership in the Sales, Service or Parts area. If that proves unsuccessful, speak to the owner of the dealership or the general manager.

2. If you cannot resolve the issue with the dealership, contact the LiveWire Customer Support Center. LiveWire Attention: LiveWire Customer Support Center P.O. Box 653 Milwaukee, Wisconsin 53201 1-414-343-4122 (U.S. only)

For customers outside the US, contact your local LiveWire market office, call 1-414-343-4122 or visit www.LiveWire.com.

Table 2. Vehicle and Personal Data

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



SAFETY DEFINITIONS

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

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. (08704a)

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

NOTE

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

These safety words may be accompanied by graphic symbols. The graphic symbols indicate potential safety hazards and avoidance actions to prevent a hazardous situation. The graphical symbols may be present in manuals, instructions, on the motorcycle and/or Parts & Accessory product labels. Refer to SAFETY FIRST > SAFE OPERATING RULES (Page 3), the appropriate section in this manual and/or Parts & Accessory instructions for additional safety information. See SAFETY FIRST > SAFETY SYMBOL DEFINITIONS (Page 21).

SAFE OPERATING RULES

⚠ WARNING

Electric 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.

(09004a)

LiveWire Motorcycles Are for On-Road Use Only

This motorcycle is designed to be used only on the road. Operation or off-road usage in some areas may be illegal. Obey local laws and regulations.

General

⚠ WARNING

Consult a LiveWire 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. (12125a)

- Make sure all equipment required by federal, state and local law is installed and in good operating condition.
- Know and respect the rules of the road. Read the safety information that is provided by your state or regional traffic authority.
- In the United States, read the RIDING TIPS booklet that is provided with this owner's manual. Read the MOTORCYCLE HANDBOOK which is made available by your state or regional traffic authority.
- Protect your motorcycle against theft. Lock the front fork. Remove the key when parking your motorcycle.

⚠ 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)

Operation

Before operating your new motorcycle, it is your responsibility to read and follow the operating and maintenance instructions in this manual and follow these rules for your personal safety.

- Before riding, complete the BEFORE RIDING > PRE-RIDE CHECKLIST (Page 39).

⚠ 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 LiveWire dealer. A damaged tire can fail while riding and adversely affect stability and handling, which could result in death or serious injury. (12132b)

⚠ WARNING

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

- Do not exceed the legal speed limit or drive too fast for existing conditions. Always reduce speed when poor driving conditions exist. High speed increases the influence of any other condition affecting stability and increases the possibility of loss of control.
- Pay strict attention to road surfaces and wind conditions and keep both hands on the handlebar grips at all times when riding the motorcycle. Any two wheeled vehicle may be subject to upsetting forces such as wind blasts from passing trucks, holes in the pavement, rough road surfaces, rider control error, etc. These forces may influence the handling characteristics of your motorcycle. If this happens, reduce speed and guide the motorcycle with a relaxed grip to a controlled condition. Do not brake abruptly or force the handlebar. This may aggravate an unstable condition.
- New riders should gain experience under various conditions while riding at moderate speeds. LiveWire suggests using range mode (or rain mode, if appropriate) for gaining experience. See OPERATION > WIDGETS (Page 106).
- Operate your motorcycle defensively. In an accident, a motorcycle does not afford the same protection as an automobile.
- It is the rider's responsibility to instruct passengers on proper riding procedures.

- Do not allow other individuals to operate the motorcycle unless they are experienced, licensed riders and are thoroughly familiar with the operation of the motorcycle.

Steering and Handling

⚠ 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 a fork lock, but it also has a sensor that detects whether or not it is engaged. The system will not allow propulsion while the fork lock is engaged.

⚠ 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

Do not operate motorcycle with loose, worn or damaged steering or suspension systems. Contact a LiveWire 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. (12121a)

⚠ WARNING

LiveWire parts and accessories are designed for LiveWire motorcycles. Using non-LiveWire parts or accessories can adversely affect performance, stability or handling, which could result in death or serious injury. (12120b)

⚠ 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

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)

Accessories and Cargo

⚠ 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.
- The GVWR is shown on the information label, located on the frame steering head or the frame downtube.
- GAWR is the maximum amount of weight that can be safely carried on each end of the motorcycle.
- For GVWR and GAWR, front and rear. See SPECIFICATIONS > SPECIFICATIONS (Page 35).
- Keep cargo weight concentrated close to the motorcycle and as low as possible.
- 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 (if equipped).
- Luggage racks (if equipped) are designed for lightweight items. Do not overload racks.
- Make sure cargo is secure. Make sure the cargo will not shift while riding and check the cargo periodically. Accessories that change the operator's riding position may increase reaction time and affect handling of the motorcycle.

Tires

⚠ WARNING

Be sure tires are properly inflated, balanced, undamaged, and have adequate tread. Inspect your tires regularly and see a LiveWire 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. (12123b)

⚠ 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 punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the removed tire by a LiveWire dealer. Speed should NOT exceed 80 km/h (50 mph) for the first 24 hours after repair, and the repaired tire should NEVER be used over 129 km/h (80 mph). Failure to follow this warning could lead to tire failure and result in death or serious injury. (12124b)

⚠ WARNING

LiveWire recommends the use of its specified tires. LiveWire vehicles are not designed for operation with non-specified tires, including snow, moped and other special-use tires. Use of non-specified tires can adversely affect stability, handling or braking and lead to loss of vehicle control, which could result in death or serious injury. (12127d)

Towing and Trailing

⚠ 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)

- Never tow a trailer.

⚠ WARNING

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

Brakes

⚠ WARNING

Brakes are a critical safety component. Contact a LiveWire dealer for brake repair or replacement. Improperly serviced brakes can adversely affect brake performance, which could result in death or serious injury. (12130a)

⚠ WARNING

Apply front and rear brakes evenly. Favoring one brake accelerates wear and reduces braking efficiency. Operation with excessively worn brakes can lead to brake failure, which could result in death or serious injury. (00135a)

⚠ WARNING

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

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

(12208e)

⚠ WARNING

DOT 4 brake fluid absorbs moisture from the atmosphere over time, changing the properties of the fluid. Check brake fluid moisture content at every service interval or annually (whichever comes first). Flush and replace the brake fluid every two years, or sooner if moisture content is 3% or greater. Failure to flush and replace fluid can adversely affect braking, which could result in death or serious injury. (06304b)

To ensure the brake system is performing to design, check the moisture content of the brake fluid at every service interval or at least annually using a DOT 4 brake fluid moisture tester (part number HD-48497-A or equivalent) following the instructions included with the tool. Flush DOT 4 fluid every 2 years or sooner if the brake system fluid test shows moisture content is 3% or greater.

LiveWire recommends using Harley-Davidson Platinum Label DOT 4 Brake Fluid because of its superior moisture and corrosion inhibiting properties

Batteries and Charging

The main components of the charging system are the Rechargeable Energy Storage System (RESS), the On Board Charger (OBC), the 12 V Lithium-Ion Battery and the Electric Vehicle Supply Equipment (EVSE). High-voltage components are connected by high-voltage cables which are colored orange for easy identification.

Do not disassemble, remove or replace high-voltage components, covers or guards. Always have the high voltage system serviced by qualified technicians.

Rechargeable Energy Storage System (RESS)

⚠ DANGER

This vehicle contains a high voltage Rechargeable Energy Storage System (RESS). An improperly handled or damaged RESS can cause electrical shock and/or fire, which will result in death or serious injury.

- **RESS must only be serviced by a qualified technician using proper Personal Protective Equipment (PPE).**
- **Do not touch RESS connector terminals with fingers, tools, jewelry, or other metal objects.**
- **Do not disconnect, disassemble, or use RESS for other than its intended use.**
- **Improper charging, impact or exposure to fire can damage the RESS.**
- **A damaged RESS can leak electrolyte and/or generate flammable gas.**

(08705a)

⚠ DANGER

A damaged Rechargeable Energy Storage System (RESS) can leak electrolyte. Contact with electrolyte will cause serious chemical burns or blindness.

- **Always wear proper Personal Protective Equipment (PPE) while handling RESS.**
- **If electrolyte comes in contact with eyes, skin, or clothing, rinse affected area with clean water and seek medical attention immediately.**
- **See Safety Data Sheet (SDS) for more details available at sds.livewire.com.**

(12210b)

⚠ WARNING

Misused or abused lithium-ion batteries can get hot, explode or ignite, or potentially release gas, smoke or liquid. Always follow battery safety precautions. Misuse or abuse of lithium-ion batteries could result in death or serious injury. (07729b)

12 V Lithium-Ion Battery

- Do not use battery if it gives off an odor, generates heat, releases gas, smoke or liquid, becomes discolored, or deformed or appears abnormal in any way. If the battery is in use or being recharged, disconnect it from the motorcycle or charger immediately and discontinue use. Wear a protective face shield, rubberized gloves, respiratory protection and protective clothing when handling a damaged battery to prevent exposure to internal battery contents.

10 Safety First

- Never attempt to open or disassemble a battery. If accidental contact with internal battery contents occurs, wash the affected skin area and contact a doctor for medical assistance.
- Do not pierce the battery case with a nail or other sharp objects, do not break it open, do not crush.
- Do not place the battery in a microwave oven or pressurized container.
- Do not immerse the battery in water.
- Do not strike, throw or subject the battery to severe physical shock.
- Do not press the indicator button on the battery longer than a few seconds.
- Keep out of reach of children and pets.

In the Event of Contact with Internal Battery Contents

⚠ WARNING

Contact with internal battery contents can have serious health effects. Wear protective face shield, rubberized gloves, respiratory protection, and protective clothing when handling damaged batteries. Failure to wear proper protective gear while handling a damaged battery could result in death or serious injury.

See Safety Data Sheet (SDS) for more details available at sds.livewire.com (12209b)

General information: The following first aid measures are required only in case of exposure to internal battery contents after damage of the external battery casing.



Table 3. Battery Electrolyte Antidote

Physical Location	Procedure
After Inhalation	• Remove to fresh air • Wash mouth and nasal passages with water • If patient is not breathing, apply artificial respiration • Do not perform mouth-to-mouth resuscitation • Call a physician immediately
After Contact with Skin	• Wash off immediately with plenty of water and soap for at least 15 minutes • Take off contaminated clothing and wash it before reuse • Call a physician immediately
After Contact with Eyes	• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes • Remove contact lenses, if present and easy to do. Continue rinsing • Seek medical treatment by eye specialist

Table 3. Battery Electrolyte Antidote

Physical Location	Procedure
After Ingestion	• Rinse mouth • Drink plenty of water or milk • Never give anything by mouth to an unconscious person • Do not induce vomiting • Call a physician immediately

Charging

Charging time depends on the beginning State of Charge (SOC) and the target state of charge.

- The RESS keeps the 12 V Lithium-Ion battery charged.
- Level 1 (AC Slow Charge) charging with the EVSE requires a dedicated, properly grounded AC outlet protected by a circuit breaker.
- Level 3 (DC Fast Charge) charging requires a charging station.

Electric Vehicle Supply Equipment (EVSE), Level 1 Charging

The EVSE is also commonly referred to as the vehicle charging cord. The EVSE includes the connection to the outlet, the cable and the connection to the motorcycle.

- The supplied EVSE is intended only for this motorcycle.
- Do not use EVSE if there is any cracking or damage to the unit, the EVSE cable or the connector. Do not attempt to repair. Replace EVSE if damaged.

⚠ WARNING

To avoid risk of fire or electric shock, only use the supplied EVSE when charging motorcycle. Fire or electric shock could result in death or serious injury.

- **Do not use EVSE with an extension cord.**
- **Charge the motorcycle in a well-ventilated area.**
- **Make sure connectors are fully inserted into the outlet and motorcycle.**
- **Do not allow charging equipment to be immersed in water or liquids.**
- **Do not put fingers, jewelry or other metal objects in charging socket.**
- **Use a dedicated, properly grounded, AC outlet protected by a circuit breaker.**

- **Observe charging for several minutes before leaving the motorcycle unattended to ensure the vehicle is charging as expected.**

(08710c)

On Board Charger (OBC)

⚠ WARNING

Risk of electric shock or burn. Do not touch with fingers, jewelry or other metal objects. Only to be serviced by a qualified technician. Failure to follow instructions can result in death or serious injury. (08804b)

The EVSE connects to the charge port which supplies charging power to the OBC.

When charging 12 V Lithium-Ion Battery:

- If motorcycle is not equipped with a battery tender connector, then remove battery from motorcycle prior to charging. See SERVICE PROCEDURES > BATTERY REPLACEMENT (Page 164).
- Do not recharge battery if voltage is below 8 V to prevent hazardous situations. Charging a deep discharged battery can cause release of smoke, gas and liquids.
- To prevent damage to the battery, the charging voltage should NEVER be higher than 14.4 V.

- Do not overcharge. In case of overcharging, a degassing event with smoke generation could occur.
- Do not connect the battery directly to an AC outlet.
- Only charge or discharge the battery in a well-ventilated area.
- Always use a lithium-ion battery specific battery charger to charge the lithium-ion battery, ensure charging voltage is between 14.2 V and 14.4 V.

Electric Vehicle Crash or Damage

⚠ DANGER

This vehicle contains a high voltage Rechargeable Energy Storage System (RESS). An improperly handled or damaged RESS can cause electrical shock and/or fire, which will result in death or serious injury.

- RESS must only be serviced by a qualified technician using proper Personal Protective Equipment (PPE).
- Do not touch RESS connector terminals with fingers, tools, jewelry, or other metal objects.
- Do not disconnect, disassemble, or use RESS for other than its intended use.
- Improper charging, impact or exposure to fire can damage the RESS.

- **A damaged RESS can leak electrolyte and/or generate flammable gas.**

(08705a)

⚠ DANGER

A damaged Rechargeable Energy Storage System (RESS) can leak electrolyte. Contact with electrolyte will cause serious chemical burns or blindness.

- Always wear proper Personal Protective Equipment (PPE) while handling RESS.
- If electrolyte comes in contact with eyes, skin, or clothing, rinse affected area with clean water and seek medical attention immediately.
- See Safety Data Sheet (SDS) for more details available at sds.livewire.com.

(12210b)

⚠ WARNING

Misused or abused lithium-ion batteries can get hot, explode or ignite, or potentially release gas, smoke or liquid. Always follow battery safety precautions. Misuse or abuse of lithium-ion batteries could result in death or serious injury. (07729b)

In the event of a crash, always handle as though the electric vehicle's high voltage system is charged and powered up. Stay clear of the motorcycle and contact an emergency response team to evaluate the vehicle. Damage to a high voltage battery may result in immediate or delayed release of toxic/flamable gases and/or fire.

In the Event of Contact with Internal Battery Contents

⚠ WARNING

Contact with internal battery contents can have serious health effects. Wear protective face shield, rubberized gloves, respiratory protection, and protective clothing when handling damaged batteries. Failure to wear proper protective gear while handling a damaged battery could result in death or serious injury.

See Safety Data Sheet (SDS) for more details available at sds.livewire.com (12209b)

General information: The following first aid measures are required only in case of exposure to internal battery contents after damage of the external battery casing.

Table 4. Battery Electrolyte Antidote

Physical Location	Procedure
After Inhalation	• Remove to fresh air • Wash mouth and nasal passages with water • If patient is not breathing, apply artificial respiration • Do not perform mouth-to-mouth resuscitation • Call a physician immediately
After Contact with Skin	• Wash off immediately with plenty of water and soap for at least 15 minutes • Take off contaminated clothing and wash it before reuse • Call a physician immediately
After Contact with Eyes	• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes • Remove contact lenses, if present and easy to do. Continue rinsing • Seek medical treatment by eye specialist

Table 4. Battery Electrolyte Antidote

Physical Location	Procedure
After Ingestion	• Rinse mouth • Drink plenty of water or milk • Never give anything by mouth to an unconscious person • Do not induce vomiting • Call a physician immediately

Hazardous Materials

For the purpose of shipping and handling, lithium ion batteries are considered hazardous materials. Refer to local regulations regarding special handling and packing requirements, shipping instructions, and for training requirements on hazardous materials.

Consumers are responsible for recycling or proper disposal of used batteries. Dispose in accordance with methods that meet or exceed all state and federal environmental laws.

- Never mix lithium-ion battery cores with lead acid cores.

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)

- A new motorcycle must be operated according to the special break-in procedure. See BEFORE RIDING > BREAK-IN RIDING RULES (Page 40).
- Proper care and maintenance, including tire pressure, tire condition, tread depth and proper adjustment to steering head bearings are important to stability and safe operation of the motorcycle. See SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

Parts and Accessories

⚠ WARNING

LiveWire parts and accessories are designed for LiveWire motorcycles. Using non-LiveWire parts or accessories can adversely affect performance, stability or handling, which could result in death or serious injury. (12120b)

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

⚠ WARNING

Use LiveWire replacement fasteners. Aftermarket fasteners can adversely affect performance, which could result in death or serious injury. (12122a)

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

⚠ WARNING

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

- LiveWire Motorcycle Company cannot test and make specific recommendations concerning every accessory or combination of accessories sold. Therefore, the rider must be responsible for safe operation of the motorcycle when installing accessories or carrying additional weight.
- Additional electrical equipment may overload the electrical system possibly resulting in electrical system and/or component failure.

EMERGENCY RESPONSE SAFETY

LiveWire electric vehicles have been designed with many safety features for your protection. These features help provide safe access to the vehicle under various conditions.

If your vehicle has had a minor tip over, upright vehicle, turn off power and check for damage. If damage is found, see your authorized LiveWire dealer for repairs.

⚠ DANGER

This vehicle contains a high voltage Rechargeable Energy Storage System (RESS). An improperly handled or damaged RESS can cause electrical shock and/or fire, which will result in death or serious injury.

- RESS must only be serviced by a qualified technician using proper Personal Protective Equipment (PPE).
- Do not touch RESS connector terminals with fingers, tools, jewelry, or other metal objects.
- Do not disconnect, disassemble, or use RESS for other than its intended use.
- Improper charging, impact or exposure to fire can damage the RESS.
- A damaged RESS can leak electrolyte and/or generate flammable gas.

(08705a)

18 Safety First

⚠ DANGER

A damaged Rechargeable Energy Storage System (RESS) can leak electrolyte. Contact with electrolyte will cause serious chemical burns or blindness.

- Always wear proper Personal Protective Equipment (PPE) while handling RESS.
- If electrolyte comes in contact with eyes, skin, or clothing, rinse affected area with clean water and seek medical attention immediately.
- See Safety Data Sheet (SDS) for more details available at sds.livewire.com.

(12210b)

⚠ WARNING

Misused or abused lithium-ion batteries can get hot, explode or ignite, or potentially release gas, smoke or liquid. Always follow battery safety precautions. Misuse or abuse of lithium-ion batteries could result in death or serious injury. (07729b)

Inspect your motorcycle if it has been submerged or involved in any accident incident. Always check for:

- Exposed wiring, damaged connectors or damaged housings of any components.

- Venting of vapors/gasses.
- Signs of sparks, smoke, or bubbling noises.
- Escaping fluids.
- Signs of radiating high heat.

In the event of a crash or any of these symptoms, always assume the electric vehicle's high voltage system is charged and powered up. Stay clear of the vehicle and immediately contact an emergency response team to evaluate the vehicle. Damage to a high voltage battery may result in immediate or delayed release of toxic/flamable gases and/or fire.

⚠ WARNING

Contact with internal battery contents can have serious health effects. Wear protective face shield, rubberized gloves, respiratory protection, and protective clothing when handling damaged batteries. Failure to wear proper protective gear while handling a damaged battery could result in death or serious injury.

See Safety Data Sheet (SDS) for more details available at sds.livewire.com (12209b)

The following first aid measures are required only in case of exposure to internal battery contents after damage of the external battery casing.

Table 5. Battery Electrolyte Antidote

Physical Location	Procedure
After Inhalation	• Remove to fresh air • Wash mouth and nasal passages with water • If patient is not breathing, apply artificial respiration • Do not perform mouth-to-mouth resuscitation • Call a physician immediately
After Contact with Skin	• Wash off immediately with plenty of water and soap for at least 15 minutes • Take off contaminated clothing and wash it before reuse • Call a physician immediately
After Contact with Eyes	• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes • Remove contact lenses, if present and easy to do. Continue rinsing • Seek medical treatment by eye specialist

Table 5. Battery Electrolyte Antidote

Physical Location	Procedure
After Ingestion	• Rinse mouth • Drink plenty of water or milk • Never give anything by mouth to an unconscious person • Do not induce vomiting • Call a physician immediately

ANTI-LOCK BRAKE SYSTEM (ABS)

⚠ WARNING

If ABS lamp continues flashing at speeds greater than 5 km/h (3 mph) or remains on continuously, the ABS is not operating. The standard brake system is operational, but wheel lock up can occur. Contact a LiveWire 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. (12135b)

To operate motorcycles equipped with an anti-lock brake system, see OPERATION > CORNERING RIDER SAFETY ENHANCEMENTS (Page 125).

RULES OF THE ROAD

- Always 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 30.5 m (100 ft) before reaching the turning point. If turning across an intersection, move over to the centerline of the street (unless local rules require otherwise). Slow down when entering the intersection and turn carefully.
- Never anticipate a traffic light. When a change is indicated from GO to STOP (or STOP to GO), 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.

SAFETY SYMBOL DEFINITIONS

These are some of the symbols that you may see on your motorcycle and may accompany safety words, see SAFETY FIRST > SAFETY DEFINITIONS (Page 3). The symbols indicate potential safety hazards and avoidance actions to prevent a hazardous situation. The symbols may be present in manuals, instructions, on the motorcycle and/or Parts & Accessory product labels. Refer to SAFETY FIRST > SAFE OPERATING RULES (Page 3), the appropriate section in this manual and/or Parts & Accessory instructions for additional safety information.

- Yellow triangle: Safety symbol alerting to a hazard. Table 6
- Red circle with line: Prohibition symbol to avoid a situation which may lead to a hazard, personal injury and/or property damage. Table 7

- Blue circle: Mandatory action to avoid a hazard resulting in personal injury and/or property damage. Table 8

Table 6. General Warning Symbols

SYMBOL	SYMBOL DEFINITION	SYMBOL	SYMBOL DEFINITION
	General Warning indicating a hazard.		Explosive material hazard.
	Crash hazard.		Corrosive chemical burn hazard.
	Electric shock hazard.		Hot surface hazard.
	Battery charging hazard.		

Table 7. General Prohibition Symbols

SYMBOL	SYMBOL DEFINITION	SYMBOL	SYMBOL DEFINITION
	General prohibition sign to signify a prohibited action.		Do not expose to fire.
	Do not service without proper training or tools. Qualified technician only. Not user serviceable. No user replaceable parts. Refer service to qualified technician.		Do not perform action above indicated temperature.
	Do not touch.		Never tow a trailer.
	Keep away from open flame. Avoid smoking, flames, or sparks.		Do not use an extension cord.
	Do not add weight.		

Table 8. General Mandatory Action Symbols

SYMBOL	SYMBOL DEFINITION	SYMBOL	SYMBOL DEFINITION
	General mandatory action.		Wear proper protective riding gear.
	Refer to appropriate manual or instructions.		Wear proper hand protection.
	Take a rider training course.		Wear proper Personal Protective Equipment (PPE).
	Wear a helmet and eye protection.		Wear proper eye protection.

Table 9. General Information Symbols

SYMBOL	SYMBOL DEFINITION	SYMBOL	SYMBOL DEFINITION
	Contains button or coin cell battery. Hazardous if swallowed.		Protect from rain or wet conditions.
	First responder cut loop. Emergency Personnel/First Responder use only.		Do not add more weight than specified.

LABELS

See Figure 1 for safety and maintenance labels which were on the vehicle when new. Refer to Table 10.

NOTE

Replacement labels can be purchased for your motorcycle. See a LiveWire dealer. Some labels are available in different languages for destinations outside the United States.

Refer to SAFETY FIRST > SAFETY SYMBOL DEFINITIONS (Page 21) for definitions of symbols on labels.

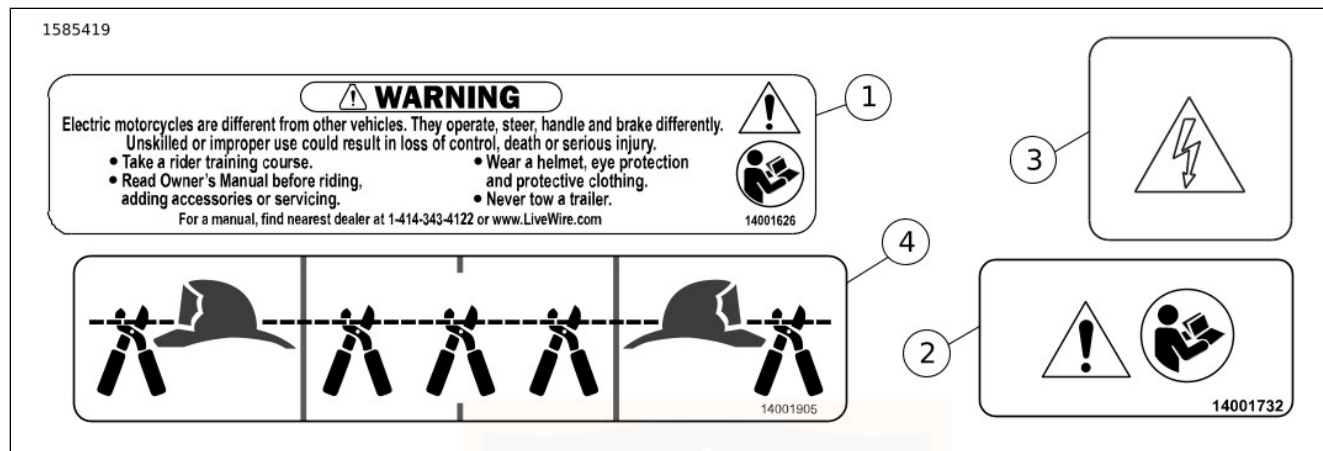


Figure 1. Labels

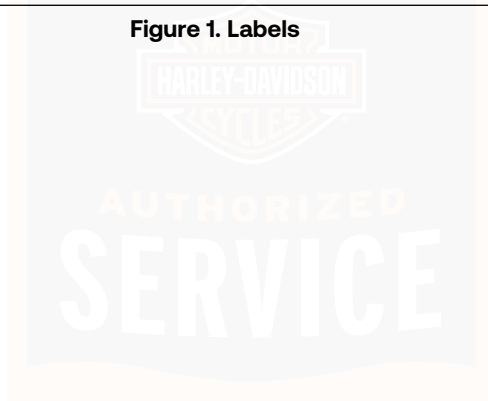


Table 10. Labels

ITEM	PART NO.	DESCRIPTION	LOCATION	TEXT
1	14001626	General warnings	Top of rear fender	WARNING: Electric 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 1-414-343-4122 or www.LiveWire.com
2	14001732	Battery warning	On battery box cover	No text, label uses ISO images.
3	14001630	High voltage warning	On left side high voltage wire cover	No text, label uses ISO images. ISO High voltage warning.
4	14001905	First responder cut loop identification	Under left and right sides of top cover on 12 V power lead	No text, label uses ISO images. Emergency Personnel/First Responder use only.

NOTES



VEHICLE IDENTIFICATION NUMBER (VIN)

General

See Figure 3. A unique 17-digit serial or Vehicle Identification Number (VIN) is assigned to each motorcycle. Refer to Table 11.

Location

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

Abbreviated VIN

An abbreviated VIN showing the vehicle model, motor type, model year, and sequential number is stamped on the left side of the electric vehicle powertrain.

NOTE

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

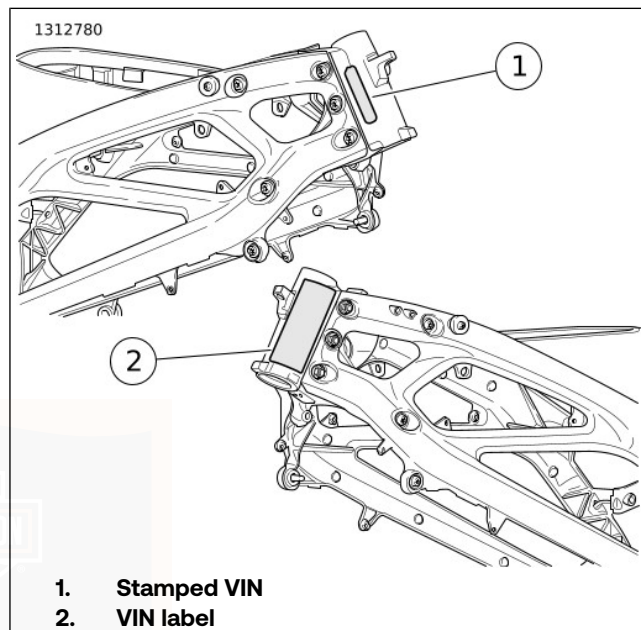


Figure 2. VIN Locations

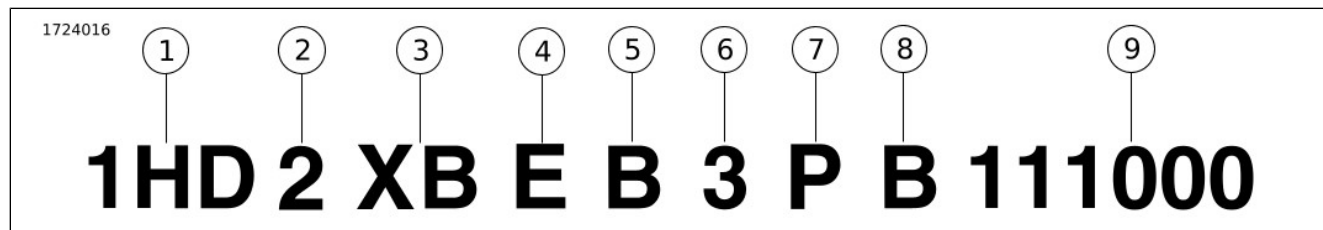


Figure 3. Typical VIN: 2023 LiveWire ONE

Table 11. VIN Breakdown: 2023 LiveWire ONE

POSITION	DESCRIPTION	POSSIBLE VALUES	
1	World manufacturer identifier®	1HD=Originally manufactured in the United States 5HD=Originally manufactured in the United States or Thailand for sale outside the United States	
2	Motorcycle type	2=Heavyweight electric motorcycle	
3	Model	XB=LW1 LiveWire ONE®	
4	Motor type	E=Revelation® electric power train	
5	Configuration/calibration, introduction	Normal Introduction B=EV1 C=EV2 D=EV3 E=EV4 F=EV5	Mid-year or Special Introduction
6	VIN check digit	Can be 0-9 or X	
7	Model year	P=2023	

Table 11. VIN Breakdown: 2023 LiveWire ONE

POSITION	DESCRIPTION	POSSIBLE VALUES
8	Assembly plant	B=York, PA USA D=H-D Brazil-Manaus, Brazil (CKD) S=Tasit, Pluagdang, Rayong, Thailand
9	Sequential number	Varies

MODELS AND FEATURES

Some models, features or configurations shown in this manual may not be available in all markets.

