



# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Safety First

### Safe Operating Rules: XB Models

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[Top of page](#)

#### **⚠ WARNING**

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

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

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

Know and respect the rules of the road. See [Rules of the Road: Buell Models](#). Read and observe the RIDING TIPS booklet that comes with this Owner's Manual. You should also read and know the contents of the MOTORCYCLE HANDBOOK for your state.

Before starting engine, check for proper operation of brake, clutch, shifter and throttle controls. Inspect fuel and oil supply.

## **⚠WARNING**

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

Use only Buell approved parts and accessories. Use of certain "race only" or other manufacturer's performance parts will void your new motorcycle warranty. See a Buell dealer for details.

## **⚠WARNING**

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

## **⚠WARNING**

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

## **⚠CAUTION**

Cooling fans operate automatically, even when the ignition switch is off. Keep hands away from fan blades. Contact with a rotating fan blade can result in minor or moderate injury. (00093a)

## **⚠WARNING**

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

## **⚠WARNING**

Wheel weights on wheels without spokes contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. (00356c)

## ⚠ WARNING

Do not run motorcycle in a closed garage or confined area. Inhaling motorcycle exhaust, which contains poisonous carbon monoxide gas, could result in death or serious injury. (00005a)

See [Break-in Riding Rules](#). A new motorcycle must be operated according to the break-in procedure.

Operate motorcycle only at moderate speed and out of traffic until you have become thoroughly familiar with its operation and handling characteristics under all conditions.

### NOTE:

*We recommend that you obtain information and formal training in the correct motorcycle riding technique. In the United States, the Motorcycle Safety Foundation® offers beginning and experienced rider safety courses. Call (949)727-3227 for information.*

## ⚠ WARNING

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

Know your limits as a rider. Do not exceed the legal speed limit or drive too fast for existing conditions. Always reduce speed when poor driving conditions exist and/or you feel the driving situation is uncomfortable. High speed increases the influence of any other condition affecting stability and increases the possibility of loss of control.

If you are a novice rider, do not carry a passenger until you have experienced at least two riding seasons, your motorcycle will handle different when carrying a passenger.

Pay strict attention to road surfaces and wind conditions. Your motorcycle may be subject to the following upsetting forces:

1. Wind blasts from passing trucks.
2. Holes in the pavement.
3. Strips of tar used to seal cracked pavement.
4. Rough road surfaces.
5. 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.

*NOTE:*

*New riders should gain experience under various conditions while riding at moderate speeds.*

Operate your motorcycle defensively. Remember, a motorcycle does not afford the same protection as an automobile in an accident. One of the most common accident situations occurs when the driver of the other vehicle fails to see or recognize a motorcycle and turns left into the oncoming motorcyclist. Riding with headlamp high beam switch on during daylight hours will increase your chances of visibility.

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

## **⚠WARNING**

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

When carrying passengers, it is your responsibility to instruct them on proper riding procedures.

Do not allow others under any circumstances to operate your motorcycle unless you know they are experienced, licensed riders and are familiar with the operation of your particular motorcycle.

Protect your motorcycle against theft. After parking your motorcycle, lock the steering head and remove ignition key from switch.

Safe motorcycle operation requires alert mental judgment combined with a defensive driving attitude. Do not allow fatigue, alcohol or drugs to endanger your safety or that of others.

See MAINTENANCE AND LUBRICATION section. Maintain your motorcycle in proper operating condition in accordance with the Maintenance Intervals chart in this Owner's Manual. Particularly important to motorcycle stability is proper tire inflation pressure, tread condition and proper inspection of wheel bearings and steering head bearings.

## **⚠WARNING**

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

## **⚠WARNING**

Do not operate motorcycle with loose, worn or damaged steering or suspension systems. Contact a Buell 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. (00113a)

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

## **⚠WARNING**

Use Buell replacement fasteners. Aftermarket fasteners can adversely affect performance, which could result in death or serious injury. (00116a)

See a Buell service manual for proper torque values.

Aftermarket fasteners may not have the specific property requirements to perform properly.

## **⚠WARNING**

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

## **⚠WARNING**

Match tires, tubes, air valves and caps to the correct wheel rim. Contact a Buell dealer. Mismatching can result in damage to the tire bead, allow tire slippage on the rim or cause tire failure, which could result in death or serious injury. (00162a)

## **⚠WARNING**

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Buell dealer for replacements. Riding with excessively worn

unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00114a)

## **⚠WARNING**

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

GVWR is the sum of the weight of the motorcycle, accessories, and the maximum weight of the rider, passenger and cargo that can be safely carried.