PRIMARY CONTROLS AND SERVICE COMPONENTS

Familiarize yourself with the location of all the controls and service components on your motorcycle.

NOTE

Illustrations are for general reference only. Controls and service components shown are general locations and

representations that do not show a specific model of motorcycle.

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

See Figure 4 for rider controls and service components accessible when seated.

See Figure 5 for rider controls and service components accessible from the right.

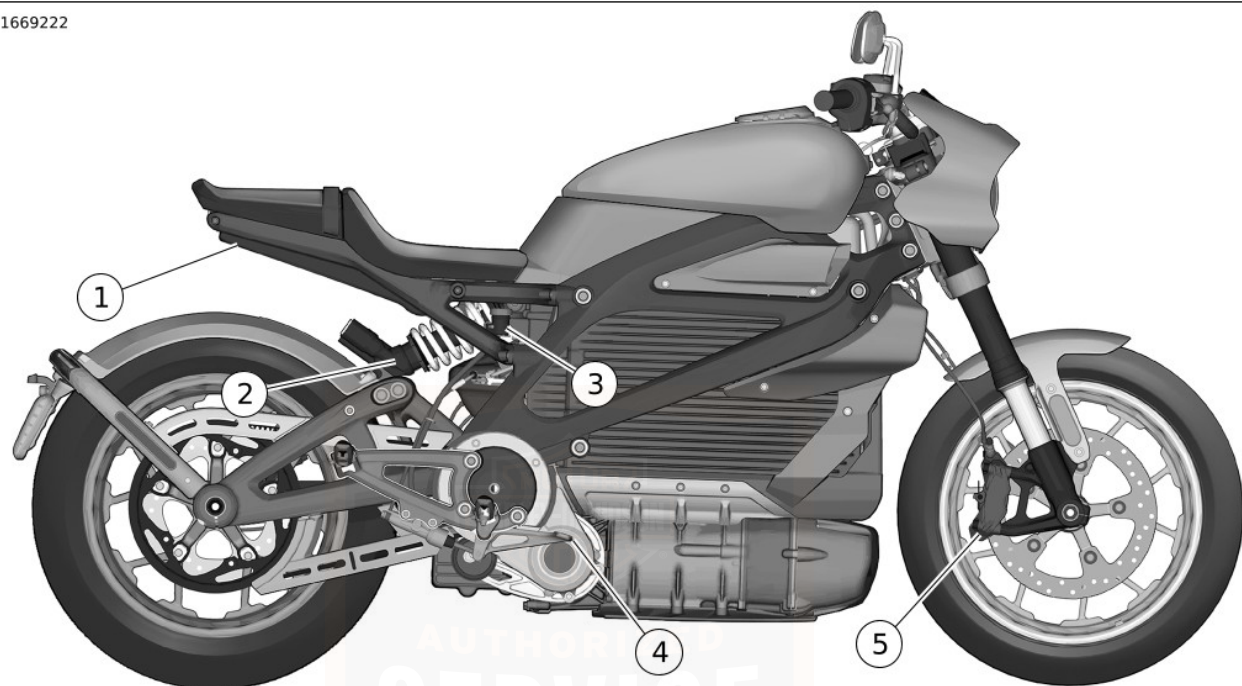
See Figure 6 for rider controls and service components accessible from the left.



- 1. Vehicle inlet/Charge port
- 2. Left hand control module
- 3. Instrument module
- 4. Front brake fluid reservoir

- 5. Front brake lever
- 6. Throttle twist grip
- 7. Right hand control module

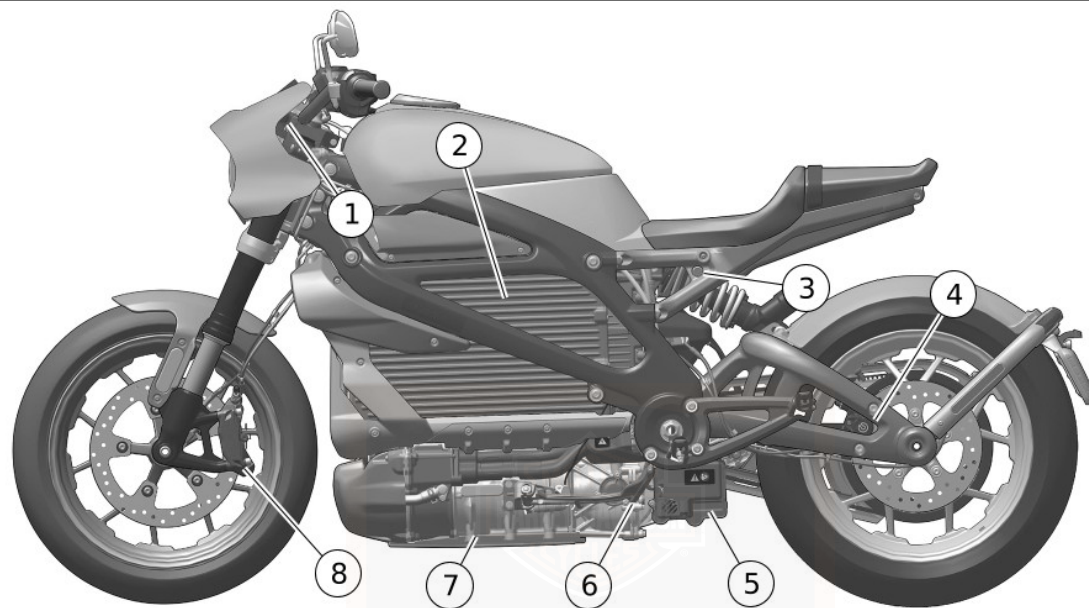
Figure 4. Controls and Service Components



- 1. Electric Vehicle Supply Equipment (EVSE) caddy
- 2. Rear suspension
- 3. Rear brake fluid reservoir

- 4. Rear brake pedal
- 5. Front brake caliper

Figure 5. Controls and Service Components



- | | |
|--|--|
| 1. USB-C port | 5. Battery box |
| 2. Rechargeable Energy Storage System (RESS) | 6. Jiffy stand |
| 3. Seat lock/latch | 7. Electric Vehicle Power-Train (EVPT) |
| 4. Rear brake caliper | 8. Front brake caliper |

Figure 6. Controls and Service Components

SPECIFICATIONS

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 motorcycle differences. Customers seeking officially recognized regulatory specifications for their motorcycle should refer to certification documents and/or contact their respective dealer or distributor.

- LiveWire reserves the right to change specifications, equipment or designs at any time without notice and without incurring obligation. Refer to your respective dealer or www.LiveWire.com for the latest available information.

Tires

Table 12. Specified Tires

MODEL	MOUNT	SIZE	SPECIFIED TIRE	PRESSURE COLD	
				psi	kPa
LW1 LiveWire® ONE	Front	17 in	Michelin Scorcher Sport 120/70 ZR17 58W	36 psi	248 kPa
LW1 LiveWire® ONE	Rear	17 in	Michelin Scorcher Sport 180/55 ZR17 73W	42 psi	290 kPa

⚠ WARNING

LiveWire recommends the use of its specified tires. LiveWire vehicles are not designed for operation with non-specified tires, including snow, moped and other special-use tires. Use of non-specified tires can adversely affect stability, handling or braking and lead to loss of vehicle control, which could result in death or serious injury. (12127d)

Weights and Dimensions

Table 13. Weights

ITEM	lb	kg
Running weight ⁽¹⁾	562 lb	255 kg
Maximum additional weight allowed ⁽²⁾	400 lb	181 kg
GVWR	962 lb	436 kg
GAWR front	441 lb	200 kg
GAWR rear	588 lb	267 kg
<i>(1) The total weight of the motorcycle as delivered with all fluids.</i>		
<i>(2) The total weight of accessories, cargo, riding gear, passenger and rider must not exceed this weight.</i>		

Table 14. Dimensions

ITEM	in	mm
Overall length	84.1 in	2,135 mm
Overall width	32.7 in	830 mm
Overall height	42.5 in	1,080 mm
Wheelbase	58.7 in	1,491 mm
Road clearance	5.1 in	130 mm
Seat height ⁽¹⁾	30 in	761 mm
<i>(1) With 81.6 kg (180 lb) rider on seat.</i>		

Capacities

Table 15. Capacities

ITEM	U.S.	METRIC
Transmission (approximate)	0.34 qt	0.32 L
Coolant (approximate)	0.8 qt	0.72 L

Motor and Transmission

Table 16. Motor: Revelation

ITEM	SPECIFICATION
Type®	Internal Permanent Magnet Synchronous Motor Water Jacket Cooling
Inverter Type	IGBT
Torque	114 N-m (84 ft-lbs)
Horsepower	75 kW (100 hp)
RPM	15,000 rpm Max

Table 17. Transmission

ITEM	SPECIFICATION
Type	Single Speed
Gear Ratio	9.706

Electrical

Table 18. Rechargeable Energy Storage System (RESS)

ITEM	SPECIFICATION
Type	Lithium Ion
Capacity	15.4 kW (20.6 hp)
On-board Charger Charge Rate	1,400 W (1.9 hp)
Direct Current (DC) to DC Conversion	450 W (0.6 hp) at 14.2 V

Table 19. 12 Volt Electrical

ITEM	SPECIFICATION
Battery	Lithium Ion 12.8 V, 24 Wh, 120 A sealed and maintenance free
Charging system	Onboard DC to DC conversion



NOTES



REMOVING MOTORCYCLE FROM STORAGE

NOTE

Take care when wearing loose fitting clothing to ensure they do not get caught on any protruding surfaces of the motorcycle.

1. Charge the Rechargeable Energy Storage System (RESS). See BEFORE RIDING > CHARGING MOTORCYCLE (Page 40).
2. Inspect drive belt and sprocket. See MAINTENANCE AND LUBRICATION > CHECK DRIVE BELT DEFLECTION (Page 150).
3. Perform the items in the BEFORE RIDING > PRE-RIDE CHECKLIST (Page 39).

PRE-RIDE CHECKLIST

1. Check RESS State of Charge (SOC). Charge if required. See BEFORE RIDING > CHARGING MOTORCYCLE (Page 40).
2. Adjust mirrors to proper riding positions. See BEFORE RIDING > ADJUSTING MIRRORS (Page 57).
3. Check brake fluid level. See MAINTENANCE AND LUBRICATION > CHECKING BRAKE FLUID LEVEL AND CHANGING BRAKE FLUID (Page 155).

4. Inspect brake pads and discs for wear. See MAINTENANCE AND LUBRICATION > INSPECTING BRAKE PADS AND DISCS (Page 154).
5. Check the hand and foot controls to be sure they are operating properly. Operate the front and rear brakes and throttle. See OWNER MANUAL > OPERATION (Page 79).
6. Inspect brake lines for wear or damage. See MAINTENANCE AND LUBRICATION > CHECKING SYSTEMS FOR LEAKS OR ABRASIONS (Page 158)
7. Check steering for smoothness by turning the handlebar 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 LiveWire 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. (12123b)

8. Check tire condition, pressure and motorcycle loading. Refer to BEFORE RIDING > CHECKING TIRE PRESSURE AND INSPECTING TIRES (Page 52) for correct tire inflation pressure and motorcycle weight allowances.
9. Check suspension front and rear pre-load settings. Adjust to motorcycle loading, if necessary. Refer to BEFORE RIDING > SUSPENSION ADJUSTMENTS (Page 58), BEFORE RIDING > ADJUSTING REAR SHOCK ABSORBERS (Page 59) and BEFORE RIDING > ADJUSTING FRONT SHOCK ABSORBERS (Page 63).
10. Check for any fluid leaks. See MAINTENANCE AND LUBRICATION > CHECKING SYSTEMS FOR LEAKS OR ABRASIONS (Page 158).
11. Check drive belt for wear or damage. See MAINTENANCE AND LUBRICATION > CHECK DRIVE BELT DEFLECTION (Page 150).
12. Check all electrical equipment and switches including the headlamp, tail and stop lamp, turn signals and horn for proper operation.
13. Service your motorcycle as necessary. See SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

BREAK-IN RIDING RULES

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

Your Electric Vehicle (EV) motorcycle powertrain does not require any break-in period. For general break-in we recommend that you observe the riding rules provided below.

1. Avoid hard braking. Break-in new brakes with moderate use for the first 160 km (100 mi).

CHARGING MOTORCYCLE

General Information

LiveWire is powered by a lithium-ion RESS. Lithium-Ion technology provides higher power and energy density, faster charging, and longer life than traditional lead-acid batteries. The Onboard Charger (OBC) DC-to-DC charger handles all charging and maintenance of the 12 V battery.

▲ 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)

SOC is the amount of energy in the RESS available to use before it needs to be recharged. The State of Health (SOH) is the measurement of impedance and capacity degradation of the RESS compared to when it was new. All lithium-ion batteries chemically age through time and use, resulting in a gradual degradation of performance and the ability to hold a charge. A 20% loss of SOH is expected over the life of the RESS warranty.

A battery's lifespan is related to the chemical breakdown and aging process which involves more than just time and use. It involves duration at high temperatures, types of charging, number of charge/discharge cycles, and storage duration. To maximize RESS performance and help extend RESS lifespan follow these tips:

- When recharging the RESS, choose Level 1 (110V to 220V) charging when possible. Level 1 charging causes the least amount of stress to the RESS.
- The RESS does not limit the number of times a Level 3 DC fast charger (480V) can be used. However, more frequent DC fast charging will stress the RESS more than Level 1 charging. If possible, avoid using DC fast charge, exclusively. The suggested best practice is to alternate your charging between Level 1 and Level 3 DC Fast Charge in a 4:1 ratio (4 Level 1 charges to every 1 Level 3 fast charge).

- The battery will protect itself from thermal damage, however extended periods of time operating at high temperature can speed the chemical aging process and shorten RESS lifespan.
- 12-volt battery maintenance charging may not be performed at a very low RESS SOC. It is EV best practice to charge the vehicle after use to prevent conditions that lead to 12-volt battery depletion.

The RESS is designed to charge quickly to 80% of its capacity, at which point the charge rate then slows to reduce the rate of RESS degradation. If the battery is too hot or too cold, the charge rate will automatically reduce to a sustainable level. Charging below 0C/32F or over 50C/122F degrees will result in significantly increased charge time. Under extreme usage or extreme temperature conditions, the RESS may limit its performance in order to prevent damage.

Electric Vehicle Supply Equipment (EVSE), Level 1 Charging

The Electric Vehicle Supply Equipment (EVSE) is also commonly referred to as the vehicle charging cord which is stored under the seat. The EVSE includes the Charge Module (connection to the wall outlet), the cable and the Coupler (connection to the motorcycle). See BEFORE RIDING > EVSE STORAGE (Page 51).

The EVSE features:

- Compact, portable design
- Overheating protection
- Quick-read status indicator lights
- Underwriters Laboratories (UL) listed
- Auto-restart in event of ground fault or power outage

The motorcycle charging port provides primary EVSE theft resistance feature via an inlet lock pin commanded by the OBC.

Indicator Lights

- Blue Light – Status Indicator

When plugged into the wall outlet, the blue status indicator light illuminates to communicate that the charger is ready to use.

While the battery is charging, the blue light will blink on and off approximately every two seconds. See Figure 7.

When fully charged, the blue light will change to solid blue. See Figure 8.

- Red – Trouble Indicator

The red trouble indicator light illuminates when the charger has detected an error. See Figure 9. If the light is illuminated the charger will not deliver power to the vehicle. The error must be corrected before a charging cycle can begin or

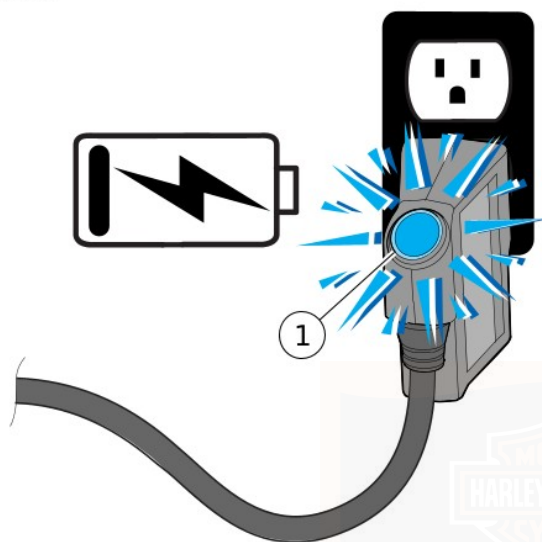
continue. Refer to Troubleshooting in the EVSE Owner's Manual for more information.

NOTE

A momentary blink of the red trouble indicator light at first plug-in to the wall is normal and functions as a start-up safety check. This momentary blink is followed by the solid blue light and the red light turns off.

A constant or blinking red light indicates an actual problem.

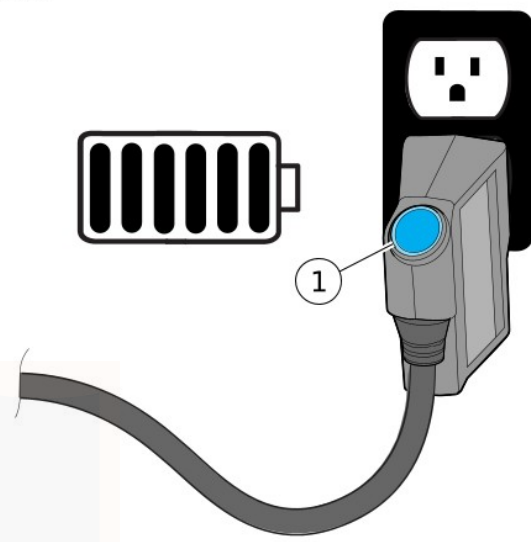
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1. **Blinking blue light**

Figure 7. EVSE Charge Module - Charging

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1. **Solid blue light**

Figure 8. EVSE Charge Module - Fully Charged

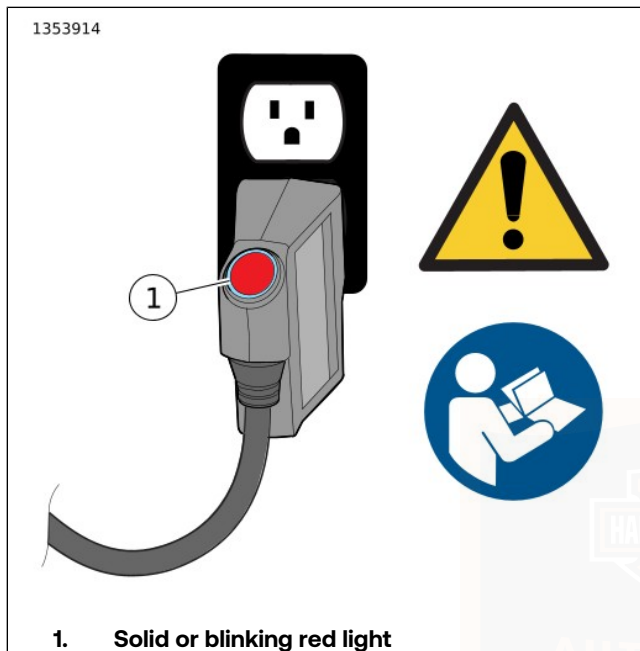


Figure 9. EVSE Charge Module - Fault

Charging

NOTE

EVSE is designed to plug directly into wall outlet. Do not use extension cords to reach motorcycle. Move motorcycle closer to outlet if EVSE will not reach. See Figure 10.

If the motorcycle tips over while plugged into a charger, the motorcycle will sense the tip and terminate charging.

When plugging into an unfamiliar wall outlet, it is good practice to let the vehicle charge for several minutes before leaving it unattended, to ensure it is in fact supplying the expected AC charging power.

1. Plug the CHARGE MODULE into the appropriate wall outlet. See Figure 11.
2. The red light will blink then the blue light on the CHARGE MODULE should be ON. This means that the charger is ready to provide power to your vehicle.

NOTE

When charging your motorcycle in a public location using the EVSE, be sure to use the Vehicle Inlet Security Insert to prevent theft of the EVSE. Install the insert into the motorcycle charging inlet, and then connect the charge coupler. See Figure 12. Store the insert with the EVSE in the EVSE caddy when not in use. See BEFORE RIDING > EVSE STORAGE (Page 51).

3. Plug the COUPLER into your vehicle's charging outlet until it clicks. See Figure 12. If inserted properly, the blue light on the CHARGE MODULE will blink once. Once latched, the COUPLER will not disengage unless the release button is manually pressed.
4. Automatic charging begins and power will be delivered in according to battery demand. While the battery is charging, the blue light will blink on and off approximately every two seconds.
5. When fully charged, the blue light will change to solid blue.

NOTE

Charging will automatically stop when battery is fully charged.

6. Disconnect COUPLER when the charge is complete by bringing fob to motorcycle, pressing the release button on the COUPLER and removing it from the vehicle. See Figure 13 and Figure 14.
7. Unplug CHARGE MODULE from wall outlet. See Figure 15.

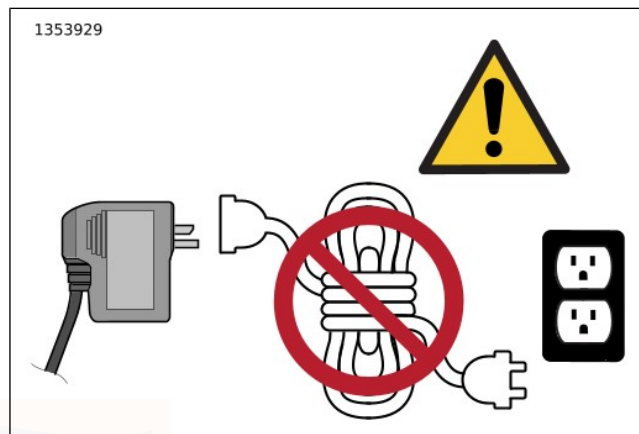


Figure 10. EVSE Charge Module - No Extension Cord

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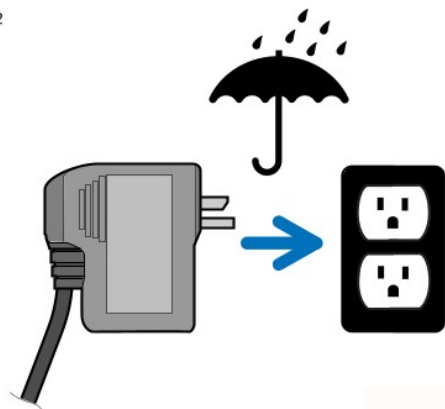


Figure 11. EVSE Charge Module - Keep Dry

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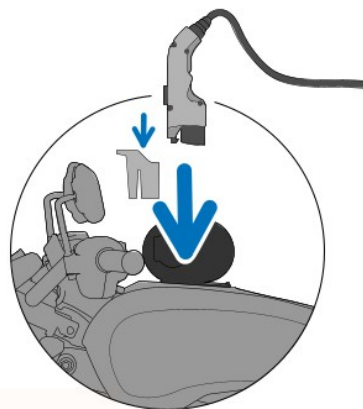
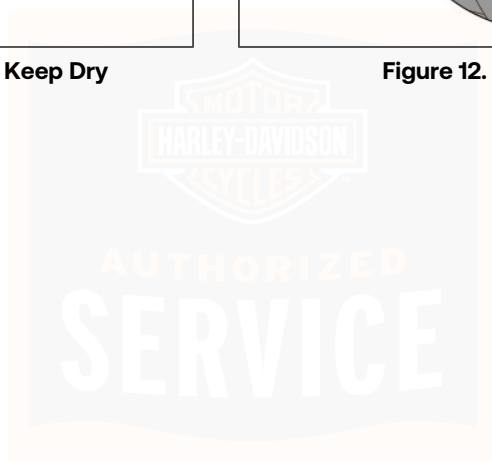


Figure 12. EVSE - Insert Coupler



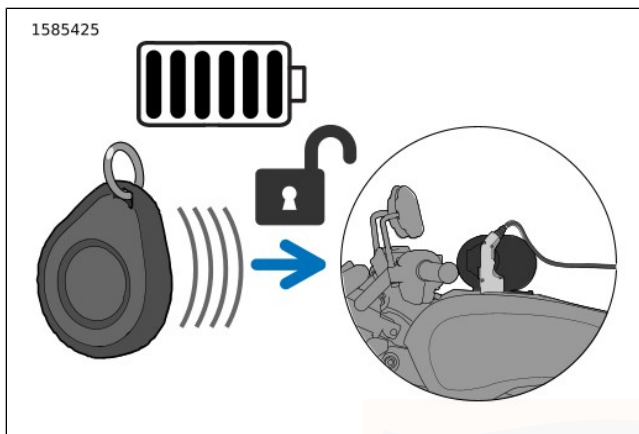


Figure 13. EVSE Coupler - Fob Present to Unlock Coupler

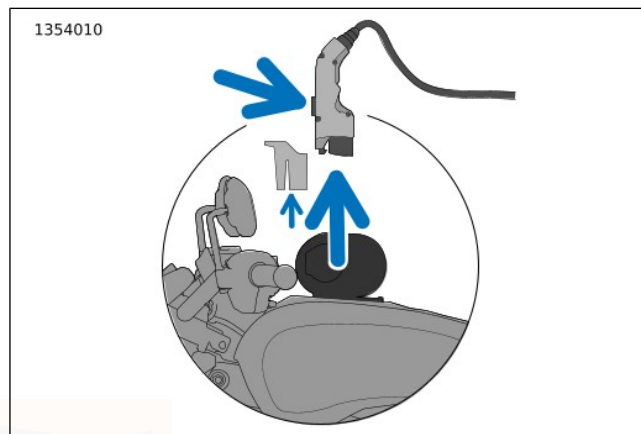
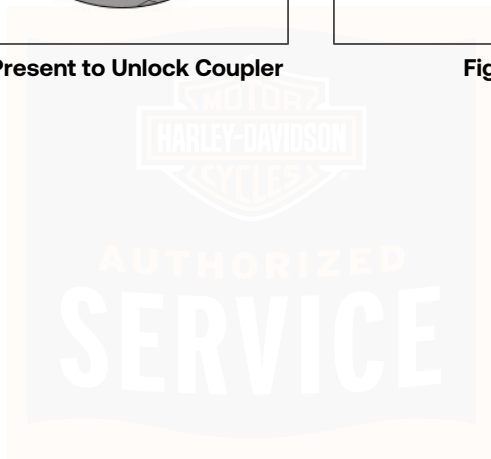


Figure 14. EVSE - Remove Coupler



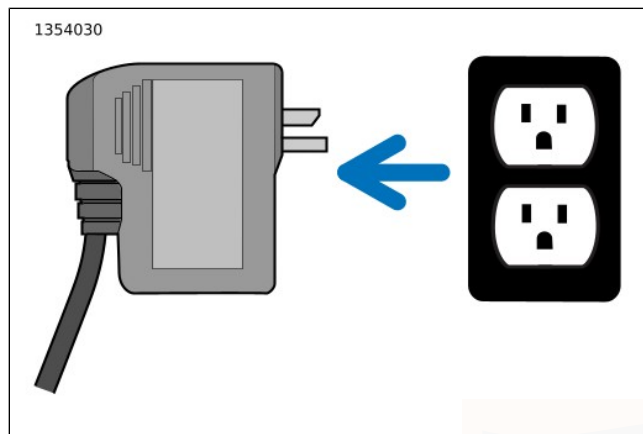


Figure 15. EVSE Charge Module - Un-Plug

Auto-Restart

Your EVSE has an auto-restart feature which ensures that your vehicle will be charged and ready for use when needed.

When a charge interrupt occurs and an error is detected, the charger will cycle on and off to clear the error until the auto-restart removes the error. Charging will resume once the error is no longer detected. If the error is not overcome, the RED TROUBLE Indicator will remain.

The exception to an immediate restart is when the interruption is due to a charger GFCI fault. The Charger will attempt to restart 15 minutes after a GFCI event. After the fourth attempt to restart, the charger will shut down and the RED TROUBLE Indicator will stay ON.

If the fault persists, do not continue to try to charge your vehicle. Contact LiveWire Customer Support, www.LiveWire.com.

Charging Widget Displays

The charging widget, shown on the Instrument Module (IM), displays information related to specific charging faults. The charging widget will inform the user of conditions present that would prevent or delay charging. Refer to Table 20.

Table 20. Charging Widget Displays

Widget	Text Displayed	Cause	Action
	EVSE Fault	EVSE fault.	See portable charger (EVSE) user guide.
	Charge Port Lock Fault	Charge port lock not functioning.	See dealer.
	Charge Plug Latch Pressed	EVSE latch switch indication pressed.	If EVSE latch not pressed - see dealer.
	OBC Too Warm	OBC above operating temperature.	• Verify unobstructed airflow to radiator. • Restart charge after vehicle cools down.
	RESS Too Warm	RESS above operating temperature.	Restart charge after vehicle cools down.

Table 20. Charging Widget Displays

Widget	Text Displayed	Cause	Action
	Establishing Communication	Vehicle establishing communication with external charger.	Check external charger for further instructions if needed.
	User Delayed	DC fast charging delayed or stopped by user.	Restart charge if desired.

Level 1 and 2 AC Charging and Level 3 DC Fast Charging Stations

AC Level 1 and 2 slow chargers connect through the charging port and the electrical power is then converted to DC through the OBC which then charges the RESS. AC Level 2 can be accepted but OBC charging ability will only allow for it to charge at a Level 1 rate.

Level 3 DC fast charging stations provide a high power DC current to the electric vehicle's battery without passing through the converter. Which means the current is connected directly to the RESS, making the charging process much faster than the AC slow charging process. Per industry standards for safety, inlet lock pin is also commanded by the OBC during all DC charging events to prevent High Voltage exposure.

NOTE

This vehicle complies with ECE R10 Section 7.20.4 when used in RESS charging mode coupled to a power grid with cables shorter than 30 m (98 ft).

EV charging stations are located in many places. Be sure to read and follow the instructions supplied at the charger location.

Storage

If it becomes necessary to store your motorcycle, follow the recommendations in AFTER RIDING > STORING MOTORCYCLE (Page 146).

EVSE STORAGE

The Electric Vehicle Supply Equipment (EVSE) can be stored under the seat in the EVSE caddy.

See Figure 16. For proper storage the EVSE should be placed into the caddy as shown.

1. Place coupler (3) within the guides in the EVSE caddy (1).
2. Wrap EVSE counter-clockwise around guides in the caddy.
3. Place charge module (2) within the guides in the caddy.
4. Place vehicle inlet security insert (4) in the caddy over the guide.

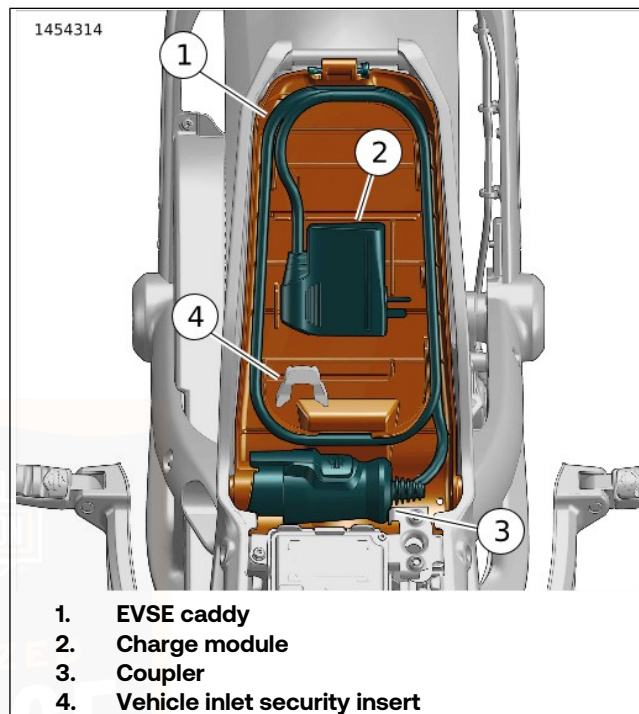


Figure 16. EVSE Storage

ABS BRAKE SYSTEM IDENTIFICATION

Identification

See Figure 17. The Anti-lock Braking System (ABS) brake system can be identified by a wheel speed sensor on the left side of the front wheel.

See Figure 18. The ABS system will also have an ABS module (Electro Hydraulic Control Unit (EHCU)).

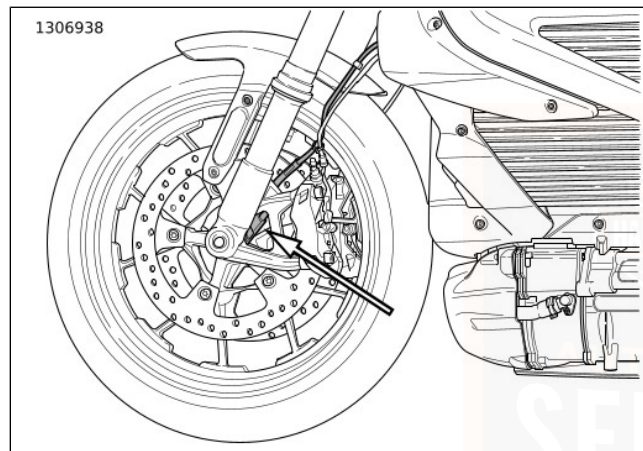


Figure 17. Wheel Speed Sensor (ABS identification)

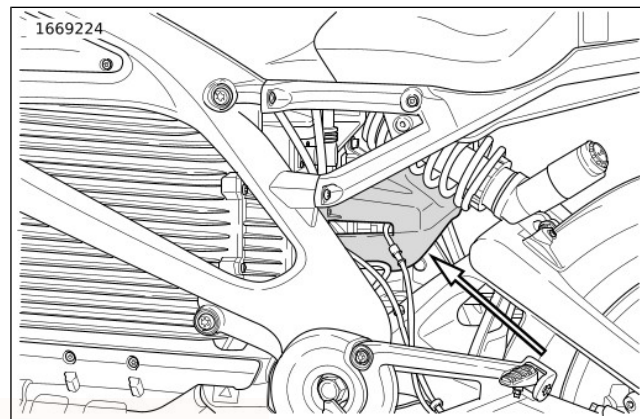


Figure 18. ABS Module (EHCU) Cover

CHECKING TIRE PRESSURE AND INSPECTING TIRES

General Information

⚠ WARNING

Match tires, tubes, rim strips or seals, air valves and caps to the correct wheel. Contact a LiveWire 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. (12126c)

⚠ WARNING

This vehicle's 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. (12128b)

Tire Pressure

⚠ WARNING

Be sure tires are properly inflated, balanced, undamaged, and have adequate tread. Inspect your tires regularly and see a LiveWire 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. (12123b)

Tire pressures should be set using information in Table 21 and Table 22. Tires are considered Cold Tires if the vehicle has not been recently ridden. The tire pressure increases as the tire warms. Tires can warm due to both riding and high ambient air temperatures. Tires can remain warm for up to 2 hours after riding. For the most accurate reading, check tire pressures with a good gauge before riding while the tires are cold.

Check tire pressure:

- As part of the pre-ride checklist.
- At every scheduled service interval.

For Cold Tires with an Ambient Air Temp of 20 °C (68 °F) or less: Table 21

Table 21. Specified Tires

MODEL	MOUNT	SIZE	SPECIFIED TIRE	PRESSURE COLD	
				psi	kPa
LW1 LiveWire® ONE	Front	17 in	Michelin Scorchers Sport 120/70 ZR17 58W	36 psi	248 kPa
LW1 LiveWire® ONE	Rear	17 in	Michelin Scorchers Sport 180/55 ZR17 73W	42 psi	290 kPa

For Cold Tires with an Ambient Air Temp higher than 20 °C (68 °F): Refer to the first column in Table 22 to determine the tire pressure adjustments. For example: If the motorcycle has not been ridden for 2 hours or more and the ambient

temperature is 31 °C (88 °F), the recommended front and rear pressures are Table 21 pressures plus 14 kPa (2 psi).

Tires warm due to riding which increases the tire pressure. If the vehicle has been recently ridden, refer to the second column in Table 22 to determine the tire pressure adjustment. For example: If the motorcycle has been recently ridden and the ambient temperature is 31 °C (88 °F), the recommended front and rear pressures are the Table 21 pressures plus 48 kPa (7 psi).

If a tire pressure adjustment is made when the vehicle has been recently ridden, re-adjust the tire pressure per recommendations when the tires have cooled. Tires can remain warm for up to 2 hours after riding.

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

Table 22. Tire Pressure Adjustment

AMBIENT AIR TEMPERATURE	MOTORCYCLE NOT RIDDEN FOR 2 HOURS OR MORE: ADD TO FRONT AND REAR PRESSURES IN SPECIFIED TIRES TABLE	MOTORCYCLE RECENTLY RIDDEN: ADD TO FRONT AND REAR PRESSURES IN SPECIFIED TIRES TABLE
20 °C (68 °F) or less	0 kPa (0 psi)	34 kPa (5 psi)
26 °C (79 °F)	7 kPa (1 psi)	41 kPa (6 psi)
31 °C (88 °F)	14 kPa (2 psi)	48 kPa (7 psi)
37 °C (99 °F)	21 kPa (3 psi)	55 kPa (8 psi)
42 °C (108 °F) or higher	28 kPa (4 psi)	62 kPa (9 psi)

Inspecting Tires

⚠ WARNING

Replace tire immediately with a LiveWire specified tire when wear bars become visible or only 1 mm (1/32 in) tread depth remains. Riding with a worn tire could result in death or serious injury. (12133c)

Check tire tread:

- As part of the pre-ride checklist.
 - At every scheduled service interval.
1. Inspect each tire for punctures, cuts and breaks.

LiveWire tires are equipped with wear bars that run horizontally across the tread.

A tire is considered worn when the wear bars are visible or if only 0.8 mm (0.031 in) tread depth remains. A worn tire can:

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

See Figure 19. Always replace tires before the tread wear bars appear.

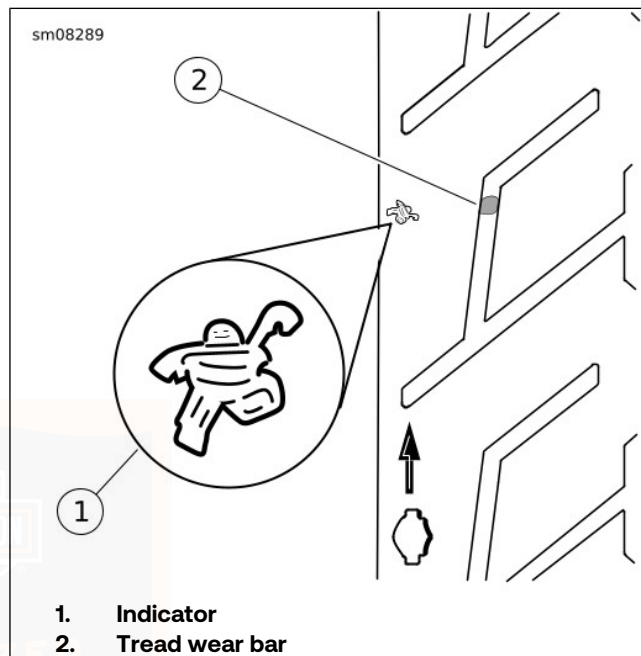


Figure 19. Tread Wear Indicator: Michelin Tires

Replacing Tires

⚠ WARNING

Tires are a critical safety component. Contact a LiveWire dealer for tire repair or replacement. Improper tire service can adversely affect stability and handling, which could result in death or serious injury. (12131a)

⚠ WARNING

LiveWire recommends the use of its specified tires. LiveWire vehicles are not designed for operation with non-specified tires, including snow, moped and other special-use tires. Use of non-specified tires can adversely affect stability, handling or braking and lead to loss of vehicle control, which could result in death or serious injury. (12127d)

⚠ 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

Replace punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the removed tire by a LiveWire dealer. Speed should NOT exceed 80 km/h (50 mph) for the first 24 hours after repair, and the repaired tire should NEVER be used over 129 km/h (80 mph). Failure to follow this warning could lead to tire failure and result in death or serious injury. (12124b)

⚠ WARNING

Replace tire immediately with a LiveWire specified tire when wear bars become visible or only 1 mm (1/32 in) tread depth remains. Riding with a worn tire could result in death or serious injury. (12133c)

New tires are needed if any of the following conditions exist (refer to Table 21 for the specified replacement tires):

- Tread wear 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 be sure the rotational arrows molded into the sidewalls point in the direction of rotation when the vehicle is moving forward.

ADJUSTING MIRRORS

⚠ WARNING

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

Adjust 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.

OPERATING JIFFY STAND

Location

⚠ 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 YOUR MOTORCYCLE > PRIMARY CONTROLS AND SERVICE COMPONENTS (Page 31). The jiffy stand is located on the left side of the motorcycle.

When parking your motorcycle on a grade, position the motorcycle with front tire uphill. Place a wheel stop, such as a street curb or wheel chock, behind the rear tire to prevent movement of motorcycle.

The jiffy stand must be in the raised position for the motorcycle to allow propulsion. A symbol and instruction will appear on the instrument module to raise the jiffy stand if attempting to enable propulsion with jiffy stand down. Raising jiffy stand will allow propulsion to be enabled.

While the motorcycle is in motion at speeds greater than 15km/h (10mph), lowering the jiffy stand will not stop the motorcycle.

SUSPENSION ADJUSTMENTS

Damping is set at the factory for the average solo rider under normal riding conditions. The rider may make adjustments to compensate for individual riding styles and varying road conditions.

Evaluating and changing the rebound and compression damping is a very subjective process with many variables and should be approached carefully.

SUSPENSION DEFINITIONS

Damping: Resistance to velocity of suspension movement. Damping affects how easily the suspension can move and limits oscillations of the system once movement has begun.

Compression: The suspension is compressed when the wheel moves upward (when riding over a bump).

Rebound: The suspension is rebounding when it is moving back from being compressed (rebounding to the road surface after a bump).

Preload: An adjustment made to the rear shock and front fork springs to limit vehicle and rider sag to a standard percentage of total suspension travel.

Suspension Tuning

Make all suspension adjustments in small increments. Radical setting changes may cause you to skip the best adjustment.

Refer to Table 23. Possible suspension and operating characteristics and their probable causes are listed. This table is helpful in keeping your motorcycle in good operating condition.

To achieve the proper settings you will need the preload properly adjusted, the tires properly inflated and a familiar bumpy road. It is useful if the road contains a variety of different kinds of bumps from small sharp bumps such as potholes or frost heaves to large cracks.

SERVICE

Table 23. Suspension Tuning

SUSPENSION CHARACTERISTICS	SOLUTION
Bike wallows through turns.	Increase rebound damping.
Bike feels loose or vague after bumps.	
Wheel tends to "pogo" or suffer continuous bouncing after passing a bump. This is often noticeable by watching the bike as it travels over bumps.	
Wheel responds to bump but doesn't return to ground quickly after bumps. This is more pronounced over a series of bumps and is often referred to as "packing down."	Reduce rebound damping.
Bike bottoms in dips or while cornering.	Increase compression damping.
Bike has excessive brake dive.	
Harsh ride, particularly over washboard surfaces.	Reduce compression damping.
Bumps transfer through handlebars or seat.	
Suspension seems not to respond to bumps. Tires chatter through corners or rider is jolted over rough roads.	

Changes in Load

The front and rear preload setting will need to be adjusted for the rider's weight and cargo. This adjustment should be made before the motorcycle is ridden any distance and after changing the overall vehicle weight (adding saddlebags, etc.).

Changes in the load carried requires changes in the preload settings. Carrying less weight than was used for setting up the suspension requires decreasing the amount of preload. Increasing the load carried requires adding more preload.

ADJUSTING REAR SHOCK ABSORBERS

General

Damping is set at the factory for the average solo rider under normal riding conditions. The rider may make adjustments to compensate for load, individual riding styles and varying road conditions.

Evaluating and changing the rebound and compression damping is a subjective process with many variables and should be approached carefully.

NOTICE

Compression and rebound adjusting valves may be damaged if too much force is used at either end of the adjustment range. (00237a)

NOTE

Do not force adjusters beyond mechanical stops.

Rebound and Compression Damping

Rebound Damping Adjustment

1. **NOTE**

Rebound adjuster is marked as **TEN** on the shock absorber.

See Figure 20. Turn rebound adjuster (1) clockwise in the H (hard) direction until it stops. This is the maximum rebound damping setting.

2. Turn rebound adjuster (1) counter-clockwise in the S (soft) direction the recommended number of turns. Refer to Table 26.

Compression Damping Adjustment

1. **NOTE**

Compression adjuster is marked as **COM** on the shock absorber.

See Figure 20. Turn compression adjuster (2) clockwise in the H (hard) direction until it stops. This is the maximum compression damping setting.

2. Turn compression adjuster (2) counter-clockwise in the S (soft) direction the recommended number of turns. Refer to Table 26.

Preload Adjustment

1. Figure 20 Release the lock collar (4) on shock absorber by turning only the lock collar counter-clockwise until it stops at bottom of the threads.
2. Calculate rear preload settings.
 - a. **Rider:** Refer to Table 24 for preload distance required for rider. Note distance required.
 - b. **Passenger or cargo:** Refer to Table 25 for additional preload distance required for passenger or cargo. Note distance required.

- c. Add rider and passenger/cargo preload amounts together to get final adjustment setting.
3. See Figure 20 and Figure 21. Adjust preload adjustment collar to the desired position.
 - a. Turn adjustment collar (3) clockwise to increase preload distance.
 - b. Turn adjustment collar counter-clockwise to decrease preload distance.
4. Turn lock collar (4) clockwise and tighten against adjustment collar.

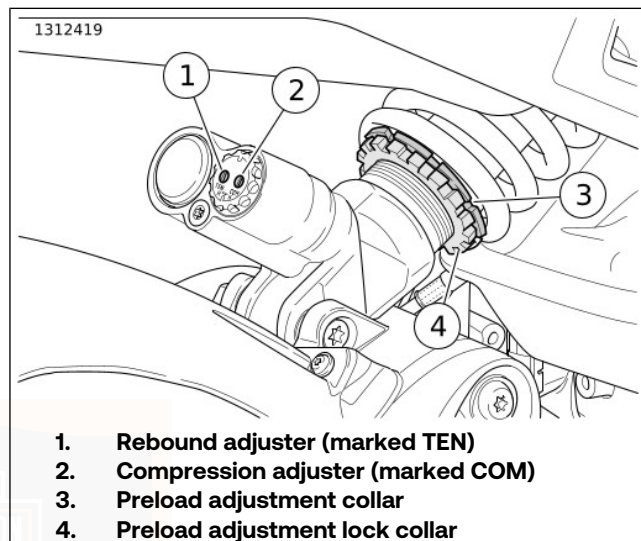


Figure 20. Rear Suspension Adjustment

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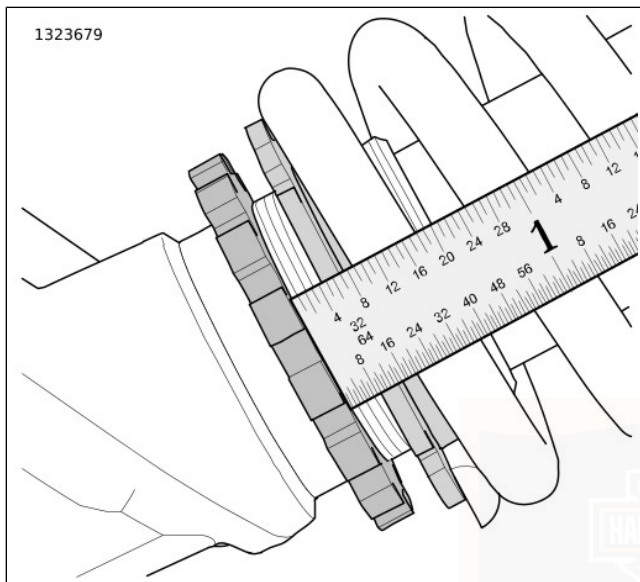


Figure 21. Rear Suspension Measurement

Table 24. Rear Preload Suspension Settings

RIDER WEIGHT	REAR SHOCK
kg/lb	Distance from Minimum ⁽¹⁾
<68 kg (150 lb)	0 mm (0 in)
68–77 kg (150–170 lb)	0 mm (0 in)
77–86 kg (170–190 lb)	0 mm (0 in)
86–95 kg (190–210 lb)	1 mm (.04 in)
95–104 kg (210–230 lb)	2 mm (.08 in)
104–113 kg (230–250 lb)	3 mm (.12 in)
113–122 kg (250–270 lb)	5 mm (.20 in)
122–132 kg (270–290 lb)	7 mm (.27 in)
132 kg (290 lb) to GVWR	9 mm (.35 in)

(1) Distance between adjuster nut and lock nut when lock nut is at minimum position (counter clockwise until stop).

Table 25. Rear Preload with Passenger or Cargo

PASSENGER or CARGO	REAR SHOCK
kg/lb	Additional Distance ⁽¹⁾
0–23 kg (0–50 lb)	+3 mm (.12 in)
23–45 kg (50–100 lb)	+7 mm (.27 in)
45–68 kg (100–150 lb)	+12 mm (.47 in)
68 kg (150 lb) to GVWR	+14 mm (.55 in)

(1) Add to distance required for rider weight.

Table 26. Rear Fork Compression and Rebound

RIDE SETTING	REAR SHOCK ⁽¹⁾	
	Compression	Rebound
Standard	2.5	3.5
Comfort	4	4
Sport	0.5	1.5
With Passenger	3	1

(1) Damping adjuster settings are done by turning adjuster clockwise until it stops at the maximum setting, then counting the turns counter-clockwise to the desired setting.

ADJUSTING FRONT SHOCK ABSORBERS

General

Damping is set at the factory for the average solo rider under normal riding conditions. The rider may make adjustments to compensate for load, individual riding styles and varying road conditions.

Evaluating and changing the rebound and compression damping is a subjective process with many variables and should be approached carefully.

NOTICE

Compression and rebound adjusting valves may be damaged if too much force is used at either end of the adjustment range. (00237a)

NOTE

Do not force adjusters beyond mechanical stops.

Rebound and Compression Damping

The rebound and compression screws (1 and 2) are located on the right fork tube. See Figure 22.

Rebound Damping Adjustment

1. See Figure 22. Turn rebound adjuster (1) screw clockwise in the H (hard) direction until it stops. This is the maximum rebound damping setting.
2. Turn rebound adjuster (1) counter-clockwise in the S (soft) direction the recommended number of turns. Table 29

Compression Damping Adjustment

1. See Figure 22. Turn compression adjuster (2) clockwise in the H (hard) direction until it stops. This is the maximum compression damping setting.

2. Turn compression adjuster (2) counterclockwise in the S (soft) direction the recommended number of turns. Table 29

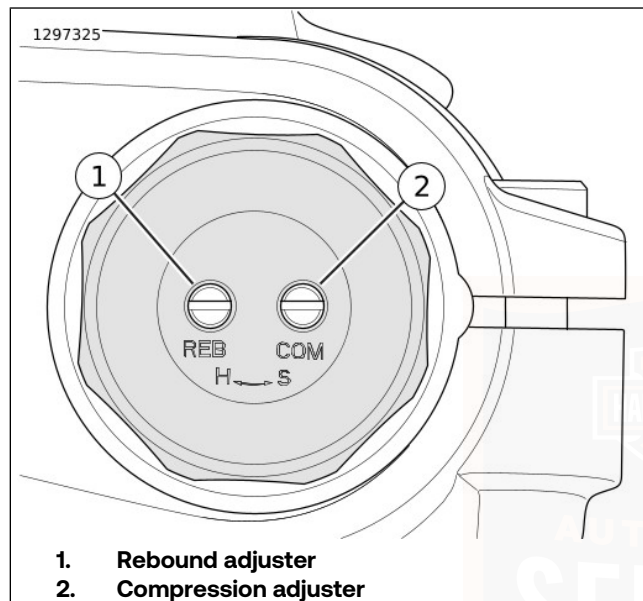


Figure 22. Rebound and Compression Damping Adjustment

Spring Preload

The preload adjustment screw (1) is located on the left fork tube. See Figure 23.

1. **NOTE**

Using a wide flat blade screwdriver will ease the preload adjustment operation.

See Figure 23. Turn preload adjuster (1) counter-clockwise in the L (low) direction until it stops. This is the minimum preload setting.

2. Calculate front preload settings.
 - a. **Rider:** Refer to Table 27 for required rider preload adjustment. Note required adjustment.
 - b. **Passenger or cargo:** Refer to Table 28 for required passenger and cargo preload. Note required adjustment.
 - c. Add rider and passenger/cargo preload amounts together to get final adjustment setting.
3. Adjust front preload settings. Turn preload adjuster clockwise in the H (high) direction the calculated number of turns.

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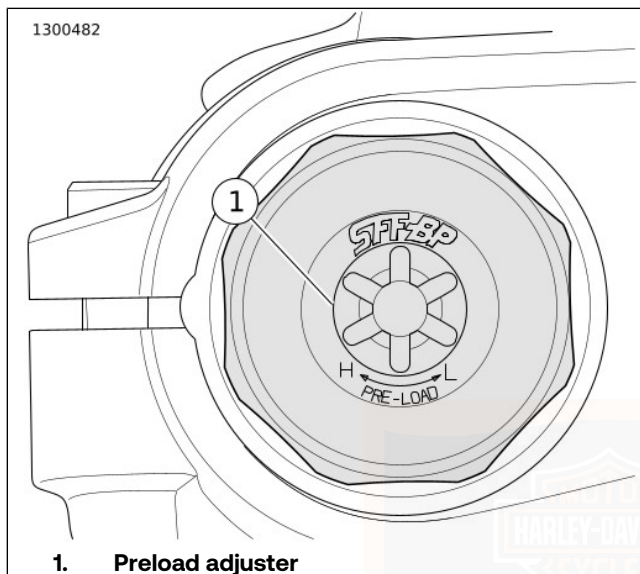


Figure 23. Preload Adjustment

Table 27. Front Preload Suspension Settings

RIDER WEIGHT	FRONT FORKS
kg/lb	Turns from Minimum ⁽¹⁾
<68 kg (150 lb)	0
68–77 kg (150–170 lb)	2
77–86 kg (170–190 lb)	5
86–95 kg (190–210 lb)	9
95–104 kg (210–230 lb)	12
104–113 kg (230–250 lb)	16
113–122 kg (250–270 lb)	19
122–132 kg (270–290 lb)	20
132 kg (290 lb) to GVWR	20

(1) Number of clockwise turns from minimum preload setting.

Table 28. Front Preload with Passenger or Cargo

PASSENGER or CARGO	FRONT FORKS
kg/lb	Additional Turns ⁽¹⁾
0–23 kg (0–50 lb)	+1
23–45 kg (50–100 lb)	+3
45–68 kg (100–150 lb)	+4
68 kg (150 lb) to GVWR	+5

(1) Add to the turns required for rider weight.

Table 29. Front Forks Compression and Rebound

RIDE SETTING	FRONT FORKS ⁽¹⁾	
	Compression	Rebound
Standard	2	2
Comfort	5.5	5
Sport	0	0.5
With Passenger	6	3

(1) Damping adjuster settings are done by turning adjuster clockwise until it stops at the maximum setting, then counting the turns counter-clockwise to the desired setting.



SECURITY SYSTEM

Components

The security system consists of a control module, a hands-free antenna mounted on the motorcycle and a hands-free fob carried by the rider. The security system lamp in the IM indicates when security is armed or disarmed.

See SECURITY SYSTEM > ARMING AND DISARMING (Page 70).

Options

See a LiveWire dealer or www.LiveWire.com for security system options.

SECURITY SYSTEM FOB

Assigning Fob

See Figure 24. Key fobs are electronically assigned to the security system by a LiveWire dealer. Only two fobs can be assigned at any one time.

Purchase replacement fobs from a LiveWire dealer. The fobs can only be assigned to an individual motorcycle by a trained LiveWire technician.

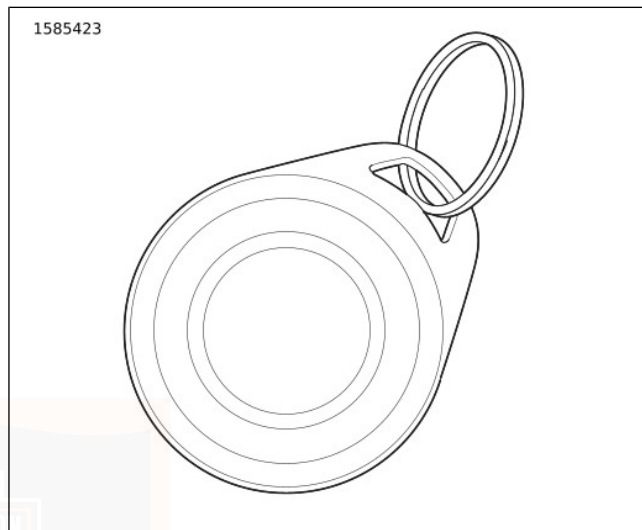


Figure 24. Fob: Security System

NOTE

- The module will arm only if the fob has been assigned by a LiveWire dealer and a Personal Identification Number (PIN) has been entered in the system. Record the PIN on the Personal Information page in the front of this Owner's Manual.

- If the fob is misplaced or fails, the rider can refer to the *Personal Information page in the front of this Owner's Manual* and use the PIN to manually disarm the system. See *SECURITY SYSTEM > ARMING AND DISARMING (Page 70)* and *SECURITY SYSTEM > TROUBLESHOOTING (Page 77)*.
- The rider can change the PIN at any time. See *SECURITY SYSTEM > PERSONAL IDENTIFICATION NUMBER (PIN) (Page 69)*.

Fob Battery

⚠ WARNING



CONTAINS BUTTON OR COIN CELL BATTERY. KEEP OUT OF REACH OF CHILDREN.

Ingestion can result in death or serious injury. Choking, chemical burns and perforation of soft tissue may result. Severe burns can occur within 2 hours of ingestion or placement in any part of the body. Seek medical attention immediately. (13105b)

Replace the fob battery every year.

NOTE

- The reusable label found on the fob packaging lists the serial number of the fob. For reference, affix the label to a blank "NOTES" page in this Owner's Manual.
 - See Figure 25. The serial number of the fob is also found on the inside of the fob.
1. See Figure 25. To open the fob, turn a thin blade in the slot (1).
 2. Remove the battery (2) and discard in accordance with local regulations.
 3. Install a **new** battery (Panasonic CR2032 or equivalent) with the positive side up.
 4. Align the two halves of the fob. Snap the halves together.

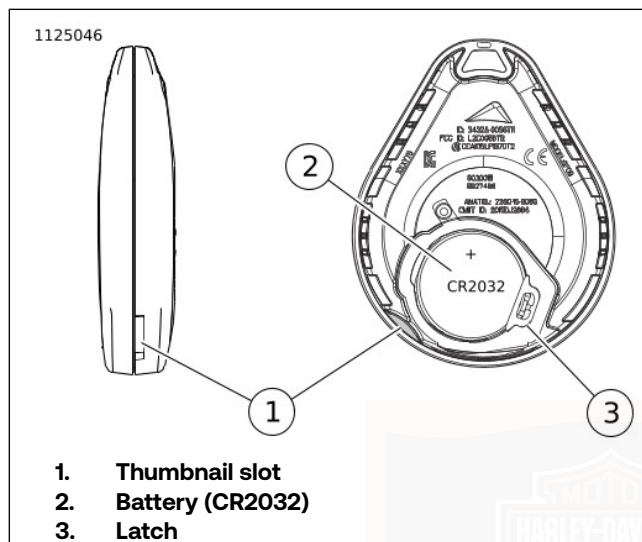


Figure 25. Replace Fob Battery

Riding with a Fob

- Always carry the fob when riding, loading, fueling, moving, parking or servicing the motorcycle.
- 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 76 mm (3.0 in) to a mobile phone, PDA, display or other electronic device. Any electromagnetic interference may prevent the fob from disarming the system.
- For added security, always lock the fork. 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 without the fob in acceptable proximity, the IM 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 Table 38.

SECURITY STATUS INDICATOR

See OPERATION > INDICATORS (Page 97). The security lamp on the instrument module 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:** See a LiveWire dealer if the lamp remains lit continuously.

ARMING AND DISARMING

Arming

When the motorcycle is parked and the OFF/RUN switch is moved to OFF, the security system arms automatically within five seconds if no motion is detected. Even when the fob is present, the system arms.

On arming, the turn signals flash twice. While armed, the indicator lamp on the instrument module flashes every three seconds.

Disarming

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

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

The range of the fob is 1.5 m (5ft).

When the system disarms, the security indicator lamp illuminates for a solid four seconds and then turns off.

Personal identification number (PIN): If the fob is misplaced or if the present fob fails to communicate, the system can be disarmed with the personal identification number (PIN). Refer to Table 30.

Disarming with a PIN

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

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

NOTE

- If a mistake is made while entering PIN, move the OFF/RUN switch to OFF before entering the last digit and then start the procedure from the beginning.
- If the procedure fails to disarm the security system, wait two minutes before attempting another PIN disarm.
- The security system remains disarmed until the OFF/RUN switch is moved to OFF.
- At any time during a PIN disarm if the fob is brought within range, the security system disarms as the module receives the coded signal from the fob.