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

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

## **⚠WARNING**

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

## **⚠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**

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

## **⚠WARNING**

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

## ⚠ WARNING

Observe warnings on labels of brake and battery fluids and cleaning compounds. Failure to follow warnings could result in death or serious injury. (00131a)

## ⚠ WARNING

Consult a Buell 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. (00115a)

## Rules of the Road: Buell Models

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[Top of page](#)

As recommended previously, inexperienced riders are recommended to complete the beginner's Motorcycle RiderCourse<sup>®</sup> sponsored by the Motorcycle Safety Foundation<sup>®</sup>. Important tips about riding safety are listed below.

- Always sound your horn but do not rely on it to be your only defense against other riders or drivers of automobiles and trucks.
- Never try to pass another vehicle going in the same direction at street intersections, on curves, or when going up and/or down a hill.
- When you are at street intersections, give the right-of-way to vehicles according to local regulations. Do not assume you have the right-of-way; the other driver may not know that it is your turn.
- Always use your signals when preparing to pass a vehicle, change lanes, turn or stop.
- All traffic signs, including those used for the control of traffic at intersections, should be obeyed promptly. SLOW DOWN signs near schools and caution signs at railroad crossings should always be observed and your actions governed accordingly.
- When intending to turn, signal at least 100 feet 30 meters before reaching the turning point. When turning across an intersection, move over to the centerline of the street (unless local rules require otherwise). Slow down, enter the intersection of the street and turn carefully.
- Never run through a yellow or red traffic light. When a change is indicated from GO to STOP (or vice versa), slow down and wait for the light to change.
- While turning either right or left, watch for pedestrians and animals; as well as vehicles.
- Do not leave the curb or parking area without signaling and being sure that your

way is clear to enter moving traffic. Moving lines of traffic have the right-of-way.

- Be sure that your license plate is installed in the position specified by law and that it is clearly visible at all times. Keeping the plate clean will improve visibility of the motorcycle to other motorists (especially at night).
- 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, wet or under construction.
- Watch for debris such as leaves or loose gravel.
- Weather and traffic conditions on the highway dictate adjusting your speed and driving habits accordingly.

## **⚠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)

## **⚠WARNING**

Operating this motorcycle in a reckless manner, including performing wheelies, stoppies or burnouts, can lead to parts failure or loss of control, which could result in death or serious injury. (00120a)

## **Accessories and Cargo: XB Models**

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[Top of page](#)

## **⚠WARNING**

Improper loading of cargo or installation of accessories can affect motorcycle stability and handling, which could result in death or serious injury. (00121a)

Buell Motorcycle Company cannot test and make specific recommendations regarding every accessory or combination of accessories sold, the rider must assume responsibility for safe operation of the motorcycle when installing accessories or carrying additional weight. Use the following guidelines when equipping a motorcycle or carrying passengers and cargo.

- Do not cover or restrict the air intake screen. Certain accessories, like tank bags,



may cover or restrict the air intake screen on the airbox cover. This will reduce power and performance. See the [Air Filter: XB Models](#) section for more information.

- Do not exceed the Gross Vehicle Weight Rating (GVWR) on the information plate located on the frame steering head. GVWR is the sum of the weight of the motorcycle and accessories and the maximum weight of the rider and cargo that may be carried safely.
- Do not pull a trailer with this motorcycle.
- Keep cargo weight concentrated close to the motorcycle as low as possible to minimize the change in the motorcycle's center of gravity. Distribute weight evenly on both sides of the vehicle and do not load bulky items too far behind the rider or add weight to the handlebars or front forks.
- Be sure cargo is secure and will not shift while riding. Periodically recheck load.
- Accessories that change the operator's riding position can increase reaction time and adversely affect handling. Only use such items if they are designed and approved by Buell Motorcycle Company, built specifically for your motorcycle and installed properly.
- Additional electrical equipment can overload the motorcycle's electrical system and cause an unsafe operating condition.
- Large surfaces, such as fairings, windshields, backrests and luggage racks, can affect handling. These items should be designed and approved by Buell Motorcycle Company specifically for the motorcycle model and properly installed.

## **⚠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)

## **⚠WARNING**

Buell motorcycles are not designed for sidecar use. Sidecar use with a Buell can adversely affect handling and reduce braking efficiency, which could result in death or serious injury. (00132a)

## **⚠WARNING**

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

## **⚠WARNING**

Keep tail lamp visible at all times. Do not place objects on license plate bracket blocking tail lamp visibility. Low visibility of rider can result in death or serious injury. (00123a)

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## Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

# Identification

## Vehicle Identification Number: XB Models

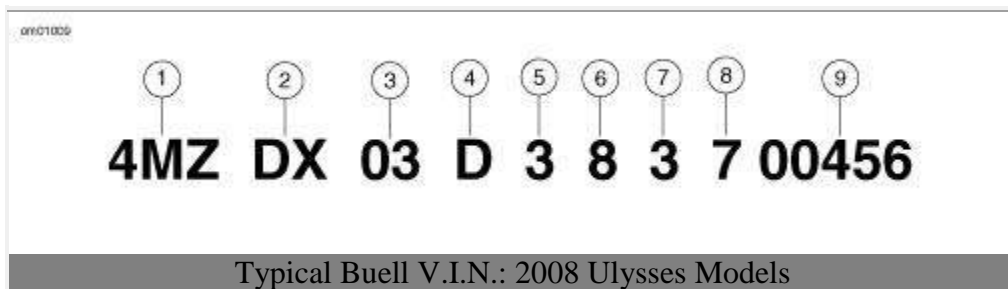
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[Top of page](#)