Table 30. Entering a PIN to Disarm Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
1	If necessary, verify the current 5-digit PIN.		
2	Push the OFF/RUN switch to RUN .	The IM display will show ENTER PIN dialog.	
3	Press and release the first digit of the PIN on the displayed number pad.	The selected digit will now be displayed as the first digit of the PIN on the IM.	
4	Press and release the second digit of the PIN on the displayed number pad.	The selected digit will now be displayed as the second digit of the PIN on the IM.	
5	Press and release the third digit of the PIN on the displayed number pad.	The selected digit will now be displayed as the third digit of the PIN on the IM.	

Table 30. Entering a PIN to Disarm Security System

STEP NO.	ACTION	WAIT FOR CONFIRMATION	NOTES
6	Press and release the fourth digit of the PIN on the displayed number pad.	The selected digit will now be displayed as the fourth digit of the PIN on the IM.	
7	Press and release the fifth digit of the PIN on the displayed number pad.	The selected digit will now be displayed as the fifth digit of the PIN on the IM.	After fifth digit of PIN is entered the 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.

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.

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.

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 LiveWire Security Pager. The range of a pager can be up to 0.8 km (0.5 mi). See a LiveWire 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)

Vehicles with optional siren can be set to chirp upon arming and disarming.

Chirp Mode

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

Chirpless Mode

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

The siren still provides warning chirps and sounds the alarm if 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. Count two seconds, 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. Count two seconds, 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

NOTE

If the vehicle is transported without being put into transport mode, the 12-volt battery may be depleted. In this situation, the 12-volt battery needs to be replaced before the vehicle will power back up.

When transporting the vehicle, it is necessary to utilize transport mode. Placing the vehicle in transport mode

disables the motion detector, preventing a prolonged security event. The vehicle remains armed and unable to start 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.
5. Take the fob out of range to enable vehicle's security.

NOTE

When transport mode is enabled the IM will momentarily display In Transport Mode message.

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 1.5 m (5 ft). 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 AFTER RIDING > STORING MOTORCYCLE (Page 146).

Service Departments

When the motorcycle is left at a LiveWire 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. Once service mode is active, the vehicle can be operated without an assigned fob present. To maintain the service mode, the assigned fobs must be kept out of range. If the fob appears in range, the service mode is cancelled.

DISCONNECTING POWER

NOTE

Follow this procedure to safely deactivate electrical system.

Deactivate the electrical system whenever you perform maintenance on your motorcycle or need to disconnect/replace the battery.

NOTE

- To remove/replace the main fuse, see your authorized LiveWire dealer.
- To disconnect the battery, follow this procedure.

Deactivate Electrical System

1. Ensure the FOB is present.
2. Remove top cover. See SERVICE PROCEDURES > TOP COVER (Page 163).
3. Place OFF/RUN switch in RUN position.
4. See Figure 26. Disconnect TCU connector (5-wire), if equipped
5. Disconnect siren from inside of battery cover, if equipped.
6. Place OFF/RUN switch in OFF position.
7. See Figure 27. Remove rear cover.

NOTE

vehicle OFF/RUN switch should be in OFF position for at least five minutes before OBC connector is disconnected.

8. See Figure 28. Disconnect OBC power connector.

Disconnect the battery if needed. See SERVICE PROCEDURES > BATTERY REPLACEMENT (Page 164).

Perform maintenance as needed.

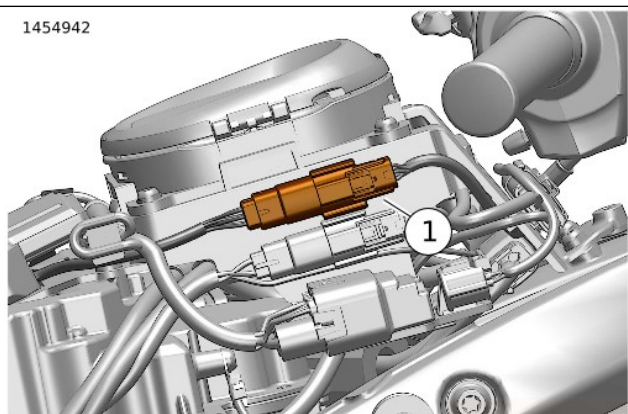
Reactivate Electrical System

NOTE

Ensure the OFF/RUN switch is set back to the OFF position and FOB is present.

1. Connect TCU connector.
2. Connect siren (if equipped).
3. Connect OBC connector.
4. Install the rear cover.
5. Install top cover.

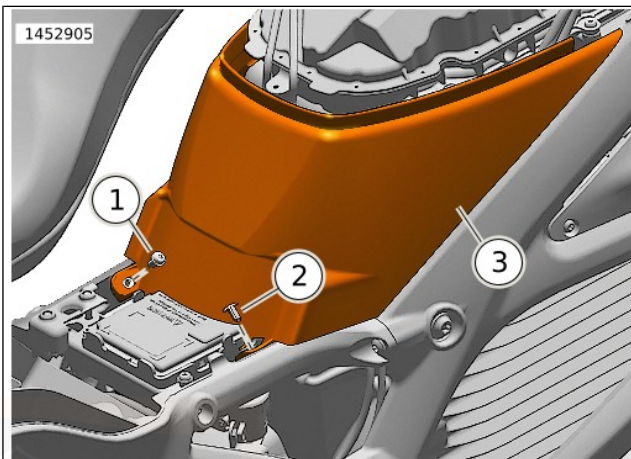
1454942



1. TCU connector (5-wire)

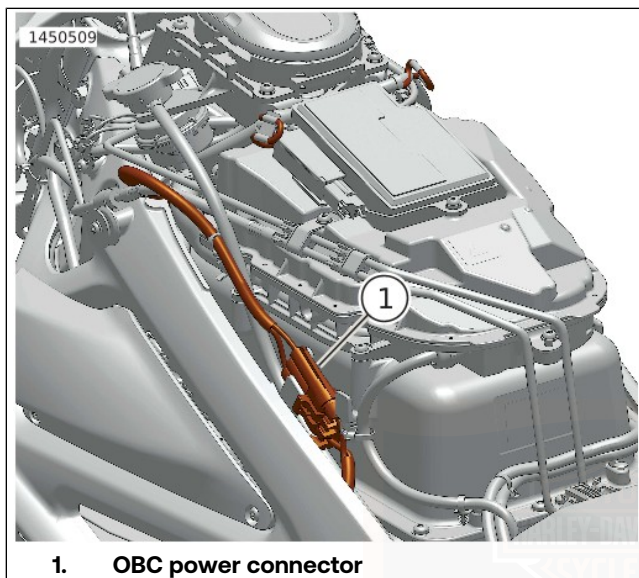
Figure 26. TCU connector

1452905



1. Screw
2. Clip
3. Rear cover

Figure 27. Rear Cover (typical)



1. OBC power connector

Figure 28. OBC connector

TROUBLESHOOTING

Security Lamp

If the security lamp stays illuminated while riding, see a LiveWire 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 76 mm (3 in) 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 5 m (15 ft) from the spot of interference.
2. **Discharged fob battery:** Use the PIN to disarm the system. Replace the battery. See SECURITY SYSTEM > SECURITY SYSTEM FOB (Page 67).

NOTE

When fob battery is low the IM will display LOW FOB BATTERY message.

3. **Damaged fob:** Use the PIN to disarm the motorcycle. Replacement fobs are available for purchase from a LiveWire dealer.

NOTES



KEYLESS ACTIVATION

⚠ 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)

A Motorcycle with a keyless ignition does not require a key for operation. Instead, an assigned security fob must be present or the PIN must be used before propulsion can be enabled.

The key supplied with the motorcycle is for the fork lock. See OPERATION > CONTROLS, INSTRUMENTS AND SWITCHES (Page 80).

Ignition Mode

With security fob present, set the OFF/RUN switch to RUN. The lights and IM become operational and propulsion can be enabled. To disarm the security system using the PIN, see SECURITY SYSTEM > ARMING AND DISARMING (Page 70).

The motorcycle remains on until the OFF/RUN switch is set to OFF. Taking the security fob out of range will not turn off the motorcycle after it is turned on. However, the IM will display a NO FOB alert if the motorcycle begins moving without the fob present.

NOTE

With the OFF/RUN switch in RUN, the system will turn off after 15 minutes of inactivity.

When parked, set the OFF/RUN switch to OFF and take the security fob from the motorcycle to prevent theft or propulsion. With the motorcycle turned off and the security fob out of range, the propulsion system and OFF/RUN switch remain disabled, immobilizing the motorcycle.

Accessory Mode

See Figure 33. With the security fob present, press and hold the Trigger switch. The IM and accessory circuit are powered. The headlamp (high and low beam) and turn signal lamps remain off. While in accessory mode:

- The IM is activated.
- Power is supplied to the USB port and data transfer is enabled.
- The headlamp halo will illuminate.
- The headlamp can be activated by pressing the headlamp flash to pass switch.
- The stop lamps can be operated.

To turn off accessory mode, press and hold the Trigger switch.

Do not leave the motorcycle in accessory mode for an extended period. This can discharge the battery. If the vehicle is left in accessory mode for 40 minutes, the vehicle will automatically shut off to prevent complete battery discharge. To resume accessory mode, press and hold the trigger switch.

CONTROLS, INSTRUMENTS AND SWITCHES

Left-Hand Control Module

See Figure 4. Operate the switches on the left hand control module (2) with the thumb of the left hand. See OPERATION > LEFT HAND CONTROL SWITCHES (Page 100).

Right-Hand Control Module

See Figure 4. Operate the switches on the right hand control module (7) with the thumb of the right hand. See OPERATION > RIGHT HAND CONTROL SWITCHES (Page 103).

Instrument Module

See Figure 4. The IM (3) displays vehicle instrumentation including speedometer, odometer, charge status and range, widgets (rectangle IM), icons (round IM) and telltales. See OPERATION > INSTRUMENTS (Page 82).

Brakes

⚠ 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)

Front brake lever: See Figure 4. The front brake lever (5) controls the front brake. Operate the hand lever with the fingers of the right hand.

Rear brake pedal: See Figure 5. The rear brake pedal (4) activates the rear wheel brake.

⚠ WARNING

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

Apply brakes evenly to prevent wheels from locking up. A balance between rear and front brake is best.

Throttle Twist Grip

Accelerate: See Figure 4. Slowly twist throttle twist grip (6) backward (toward rear of motorcycle) to increase speed.

Decelerate: Slowly twist throttle control grip forward (toward the front) to decrease speed.

OFF/RUN Switch

NOTE

The headlamp and tail lamps operate when the OFF/RUN switch is in the RUN position.

See Figure 34. To activate propulsion, see OPERATION > STARTING MOTORCYCLE (Page 123).

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)

NOTICE

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

See Figure 29. The fork lock is located in the triple clamp on the right side and is locked with the key. The fork lock also has a sensor that detects whether or not it is engaged. The

system will not allow propulsion while the fork lock is engaged. See Propulsion Interlocks in OPERATION > INSTRUMENTS (Page 82).

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

1. Turn fork to full left position.
2. Insert key into fork lock.
3. Turn key to right position (clockwise).
4. Remove key.
5. To unlock fork, insert key into fork lock and turn to the left position (counter-clockwise). Remove lock key.
6. Check steering for proper operation by turning the handlebars through the full operating range. Handlebars should turn smoothly without binding.

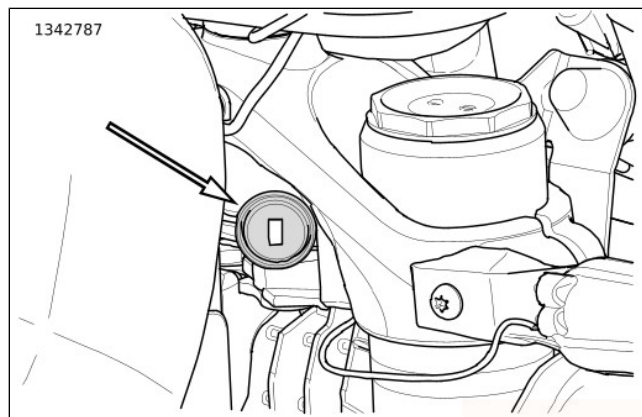


Figure 29. Fork Lock

INSTRUMENTS

Settings Menu

⚠ WARNING

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

See Figure 30 or Figure 31. The settings menu displays the menus used to set up ride modes, appearance, system, widgets (rectangle IM), icons (round IM) and user settings.

NOTE

To make full use of features and minimize distraction while on the road, configure the system with your personal preferences before riding.

After propulsion has been enabled the settings menu and touchscreen functions are disabled.

Table 31. Settings Main Menu

Press	Result
[Settings] 	Configure instrument module settings. Do before riding the motorcycle.
	Available selections (rectangle IM): RIDE MODE, APPEARANCE, SYSTEM, CUSTOMIZE WIDGETS, USER SETTINGS.
	Available selections (round IM): General, Ride Customization, Appearance, Bluetooth, Phone Notifications, Software.

RIDE MODE

Table 32. Settings Menu: Ride Mode

Press	Result
[RIDE MODE]	Allows enable and disable of available ride modes and allows setup of custom ride modes.
	Preset ride mode selections: Preset Ride mode selections: Enable/Disable, Copy+Edit. ⁽¹⁾
	Custom ride mode selections: Enable/Disable, Power slider, Regen slider, Throttle slider, Traction control setting ^(2, 3)

(1) Copy+Edit selection will copy the selected ride mode into a selected custom ride mode option and allow the rider to build a custom ride mode using a preset selection as a starting point.

(2) Power Slider adjusts how much overall power will be available in the custom ride mode. Regen slider adjusts how much regen will be enabled in the custom ride mode. Throttle slider adjusts the intensity of throttle response felt by the rider in the custom ride mode.

(3) The traction control level adjusts how much rear wheel slip the system will allow. Traction control adjustment does not affect the performance of drag torque slip control or ABS functions.

APPEARANCE

Table 33. Settings Menu: Appearance

Press	Result
[APPEARANCE]	Configure instrument module appearance.
	Available selections (rectangle IM): SPEEDOMETER STYLE (DIGITAL/ANALOG), AUTO BRIGHTNESS (on/off), BRIGHTNESS slider.
	Available selections (round IM): Auto-Brightness (on/off), Brightness Level (adjustable slider).

Table 34. Settings Menu: General (Round IM)

Press	Result	
[General]	Configure instrument module settings. Do before riding the motorcycle.	
	Available selections: Trip Reset, Adjust Date, LW App Time Sync, Adjust Clock Time, Clock Format, Units, Change Security Pin, Display Language.	
	Trip Reset	Select from Trip A or B, Reset Trip
	Adjust Date	Manually set date displayed
	LW App Time Sync	Toggle On/Off
	Adjust Clock Time	Manually set time displayed
	Clock Format	Select 12 or 24 hour time display
	Units	Select Standard or Metric units of measure
	Change Security Pin	Select PIN for security system
	Display Language	Select language to display

SYSTEM

Table 35. Settings Menu: System (Rectangle IM)

Press	Result	
[System]	Configure instrument module settings. Do before riding the motorcycle.	
	Available selections: BLUETOOTH CLOCK LOCALIZATION ABOUT	
	BLUETOOTH: (LiveWire App must be installed on phone for full functionality)	• BLUETOOTH (On/Off) • PAIRING (Android devices must have LiveWire App installed and open for pairing. Apple devices must have LiveWire App closed for pairing) • MY DEVICES > Optional selections: When devices paired: (Select desired device from list) FAVORITE (On/Off), CONNECT THIS DEVICE, FORGET THIS DEVICE.
	CLOCK:	• SYNC CLOCK TO PHONE (On/Off) • CLOCK TYPE (12/24) • HOUR, MINUTE, AM/PM
	LOCALIZATION:	• LANGUAGE • List of selectable languages • UNITS • SPEED/DISTANCE (MI/KM) • TEMPERATURE (F/C)

Table 35. Settings Menu: System (Rectangle IM)

Press	Result	
	ABOUT:	• FACTORY OPTIONS • CLEAR CACHE (CLEAR CACHE selection will clear all paired bluetooth devices from IM memory.) • UPDATE SOFTWARE • LOAD ADDITIONAL LANGUAGES

Updating Software

1. Check software version.
 - a. Refer to Table 35 or Table 36. SETTINGS> SYSTEM> ABOUT> SOFTWARE or Settings> Software> Software Information. This menu will show the current software version on the IM.
 - b. Check for latest software version. See website: www.h-d.com/infotainment-support.
2. Update software.
 - a. Download the latest software version to Universal Serial Bus Type-C (USB-C) device. See website: www.h-d.com/infotainment-support.
 - b. Unzip the downloaded file to extract the gpg file for rectangle IM or pv2 file for round IM. The downloaded file must be at the root directory of your USB-C drive in order for it to be detected by the IM. Only one gpg or pv2 file should be present at the root directory level.
 - c. See Figure 6. Connect USB-C drive to motorcycle.

- d. **Rectangle IM:** Refer to Table 35. SETTINGS> SYSTEM> ABOUT> FACTORY OPTIONS. Select UPDATE SOFTWARE.

- e. **Round IM:** Refer to Table 36. Settings>Software>Infotainment SW Update. Select software update file. Select check mark to start update.

- f. Allow update to complete.

- g. Remove USB-C drive.

Table 36. Settings Menu: Software (Round IM)

Press	Result	
[Software]	View and update software versions.	
	Available selections: Infotainment SW Update, Regulatory Info, Software Information	
	Infotainment SW Update	Displays available updates
	Regulatory Info	Displays regional regulatory information
	Software Information	Displays software part number/revision, hardware part number/revision and hardware serial number

Loading Additional Languages

1. Check for available languages.

- a. Refer to Table 35 or Table 34. SETTINGS> SYSTEM> LOCALIZATION> LANGUAGE or Settings>general>display language. If the preferred language is not selectable it must be loaded into the IM.

- b. Check for latest language file. See website: www.h-d.com/infotainment-support.

2. Load additional languages.

- a. Download the latest language file to USB-C device. See website: www.h-d.com/infotainment-support.

- b. Unzip the downloaded file to extract the asc file. The asc file must be at the root directory of your USB-C drive in order for it to be detected by the IM. Only one asc file should be present at the root directory level.
- c. See Figure 6. Connect USB-C drive to motorcycle.
- d. Refer to Table 35 or Table 34. SETTINGS> SYSTEM> ABOUT> FACTORY OPTIONS. Select LOAD ADDITIONAL LANGUGES.

- e. Allow update to complete.
- f. Remove USB-C drive.

CUSTOMIZE WIDGETS (Rectangle IM)

See OPERATION > WIDGETS (Page 106) for more details on Widget functions.



Table 37. Settings Menu: Customize Widgets (Rectangle IM)

Press	Result	
[CUSTOMIZE WIDGETS]	Available selections: ALERT RIDE MODE POWER RANGE BATTERY TEMPERATURE TRIP BLUETOOTH NAVIGATION AUDIO PHONE CHARGING	
	ALERT:	• LOCATION (LEFT/RIGHT)
	RIDE MODE:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)
	POWER:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)
	RANGE:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)
	BATTERY:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)

Table 37. Settings Menu: Customize Widgets (Rectangle IM)

Press	Result	
	TEMPERATURE:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)
	TRIP:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT) • OPTION (Trip B/Key On) • TRIP RESET (Trip A, Trip B, Key On)
	BLUETOOTH:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT)
	NAVIGATION:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT) • TIME INFO (ARRIVAL/DURATION) • DISTANCE TO DESTINATION (On/Off)
	AUDIO:	• ENABLED (On/Off) • LOCATION (LEFT/RIGHT) • AUDIO INFO (On/Off) (PLAYHEAD/ALBUM)
	PHONE:	• LOCATION (LEFT/RIGHT)
	CHARGING:	• ENABLED (On/Off)

USER SETTINGS

Table 38. Settings Menu: User Settings (Rectangle IM)

Press	Result
[USER SETTINGS]	Available selections: SMALL DISPLAY INFO, BATTERY BAR OPTIONS, CHANGE Personal Identification Number (PIN), PIN DISPLAY.
Options for:	SMALL DISPLAY INFO⁽¹⁾ • Blank (On/Off) • TRIP A (On/Off) • TRIP B (On/Off) • KEY ON (On/Off) ⁽¹⁾ BATTERY BAR OPTIONS • SHOW BATTERY PERCENTAGE (On/Off) • SHOW RANGE (On/Off) • RANGE (SHORT/LONG) CHANGE PIN PIN DISPLAY (SHOW/TEMP/HIDE)
<i>(1) Small display refers to odometer display.</i>	

Charge State/Range

NOTE

Actual range will vary depending on riding habits, ambient weather and equipment conditions.

See Figure 30 or Figure 31. The charge state and range bar displays the charge state of the Rechargeable Energy Storage System (RESS) and estimated remaining range.

Speedometer

⚠ WARNING

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

See Figure 30 or Figure 31. The IM registers miles per hour (MPH) (U.S. models default) and kilometers per hour (km/h) (international models default). The IM can be configured to register either miles per hour or kilometers per hour through the settings menu.

Instrument backlighting changes with ambient lighting differences, changes in ambient light, such as such as going through a tunnel, may change level of backlighting.

Clock

See Figure 30 or Figure 31. The clock displays current time in 12/24 hour format. The settings menu is used to set time and select 12 or 24 hour format.

Odometer

Pressing the trip switch with the OFF/RUN switch in either position activates the odometer reading.

See Figure 30 or Figure 31. The odometer display also provides the following selectable displays:

- Odometer
- Trip odometer A
- Trip odometer B
- Trip odometer K (rectangle IM)

Press and release the trip switch to cycle through the displays.

Trip Odometers A, B (and K rectangle IM)

See Figure 30. To check mileage or to reset trip odometers, the OFF/RUN switch must be in the RUN position. Press and release the trip switch until the desired trip odometer is displayed. An A, B, or K on the left of the odometer display identifies the trip odometer.

NOTE

Trip K (Key on) resets each time the OFF/RUN switch is put into the RUN position if more than five minutes has passed since vehicle has been turned off.

To reset or zero trip odometers, have desired (A or B) odometer displayed. Press the trip switch and hold for approximately one second. The trip odometer resets to zero.

Propulsion Interlocks

See Figure 30 or Figure 32. The vehicle is equipped with propulsion interlocks. Propulsion interlocks are conditions that must be met before propulsion can be enabled.

Propulsion interlock messages will be displayed on the IM when conditions are not met to enable propulsion.

Propulsion interlock messages include; CALL SERVICE, UNPLUG TO RIDE, PRESS RUN, WAIT - NOT READY, UNLOCK FORK, RAISE SIDE STAND, RELEASE TWIST GRIP and PRESS START.

Widgets (Rectangle IM)

See Figure 30. Widgets can be displayed on the left and right sides (2 and 26) of the IM. Each selectable widget displays unique additional information on the IM.

See OPERATION > WIDGETS (Page 106).

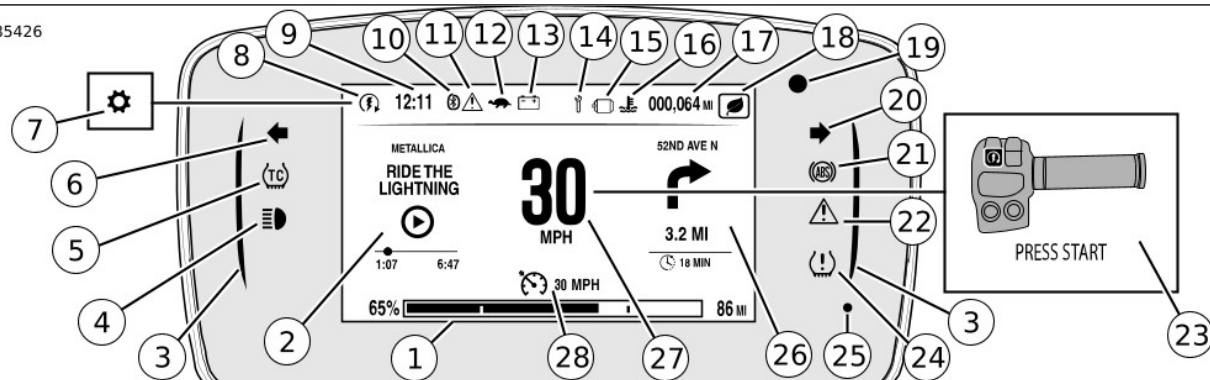
Table 39. Settings Menu: Bluetooth (Round IM)

Press	Result	
[Bluetooth]	Configure connections with bluetooth devices.	
	Available selections: Phone List, Add New Phone, Headset List, Add New Headset	
	Phone List	Shows paired phones
	Add New Phone	Use to pair new phone to vehicle
	Headset List	Shows paired headsets
	Add New Headset	Use to pair new headset to vehicle

Table 40. Settings Menu: Phone Notifications (Round IM)

Press	Result
[Phone Notifications]	Configure which phone notifications are displayed.
	Available selections: Call notifications (on/off) and text notifications (on/off).

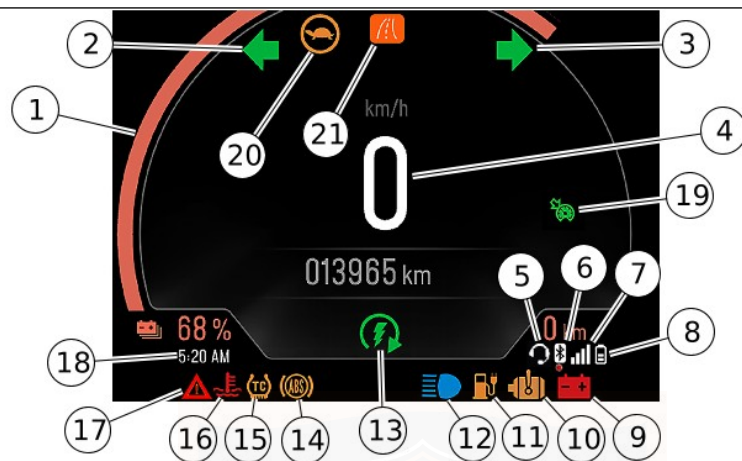




1. Charge state/Range bar
2. Left widget
3. Side bar
4. Headlamp high beam
5. Traction control
6. Left turn signal
7. Settings
8. Propulsion enabled
9. Clock
10. Bluetooth
11. EV alert
12. Propulsion limited
13. 12V Battery discharge
14. Not used

15. Malfunction Indicator Lamp (MIL)
16. Coolant temperature
17. Odometer
18. Ride mode
19. Light sensor (not an indicator)
20. Right turn signal
21. ABS
22. EV fault
23. Propulsion interlock
24. Not used
25. Security/Fault
26. Right widget
27. Speedometer
28. Cruise control

Figure 30. Instrument Module Displays and Selections (Rectangle IM)



- | | |
|---------------------------|-------------------------|
| 1. Charge state/Range bar | 12. Headlamp high beam |
| 2. Left turn signal | 13. Propulsion enabled |
| 3. Right turn signal | 14. ABS |
| 4. Speedometer | 15. Traction control |
| 5. Headset connection | 16. Coolant temperature |
| 6. Bluetooth | 17. EV alert |
| 7. Device signal | 18. Clock |
| 8. Device battery | 19. Cruise control |
| 9. 12V battery discharge | 20. Propulsion limited |
| 10. MIL/OBD fault | 21. Ride mode |
| 11. Low state of charge | |

Figure 31. Instrument Module Displays and Selections (Round IM)

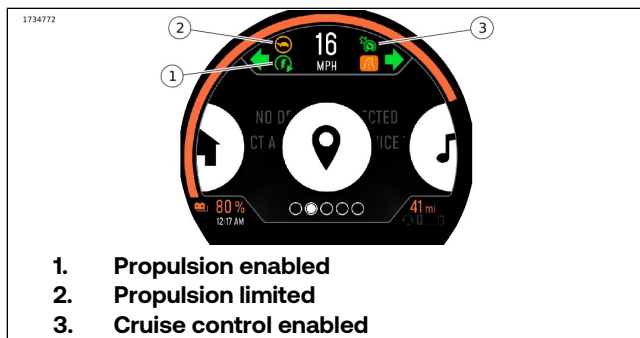


Figure 32. Propulsion States

INDICATORS

Service Lamps

See Figure 30 or Figure 31. The service lamps indicate the condition of the powertrain/powertrain management system.

EV Alert: Amber Icon appears when the vehicle has detected the vehicle requires maintenance and/or repair but can still be operated.

EV Fault: Red Icon appears when the vehicle has detected an error, the vehicle should not be operated and will go into shutdown mode.

Malfunction Indicator Lamp (MIL): The MIL normally comes on when the ignition is first turned on. During this time, the

powertrain management system runs a series of self-diagnostics.

If the MIL does not turn off after enabling propulsion or comes on at any other time, See an authorized LiveWire dealer.

Side Bar Lamps (Rectangle IM)

See Figure 30.

Charging: When charging, the sidebar lamps illuminate in a red, yellow, green succession.

Accessory mode: The side bar lamps are blue when the motorcycle is in accessory mode.

Propulsion not enabled: With the OFF/RUN switch in the RUN position the sidebar lights are yellow when propulsion is not enabled.

Propulsion enabled: With the OFF/RUN switch in the RUN position the sidebar lights are green when propulsion is enabled.

Propulsion Enabled

See Figure 30 or Figure 31. The Propulsion enabled Indicator replaces the settings icon on the IM when propulsion has been enabled.

Bluetooth

See Figure 30 or Figure 31. The bluetooth indicator displays the connection status of the IM. When connected to a device the indicator will be blue, when no connection is detected the indicator will be grey.

Propulsion Limited

See Figure 30 or Figure 31. The Propulsion limited Indicator illuminates when there is a fault that requires performance to be limited.

12 V Battery Discharge

See Figure 30 or Figure 31. The battery discharge lamp indicates overcharging or undercharging of the 12 V battery.

Coolant Temperature

▲ WARNING

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

See Figure 30 or Figure 31. The coolant temperature Indicator illuminates when the coolant has exceeded threshold temperature.

If coolant level is sufficient and the lamp remains on, see a LiveWire dealer for service.

Ride Mode

See Figure 30 or Figure 31. The ride mode Indicator displays the current selected ride mode. See OPERATION > WIDGETS (Page 106).

Security/Fault Lamp (Rectangle IM)

See Figure 30. The security lamp displays the status of the security system and electrical self-diagnostics for the motorcycle. Refer to OWNER MANUAL > SECURITY SYSTEM (Page 67) for security system operation.

Flashing: The security system is armed.

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

Solid (security system disarmed): If the lamp remains on after the security system has been disarmed, see a LiveWire dealer.

Turn Signal Indicator Lamps

See Figure 30 or Figure 31.

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

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

Headlamp High Beam Lamp

See Figure 30 or Figure 31. The headlamp high beam lamp is on when the high beam or flash to pass switch is activated.

Cruise Control

See Figure 30 or Figure 31.

Off: Cruise control is not enabled.

Enabled - speed not set: Cruise control is enabled, cruising speed is not set. Cruise indicator shown in amber color without speed setting.

Enabled - speed set: Cruising speed is set. Motorcycle speed is maintained by the cruise control system. Cruise indicator and speed setting shown in green color.

Enabled - speed set disengaged: Cruising speed is set but has been disengaged. Motorcycle speed is not maintained by the cruise control system. Cruise indicator and speed setting is shown in red color.

ABS Lamp

See Figure 30 or Figure 31.

⚠ WARNING

If ABS lamp continues flashing at speeds greater than 5 km/h (3 mph) or remains on continuously, the ABS is not operating. The standard brake system is operational, but wheel lock up can occur. Contact a LiveWire 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. (12135b)

Flashing: The ABS lamp begins flashing when the vehicle is turned on. The flashing lamp indicates that the system is in self-diagnosis mode. It continues to flash until motorcycle speed exceeds 5 km/h (3 mph). ABS is not operational until the lamp turns off.

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 LiveWire dealer for service.

Traction Control Lamp

See Figure 30 or Figure 31.

Solid: Traction control has been turned off.

Flashing: Traction control system active intervention.

Off: Traction control system is on.

Solid with Security/Fault indication lamp On: Continuous illumination of the lamp with the Security/Fault indication lamp indicates a traction control fault. Traction control is disabled and the motorcycle is operating as traction control turned off. See a LiveWire dealer for service.

LEFT HAND CONTROL SWITCHES

Trigger Switch

See Figure 33. **Vehicle off:** Press the trigger switch (1) to display the accumulated mileage on the IM. **Vehicle in accessory/ignition mode:** Press the trigger switch to cycle through the odometer functions. Refer to Table 41.

High Beam

See Figure 33. Press the high beam switch (2) to activate the high beam. The (blue) high beam indicator lamp is lit when the high beam is on. Refer to Table 41.

Low Beam/Flash to Pass

Low beam: See Figure 33. Press the bottom of the low beam/flash to pass switch (3) to activate the low beam.

Flash to pass: When the low beam switch is on, press and release the flash to pass switch to flash the high beam before passing another vehicle. The high beam indicator lamp on the instrument cluster 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 Table 41.

Voice Recognition Switch (Rectangle IM)

See Figure 33. The voice recognition switch (4) activates voice recognition features on a connected device (if supported). With a headset connected, press the voice command switch. Speak the desired command into the headset microphone.

Menu Switch (Round IM)

See Figure 33. The menu switch (4) activates the scrolling menu to select settings, music, navigation and bike status.

Cruise Control Switch

See Figure 33. The CRUISE/SET/RESUME switch (5) automatically regulates the speed of the vehicle. See

OPERATION > CRUISE CONTROL (Page 129) for detailed operation.

CRUISE: Press the CRUISE switch straight in to enable cruise control. The cruise control indicator is displayed green without speed setting. Pressing the CRUISE switch again turns off cruise control and indicator.

SET/-: With cruise control enabled, press SET/- to set the cruising speed. The cruise indicator will now have the green set speed shown next to it. While at cruising speed, press SET/- to decrease the regulated speed.

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

Play/Pause/Volume/Previous/Next Switch

See Figure 33. The Play/Pause/Volume/Previous/Next (6) five-way switch operates radio features.

Play/Pause: Press the Play/Pause switch straight in to pause or resume audio.

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

Previous/Next : Press the switch to the left or right to seek up/down to select the previous/next media file.

Left Turn Signal

Activate: See Figure 33. Press the left turn signal switch (7) to activate the left turn signal. Refer to Table 41.

Cancel:

Manual Operation: Press the left turn signal switch to cancel the right turn signal.

Automatic Operation: 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.

NOTE

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

Horn

See Figure 33. The horn is operated by pressing the horn switch (8). 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 Table 41.

Traction Control Switch

See Figure 33. The traction control switch (9) activates and deactivates the traction control system. Refer to Table 41.

Disable: Press switch for 1 s with propulsion enabled and vehicle stopped.

Enable: Press switch at anytime to resume traction control operation.

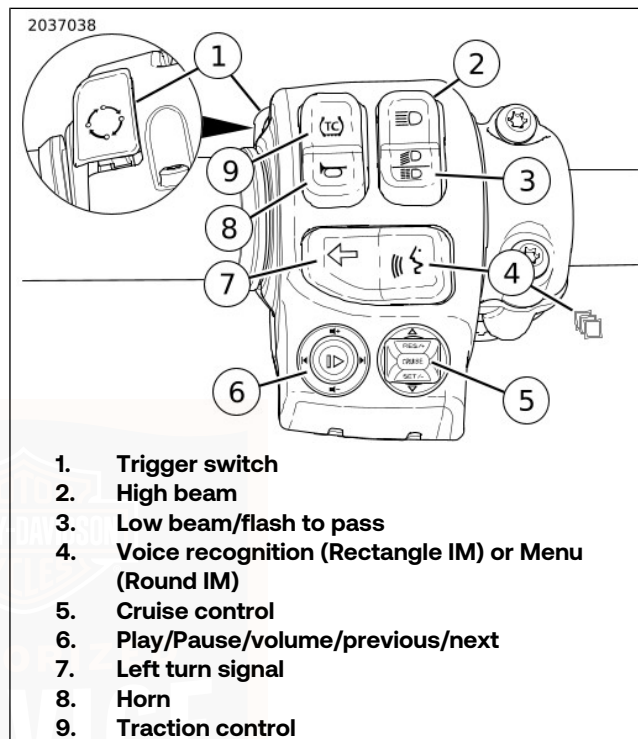


Figure 33. Left Hand Control Module

Table 41. Left-Hand Control Switches

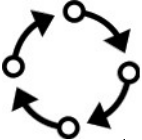
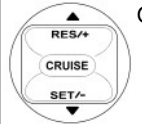
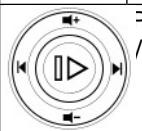
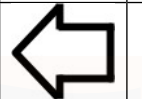
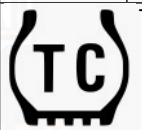
SWITCH	NAME	FUNCTION
	Trigger	Press the switch to alternate odometer displays.
	High beam	Press the switch to switch the headlamp to high beam.
	Low beam/ Flash to pass	Press the switch to switch the headlamp to low beam. Press and release to flash the high beam. In ACC, press to activate the headlamp.
	Voice recognition (Rectangle IM)	Initiates a voice recognition session on connected device (if supported).
	Menu (Round IM)	Activates the scrolling menu to select setting/music/navigation/bike status.

Table 41. Left-Hand Control Switches

SWITCH	NAME	FUNCTION
	Cruise control	Three-way switch, operates cruise control functions.
	Play/Pause/Volume /previous/next	Five-way switch, operates music functions.
	Left turn	Press the switch to signal a left turn.
	Horn	Press the switch to sound the horn.
	Traction control	Press the switch to deactivate and activate traction control.

RIGHT HAND CONTROL SWITCHES

Hazard Warning 4-Way Flasher

See Figure 34. 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 off until assistance is found. Refer to Table 42.

1. With the OFF/RUN switch in the RUN position, press on the hazard warning triangle to activate the 4-way flashers.

NOTE

- *The fob must be present when turning on the 4-way flashers and when canceling the flashers.*
 - *The four-way flashers will operate when the vehicle is tipped over regardless of OFF/RUN switch position. See OPERATION > RESTORING VEHICLE FUNCTIONS AFTER TIPOVER (Page 125).*
2. Turn OFF/RUN switch to the OFF position. The 4-way flashers continue for 2 hours or until cancelled by the rider.
 3. To cancel, turn the OFF/RUN switch to the RUN position. Press the warning triangle above the start switch.

OFF

See Figure 34. Press the OFF/RUN switch to OFF (2) to disable propulsion. Refer to Table 42.

RUN

See Figure 34. Push the OFF/RUN switch to RUN (3) to enable start switch. The OFF/RUN switch must be in the RUN position to enable propulsion. Refer to Table 42.

Right Turn Signal

Activate:

See Figure 34. Press the right turn signal switch (4) to activate the right turn signal. Refer to Table 42.

Cancel:

Manual Operation: Press the right turn signal switch to cancel the right turn signal.

Automatic Operation: 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.

NOTE

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

Cursor/Select Switch

See Figure 34. The CURSOR/SELECT five-way switch (5) operates IM features. Refer to Table 42.

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

CURSOR: Press the switch in the desired direction to move the selection on the IM.

MODE switch

See Figure 34. Press the MODE switch (6) to cycle through and select the desired ride mode. Refer to Table 42.

Start

See Figure 34. The start switch (7) is on the right handlebar control module. Refer to Table 42.

1. Switch the OFF/RUN switch to the RUN position (3). See OPERATION > STARTING MOTORCYCLE (Page 123).

NOTE

Start switch must be held for a minimum of one second to activate propulsion.

2. Press the start switch (7) to activate propulsion.

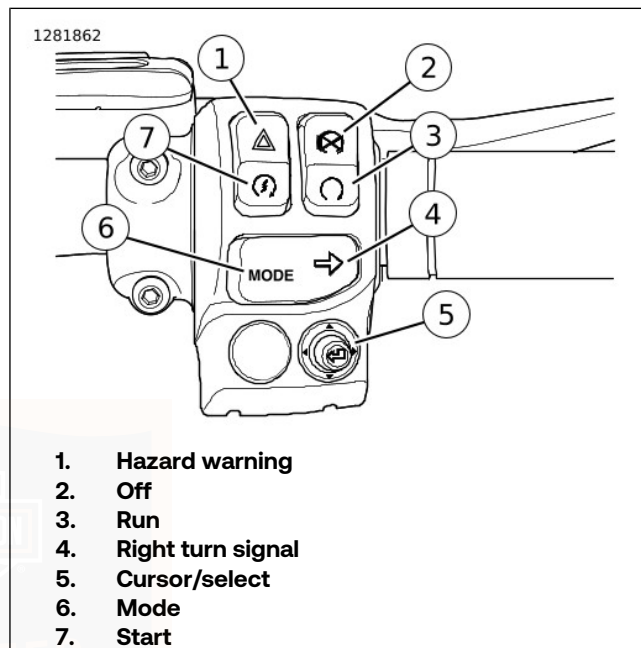


Figure 34. Right Hand Switch Module

Table 42. Right Hand Control Switches

SWITCH	NAME	FUNCTION
	Hazard	Press to activate the 4-way flashers.
	Off	Press to turn off power.
	Run	Press to turn on power.
	Right turn	Press to signal a right turn.
	Cursor/Select	Five-way switch, operates instrument functions.

Table 42. Right Hand Control Switches

SWITCH	NAME	FUNCTION
	Mode	Press to cycle through and select ride modes.
	Start	Press to enable propulsion.

WIDGETS

Widgets are small customizable displays that allow the rider to see select additional information on the IM. Widgets are customizable through the settings menu on the IM. Widgets can be changed using the Cursor/Select switch on the Right Hand Control Module (RHCM). Left selection moves through enabled widgets on the left side of the IM, right selection moves through enabled widgets on right side of the IM. See OPERATION > INSTRUMENTS (Page 82).

NOTE

Left and right widgets will default to blank with each cycle of the OFF/RUN switch.

Alert

See Figure 35. The alert widget displays information related to specific vehicle faults. The alert widget displays an alert icon which will match the illuminated indicator lamp, and the alert description, which will give more information related to the current fault.

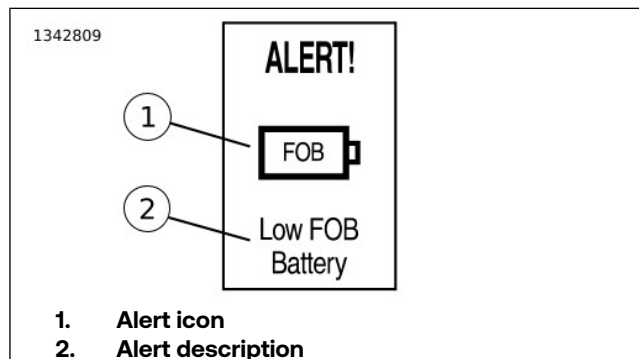


Figure 35. Alert Widget

Table 43. Alert Widget/Icon Displays

Widget	Widget Text	Cause	Action
	Alert – Shutdown Alert	Propulsion will start disable sequence	See dealer
	Alert – HV Disconnection	High voltage connection issue	See dealer
	Alert – Motor Fault	Motor or inverter fault	See dealer
	Alert – RESS Fault	RESS internal fault	See dealer
	Alert – Charge Bike Fault	RESS too low to enable propulsion	Charge motorcycle

Table 43. Alert Widget/Icon Displays

Widget	Widget Text	Cause	Action
	Alert – Charger Fault	OBC general fault	See dealer
	Alert – RESS Significantly Out of Balance	RESS at significant level of imbalance	See dealer
	Alert – Jiffy Stand Not Trusted	Jiffy stand sensor fault	Cycle jiffy stand down and back up, if the alert is not corrected see dealer
	Alert – Propulsion Inhibited ⁽¹⁾	General fault	See dealer
	Alert – 12 V Battery Faulted	12 V Battery needs replacement	See dealer
	Alert – 12 V Battery Weak	12 V Battery needs replacement	See dealer
	Alert – 12 V Battery Disconnected	12 V battery leads loose or disconnected	See dealer
	Alert – Load Shedding	12 V battery fault	See dealer
	Alert – OBC Over Temperature ⁽¹⁾	OBC overheating	Shutdown motorcycle and allow to cool
	Alert – Low Charge	Low SOC	Charge motorcycle
	Alert – Coolant Pump Fault	Coolant pump fault.	See dealer

Table 43. Alert Widget/Icon Displays

Widget	Widget Text	Cause	Action
	Alert – MIL ⁽²⁾	Propulsion system fault.	See dealer
	Alert – OBC Too Warm ⁽²⁾	OBC general fault	See dealer
	Alert – RESS Too Warm ⁽²⁾	RESS general fault	See dealer
	Alert – Charge Port Fault ⁽²⁾	Charge Port fault	See dealer
	Alert – EVSE Fault ⁽²⁾	EVSE fault	See dealer

Table 43. Alert Widget/Icon Displays

Widget	Widget Text	Cause	Action
	Alert – Charge Plug Latch Pressed ⁽²⁾	Charge Plug latch pressed	Reinstall Charge Plug, if the alert is not correct see dealer
	Alert – Load Shedding	General fault	Verify RESS has adequate charge, if the alert is not corrected see dealer
	Alert – Low Charge ⁽²⁾	Low RESS charge	Charge vehicle, if the alert is not corrected see dealer
	Alert – Vehicle Motion Detected ⁽²⁾	Vehicle Motion Detected	Cycle OFF/ RUN switch, if the alert is not corrected see dealer
	Alert – Vehicle Starting ⁽²⁾	Vehicle start up has been activated	Vehicle start up has been activated

Table 43. Alert Widget/Icon Displays

Widget	Widget Text	Cause	Action
	Alert – Propulsion Enabled ⁽²⁾	Propulsion has been activated	Propulsion has been activated
	Alert – Propulsion Limited ⁽²⁾	Low SOC, ride mode selected or general fault	Charge vehicle If unable to charge, see dealer
	No FOB	No assigned fob detected	Bring assigned fob within range
	Low FOB battery	Battery in fob low	Replace fob battery
(1) Rectangle IM (2) Round IM			

Ride Mode

Rectangle IM: See Figure 36. The ride mode widget displays the seven available ride mode icons, four pre-set (1,2,3,4) and three custom (5). Current selectable ride modes will be shown

in color, disabled ride mode icons are gray and the active ride mode will be highlighted.

Round IM: Refer to Table 44. The ride mode icon displays the currently selected ride mode. The selected ride mode can be changed using the mode button on the RHCM.

Ride Modes

- **Sport:** Delivers the full potential of the motorcycle for a performance oriented riding experience.
- **Road:** Delivers balanced performance with a blend of technology for daily use.
- **Range:** A combination of settings that results in smooth riding to get the most range out of a charge.
- **Rain:** Smooth acceleration with higher levels of traction control intervention, giving the rider greater confidence in poor conditions. This is also an appropriate setting for riders to become familiar with the motorcycle.

NOTE

Custom ride modes must be set up before they can be used.

- **Custom A, Custom B, (Custom C rectangle IM only):** There are up to three possible customizable ride mode selections. When setting up a custom ride mode, the available level of power, regen and throttle response can be adjusted. **Rectangle IM** refer to Table 32.

Round IM Ride Mode Customization

See Figure 37. The ride modes screen displays the available ride mode icons and configuration options. Ride modes can be enabled or disabled using the enable/disable button (1). To access the ride mode customization screen, press the edit button (2) next to custom ride mode A or B. Current selectable ride modes will be shown in color, disabled ride mode icons are gray and the active ride mode will be highlighted.

See Figure 38. The Ride Mode Customization screen displays configuration information for the custom ride modes. Configurable options include: Power - Maximum available power (1). Regen - Maximum available regenerative braking (2). Throttle - Maximum available throttle (3) Traction Control - There are four available traction control modes. These modes adjust the level of intervention for Front Wheel Lift Mitigation as well as traction control and are shown in order of decreasing intervention: Rain > Road > Sport. Decreasing intervention means more rear wheel slip during heavy acceleration and more front wheel lift allowed (4). Anti-Lock Braking - There are 2 available ABS modes. These modes are shown in increasing intervention order. Most intervention in Rain, least intervention in Road.

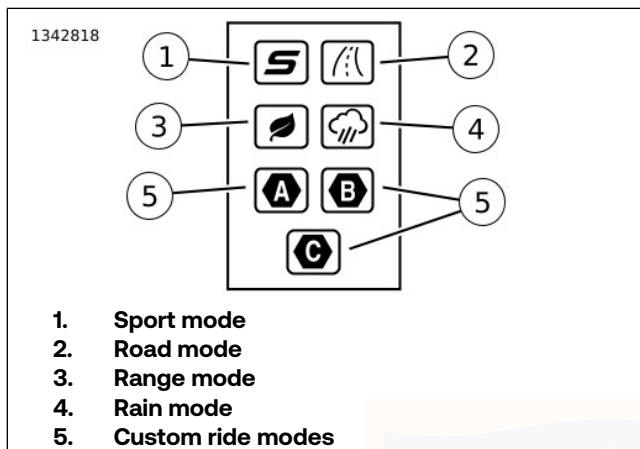


Figure 36. Ride Mode Widget (Rectangle IM)

Table 44. Ride Modes

ICON	Ride Mode
	Sport
	Custom A
	Custom B
	Custom C (Rectangle IM)
	Ride mode fault

Table 44. Ride Modes

ICON	Ride Mode
	Range
	Road
	Rain

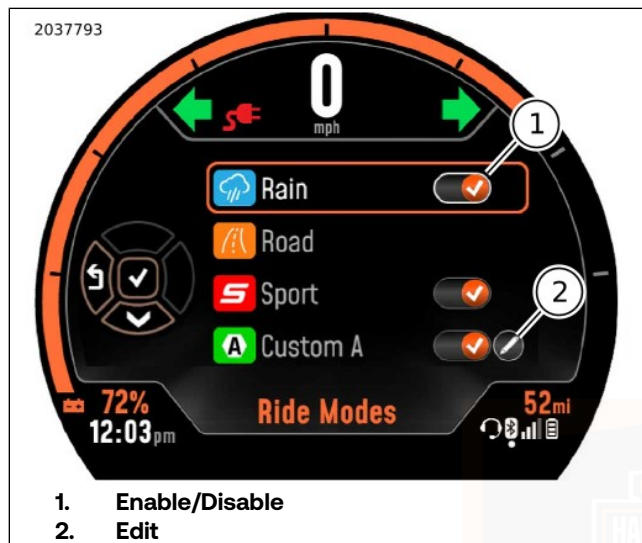


Figure 37. Ride Mode Display (Round IM)

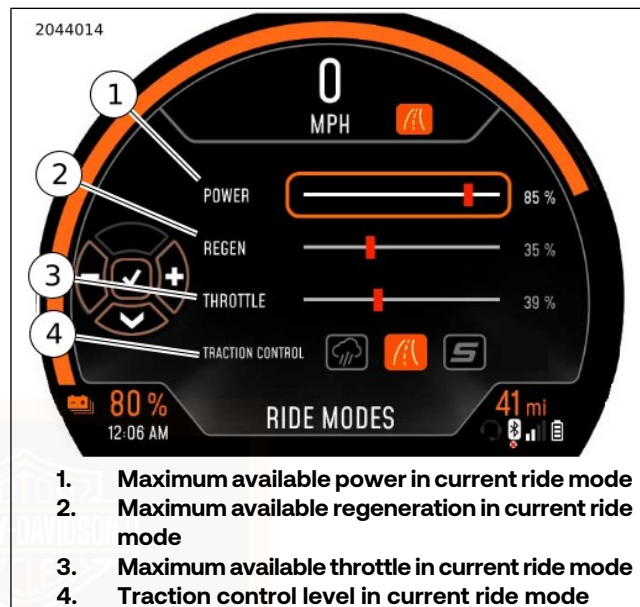


Figure 38. Ride Mode Customization

Power/Torque

See Figure 39. The Power/Torque widget displays power and torque information related to the current ride mode. The Power/Torque widget displays the current ride mode (2),

maximum available power (1) and maximum available regen (3).

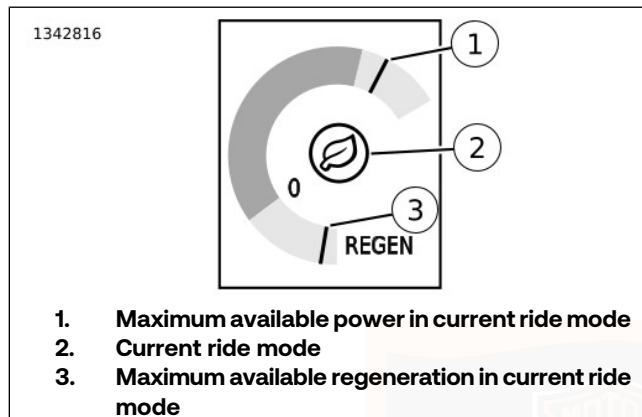


Figure 39. Power/Torque Widget

Range

See Figure 40. The Range widget displays estimated remaining range (1), maximum estimated range (2) and minimum estimated range (3) based on current riding behavior.

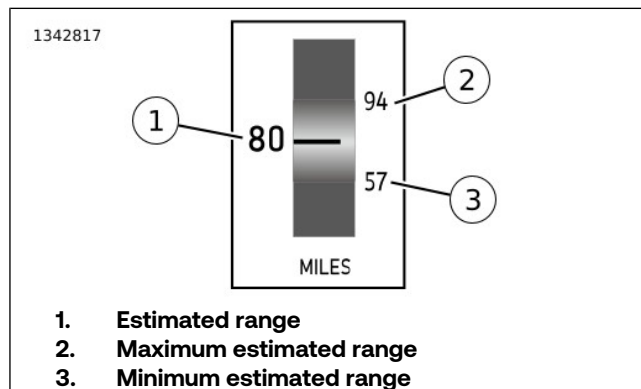


Figure 40. Range Widget

Battery (RESS)

See Figure 41. The battery widget displays SOC (1), watt-hour per mile (2), and RESS temperature (3).

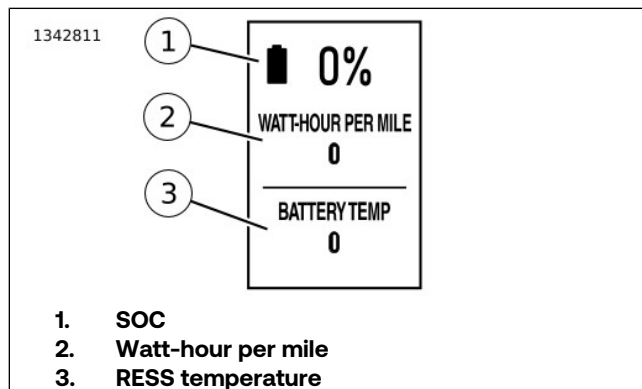


Figure 41. Battery Widget

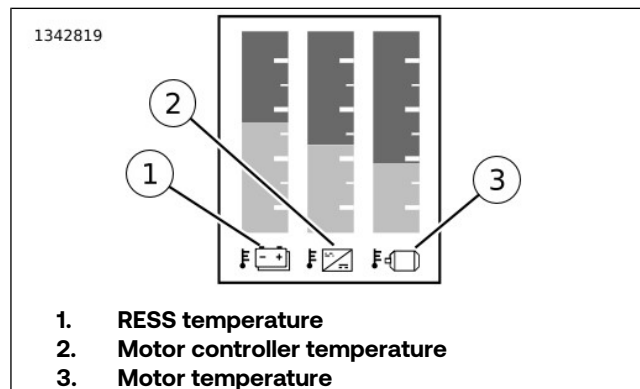


Figure 42. Temperature Widget

Temp

See Figure 42. The temperature widget displays RESS temperature (1), motor controller temperature (2) and motor temperature (3).

Trip

See Figure 43. The trip widget displays the odometer reading (1), trip A (2) and trip B (3) mileage. The trip widget can also be configured from the settings menu to display trip K.

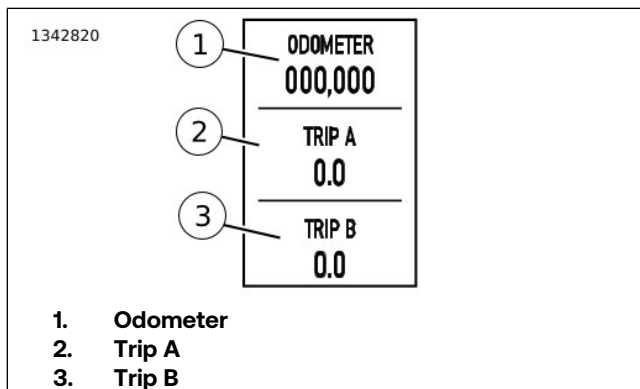


Figure 43. Trip Widget

Bluetooth

In order to leverage Bluetooth enabled functions such as Navigation, Media display and controls, the phone must be paired through the LiveWire App.

Once paired, the Bluetooth widget displays phone connection status, device name and battery percentage.

Navigation

The navigation widget is intended to assist you when traveling. Always use personal judgment and observation of the actual road conditions while riding. In some

circumstances, information provided in the navigation widget may be incomplete, incorrect or outdated. Road conditions, traffic laws and restrictions (such as no left turns, street closures, one way streets, road construction detours, and so on) can frequently change. Before following any instruction from the widget, check that the instruction can be done safely and legally.

If necessary, safely park the vehicle if there is difficulty following the route guidance or if there is a need to program a new route.

Program and review navigation routes with the vehicle stopped. Follow these steps to load navigation instructions.

1. Ensure the LiveWire App is in proper state before pairing.
 - a. **Apple:** LiveWire App must be **closed** before pairing.
 - b. **Android:** LiveWire App must be **open** before pairing.
2. Verify the phone is connected via Bluetooth to the LiveWire instrument module (Bluetooth icon is blue).
3. Select the Navigation widget on the instrument display. It's normal to see "No Nav" in the display prior to a route being pushed to the instrument.

4. Open the LiveWire App on your phone.
5. Select a route or a POI, then click the action boxes: **Take Me There** (not “send to bike”), then **Continue, Start**, and finally **Let’s Ride**
 - a. Turn By Turn (TBT) navigation should be running on the app and appear on the widget of the instrument display in place of where “No Nav” was previously displayed.
 - b. If TBT does not push to the instrument, close the app and re-open it and repeat step 3.

Plan and review the route before riding the motorcycle.

See Figure 44. The navigation widget displays turn by turn navigation information that has been entered into the connected device using the LiveWire App. This information includes street name (1), Next action icon (2), distance to next action (3) and time information (4) (either arrival time or trip duration).

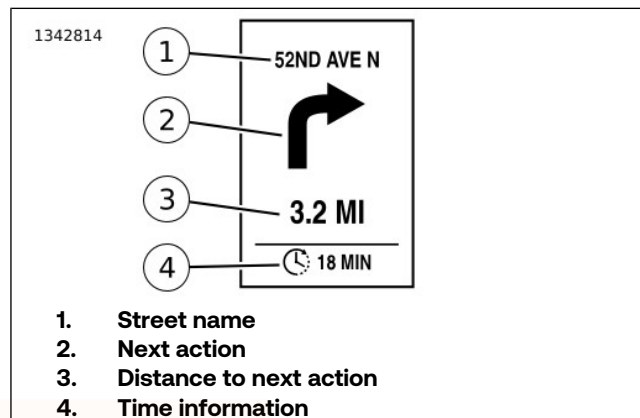


Figure 44. Navigation Widget

Table 45. Navigation Icons

ICON	DESCRIPTION
	Start
	Finish

Table 45. Navigation Icons

ICON	DESCRIPTION
	Ended
	Navigation paused
	Navigation cancelled
	No signal
	Unidentified

Table 45. Navigation Icons

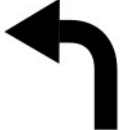
ICON	DESCRIPTION
	Straight
	Turn left
	Turn right
	Light left
	Light right

Table 45. Navigation Icons

ICON	DESCRIPTION
	Heavy left
	Heavy right
	U-Turn left
	U-Turn Right
	Keep left

Table 45. Navigation Icons

ICON	DESCRIPTION
	Keep right
	Keep middle
	Enter highway left
	Enter highway right
	Keep left highway

Table 45. Navigation Icons

ICON	DESCRIPTION
	Keep right highway
	Leave highway left
	Leave highway right
	Roundabout left ⁽¹⁾

Table 45. Navigation Icons

ICON	DESCRIPTION
	Roundabout right ⁽¹⁾
	Ferry
<i>(1) The number in the center of the icon corresponds to the exit to be taken, counted from the entry into the roundabout.</i>	

Music

See Figure 45. The music widget displays music information from a connected device. This information includes artist name (1), Song name (2), play pause icon (3) and either a playhead or album name (4).

NOTE

Must be used with a connected device through a connected headset.

Integration with hand control functionality (play, pause, volume. etc) is only through LiveWire App.