See [Typical Buell V.I.N.: 2008 Ulysses Models](#) and [Buell V.I.N. Breakdown: 2008 Models](#). The full serial number or Vehicle Identification Number (V.I.N.) is stamped on the right front of the frame near the steering head. A Motor Identification Number is stamped on the left side crankcase near the front of the engine.

*NOTE:*

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



### Buell V.I.N. Breakdown: 2008 Models

POSITION	DESCRIPTION	POSSIBLE VALUES
1	Market designation (WMI code)	4MZ = Buell vehicles originally manufactured for sale <b>within</b> the United States  5MZ = Buell vehicles originally manufactured for sale <b>outside</b> the United States
2	Motorcycle type code	AX=Firebolt <sup>®</sup> DX=Ulysses <sup>™</sup> JX=Lightning <sup>®</sup> Long KP=Blast <sup>®</sup> KX=Lightning <sup>®</sup> CityX SX=Lightning <sup>®</sup> WX=Lightning <sup>®</sup> Scg XX=Lightning <sup>®</sup> Super TT
3	Engine type	01=492cc  02=984cc  03=1203cc
4	Market configuration	A=Australia

		B=Brazil L=California N=Canada D=Domestic E=England R=Europe F=France J=Japan
5	V.I.N. check digit	Can be 0-9 or X
6	Model year	8=2008
7	Assembly plant	3=East Troy, WI U.S.A.
8	Model	0=Blast (08) 2=XB9SX (08) 3=XB12R (08) 4=XB12S (08) 5=XB12Scg (08) 6=XB12Ss (08) 7=XB12X (08) 8=XB12STT (08)
9	Sequential number (last five digits)	Varies

## Labels: XB Models

[Top of page](#)

See [Labels: Ulysses Models](#) for safety and maintenance labels which were on the vehicle when new. If removed, replacement labels may be purchased for your motorcycle. Refer to [Labels: Ulysses Models](#) for label descriptions.

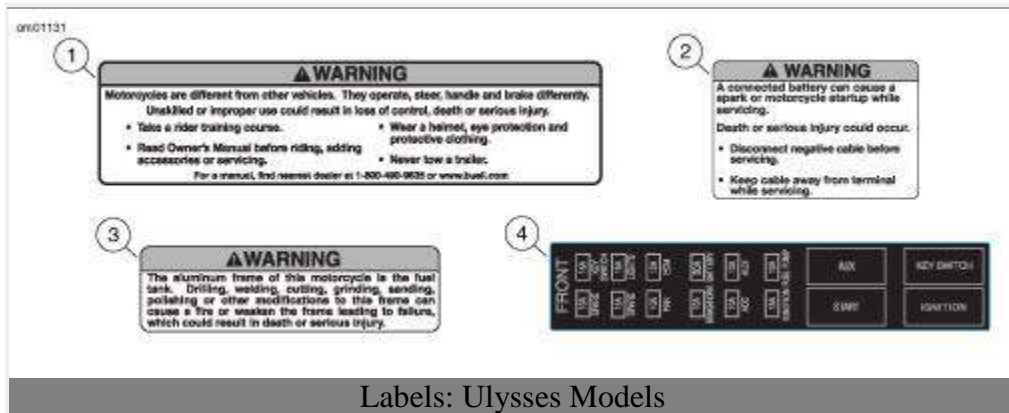
*NOTE:*

*Some labels are available in different languages for destinations outside the U.S.*

### Labels: Ulysses Models

LABEL	PART NUMBER	DESCRIPTION	LOCATION
1	C0178.5AA (label set)*	General warning label	Right side of swingarm.
2		Battery warning label	Top of fuse block cover.
3		Frame modification warning label	Right side of frame above V.I.N. label.
4		Fuse block label	Side of fuse block cover.

\*C0178.5AA is a sheet that includes all the labels above.



### Labels: Ulysses Models

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Specifications

### Specifications: 2008 Ulysses Models

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[Top of page](#)

Engine: 2008 Ulysses Models

ITEM	DATA
Cylinders	2

Type	Four-stroke, 45 degree V-Twin	
Cooling	Air, oil and fan cooled	
Bore	3.500 in.	88.90 mm
Stroke	3.812 in.	96.82 mm
Engine displacement	73.4 cu. in.	1203 cc
Compression ratio	10.0:1	
Valve train	OHV, two valves per cylinder	
Valve adjustment	Hydraulic, self-adjusting valve tappets	
Fuel delivery	Dynamic Digital Fuel Injection III	

#### Ignition System: 2008 XB Models

ITEM	DATA	
Battery	12 volt, 12 amp./hr, 200 CCA	
Spark plugs	Harley-Davidson No. 10R12X	
Size	12 mm	
Gap	0.035 in.	0.89 mm
Torque	12-18 ft-lbs	16-24 Nm

**NOTE:**

*Specifications in this publication may not match those of official certification in some markets due to timing of publication printing, variance in testing methods, and/or vehicle differences. Customers seeking officially recognized regulatory specifications for their vehicle should refer to certification documents and/or contact their respective dealer or distributor.*

#### Sprocket Teeth: 2008 Ulysses Models

DRIVE	ITEM	NUMBER OF TEETH		38
		Primary	Engine	
Clutch	57			
Final	Transmission	27		
	Rear wheel	65		
	Belt	135		

### Capacities: 2008 Ulysses Models

ITEM	U.S.	LITERS
Fuel tank total (including reserve)	4.40 gallons	16.7
Reserve/low fuel lamp illuminates at	0.83 gallons	3.1
Oil tank	2.5 U.S. quarts	2.4
Transmission	1.0 U.S. quart	0.9

### Transmission Gear Ratios: 2008 Ulysses Models

GEAR	FINAL	OVERALL
	First gear	2.648
Second gear	1.892	6.831
Third gear	1.407	5.080
Fourth gear	1.166	4.211
Fifth gear	1.000	3.611

**NOTES:**

- Overall gear ratios indicate the number of engine revolutions required to drive the rear wheel one revolution.
- Final gear ratios indicate the number of mainshaft revolutions required to drive the output sprocket one revolution.

### Dimensions: 2008 Ulysses Models

ITEM	IN.	MM
Wheel base (without rider)	54.1	1374
Seat height (with rider)	31.8	808



Ground clearance (without rider)	6.75	171
Trail	4.8	122
Rake (steering angle)	23.5 degrees	
Rake (fork angle)	22 degrees	

#### Weights: 2008 Ulysses Models

ITEM	LB.	KG
Weight	495	225
GVWR	950	431
GAWR front	345	156
GAWR rear	685	311
Load capacity	455	206
All measurements include a full tank of gasoline.		

#### NOTES:

- Gross Vehicle Weight Rating (GVWR) and corresponding Gross Axle Weight Ratings (GAWR) are given on a label located on the frame steering head.
- Weight is the total weight of the motorcycle including fuel, oil and primary fluid. GVWR is the Gross Vehicle Weight Rating (maximum allowable loaded vehicle weight). GAWR is the Gross Axle Weight Rating (maximum allowable loaded weight per axle). Load capacity is the amount of weight (including the rider) that can be carried on the motorcycle without exceeding the GVWR.

#### Bulb Chart: 2008 Ulysses Models

BULB		BULBS REQUIRED	WATTS	AMPS	PART NUMBER
Headlamps	Bulb (H7)	2	55	4.58	Y0148.1AD
	Position lamp (European models only)	1	5	0.37	53436-97
Marker	Tail/stop lamp	Replace tail lamp assembly if lamp			Y0401.1AKC

lamps		fails.				
	Front and rear turn signal lamps (1 bulb each)	4	10	0.74	Y0042.K	
	License plate illumination lamp	1	5	0.37	53436-97	
Instruments	Turn signal indicator	1	1.12	0.08	Y0163.02A8	
	Check engine	1	1.12	0.08	Y0163.02A8	
	High beam	1	0.7	0.05	Y0162.02A8	
	Oil indicator	1	1.12	0.08	Y0163.02A8	
	Neutral	1	1.12	0.08	Y0163.02A8	
	Backlight		2	1.12	0.08	Y0163.02A8
			1	0.7	0.05	Y0162.02A8
Low fuel	Replace instrument cluster if low fuel warning lamp fails.					

## Tire Data: Ulysses XB12X

[Top of page](#)

### **⚠WARNING**

Match tires, tubes, air valves and caps to the correct wheel rim. Contact a Buell dealer. Mismatching can result in damage to the tire bead, allow tire slippage on the rim or cause tire failure, which could result in death or serious injury. (00162a)

### **⚠WARNING**

Use only Buell approved tires. See a Buell dealer. Using non-approved tires can adversely affect stability, which could result in death or serious injury. (00133a)

### **⚠WARNING**

Do not inflate tire beyond maximum pressure as specified on sidewall. Over inflated tires can blow out, which could result in death or serious injury. (00027a)

- Tubeless tires are used on all Buell cast wheels. Tire sizes are molded on the tire sidewall.
- Use only recommended tires (the same as original equipment). Other tires may not fit correctly, could adversely affect handling, and may be hazardous to use.