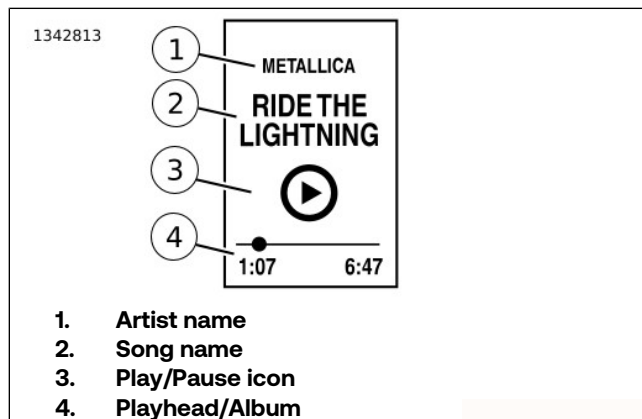


Figure 45. Audio Widget

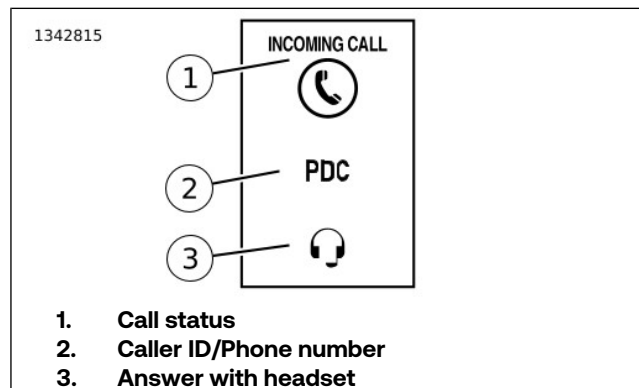


Figure 46. Phone Widget

Phone

See Figure 46. The phone widget displays current call status (1), caller ID or phone number (2), and answer with headset icon (3) (If connected to a supported phone).

NOTE

Must be used with a connected device through a connected headset.

Incoming call must be answered through controls on a connected headset.

Charging

See Figure 47. The charging widget displays estimated time to full charge (1).

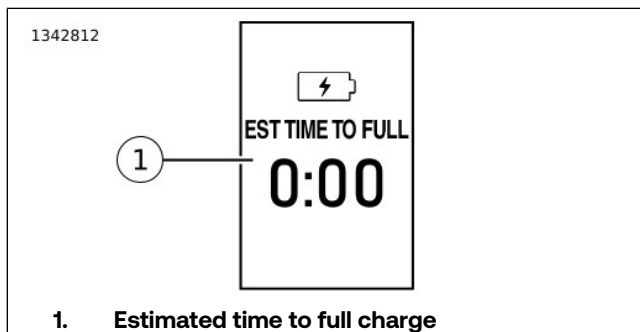


Figure 47. Charging Widget

TELEMATICS

Telematic System (Rectangle IM only)

Your motorcycle may be equipped with cellular telematic connectivity via the LiveWire Connect service. This allows you to link to the motorcycle remotely through your smart phone. Use the LiveWire App to check your motorcycle's status and receive notifications. See www.LiveWire.com for the latest version of the app and for information on subscription activation.

NOTE

- Perform system set-up and get familiar with the controls and features of LiveWire Connect before operating the motorcycle on the road.

USB PORT

⚠ WARNING

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

See Figure 6. The motorcycle has a USB-C port for charging a phone or media device and data transfer. Use an interface cable to connect with these devices. The Universal Serial Bus (USB) port is powered and operational when the vehicle is turned on or in accessory mode.

NOTE

USB port cannot be used for playing music stored on a device.

Do not leave items connected to the USB-C port unattended.

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

STARTING MOTORCYCLE

1. Bring an assigned fob within range.
2. Disconnect vehicle from charger.

3. Unlock fork.
4. Raise the jiffy stand.
5. See Figure 48. Press the OFF/RUN switch to the RUN (3) position.
6. Ensure twist grip is released.
7. Verify no propulsion interlock alerts are displayed. See OPERATION > INSTRUMENTS (Page 82).

NOTE

The vehicle has propulsion interlocks, Propulsion interlocks are conditions that must be met before propulsion can be enabled. Propulsion interlocks will be displayed on the IM (instrument module) when conditions are not met to enable propulsion.

8. Press and hold the start switch (7) until side bar lamps are green. See OPERATION > INDICATORS (Page 97).

NOTE

Once propulsion is enabled the motorcycle will provide haptic feedback to the rider through the EVPT when the motorcycle is stopped. The rider will feel a slight pulsing in the EVPT similar to a heartbeat.

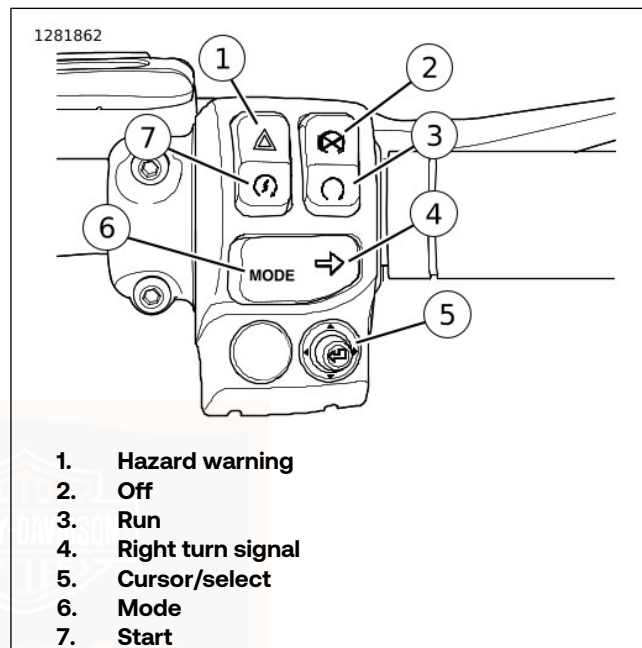


Figure 48. Right Hand Switch Module

RESTORING VEHICLE FUNCTIONS AFTER TIPOVER

⚠ WARNING

If tip occurs, check all controls for proper operation. Restricted control movement can adversely affect the performance of the brakes, which could result in loss of vehicle control and death or serious injury. (08707a)

NOTE

- If the motorcycle is tipped over, the word *TIPPED* appears on the instrument module and four-way flashers activate.
 - 12-volt battery maintenance, RESS charging, and propulsion cannot be enabled until the tip condition is reset.
 - The ignition must be reset to turn four-way flashers off.
 - Failure to reset the tip condition may result in a depleted 12-volt battery that will need to be replaced before the vehicle will power up.
1. Set motorcycle upright.
 2. Cycle the OFF/RUN switch to OFF then RUN.
 3. Push hazard switch to turn four-way flashers off.

STOPPING MOTORCYCLE

1. Push the OFF/RUN switch to OFF.
2. Remove assigned fob from range.

CORNERING RIDER SAFETY ENHANCEMENTS

Front Brake Lever

⚠ WARNING

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

See Figure 49. The front brake hand lever (1) controls the front wheel brake. The lever is on the right handlebar. Operate the hand lever with the fingers of the right hand.

Rear Brake Pedal

See Figure 49. The rear brake pedal (2) controls the rear wheel brake. The pedal is on the right side. Operate the rear brake pedal with the right foot.

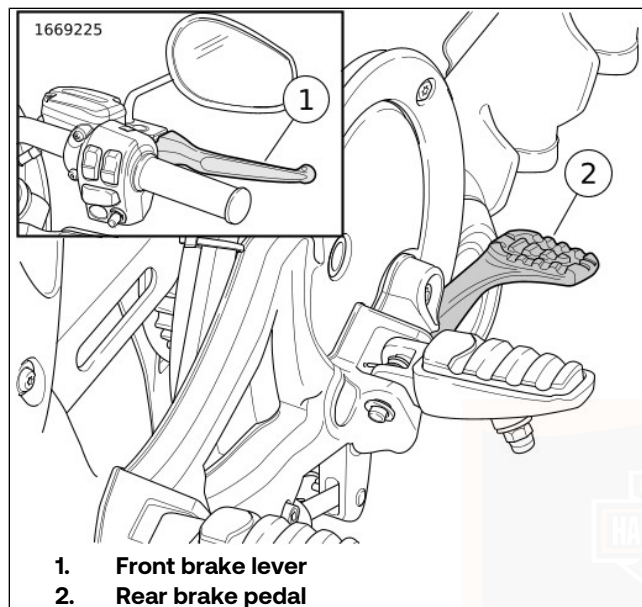


Figure 49. Brake Controls

ABS, Cornering Enhanced ABS (C-ABS) and Rear Lift Mitigation (RLM) Functions

LiveWire's ABS assists the rider in maintaining control when braking in an emergency situation. ABS monitors 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. ABS provides a specific level of intervention when the motorcycle is leaned into a turn. Rear-wheel Lift Mitigation utilizes on-board components to manage rear-wheel lift during heavy braking and further balance deceleration and rider control.

How ABS Works

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

The rider recognizes ABS activation by the slight pulsing sensation in the hand lever or the rear brake pedal. A clicking sound from the ABS module can also be heard. Both are the result of normal operation. Refer to Table 46.

For additional ABS information visit www.LiveWire.com.

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 using both brakes.

LiveWire ABS is a manual assist system. During 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 slows to a rate at which ABS is no longer needed.

ABS: Tires and Wheels

Motorcycles equipped with ABS must always use LiveWire tires and wheels. The ABS monitors the rotational speed of the wheels through individual wheel speed sensors. Changing to different diameter wheels or different size tires can alter the rotational speed. Different-sized wheels and tires 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 pressures specified can reduce ABS braking performance. Refer to OWNER MANUAL > SPECIFICATIONS (Page 35).

Table 46. ABS Symptoms and Conditions

SYMPTOM	CONDITION
ABS lamp continuously lit	ABS fault detected. See a LiveWire 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 5 km/h (3 mph). ABS is not operational until the lamp turns off. If the lamp continues flashing at speeds greater than 5 km/h (3 mph), see a LiveWire dealer for service.
Pulsing brake lever or pedal during an ABS event	Normal condition.
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, hard braking at slow speeds, and other conditions. This is due to ABS modulating caliper brake pressure to prevent uncontrolled wheel lock.

Table 46. ABS Symptoms and Conditions

SYMPTOM	CONDITION
Temporarily stiff rear brake pedal	Normal condition. Regenerative braking (causing the rear wheel to slow down) 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 5 km/h (3 mph) or on rear wheel below 8 km/h (5 mph).

TRACTION CONTROL

Traction Control System

While an advantage in certain situations, Traction Control (TC) is not a substitute for safe riding.

The Cornering Traction Control System (C-TCS) can detect when the drive wheel loses traction. In wet or slippery conditions, or under abrupt acceleration, the Traction Control System (TCS) will limit torque to the drive wheel.

By reducing tire spin, the TCS will help the rider maintain control, while allowing maximum acceleration.

The vehicle is also equipped with a Drag-Torque Slip Control System (DSCS) to help maintain control under deceleration.

When you deliver an abrupt reduction in acceleration to the vehicle, or when the powertrain decelerates on wet or slippery surfaces, the vehicle may experience rear wheel slip.

How Traction Control Works

The C-TCS constantly monitors the vehicle's lean angle during turns, and will adjust torque to the drive wheel when it senses a loss of traction, or when necessary to improve vehicle control while cornering.

This adjustment is designed to limit wheel spin and help the rider maintain the desired course of travel in corners.

During start up, the TC lamp flashes simultaneously with the ABS lamp, this indicates that both systems are waiting for the vehicle to complete a wheel speed sensor check. The

TCS is operational after start up even during the wheel speed sensor check. The TC lamp should turn off when the sensor check is complete.

If the DSCS senses rear wheel slip under powertrain deceleration, in straight-aways or corners, it may decrease drag torque, by increasing motor Revolutions Per Minute (RPM), to limit the slip and help the rider maintain control.

The TCS is also designed to support Front Lift Mitigation (FLM) to reduce the height and duration of front-wheel lift (wheelie). The height and duration of front-wheel lift is tied to the rider-selected TCS mode, with Rain being the most restrictive and Sport being the least restrictive. FLM is turned off when TCS is turned off.

How To Use Traction Control

NOTE

When running a vehicle on a dyno it is advised that TC be disabled to prevent intervention based on tire speed differences front to rear.

TC is automatically enabled at each start cycle. The rider may choose to disable TC anytime the vehicle is at a complete stop and operational by pressing and holding the TC switch for 1 second.

The rider may find it beneficial to disengage TC in low speed low traction situations such as, riding in deep sand, riding uphill on wet grass, or similar situations. The TC lamp will illuminate and remain illuminated to indicate TC is disabled. However, if the TC lamp remains on in conjunction with the fault indicator lamp, it means the TCS has faulted, if this occurs see an authorized LiveWire dealer.

The rider may again enable TC at any time during vehicle operation by pressing and releasing the TC switch.

If the TC lamp begins fast-blinking while riding, it means the TCS is intervening.

Intervention of the DSCS is indicated by fast-blinking of the TC lamp. However, disabling your TC will not disable DSCS.

CRUISE CONTROL

⚠ WARNING

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

▲ WARNING

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

Turn Cruise On

NOTE

Cruise control operates when:

- *At least 10 seconds have lapsed since the propulsion was enabled.*
- *Vehicle speed is between 40–145 km/h (25–90 mph).*

See Figure 50. Press the CRUISE switch to turn on cruise (1). When on, the cruise indicator on the IM will be displayed in green color without speed.

Set Cruise Speed

See Figure 50. When the motorcycle reaches your intended speed, press the SET/- switch down to set the cruise speed (2). The cruise indicator will now have the set speed shown next to it in 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 1.6 km/h (1 mph). Holding up the RES/+ switch gradually increases cruise speed.

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

Disengage Cruise

See Figure 50. To drop out of cruise speed, roll the throttle closed through the roll-off switch (3). The cruise indicator and set speed will change to a red color.

Cruise also disengages when the rider:

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

Resume Cruise

NOTE

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

See Figure 50. If cruise has been disengaged yet the cruise icon is still shown, pressing the RES/+ switch up resumes cruise (4). The motorcycle automatically resumes cruise at the set speed and the indicator and set speed change back to a green color.

Turn Cruise Off

Press the CRUISE switch to turn off cruise control. The cruise icon and set speed go blank.

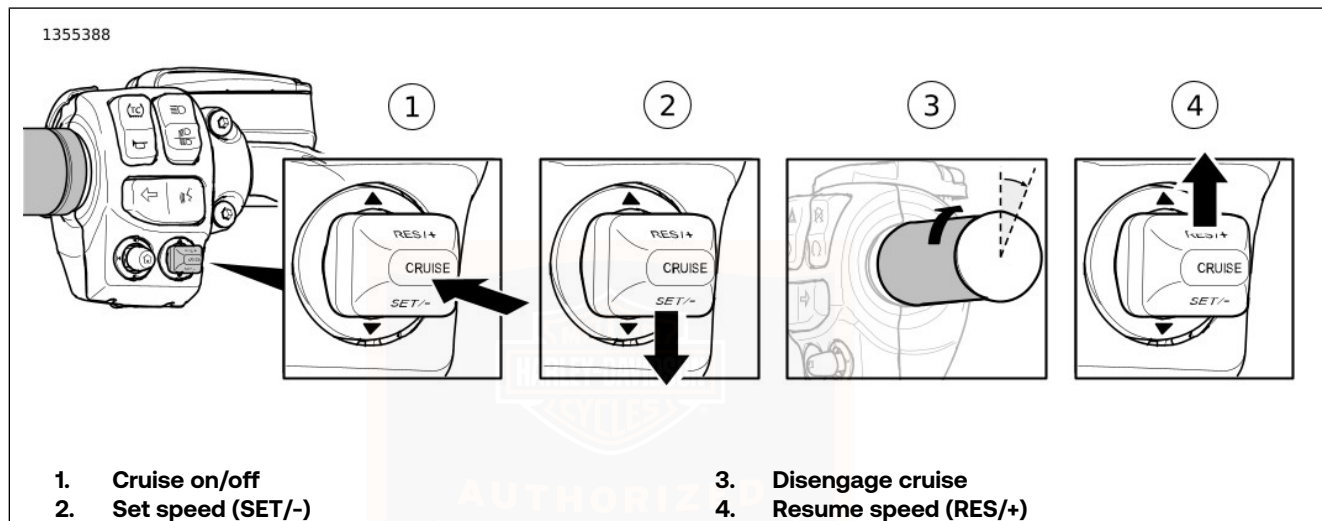


Figure 50. Cruise Control

SEAT

Opening

1. See Figure 51. Open seat.
 - a. Insert key into seat latch (3) and turn clockwise.
 - b. Lift front of seat (1).

Closing

1. Close seat.
 - a. Support seat.
 - b. Press head of seat prop locking pin (2).
 - c. Let seat down and push down on front of seat to make sure latch is engaged.

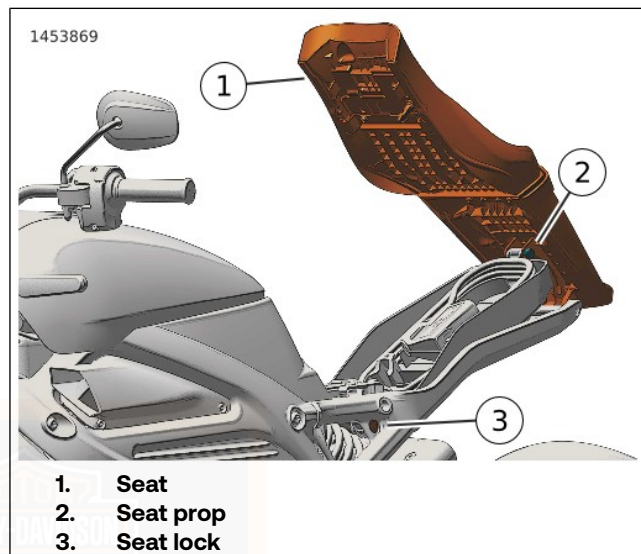


Figure 51. Seat

HELMET LOCKS

See Figure 52. The helmet lock is located on the left side of the motorcycle under the seat.

1. Lift seat. See OPERATION > SEAT (Page 132).
2. Insert D-ring from helmet over open hook.

3. Latch and lock seat to secure helmet. See OPERATION > SEAT (Page 132).

NOTE

Do not operate the motorcycle with a helmet in the helmet lock.

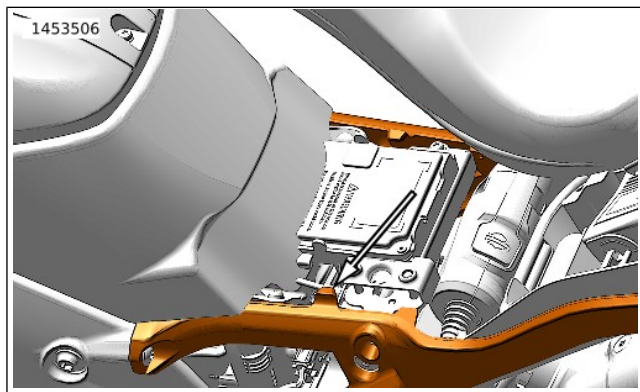


Figure 52. Helmet Lock



NOTES



GENUINE MOTOR PARTS AND ACCESSORIES

Stop at your LiveWire dealer to pick up a copy of the Genuine Motor Parts and Accessories catalog or go to www.LiveWire.com to view thousands of Genuine Motor Accessories that are available for LiveWire 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 LiveWire accessories and maintenance products.

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.

CLEANING AND GENERAL CARE

- Harley-Davidson cleaning products are tested extensively for use on motorcycle surfaces. These products are formulated to be compatible with one another. See a LiveWire dealer to purchase recommended cleaning products. Refer to Table 47 and Table 48.
- Care, cleaning and protection of the vehicle surfaces is the responsibility of the owner.
- Clean and protect the cosmetic surfaces on your motorcycle as often as possible to inhibit rust and corrosion.
- Some painted finishes and other surfaces may be scratched if gravel, dirt or grime are rubbed across the surface during washing. Use clean towels and avoid rubbing sediment across gloss finishes.
- Do not use paper towels, cloth diapers or other materials with nylon fibers which can cause fine scratches to surfaces.
- For repair of scratched surfaces, see a LiveWire dealer.

⚠ WARNING

Observe warnings on labels of cleaning compounds. Failure to follow warnings could result in death or serious injury. (00076a)

⚠ WARNING

Do not wash brake discs with cleaners containing chlorine or silicone. Cleaners containing chlorine and silicone can impair brake function, which could result in death or serious injury. (00077a)

NOTICE

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

NOTICE

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

Cleaning Wheels and Tires

NOTE

Corrosion to wheels is not considered to be a defect in materials or workmanship.

- Wheels can corrode or be cosmetically damaged if they are not properly cleaned, polished and preserved.
- It is recommended that wheels be cared for weekly.
- 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 on your motorcycle. Refer to Table 47.

Radiator

See MAINTENANCE AND LUBRICATION > CLEANING RADIATOR (Page 159) for important information regarding the cleaning of the radiator.

RECOMMENDED CLEANING PRODUCTS

The following products are recommended for your motorcycle parts and accessories. Your motorcycle may not have all the components shown in the tables.

Table 47. Recommended Cleaning and Care Products

PRODUCT PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
BARE METAL POLISH 93600028 (U.S.) 93600083 (Non-U.S.)	Polishes non-clear coated polished aluminum or polished stainless steel surfaces. ⁽¹⁾	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
BUG REMOVER 93600122 (U.S.) 93600140 (Non-U.S.)	Removes bugs from metal, plastic or painted surfaces.	Yes	Yes	Yes	Yes	
CHROME CLEAN & SHINE 93600031 (U.S.) 93600082 (Non-U.S.)	Shines chrome-plated surfaces and cleans brushed aluminum or stainless steel surfaces.	As applicable				
DENIM PAINT CLEANER 93600124 (U.S.) 93600127 (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
EVERYDAY DETAILER 93600157 (U.S.) 93600158 (Non-U.S.)	Cleans, shines, brightens and protects in a short amount of time.	Yes	Yes	Yes	No	

Table 47. Recommended Cleaning and Care Products

PRODUCT PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
GRAPHENE SPRAY COAT- ING 93600166 (U.S.) 93600169 (Non-U.S.)	Provides a protective barrier for glossy paint surfaces and chrome. Repels water and dust.	Yes	Yes	As applicable	No	
GLOSS DETAILER 93600123 (U.S.) 93600125 (Non-U.S.)	Produces high gloss with UV protection. Allows chrome to breathe, unlike wax. Good for windshields.	Yes	Yes	Yes	No	
HARLEY TRAVEL CARE KIT 93600149 (U.S. only)	Travel size cleaning and care products. (Not for use on denim finishes.)	Yes	Yes	Yes	No	
LEATHER PROTECTANT 93600034 (U.S.) 93600080 (Non-U.S.)	Weatherproofs and preserves leather products.	No	No	No	No	Leather goods
QUICK WASH 93600162 (U.S.) 93600171 (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 93600155 (U.S.) 93600156 (Non-U.S.)	Removes fine scratches and swirls.	Yes	Yes	No	No	
SEAT, SADDLEBAG & TRIM CLEANER 93600167 (U.S.) 93600170 (Non-U.S.)	Cleans and conditions vinyl, leather and plastic. Use on seats, saddlebags, inner fairings and any other trim.	No	No	No	No	Seats, saddlebags and trim

Table 47. Recommended Cleaning and Care Products

PRODUCT PART NO.	PURPOSE	FRAME	BODY PANELS	WHEELS	DENIM FINISH	OTHER
SPRAY CLEANER & POLISH 93600029 (U.S.) 93600084 (Non-U.S.)	Aerosol quick cleaner and detailer. Reduces static attraction to dust. ⁽¹⁾ Works great for removing bugs.	Yes	Yes	Yes	No	
SUNWASH BIKE SOAP 93600129 (U.S.) 93600141 (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 93600121 (U.S.) 93600126 (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

(1) DO NOT use BARE METAL POLISH or SPRAY CLEANER & POLISH on coated aluminum wheels, protective coating will be removed.

Table 48. 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 93600107	Large cotton swabs for cleaning crevices and detailed surfaces.

Table 48. Recommended Surface Care Products

PRODUCT PART NO.	PURPOSE
BIKE WASH BUCKET 93600133	Wash bucket. Includes GRIT GUARD insert.
HOG BLASTER MOTORCYCLE DRYER 94651-09A	Blows a stream of warm dry filtered air. Reduces streaks and water spots.
MICROFIBER APPLICATORS (4 pack) 93600168	Use to apply most wax, coating, sealant, and dressing products.
MICROFIBER DETAILING CLOTH 94663-02	Highly absorbent detailing cloth for polishing and sealing. Contains no nylon fibers.
MICROFIBER DETAILING CLOTHS (3 pack) 93600136	Highly absorbent detailing cloths for polishing and sealing.
MICROFIBER SOFT DRYING TOWEL 93600132	Washable and reusable. Provides a lint- and streak-free drying action for a professional results.
MICROFIBER WASH MITT 93600130	Premium quality microfiber washing mitten. Use with either hand.
WHEEL & SPOKE BRUSH 43078-99	Cone-shaped scrub brush for wheels.

Table 49. Wheel Polish and Sealing Products

WHEELS	PRODUCT	DESCRIPTION
Anodized	GRAPHENE	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.

Table 49. Wheel Polish and Sealing Products

WHEELS	PRODUCT	DESCRIPTION
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 and bare aluminum or stainless steel	BARE METAL POLISH ⁽¹⁾	Microabrasive polish to refurbish polished wheels. Do not use on chrome.
<i>(1) DO NOT use BARE METAL POLISH on coated aluminum wheels, protective coating will be removed.</i>		

WASHING THE MOTORCYCLE

Use only recommended cleaning and care products. Refer to Table 47 and Table 48.

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 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

NOTICE

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

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

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

These surfaces are not designed for long-term exposure to inclement weather. Protect these surfaces with a Rain Cover or Motorcycle Storage Cover (sold separately).

1. Vacuum or blow dust off surface.
2. Thoroughly clean surfaces with SEAT, SADDLEBAG & TRIM CLEANER, following directions on the bottle.
3. Allow the material to dry naturally and completely at room temperature before applying other products to the material. Do not use artificial means to dry the material quickly.

4. For leather only, rejuvenate faded black surfaces with BLACK LEATHER REJUVENATOR, and apply LEATHER PROTECTANT to weatherproof and preserve the leather.

NOTE

Many 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. 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 motorcycle.

DENIM FINISH

Some motorcycles have a denim (flat or matte) finish. The denim finish has qualities which differ from high gloss finishes on all other motorcycles. Like denim fabric, denim paint will burnish or mar with age and use, thus adding character and personality to the finish. For recommended products, refer to Table 47.

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

Cleaning Denim Finish

For Light deposits: Use DENIM PAINT CLEANER and a SOFTCLOTH.

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

MOLDED-IN-COLOR BODY PANEL CARE

Molded-In-Color Surfaces

NOTICE

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

NOTICE

Do not use touch-up paint on molded-in-color body panels. Use of touch-up paint can damage finish. (00246a)

The body panels feature molded-in-color technology. The color pigment is mixed in with the material when the part is made, not applied over the surface. Molded-in-color panels require different maintenance than painted surfaces to

maintain their original shine. Using methods that work on painted surfaces may ruin the finish of molded-in-color parts.

Recommended Products

Harley-Davidson cleaning products are tested extensively for use on motorcycle surfaces. These products are formulated to be compatible with one another. See an authorized dealer to purchase recommended cleaning products. Refer to AFTER RIDING > RECOMMENDED CLEANING PRODUCTS (Page 136).

Washing

To wash molded-in-color panels follow the instructions below:

1. Rinse surface with water.
2. Wash with QUICK WASH or SUNWASH BIKE SOAP.
3. Rinse surface thoroughly with water.
4. Dry with a clean chamois or soft dry natural fiber cloth.

Cleaning Between Washings

Untreated molded-in-color body panels sometimes have a static charge that attracts dust. Applying GLOSS DETAILER or GLAZE POLY SEALANT to molded-in-color surfaces will eliminate this condition.

To keep a high gloss finish on molded-in-color panels follow the instructions below:

1. Spray GLOSS DETAILER onto surface and wipe with a clean soft natural fiber cloth or Harley Softcloth.

NOTE

Rain or water will remove GLOSS DETAILER from body panels.

2. Reapply GLOSS DETAILER as required to keep surfaces looking their best.

Polishing

Polishing molded-in-color body panels results in greater surface gloss and a protective coating.

Apply GLAZE POLY SEALANT every six months or as required to keep molded-in-color panels protected and looking their best.

1. Clean and dry surfaces to be polished. See Washing.
2. Apply GLAZE POLY SEALANT to clean, slightly dampened cloth or sponge and apply to surface with a light overlapping motion. Make sure to cover all areas.
3. Let GLAZE POLY SEALANT dry to a haze and buff off residue with a DISPOSABLE DETAILING SOFT CLOTH or a clean soft cloth.

Minor Scratch Removal

NOTICE

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

To remove minor scratches from body panels follow the instructions below:

1. To remove light surface scratches and rubs, use SCRATCH & SWIRL REPAIR as recommended.
2. Make sure SCRATCH & SWIRL REPAIR is applied with a moist cloth and by hand (not by machine).
3. After scratch or rub has been repaired, polish surface lightly with GLAZE POLY SEALANT.

NOTE

Black body panels are more prone to suffer permanent cosmetic damage if attempts to remove scratches are overdone.

Major Scratch Removal

There is no repair procedure for severely scratched surfaces. Severely scratched body panels must be replaced.

STORING MOTORCYCLE

If the motorcycle will not be operated for a period of time, take steps to protect the motorcycle.

1. Refer to Table 50 for RESS storage instructions. Refer to BEFORE RIDING > CHARGING MOTORCYCLE (Page 40) for SOC and battery charging instructions.
2. Check and fill the cooling system. See MAINTENANCE AND LUBRICATION > COOLANT (Page 158).
3. To protect the body panels, powertrain, chassis and wheels from corrosion, follow the cosmetic care procedures before storage. See AFTER RIDING > CLEANING AND GENERAL CARE (Page 135).
4. Arm the security system. Refer to OWNER MANUAL > SECURITY SYSTEM (Page 67).
5. Cover the motorcycle with a material such as light canvas that breathes. Plastic materials that do not breathe promote condensation and corrosion.

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

Table 50.

Length of Storage	Storage Procedure
Less than 30 days	Plug the bike into the EVSE. Arm the security system.
Longer than 30 days	Ensure the RESS SOC is between 30–70% before a 30 days or longer storage event. Arm the security system. Monitor the SOC and ensure it does not dip below 30%. Recharge if necessary.

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)

Service your motorcycle at the regular service intervals. Road conditions like dust, rain or riding styles can require servicing the motorcycle at more frequent intervals. See SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

Though some of these procedures can be performed with a minimum of tools, always consult your authorized dealer for updates. Remember, your authorized dealer always services your motorcycle with the latest factory approved methods and equipment.

Record each service to maintain the new motorcycle warranty. See SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

BREAK-IN MAINTENANCE

NOTE

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

After a new motorcycle has been ridden 1,600 km (1000 mi), visit an authorized dealer for initial service. Refer to SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

PREPARING THE MOTORCYCLE FOR MAINTENANCE

⚠ WARNING

Be sure to check capacity rating and condition of hoists, slings, chains and cables before use. Exceeding capacity ratings or using lifting devices that are in poor condition can lead to an accident, which could result in death or serious injury. (00466c)

NOTE

Always support a motorcycle that is being serviced with blocks or stands.