*NOTE:*

*Always check tire pressure before riding. Tire pressures listed are with tires cold.*

### Tires/Air Pressures: 2008 Ulysses Models

TIRE	TYPE	SIZE	SOLO RIDER		AT GVWR	
			PSI	kPa	PSI	kPa
Front	Pirelli Scorpion Sync	120/70ZR17	34	234	Same as solo	Same as solo
Rear	Pirelli Scorpion Sync	180/55ZR17	36	248	Same as solo	Same as solo

## Gasoline Blends: Buell Models

[Top of page](#)

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



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

- Gasoline containing METHYL TERTIARY BUTYL ETHER (MTBE): Gasoline/MTBE blends are a mixture of gasoline and as much as 15% MTBE. Gasoline/MTBE blends can be used in your motorcycle.
- ETHANOL is a mixture of 10% ethanol (Grain alcohol) and 90% unleaded gasoline. Gasoline/ethanol blends can be used in your motorcycle if the ethanol content does not exceed 10%.
- REFORMULATED OR OXYGENATED GASOLINES (RFG): "Reformulated gasoline" is a term used to describe gasoline blends that are specifically designed to burn cleaner than other types of gasoline, leaving fewer "tailpipe" emissions.

They are also formulated to evaporate less when you are filling your tank. Reformulated gasolines use additives to "oxygenate" the gas. Your motorcycle will run normally using this type of gas and Buell recommends you use it when possible, as an aid to cleaner air in our environment.

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

You may find that some gasoline blends adversely affect the starting, drivability or fuel efficiency of your bike. If you experience one or more of these problems, we recommend you try a different brand of gasoline or higher octane rating.

## Fuel

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[Top of page](#)

Refer to [Octane Ratings](#). Always use a good quality unleaded gasoline. Octane ratings are usually found on the pump.

### **⚠WARNING**

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

### **⚠WARNING**

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

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

#### Octane Ratings

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

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Controls and Indicators

### General: Controls and Indicators

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[Top of page](#)

## ⚠ WARNING

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

Some features explained in this section are standard equipment on this model. Other features may be available as accessories for your Buell motorcycle. See a Buell dealer for a complete list of accessories that will fit your specific motorcycle.

## Ignition/Headlamp Key Switch: XB Models

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[Top of page](#)

### General

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## ⚠ WARNING

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

*NOTE:*

*Record your key number in the space provided at the front of this book. The key number is impressed on a plastic tab that comes with the keys.*

The ignition/headlamp key switch controls the distribution of power to the ignition and lamps.

1. See [Ignition Key Switch: Ulysses Models](#). Turn the key clockwise to the ON (5) position to start the bike.

*NOTES:*

- *If you leave the key in this position for an extended period while parked the lamps will eventually discharge the battery.*
  - *The key cannot be removed from the ON position.*
2. See [Dash Panel: Ulysses Models](#). Observe instrument panel perform self-tests. If self-tests fail, see a Buell dealer.
    - a. The needles will sweep the tachometer and speedometer.
    - b. The neutral lamp and the oil pressure signal lamp will illuminate.

- c. If the OFF/RUN switch is in the RUN position, the check engine lamp will illuminate for approximately 4 seconds. See [Fuel Injection: Ulysses Models](#) for more information about the check engine lamp.
2. See [Ignition Key Switch: Ulysses Models](#). Turn the key counterclockwise to the OFF position (4) to shut the motorcycle off.

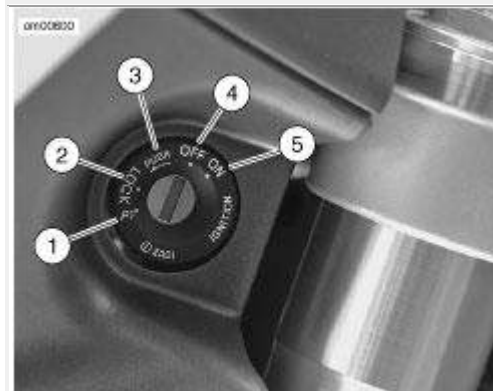
NOTES:

- The tail lamp will illuminate when the ignition/headlamp key switch is in the ON or PARK position.
- The headlamp will illuminate when the ignition/headlamp key switch is ON and the electric start switch is in the RUN position.
- The key can be removed from the OFF position.

## Locking Steering Head

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See [Steering Head Lock: XB Models](#) for complete details.



1. PARKING LAMP position
2. LOCK position
3. PUSH DETENT
4. OFF position
5. ON position

Ignition Key Switch: Ulysses Models

## Hand Controls: Ulysses Models

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[Top of page](#)

## Electric Starter Switch

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See [Hand Controls: Ulysses Models](#). The electric starter switch (11) is located on the

right handlebar control. Pushing in the electric starter switch engages the electric starter and starts the engine if ignition power is ON. See [Starting the Engine: XB Models](#) for operation procedures.