Setting Motorcycle Upright

1. Place motorcycle upright on a level surface or suitable lift, if available.
2. Verify that the motorcycle is level.
3. Secure with tie-downs.

DISPOSAL AND RECYCLING

Help protect our environment! Many communities maintain facilities for recycling used fluids, plastics and metals. Dispose of or recycle used oil, lubricants, coolant, brake fluid and batteries in accordance with local regulations. Many parts and accessories are made of plastics and metals which can also be recycled.

BATTERY MAINTENANCE

Safety Precautions

⚠ WARNING

Contact with internal battery contents can have serious health effects. Wear protective face shield, rubberized gloves, respiratory protection, and protective clothing when handling damaged batteries. Failure to wear proper protective gear while handling a damaged battery could result in death or serious injury.

See Safety Data Sheet (SDS) for more details available at sds.livewire.com (12209b)

- Do not use motorcycle if battery gives off an odor, generates heat, releases gas, smoke or liquid, becomes discolored, deformed or appears abnormal in any way.
- Never attempt to open or disassemble a battery.
- Do not pierce the battery case with a nail or other sharp objects, do not break it open, do not step on it.
- Do not immerse the motorcycle in water.
- Do not strike or subject the battery to severe physical shock.

The following first aid measures are required only in case of exposure to internal battery contents after damage of the external battery casing.

Table 51. Battery Electrolyte Antidote

Physical Location	Procedure
After Inhalation	• Remove to fresh air • Wash mouth and nasal passages with water • If patient is not breathing, apply artificial respiration • Do not perform mouth-to-mouth resuscitation • Call a physician immediately
After Contact with Skin	• Wash off immediately with plenty of water and soap for at least 15 minutes • Take off contaminated clothing and wash it before reuse • Call a physician immediately
After Contact with Eyes	• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes • Remove contact lenses, if present and easy to do. Continue rinsing • Seek medical treatment by eye specialist

Table 51. Battery Electrolyte Antidote

Physical Location	Procedure
After Ingestion	• Rinse mouth • Drink plenty of water or milk • Never give anything by mouth to an unconscious person • Do not induce vomiting • Call a physician immediately

Both batteries on the LiveWire motorcycle are monitored by the motorcycles' operating system. If your IM indicates a battery fault or your motorcycle will not properly operate, see your authorized LiveWire dealer.

Rechargeable Energy Storage System (RESS)

LiveWire ONE is powered by a Lithium-Ion RESS that is superior to conventional lead acid batteries. This battery design will provide many years of dependable service and, other than normal charging, does not require any special maintenance.

Before riding the motorcycle:

1. Inspect battery for visible damage.

NOTE

If damage is found, see your authorized dealer.

12 Volt System Battery

The motorcycle has a permanently sealed, maintenance-free 12 V Lithium-Ion battery for powering the motorcycle's 12 V systems. The RESS onboard DC-to-DC charger handles all charging and maintenance of the 12 V battery, no special maintenance is required for this battery. See your authorized dealer if the battery or motorcycle is not functioning properly.

Storing the Batteries

If you will not be riding your motorcycle for a while.

See AFTER RIDING > STORING MOTORCYCLE (Page 146) for storage instructions.

CHECK TRANSMISSION LUBRICANT

The transmission does not require any operator maintenance. After a new motorcycle has been ridden 1,600 km (1,000 mi), visit an authorized dealer for initial service. Refer to SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189) for all maintenance schedules.

MISCELLANEOUS LUBRICATION

Refer to SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189) for all maintenance schedules.

For specific information for lubricating the following items, see the service manual or an authorized dealer.

- Brake controls
- Steering head bearing
- Jiffy stand
- Front and rear brake caliper pins and bushings

CHECK DRIVE BELT DEFLECTION

Belt deflection can be measured either manually with a gauge or harmonically by using a frequency meter or a downloadable phone app.

Manual Belt Deflection Measurement

NOTE

Always use the required special tool 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 belt deflection:

- With motorcycle at ambient temperature.
 - With motorcycle upright or on jiffy stand with rear wheel on the ground.
 - With the vehicle unladen, no rider and no luggage.
1. Deactivate electrical system. See SECURITY SYSTEM > DISCONNECTING POWER (Page 74).
 2. See Figure 53. Measure belt deflection using:
Special Tool: BELT TENSION GAUGE (HD-35381-A)
 - a. Slide O-ring (4) to zero mark (3).
 - b. Fit belt cradle (2) against bottom of drive belt in line with belt deflection window.
 - c. Press upward on knob (6) until O-ring slides down to 4.54 kg (10 lb) mark (5) and hold steady.
 3. Measure belt deflection:
 - a. See Figure 54. Measure belt deflection as viewed through belt deflection viewing window while holding gauge steady. Each deflection graduation is approximately 1.6 mm (1/16 in).

4. Compare with specifications. Refer to Table 52. If not within specifications, see an authorized dealer.
5. Reactivate electrical system. See SECURITY SYSTEM > DISCONNECTING POWER (Page 74).

Table 52. Drive Belt Deflection

DEFLECTION ⁽¹⁾	
in	mm
1/8-3/16	3.2-4.8
<i>(1) Deflection measured at 10 lb (4.5 kg) tension.</i>	

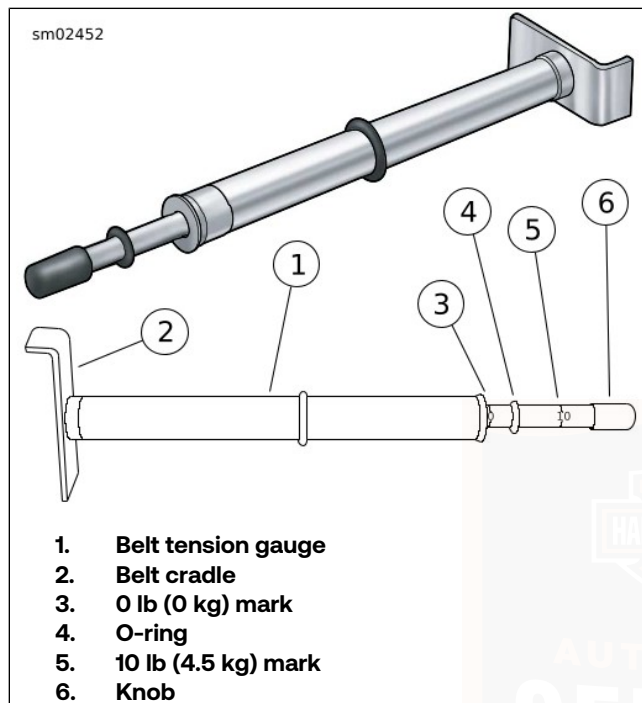


Figure 53. Belt Tension Gauge

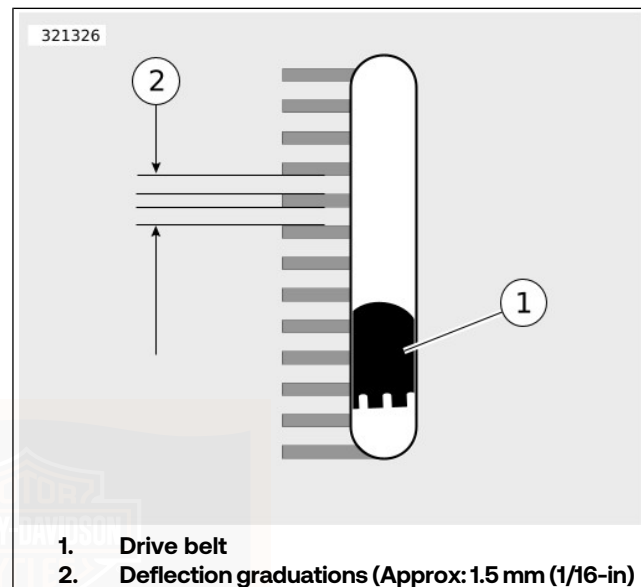


Figure 54. Belt Deflection Window

Harmonic Belt Deflection Measurement

Check belt deflection:

- With motorcycle at ambient temperature.
- With motorcycle upright or on jiffy stand with rear wheel on the ground.

- With the vehicle unladen: no rider and no luggage.
1. Deactivate electrical system. See SECURITY SYSTEM > DISCONNECTING POWER (Page 74).

2. **NOTE**

Use Gates® Carbon Drive™ Smartphone application to measure drive belt frequency. Digital frequency meters operate in the same manner by placing sensor close to belt.

Measure belt tension with phone app:

- a. Open phone app.
 - b. Turn on phone's microphone.
 - c. Hold phone near belt deflection window.
 - d. See Figure 55. Use finger or thumb to pluck back side of lower belt at belt deflection window.
 - e. Measure frequency of belt.
 - f. Take multiple measurements to ensure measurement is consistent.
3. Rotate rear wheel 90 degrees and repeat procedure.

4. Compare with specifications. Table 53 If not within specifications, see Adjust Belt in this section.
5. Reactivate electrical system. See SECURITY SYSTEM > DISCONNECTING POWER (Page 74).

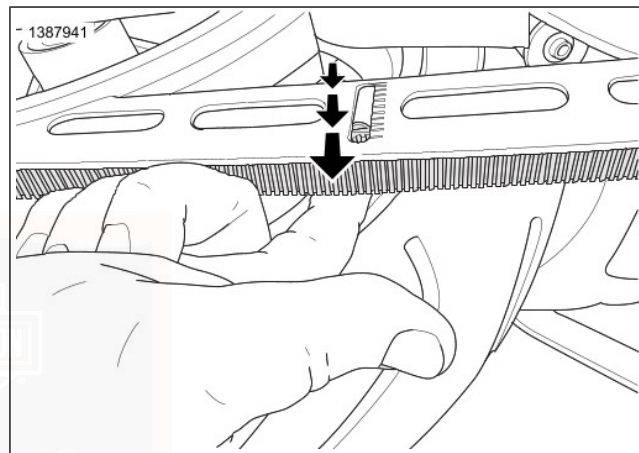


Figure 55. Belt Pluck

Table 53. Drive Belt Frequency

Frequency
Hz
78-90

CHECKING BRAKE CONTROLS

Rear Brake Pedal

- The rear brake pedal should move smoothly through its full range.
- Verify the rear brake pedal has a firm feel when applied.

See an authorized LiveWire dealer for service.

Front Brake Hand Lever

- The brake hand lever should move smoothly through its full range.
- Verify the brake hand lever has a firm feel when applied.

See an authorized LiveWire dealer for service.

INSPECTING BRAKE PADS AND DISCS

Brake Pads

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

⚠ WARNING

Always replace brake pads in complete sets for correct and safe brake operation. Improper brake operation could result in death or serious injury. (00111a)

1. Check the brake disc as it spins. The disc should run true in the brake caliper.
2. See Figure 56. Measure the thickness of the brake pad friction material.

NOTE

The pads do not necessarily wear evenly. The grooves on the front brake pads are no longer visible when the pads are near the end of service life.

3. Refer to Table 54. If the brake pad friction material is at the minimum thickness or less, replace the pads. Always replace brake pads in pairs. See an authorized LiveWire dealer.

Table 54. Brake Specifications

MINIMUM THICKNESS	mm	in
Brake pads	0.5	0.020
Front brake discs	4.5	0.177
Rear brake disc	4.5	0.177

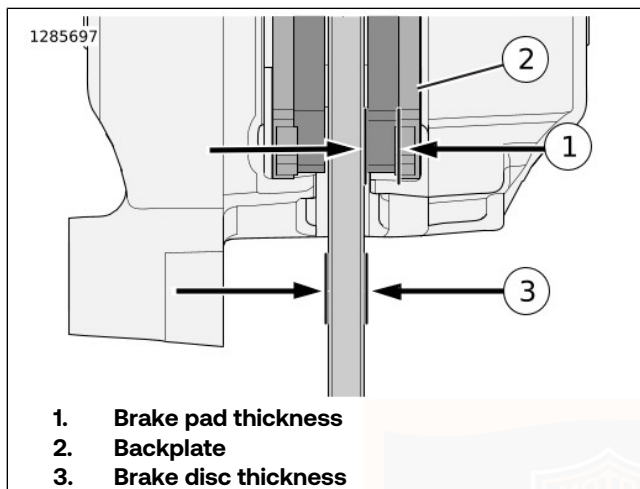


Figure 56. Brake Thickness

Brake Disc

1. Refer to Table 54. Check brake disc thickness and compare to value indicated in table.
2. Replace if necessary. See an authorized LiveWire dealer.

CHECKING BRAKE FLUID LEVEL AND CHANGING BRAKE FLUID

NOTE

- At every service, check moisture content of fluid using DOT 4 BRAKE FLUID MOISTURE TESTER (PART NUMBER: HD-48497-A). Follow the instructions included with tool.
- Flush brake system and replace DOT 4 fluid every two years or sooner if brake fluid test shows moisture content is 3% or greater.
- Do not add or remove fluid from the brake system to compensate for normal wear. Reservoir volume is adequate to provide fluid to the wear limits of the pads and discs.
- Fluid level in reservoir will decrease with brake wear. If fluid level is low, check brake pads and discs for wear. See MAINTENANCE AND LUBRICATION > INSPECTING BRAKE PADS AND DISCS (Page 154).

⚠ 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, which could result in death or serious injury. (13720a)

Checking Brake Fluid Level

1. Set motorcycle upright. Verify that the fluid in the reservoir is level. See MAINTENANCE AND LUBRICATION > PREPARING THE MOTORCYCLE FOR MAINTENANCE (Page 147).
2. **Front:** See Figure 57. Check level in front reservoir sight glass. Fluid level must be at or above the minimum mark on glass.
3. **Rear:** See Figure 58. Check level on side of rear brake reservoir. Level must be above MIN.

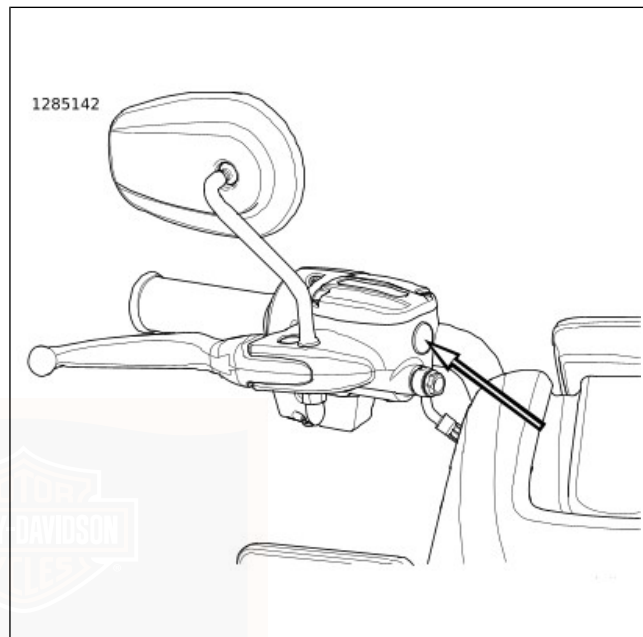


Figure 57. Front Master Cylinder Reservoir Sight Glass

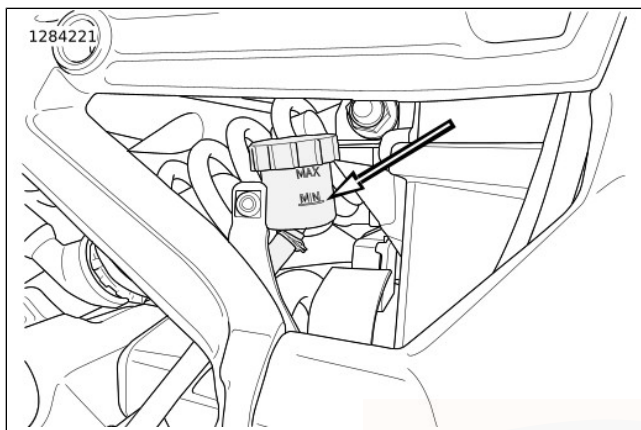


Figure 58. Rear Master Cylinder Reservoir MIN Level

Changing Brake Fluid

⚠ WARNING

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

- If inhaled: Keep calm, remove to fresh air, seek medical attention.

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

(12208e)

⚠ WARNING

DOT 4 brake fluid absorbs moisture from the atmosphere over time, changing the properties of the fluid. Check brake fluid moisture content at every service interval or annually (whichever comes first). Flush and replace the brake fluid every two years, or sooner if moisture content is 3% or greater. Failure to flush and replace fluid can adversely affect braking, which could result in death or serious injury. (06304b)

NOTICE

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

To ensure the brake system is performing to design, check the moisture content of the brake fluid at every service interval or at least annually using a DOT 4 brake fluid moisture tester (part number HD-48497-A or equivalent) following the instructions included with the tool. Flush DOT 4 fluid every 2 years or sooner if the brake system fluid test shows moisture content is 3% or greater.

It is recommended to use Harley-Davidson Platinum Label DOT 4 Brake Fluid because of its superior moisture and corrosion inhibiting properties.

CHECKING SYSTEMS FOR LEAKS OR ABRASIONS

Check all lines and hoses for leaks, damage or abrasions. For the appropriate intervals see SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189).

- Cooling system and coolant hoses
- Brake system and brake lines

COOLANT

General

NOTICE

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

GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT is pre-diluted and ready to use full strength. It provides temperature protection to -36.7 °C (-34.0 °F). DO NOT add water.

NOTICE

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

⚠ WARNING

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

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

Checking Coolant Level

1. Position vehicle on level ground resting on the jiffy stand.
2. Allow motorcycle to cool.
3. Remove top cover. See SERVICE PROCEDURES > TOP COVER (Page 163).
4. See Figure 59. Check that coolant level is at or slightly above the "COLD FILL" line (2).

NOTE

If the coolant reservoir is empty when the motorcycle is cold, inspect the system for leaks. Repair as needed. Fill system with coolant and purge any trapped air.

5. If level is below "COLD FILL" line on tank, remove coolant reservoir cap (1).
6. Add GENUINE HARLEY-DAVIDSON EXTENDED LIFE ANTIFREEZE AND COOLANT until fluid level reaches, or is slightly above the "COLD FILL" line.
7. Install coolant reservoir cap.

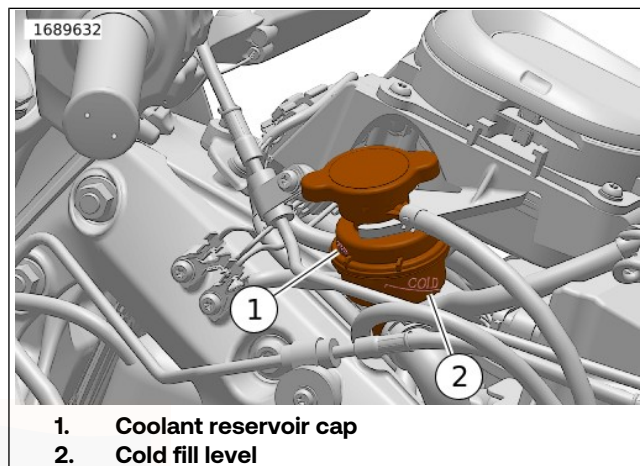


Figure 59. Coolant Reservoir

CLEANING RADIATOR

⚠ CAUTION

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

NOTICE

Using a pressure washer to clean radiators or oil coolers can damage cooling fins and reduce airflow. Reduced airflow can lead to overheating, resulting in motorcycle damage. (00056c)

NOTICE

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

1. See Figure 60. Clean debris from radiator fins.

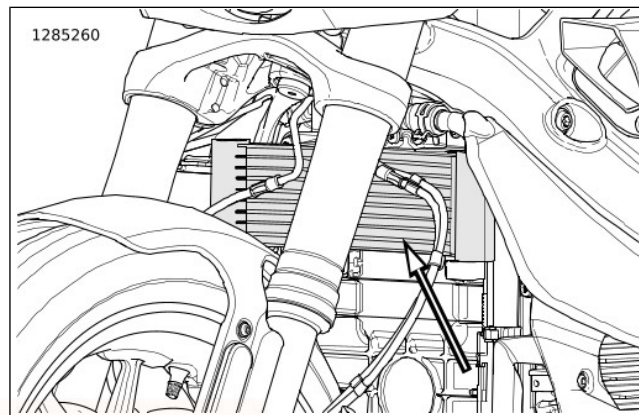


Figure 60. Radiator

REPLACING COOLANT

See a LiveWire dealer for coolant replacement.

MAINTAINING FRONT FORK

⚠ 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)

Have a LiveWire dealer drain the front fork oil and refill at proper intervals.

Rebound action of the fork will be impaired if the fork oil level is low.

If fork does not appear to be working properly or a significant oil leak should develop, see a LiveWire dealer.

Refer to SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189) for all maintenance schedules.

ADJUSTING STEERING HEAD BEARINGS

⚠ WARNING

Adjustments to steering head bearings should be performed by a LiveWire dealer. Improperly adjusted bearings can adversely affect handling and stability, which could result in death or serious injury. (12129b)

Refer to SERVICE INTERVALS AND RECORDS > SERVICE RECORDS (Page 189) for all maintenance schedules.

See a LiveWire dealer to adjust the steering head bearings.

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 LiveWire dealer.

CHECKING ELECTRICAL EQUIPMENT AND SWITCHES

⚠ 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)

Check all electrical equipment and switches including the tail lamps, turn signals, headlamp and horn for proper operation.

NOTES



TOP COVER

Remove

⚠ WARNING

Risk of electric shock or burn. Do not touch with fingers, jewelry or other metal objects. Only to be serviced by a qualified technician. Failure to follow instructions can result in death or serious injury. (08804b)

⚠ DANGER

This vehicle contains a high voltage Rechargeable Energy Storage System (RESS). An improperly handled or damaged RESS can cause electrical shock and/or fire, which will result in death or serious injury.

- RESS must only be serviced by a qualified technician using proper Personal Protective Equipment (PPE).
- Do not touch RESS connector terminals with fingers, tools, jewelry, or other metal objects.
- Do not disconnect, disassemble, or use RESS for other than its intended use.
- Improper charging, impact or exposure to fire can damage the RESS.
- A damaged RESS can leak electrolyte and/or generate flammable gas.

(08705a)

1. Unplug charging cord.
2. Place OFF/RUN switch in OFF position.
3. See Figure 61. Remove screws (1).
4. Lift top cover (3) straight up to disengage from mounting grommets (2).

Install

1. See Figure 61. Install top cover (3) to mounting grommets (2).

2. Install screws (1). Tighten.

Torque: 5–7 N·m (44–62 in-lbs)

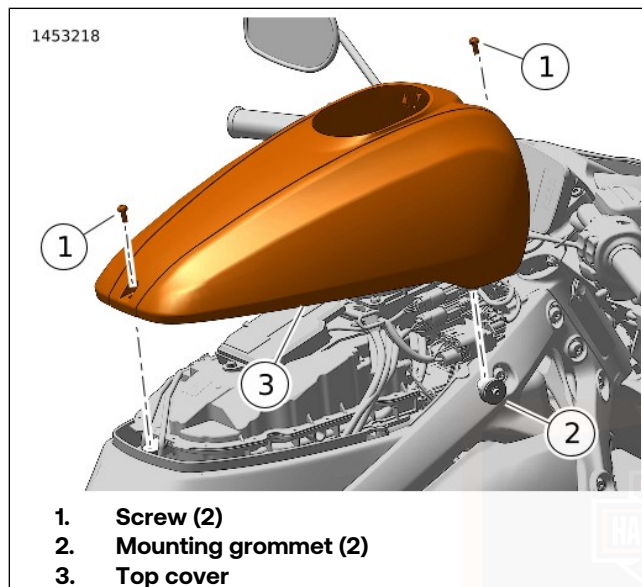


Figure 61. Top Cover

BATTERY REPLACEMENT

Both batteries, RESS and 12 V, on the LiveWire motorcycle are monitored by the motorcycle's operating system. If your IM indicates a battery fault or your motorcycle will not properly operate, see your authorized LiveWire dealer.

FUSES

For electrical problems, see an authorized LiveWire dealer who has the necessary parts and equipment to perform electrical services.

NOTE

- Fuses do not reset.
- Only replace a fuse with a fuse of the same rating.
- Use only automotive type ATO fuses as replacements.

Removing/Replacing Main Fuse

For removing or replacing the main fuse, see your authorized LiveWire dealer.

Replacing System/ABS Fuses

1. Set OFF/RUN switch to OFF.
2. Remove top cover. See SERVICE PROCEDURES > TOP COVER (Page 163).
3. See Figure 62. Remove fuse block from caddy on motorcycle.
4. Remove the cover from the fuse block.

5. See Figure 63. Remove the suspect fuse and inspect the element. Replace the fuse if the element is burned or separated.
6. Install the fuse block cover so the tabs snap into place.
7. Install fuse block to caddy.
8. Install top cover. See SERVICE PROCEDURES > TOP COVER (Page 163).

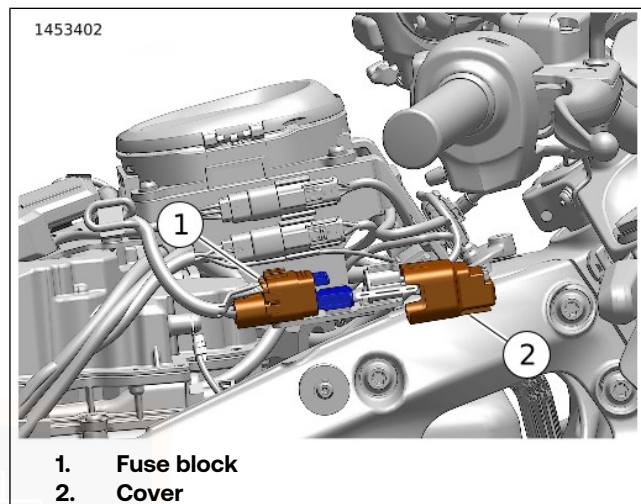
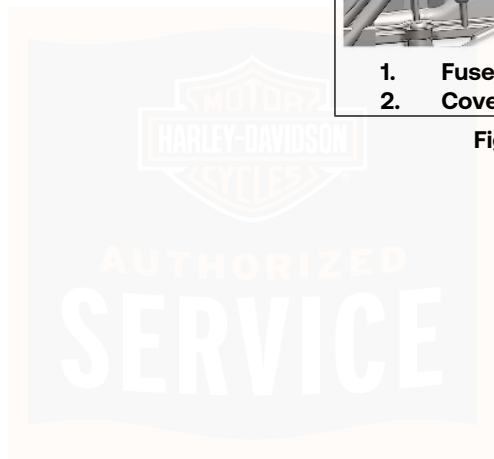


Figure 62. Fuse Block and Cover



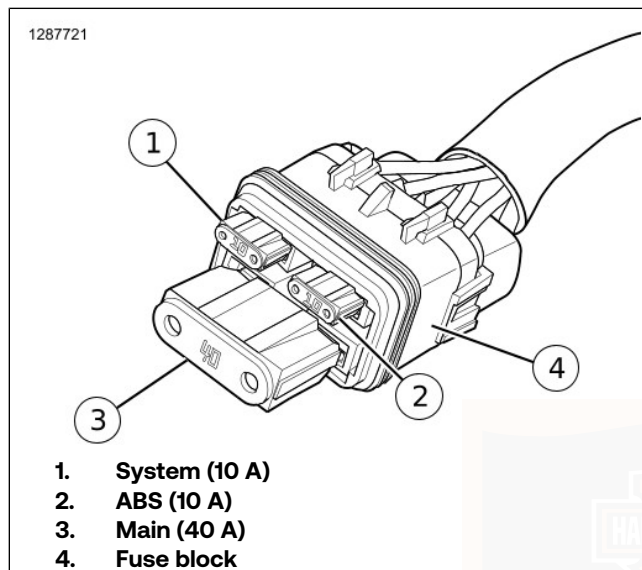


Figure 63. Fuse Block

HEADLAMP

Prepare

1. Check tire pressure. Refer to SPECIFICATIONS > SPECIFICATIONS (Page 35).
2. Adjust rear shock for the rider and intended load. See OWNER MANUAL > BEFORE RIDING (Page 39).

166 Service Procedures

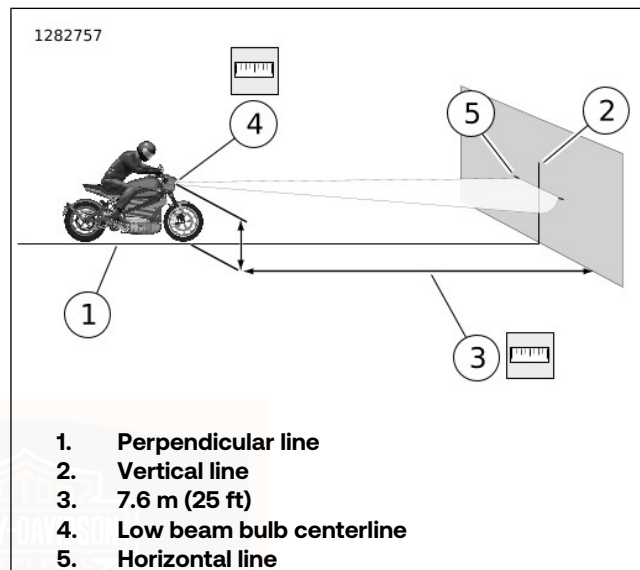


Figure 64. LED Headlamp Alignment

Check Alignment

1. See Figure 64. Park the motorcycle in a line (1) perpendicular to the wall.
2. Position motorcycle with front axle 7.6 m (25 ft) from wall.

3. Draw a vertical centerline (2) on the wall aligned with line (1).
4. With the motorcycle loaded, point the front wheel straight forward at wall. Measure the distance (4) from the floor to the center of headlamp.
5. Draw a horizontal line (5) through vertical line (2) using the same height measurement as low beam bulb centerline (4).
6. Align the top of the hot spot to horizontal line (5) with headlamp set to low beam.
7. Adjust headlamp, if necessary.

Adjusting Headlamp

1. See Figure 65. Remove fairing (1).
 - a. Pull fairing away from mounting bracket.
2. Loosen vertical adjustment screw (3).
3. Adjust headlamp vertically until beam centers on horizontal line.
4. Tighten vertical adjustment screw (3)

Torque: 13.5–17.6 N·m (10–13 ft·lbs) *Headlamp adjustment screw*

NOTE

Perform all adjustments before installing speed screen.

5. Install fairing.
 - a. Align fairing posts to grommets (4) and push.

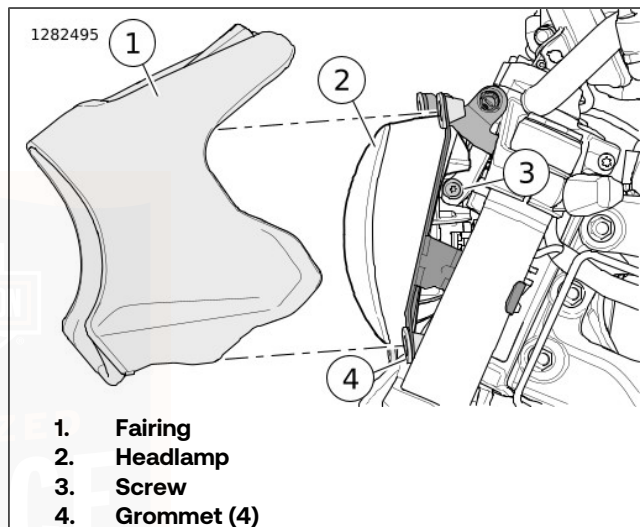


Figure 65. Headlamp Adjustment

Replacing Headlamp

The headlamp is a sealed assembly. Replace the headlamp as a unit. See a LiveWire dealer for service.

TAIL LAMP BULB REPLACEMENT: LED

The tail lamp is a Light Emitting Diode (LED) assembly. Replace the tail lamp as a unit. See a LiveWire dealer.

TURN SIGNAL BULB REPLACEMENT: LED

The LED turn signal lamp is a sealed assembly. Replace the turn signal lamp as a unit. See a LiveWire dealer.



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.

POWERTRAIN

Motorcycle Does Not Operate

1. Check RESS SOC. Charge battery.
2. Check main fuse. See SERVICE PROCEDURES > FUSES (Page 164) for removal/replacement of main fuse.
3. See your authorized LiveWire dealer.

TRANSMISSION

Motorcycle Will Not Move

1. Check RESS state of charge. Charge battery.
2. See an authorized LiveWire dealer.

Transmission Makes Noise

1. See an authorized LiveWire dealer.

COOLING SYSTEM

Overheats

1. Low coolant level or improper coolant.
2. Air flow through the radiator is obstructed.
3. Blocked coolant passages.
4. Radiator cap problem.

ELECTRICAL SYSTEM

Battery Does Not Charge

1. See an authorized LiveWire dealer.

BRAKES

ABS System Behavior

1. ABS lamp does not shut off above 5 km/h (3 mph). See dealer.
2. Other ABS symptoms. Refer to Table 46.

Brakes Do Not Hold Normally

1. Master cylinder low on fluid. See dealer.

2. Brake line contains air bubbles. See dealer.
3. Master cylinder or caliper piston worn. See dealer.
4. Brake pads contaminated with grease or oil. See dealer.
5. Brake pads badly worn. See dealer.
6. Brake disc badly worn or warped. See dealer.
7. Brake fades because of heat build up. Excessive braking or brake pads dragging. See dealer.
8. Brake drags. Insufficient hand lever free play. See dealer.



WARRANTY AND MAINTENANCE

This owner's manual contains your new motorcycle 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 LiveWire dealer for your limited warranty to remain in effect. Check with your authorized LiveWire dealer for local requirements.

1. Make an appointment with a LiveWire dealer for inspection and service prior to the first 1,609 km (1000 mi), and as soon as possible after any issue arises.
2. Bring this owner's manual with you when you visit your authorized LiveWire 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.

While you may elect to use non genuine LiveWire parts for maintenance and/or repair services, LiveWire is not obligated to pay for repairs of the non genuine LiveWire parts or for repairs of any damage resulting from the use of non genuine parts.

LiveWire authorized dealerships are independently owned and operated and may sell and install parts and accessories that are not manufactured or approved by LiveWire for use on your motorcycle. Therefore, you should understand that LiveWire is not and cannot be responsible for the quality, suitability, or safety of any non-LiveWire part, accessory or design modification, including labor, which may be sold and/or installed by authorized LiveWire dealerships.

WARRANTY/SERVICE INFORMATION

Any authorized LiveWire dealer may provide warranty repair work on your motorcycle. The fact that an authorized LiveWire dealership performs warranty repairs does not create an agency relationship between LiveWire and the authorized dealership. If you have any questions regarding warranty obligations contact your authorized LiveWire 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 LiveWire dealer by calling

1-414-343-4122 (U.S. only). To find dealers worldwide, see www.LiveWire.com.

REPORTING SAFETY DEFECTS IN THE UNITED STATES

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

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 LiveWire.

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 LiveWire dealer, or LiveWire.

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 LiveWire motorcycle is imported into the United States, additional documentation is required for that motorcycle to be eligible for the United States LiveWire Motorcycle Limited Warranty. An authorized LiveWire 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 LiveWire motorcycle, see an authorized LiveWire dealer to update your owner contact information.

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

The rights and benefits conferred upon you and the obligations of LiveWire 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. LiveWire does not authorize any entity to expand LiveWire's warranty obligations in connection with your motorcycle or this limited warranty.

When updating your contact information, your authorized LiveWire 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 LiveWire 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 LiveWire 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, LiveWire requests that you first send written notification of any defect or warranty non-conformity that you have experienced with your motorcycle to LiveWire. LiveWire appreciates the opportunity to investigate your concerns and restore your satisfaction in your motorcycle by making the necessary repairs consistent with the terms of LiveWire's limited

warranty. LiveWire requests that you send your complaint to the LiveWire Customer Support Center.

LiveWire Customer Support Center P.O. Box

653 Milwaukee, Wisconsin 53201

1-855-387-4337 (U.S.only)

LiveWire's limited warranty does not mean that each LiveWire 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, LiveWire 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 LIVEWIRE, THROUGH ITS AUTHORIZED DEALERS, IS WILLING AND ABLE TO REPAIR, REPLACE OR ADJUST DEFECTIVE PARTS IN THE PRESCRIBED MANNER. LIVEWIRE'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.

The rights and benefits conferred upon you and the obligations of LiveWire as set forth in the Limited Warranty 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. LiveWire does not authorize any entity to expand LiveWire's warranty

obligations in connection with your motorcycle or this limited warranty.



2023 LIVEWIRE LIMITED EV (ELECTRIC VEHICLE) MOTORCYCLE WARRANTY

24 Months/Unlimited Mileage

LiveWire, EV LLC ("LiveWire") warrants for any new 2023 LiveWire motorcycle that an authorized LiveWire 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 LiveWire'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 LiveWire 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's Manual. LiveWire recommends that you maintain copies of all maintenance records and receipts.

Except as described in the following paragraphs, taking your motorcycle to be serviced by a repair shop that is not an authorized LiveWire dealer will not void this warranty, and using non-genuine LiveWire parts alone will not void this warranty.

LiveWire may, however, exclude warranty coverage for defects or damage caused by unauthorized (a) parts, (b) service, or (c) use of the vehicle, including defects or damage

caused by use of non-Genuine LiveWire parts or use of the vehicle for racing or competition, and denial of coverage may be based on installation of parts designed for unauthorized uses of the vehicle, such as a trailer hitch.

Additionally, LiveWire shall exclude warranty coverage and deny all warranty claims for functional defects of powertrain components for any LiveWire motorcycle registered in the United States if the vehicle was tuned using a tuning product not covered by a California Air and Resources Board Executive Order or that was otherwise approved by the Environmental Protection Agency, or if LiveWire or any authorized LiveWire dealer has any information to show that the vehicle was tuned using a tuning product not covered by a California Air and Resources Board Executive Order or that was otherwise approved by the Environmental Protection Agency.

Disclaimers & Limitations

ASIDE FROM THE SEPARATE RECHARGEABLE ENERGY STORAGE SYSTEM (RESS) LIMITED WARRANTY DISCUSSED BELOW, THERE IS NO OTHER EXPRESS WARRANTY 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 LIVEWIRE 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.

LiveWire 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. LiveWire 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.

Warranty Duration

1. The duration of this limited warranty is 24-months on the vehicle chassis systems, drive train systems and electrical system, excluding the high voltage Rechargeable Energy Storage System (RESS), starting from the earlier of (a) the date of initial retail purchase and delivery of the motorcycle from an authorized LiveWire retailer, or (b) the third anniversary of the last day of the model year of the motorcycle. Your Authorized LiveWire 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 LiveWire dealer. The authorized LiveWire 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.

The dealer may request that you make an appointment and deliver the motorcycle for diagnosis and repair at the scheduled time.

*Note that due to the vehicle's features and components, the diagnosis may take longer and some replacement parts may take longer than traditional replacement parts to obtain. Specifically, the high voltage (HV) battery (also referenced as the RESS) is a lithium ion battery which requires special shipping and may require up to five (5) business days to receive.

Exclusions

For On-Road Motorcycles, this Limited warranty will not cover claims arising from the following:

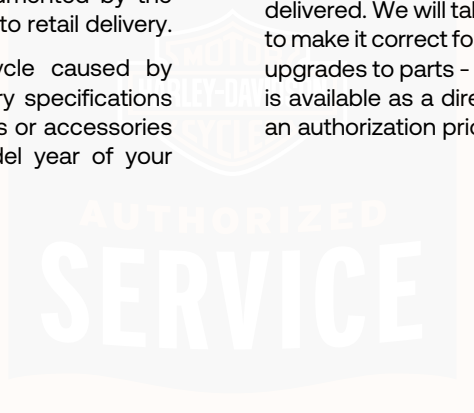
1. Failure to operate or maintain your motorcycle as specified in the owner's manual, including the Maintenance Responsibilities, Service Intervals & Records, and Maintenance & Lubrication sections.
2. Abuse, neglect, misuse, improper storage, use "off the highway," or used for racing or competition of any kind.

3. Motorcycles which are not manufactured to comply with the laws of the market in which they are registered.
4. Defects or damage caused by installation of off-road parts or competition parts installed to enhance performance, or making other unapproved modifications, including but not limited to a trailer hitch. This includes the use of genuine LiveWire parts in unapproved applications.
5. An act of God, war, riot, insurrection, nuclear contamination, natural disasters, including, but not limited to, lightning, forest fires, dust storms, hailstorms, ice storms, earthquakes, or floods, or other circumstances out of LiveWire's control.
6. A motorcycle which has been in an accident or collision, dropped or struck.

Other Limitations

This limited warranty does not cover:

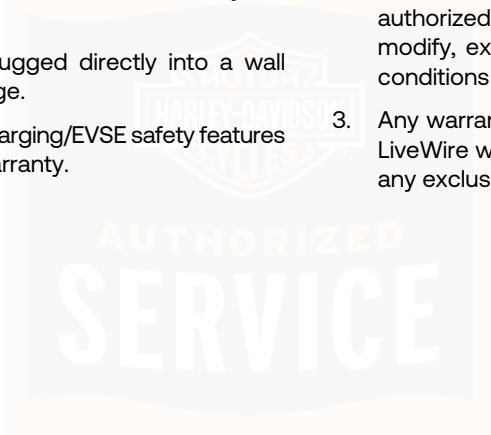
1. Parts and labor for normal maintenance as recommended in the owner's manual, or the replacement of parts due to normal wear and tear including, but not limited to, the following: tires, lubrication, coolant, battery maintenance (both 12-volt battery and RESS), brake pads, brake discs, belt adjustments, and belt replacement.
2. Cosmetic damage that arises as a result of owner misuse or abuse, lack of proper maintenance as described in the Owner's Manual, 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 damage allegedly existing at the time of retail delivery that has not been documented by the authorized LiveWire selling dealer prior to retail delivery.
4. Defects or damage to the motorcycle caused by alterations outside of LiveWire'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-genuine LiveWire parts, or unapproved genuine LiveWire parts, even those installed by an authorized LiveWire dealership, that cause a LiveWire part to fail. Examples include but are not limited to performance-enhancing powertrain components or software, including tuners, altered gear & sprocket ratio(s), non-approved tires (changing the rolling radius), lowering kits, tow packages, certain flag mounts, handlebars, and add-ons connected to the factory electrical system.
6. Upgraded parts as a warranty replacement. The limited warranty allows for repair or replacement of failed parts to put the vehicle, component, or part back to its original condition with factory supplied materials and as delivered. We will take all steps to repair/replace the part to make it correct for the customer. This does not include upgrades to parts - unless no other suitable component is available as a direct replacement. This would require an authorization prior to repair.



7. Abuse or misuse associated with operation, including:
- a. Defects due to either ignoring warning lights display or by not immediately seeking service at an Authorized LiveWire Dealer.
 - b. Running without factory certified fluids (coolant and lube).
 - c. Use of charge plugs not meant for the vehicle conversion kits and non-certified Electrical Vehicle Supply Equipment (EVSE) will void the warranty to the system.
 - d. Extension cords used in conjunction with the EVSE (from an outlet to the EVSE) are not covered by the limited warranty.
 - i. The EVSE must be plugged directly into a wall outlet to properly charge.
 - ii. Bypassing any of the charging/EVSE safety features will void the system warranty.

IMPORTANT: READ CAREFULLY

- 1. Authorized LiveWire dealers are independently owned and operated and may sell non-LiveWire products. Because of this, LIVEWIRE IS NOT RESPONSIBLE FOR THE SAFETY, QUALITY, OR SUITABILITY OF ANY NON-LIVEWIRE PART, ACCESSORY OR DESIGN MODIFICATION INCLUDING, BUT NOT LIMITED TO, LABOR WHICH MAY BE SOLD AND/OR INSTALLED BY AUTHORIZED LIVEWIRE DEALERS.
- 2. This limited warranty is a contract between you and LiveWire, EV LLC. It is separate and apart from any warranty, service plan, or service contract you may receive or purchase from an authorized LiveWire. An authorized LiveWire 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 LiveWire will not preclude LiveWire from later relying on any exclusion where applicable.



4. LiveWire and its authorized dealers reserve the right to modify or service motorcycles designed and manufactured by LiveWire at any time without incurring any additional obligation to make the same alteration or change to a motorcycle previously built and sold. LiveWire 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 LiveWire to provide similar accommodations to other owners of similar motorcycles. Sometimes LiveWire 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 LiveWire 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 LiveWire 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 cause damage or defects not covered by this limited warranty.
6. 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.

Environmental Factors

1. Warranty will cover rust/corrosion and/or pitting on one component, one time only, under appropriate conditions. If a vehicle is exhibiting any of these conditions on more than one component, warranty coverage will be denied.
2. Warranty will cover rust/corrosion and/or pitting on multiple components only if they are the same component (i.e. both mirrors, both rider footboards, etc.)
3. Warranty will not cover rust/corrosion and/or pitting on wheels at any time unless the condition had been properly documented in the DPQA. For warrantable conditions see Cosmetic Quality Guide.
4. Warranty will not cover rust/corrosion and/or pitting as a result of damage from road debris, hazards, neglect, chemical exposure or abuse/misuse of the motorcycle.
5. Warranty will not cover rust/corrosion and/or pitting or part wear that results from off-road use.

The owner is responsible for protecting the motorcycle from any cosmetic concerns that result from use and/or from

exposure to the elements.



NOTES



2023 LIVEWIRE RESS (RECHARGEABLE ENERGY STORAGE SYSTEM) WARRANTY

60 Months/Unlimited Miles

The Rechargeable Energy Storage System (RESS) consists of the high voltage lithium battery. See Service Manual for details on the RESS and service procedures.

LiveWire warrants for any new LiveWire Rechargeable Energy Storage System (RESS) that an Authorized LiveWire Dealer will repair or replace without charge any parts on your motorcycle that malfunction or fail during normal use during the applicable coverage period due to an issue with factory supplied materials or factory workmanship. Such repair or replacement of failed parts will be LiveWire's sole obligation (including a factory certified RESS as an option for replacement) and your sole and exclusive remedy under this limited warranty. This limited warranty applies only for the duration identified below.

No person, including LiveWire 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's Manual. LiveWire recommends that you maintain copies of all maintenance records and receipts.

THE LIMITED WARRANTY ABOVE AND THIS LIMITED RESS WARRANTY ARE THE ONLY EXPRESS 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 A LAW, NEITHER LIVEWIRE, 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.

LiveWire 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, 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.

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 limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state (Country/Market/Region). Decisions based on state lemon laws, state arbitration awards and/or dispute resolution awards supersede Company policy.

The following terms and conditions apply to this limited warranty:

Duration

1. The Rechargeable Energy Storage System (RESS) warranty is 60-months starting from the date the VIN is registered.
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.

Other Limitations

To obtain warranty service, return your motorcycle at your expense within the limited warranty period to an authorized LiveWire Dealer. The Authorized LiveWire 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. Note that due to the vehicle's features and components, the diagnosis may take longer and some replacement parts may take longer than traditional replacement parts to obtain. Specifically, the RESS is a lithium ion battery which requires special shipping and may require up to five (5) business days to receive.

NOTE

The RESS will exhibit capacity degradation over time as a result of both physical and chemical design limitations. Factors such as high temperature, high charge/discharge rates, or extended time at low state of charge (SOC) conditions. The battery may degrade as much as 20% of original capacity over the warranty period (5 years). This condition is not considered a warranty condition or failure but a normal characteristic of a rechargeable lithium ion battery.

Exclusions

This limited warranty will **not** apply to any RESS where there is evidence or failure due to abuse, neglect, improper maintenance or unapproved modifications or:

1. Which has been tampered with in any manner whereby the original RESS case has noticeable mechanical tampering evidence, including:
 - a. Opening or attempting to open the case of the RESS. The RESS is not a customer serviceable component (or dealer service); no attempt should be made to open the RESS.
 - b. Any products tampered with, modified, adjusted, or repaired by any unauthorized party, including the owner or a non-Authorized LiveWire Dealer.
 - c. Any damage caused or resulting from the use of inappropriate tools.
2. Unauthorized reprogramming of the RESS electronic controller, or any other vehicle controller. This includes any modification that changes the charge rate into the RESS that is not factory specific.
3. Failure to maintain the RESS State-of-Charge above zero percent.
4. Which has been modified or evidence of impact deforming the RESS housing or surrounding chassis protection.
5. Which has not been operated or maintained as specified in the Owner's Manual.
6. On which any additional accessory has been installed by the owner which causes defect of additional parts, or condition that negatively affects the designed performance.
7. Which has a damaged or altered on board charger (OBC) that no longer allows the EVSE to properly be secured, including:
 - a. adaptors not approved for use on the vehicle.
 - b. home-made – non-branded and aftermarket adaptors.
 - c. vehicle inlet assembly (charge port) tampering.
8. Which has been in an accident, collision, dropped or struck.
9. 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 LiveWire's control.
10. Which has been subjected to extended storage of the motorcycle at excessive (hot or cold) ambient temperatures which can cause accelerated battery cell capacity degradation.

- a. Which has not been properly and regularly charged with an approved charger and provided Electrical Vehicle Supply Equipment (EVSE).
- b. Warranty coverage of an RESS which has been exposed to extreme weather conditions (above 60°C (140°F) or below -40°C (-40°F)) for a prolonged period of time without proper maintenance, charging, or storage could be at risk for permanent loss of range or state of health (SoH).

Rechargeable Energy Storage System (RESS) - Factory Certified

LiveWire may at times use a factory certified RESS as a warranty replacement component. All factory certified parts are inspected and tested for quality. Replacement parts and products are covered for the remaining period of the limited warranty for the vehicle's original RESS. When making warranty repairs on your motorcycle, the dealer will use new LiveWire parts or remanufactured/reconditioned parts that are authorized by LiveWire, at the discretion of LiveWire. Nothing in this limited warranty should be construed as requiring failed parts to be replaced with new parts, or parts of a different type or design than the original part, so long as the vehicle functions properly with the replacement part. Moreover, LiveWire and its authorized dealers are entitled to a reasonable time and a reasonable number of attempts

within which to diagnose and repair any failure covered by this limited warranty.

If a factory certified RESS is available for customer purchase (non-warranty) this option will be made available at a reduced cost from the cost of a new RESS.

Pro-rated Warranty Coverage

LiveWire reserves the right to supply a factory certified RESS with a Pro-Rated SOH for a RESS that has depleted some useful life during normal operation of the vehicle beyond design expectations.

LiveWire will not apply a pro-rated amount within the first 24 months after the vehicle is first put into service. After the 24-months has expired, LiveWire reserves the right to apply SOH proration up to 20% under conditions where the battery exhibits capacity degradation over time as a result of both physical and chemical aging under normal vehicle use.

If the RESS is completely non-functioning (the vehicle is unable to be ridden due to the RESS failure) the RESS will be replaced with a new RESS. If the RESS is functioning (the vehicle can be ridden), but at a diminished level beyond design expectations, the pro-ration of SOH will be applied based on the remaining useable life of the RESS.

The state of health (SOH) and charge will be determined during dealer diagnostic evaluation based on the history of

the vehicle and the RESS data. The pro-rated amount will be disclosed at the time of authorization for replacement with the dealer.

Pro-ration will be applied at 10% increments and will always favor the customer.

- Example: RESS life has diminished 18% in the first 36 months of use. Factory Certified pro-rate amount applied will be 90% battery SOH.
- Example 2: RESS life has diminished 28% in the first 40 months of use. Factory Certified pro-rate amount applied will be 80% battery SOH.

Where a RESS has been replaced, the customer will receive the remaining warranty on the original RESS.



NOTES



SERVICE RECORDS

Regular Service Intervals

Service must be performed at specified intervals to keep your motorcycle operating at peak performance. Refer to Service Intervals for table.

Refer to Service Actions for service action definitions used in the service interval table.

NOTE

- Whenever a vehicle is in for maintenance:
 - a. always check for and complete recalls and open product programs.
 - b. always verify that the latest calibration is installed.
- After completing the final service interval, repeat the service schedule starting at the 8000 km (5000 mi) interval.

Service Intervals

Table 55. Regular Service Intervals: LiveWire ONE Models

COMPONENT	ACTION	1600 KM 1000 MI	8000 KM 5000 MI	16000 KM 10000 MI	24000 KM 15000 MI	32000 KM 20000 MI	40000 KM 25000 MI	48000 KM 30000 MI	56000 KM 35000 MI	64000 KM 40000 MI	72000 KM 45000 MI	80000 KM 50000 MI	NOTES
Service Intervals													
Electrical equipment and switches	Inspect	x	x	x	x	x	x	x	x	x	x	x	
Front tire pressure and tread	Check	x	x	x	x	x	x	x	x	x	x	x	1
Front brake fluid level	Check	x	x	x	x	x	x	x	x	x	x	x	
DOT4 front brake fluid moisture content	Check	x	x	x	x	x	x	x	x	x	x	x	
Hand control switch housing screw torque	Check	x		x		x		x		x		x	1, 5, 3

Table 55. Regular Service Intervals: LiveWire ONE Models

COMPONENT	ACTION	1600 KM 1000 MI	8000 KM 5000 MI	16000 KM 10000 MI	24000 KM 15000 MI	32000 KM 20000 MI	40000 KM 25000 MI	48000 KM 30000 MI	56000 KM 35000 MI	64000 KM 40000 MI	72000 KM 45000 MI	80000 KM 50000 MI	NOTES
Master cylinder and left side handlebar clamp screw torque	Check	x		x		x		x		x		x	1, 5, 3
Steering head bearings	Adjust	x		x		x		x		x		x	
Steering head bearings	Lubricate							x					5
Coolant system	Inspect	x	x	x	x	x	x	x	x	x	x	x	
Coolant system freeze point	Check	x	x	x	x	x	x	x	x	x	x	x	
Coolant	Replace											x	5
Radiator fins	Clean	x	x	x	x	x	x	x	x	x	x	x	
Transmission lubricant	Replace	x				x				x			2
High voltage cables	Inspect	x	x	x	x	x	x	x	x	x	x	x	5
Rear brake fluid level	Check	x	x	x	x	x	x	x	x	x	x	x	
DOT4 rear brake fluid moisture content	Check	x	x	x	x	x	x	x	x	x	x	x	
Brake system fluid	Replace	____ Flush brake system and replace DOT 4 hydraulic brake fluid every two years or sooner if moisture content is 3% or greater. _____											5
Brake system	Inspect	x	x	x	x	x	x	x	x	x	x	x	1, 5
Brake pads and discs	Inspect	x	x	x	x	x	x	x	x	x	x	x	
Front axle nut torque	Check	x		x		x		x		x		x	1, 5, 3
Jiffy stand	Lubricate	x	x	x	x	x	x	x	x	x	x	x	5, 2
Brake controls	Lubricate	x	x	x	x	x	x	x	x	x	x	x	
Rear tire pressure and tread	Check	x	x	x	x	x	x	x	x	x	x	x	1
Drive belt and sprockets	Inspect	x	x	x	x	x	x	x	x	x	x	x	5
Drive belt tension	Check	x	x	x	x	x	x	x	x	x	x	x	5

Table 55. Regular Service Intervals: LiveWire ONE Models

COMPONENT	ACTION	1600 KM 1000 MI	8000 KM 5000 MI	16000 KM 10000 MI	24000 KM 15000 MI	32000 KM 20000 MI	40000 KM 25000 MI	48000 KM 30000 MI	56000 KM 35000 MI	64000 KM 40000 MI	72000 KM 45000 MI	80000 KM 50000 MI	NOTES
Rear axle torque	Check	x		x		x		x		x		x	1, 5, 3
12 volt battery	Inspect	x	x	x	x	x	x	x	x	x	x	x	4
Front forks	Rebuild											x	5
Road test to verify component and system functions	Road Test	x	x	x	x	x	x	x	x	x	x	x	
NOTES													
1. Perform annually or at specified intervals, whichever comes first. 2. Perform maintenance more frequently in severe riding conditions. This includes extreme temperatures, dusty environments, mountainous or rough roads, long storage conditions, short runs, heavy stop/go traffic or poor fuel quality. 3. For torque instructions, see Shop Practices in the service manual. 4. Check battery, terminal torque and clean connections annually. Lubricate terminals with ELECTRICAL CONTACT LUBRICANT. 5. Should be performed by an authorized LiveWire dealer, unless you have the proper tools, service data and are mechanically qualified.													

Service Actions

Table 56. Service Action Definitions

ACTION	DEFINITION
Inspect	Carefully examine component for excess wear, abnormality, contact, or leaks.
Check	Verify the component is within the owner's manual or service manual service limits. Adjust or repair as necessary.

Table 56. Service Action Definitions

ACTION	DEFINITION
Lubricate	Lubricate the component as specified in the owner's or service manual with a LiveWire approved product.
Replace	Replace the component at the specified intervals.

Table 56. Service Action Definitions

ACTION	DEFINITION
Clean	Clean the component as specified in the owner's or service manual.
Rebuild	Rebuild the component according to the procedures in the service manual.

Maintenance Records

Maintain a record of this service to keep your new motorcycle limited warranty in force. Refer to Table 57.

Table 57. Owner's Maintenance Records

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

ACRONYMS AND ABBREVIATIONS

Table 58. Acronyms and Measurement Symbols

ITEM	DEFINITION
A	Amperes
ABS	Anti-lock braking system
AC	Alternating current
ACR	Automatic compression release
AGM	Absorbed glass mat (battery)
Ah	Ampere-hour
BCM	Body control module
°C	Celsius (Centigrade)
CCA	Cold cranking amps
ci	Cubic inch
cm	Centimeters
cm ³	Cubic centimeters (cc)
CVO	Custom vehicle operations
DC	Direct current
DLC	Data link connector
DOM	Domestic
DT II	Digital Technician II
DTC	Diagnostic trouble code
ECM	Electronic control module
EFI	Electronic fuel injection
EHCUC	Electro hydraulic control unit
EITMS	Engine idle temperature management system

Table 58. Acronyms and Measurement Symbols

ITEM	DEFINITION
EHCUC	Electro hydraulic control unit
ETC	Electronic throttle control
EV	Electric vehicle
EVAP	Evaporative emissions control system
EVPT	Electric vehicle powertrain
EVSE	Electric vehicle supply equipment
°F	Fahrenheit
fl oz	Fluid ounce
ft	Feet
ft-lbs	Foot pounds
FTP	Flash to pass
g	Gram
gal	Gallon
GAWR	Gross axle weight rating
GND	Ground (electrical)
GPS	Global positioning system
GVWR	Gross vehicle weight rating
HCU	Hydraulic control unit
HDI	Harley-Davidson International
HHC	Hill hold control
HP	Horsepower
HV	High voltage
Hz	Hertz
IGN	Ignition light/key switch position
IM	Instrument module

Table 58. Acronyms and Measurement Symbols

ITEM	DEFINITION
IMU	Inertia measurement unit
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
Li-ion	Lithium-Ion
LV	Low voltage
mA	Milliamperere
mi	Mile
MIL	Malfunction indicator lamp
Min	Minimum
mL	Milliliter
mm	Millimeter
mph	Miles per hour
ms	Millisecond
Nm	Newton-meter
OBC	Onboard charger
oz	Ounce

Table 58. Acronyms and Measurement Symbols

ITEM	DEFINITION
P&A	Parts and Accessories
PA	Public address
Part No.	Part number
PIN	Personal identification number
PPE	Personal protective equipment
psi	Pounds per square inch
PTT	Push to talk
qt	Quart
RDRS	Reflex defensive rider systems
RESS	Rechargeable energy storage system
rpm	Revolutions per minute
SDS	Safety data sheet
SoC	State of charge
SoH	State of health
SW	Software
TCS	Traction control system
TCU	Telematic Control Unit
TPMS	Tire pressure monitoring system
USB	Universal serial bus
USB-C	Universal serial bus - type C
V	Volt
VAC	Volts of alternating current
VDC	Volts of direct current
VIN	Vehicle identification number
VR	Voice recognition

Table 58. Acronyms and Measurement Symbols

ITEM	DEFINITION
W	Watt
WSS	Wheel speed sensor
Wh	Watt-hour
WHIM	Wireless Headset Interface Module

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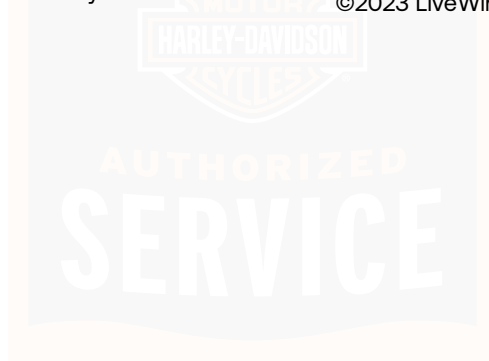
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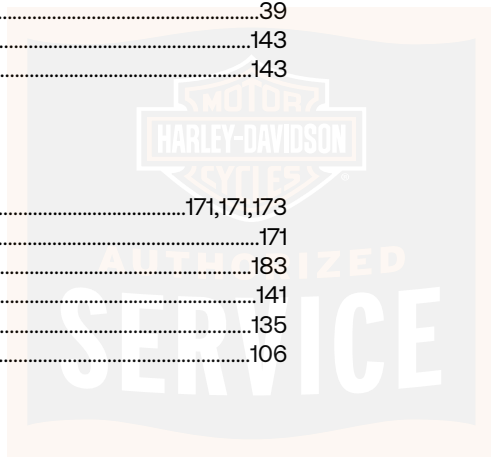
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