## Engine OFF/RUN Switch

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See [Hand Controls: Ulysses Models](#). The engine OFF/RUN switch turns the ignition power on or off. The engine OFF/RUN switch is located on the right handlebar control. Push the top portion (9) of the engine OFF/RUN switch to turn off ignition power and shut the engine off. Push the bottom portion (8) of the engine OFF/RUN switch to turn on ignition power.

### NOTES:

- *The engine OFF/RUN switch must be in the RUN position (8) to start or operate the engine.*
  - *The engine OFF/RUN switch should be used to shut the engine off.*
1. To shut the engine off, push the top of the OFF/RUN switch to the ignition OFF position (9).
  2. See [Ignition Key Switch: Ulysses Models](#). Turn the ignition/headlamp key switch counterclockwise to the OFF (4) position to turn the ignition power completely OFF.

## Throttle Control Grip

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See [Hand Controls: Ulysses Models](#). The throttle control grip (10) is located on the right handlebar control and is operated with the right hand.

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

## Clutch Hand Lever

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### 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 [Hand Controls: Ulysses Models](#). The clutch hand lever (1) is located on the left



handlebar and is operated with the fingers of the left hand.

1. Slowly pull clutch hand lever in against handlebar grip to fully disengage clutch.
2. Shift to first gear using the gear shifter lever. See [Gear Shift Lever](#).
3. Slowly release the clutch hand lever to engage clutch.

## Horn Switch

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See [Hand Controls: Ulysses Models](#). The horn is operated by pushing on the horn switch (7) located on the left handlebar control group.

## Headlamp High/Low Beam Switch

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The headlamp high/low beam switch is located on the left handlebar. The switch has two positions to activate the headlamps high or low beams.

- See [Hand Controls: Ulysses Models](#). Press the top of the headlamp high/low beam switch (3) to activate the high beam.
- Press the bottom of the headlamp high/low beam switch (4) to return to the low beam.

See [Dash Panel: Ulysses Models](#). The (blue) high beam indicator lamp (3) will illuminate when the high beam is on.

## Passing Lamp Switch

---

See [Hand Controls: Ulysses Models](#). The passing lamp switch (2) is located on the front of the left handlebar control group. Pressing the switch when the headlamp dimmer switch is set to low beam will momentarily flash the high beam headlamp.

## Turn Signal Switch

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See [Hand Controls: Ulysses Models](#). The left/right turn signal switch (5) is located on the left handlebar control and activates the front and rear turn signal flashers.

- Push the turn signal switch to the right to activate the right front and right rear turn signal flashers.
- Push the turn signal switch to the left to activate the left front and left rear turn signal flashers
- Press the yellow button in the middle of the left/right handlebar turn signal switch (6) to manually cancel the turn signal.

NOTE:

If signaling to turn in one direction and switch is depressed towards the opposite direction, the first signal is cancelled and the opposite side begins flashing.

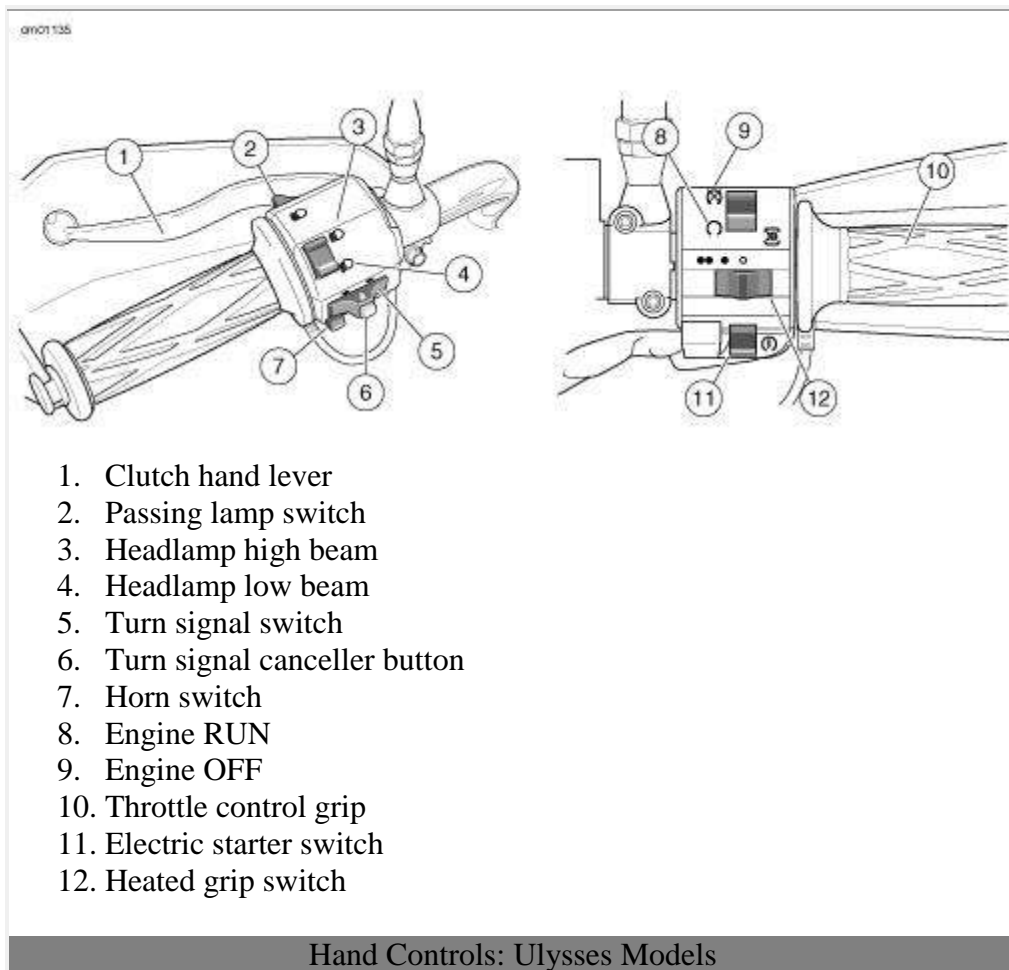
See [Dash Panel: Ulysses Models](#). The (green) turn signal indicator (1) will illuminate and flash to indicate the turn signals are in use.

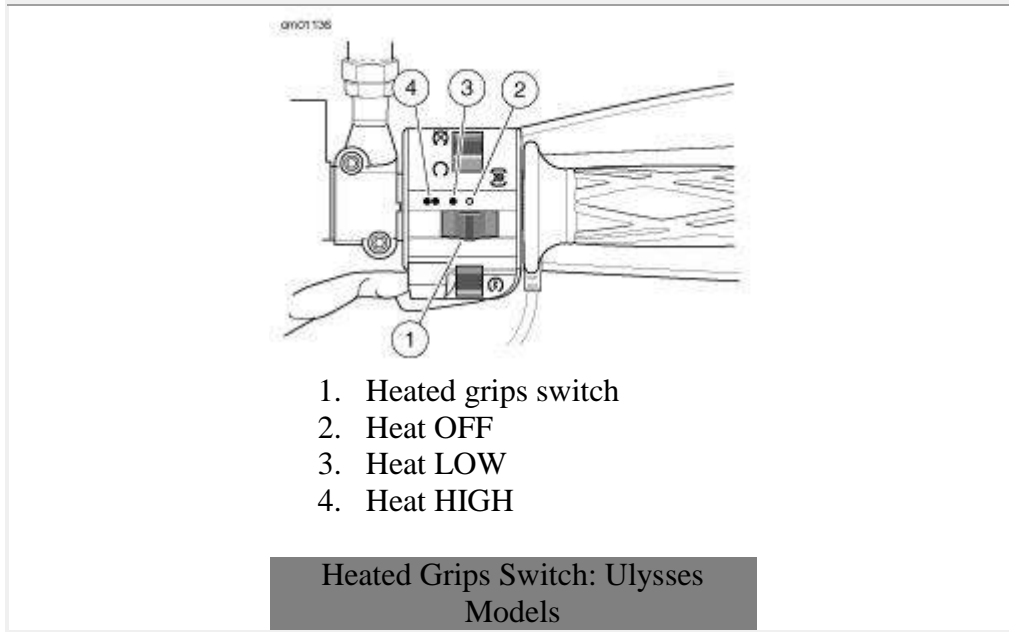
## Heated Grips Switch

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See [Hand Controls: Ulysses Models](#). The heated grips switch (12) is located on the right handlebar control group.

- See [Heated Grips Switch: Ulysses Models](#). Push the heated grips switch to the right to turn heating off.
- Push the heated grips switch to the middle to turn heating low.
- Push the heated grips switch to the left to turn heating high.





## Position Markers: XB Models

[Top of page](#)

See [Ignition Key Switch: Ulysses Models](#). When the ignition/headlamp key switch is set to the P (Parking Lamp) position, several indicator markers are or can be activated. Refer to [Position Lamps and Indicators: Ulysses Models](#). The position markers increase the motorcycle's visibility to other motorists.

### Position Lamps and Indicators: Ulysses Models

INDICATOR	OPERATION
Headlamp position marker (European models only)	On
Tail lamp position marker	On
License plate illumination lamp	On
Speedometer illumination lamp	Off
Stop lamp	Can be activated
Front and rear turn signals	Can be activated
Horn	Can be activated
Auxiliary power outlets	On

# Indicator Lamps: XB Models

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[Top of page](#)

## General

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See [Dash Panel: Ulysses Models](#). The dash panel has six indicator lamps.

- The green turn signal indicator lamp (1) flashes when the turn signals are activated.
- The green neutral indicator lamp (2) illuminates when the transmission is in neutral gear.
- The blue high beam indicator lamp (3) illuminates when the headlamp high beam is on.
- The red oil pressure indicator lamp (5) illuminates when oil is not circulating through the engine.

### NOTE:

*The oil pressure indicator lamp will illuminate when the ignition is turned on prior to starting engine. With engine running, the oil pressure indicator lamp should be off when engine speed is above idle.*

See [Fuel Injection: Ulysses Models](#) for a description of the remaining lamps.

## Oil Pressure Lamp Operation

---

Conditions that could cause the red oil pressure indicator lamp to illuminate during operation include:

- Empty oil tank, incorrect oil level or diluted oil (at speeds above idle).
- Oil feed line clogged with ice and sludge, preventing oil circulation (in freezing weather).
- Grounded oil signal switch wire.
- Faulty oil pressure switch.
- Damaged or improperly operating bypass valve.
- Improper oil pump operation.

**⚠ CAUTION**

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

If the oil pressure indicator lamp illuminates during operation:

- Stop the engine immediately and check the oil level.
- Add recommended oil as required until proper level is achieved.

If the oil pressure indicator lamp illuminates during operation despite proper oil level:

- Stop the engine immediately and do not ride further until the necessary repairs are made. See a Buell dealer.

## Instruments: Ulysses XB12X

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[Top of page](#)

### Speedometer

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#### 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 [Dash Panel: Ulysses Models](#). The speedometer (11) registers miles per hour (mph) and kilometers per hour (kph) of forward speed.

### Odometer, Trip Odometer and Reserve Fuel Odometer (F-trip)

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#### CAUTION

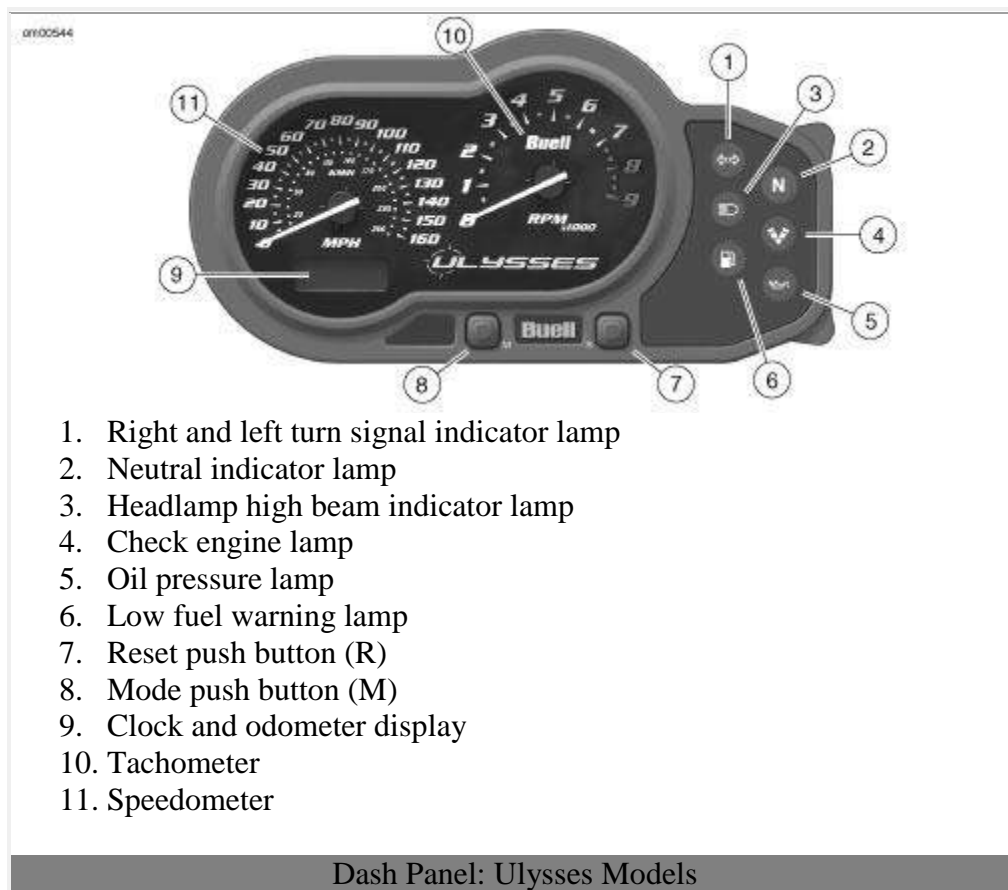
Never attempt to tamper with or alter the vehicle odometer. This is illegal. Tampering with or altering a vehicle odometer may cause equipment damage. (00160a)

See [Dash Panel: Ulysses Models](#). The odometer window (9) within the speedometer has

five displays. The default display is the odometer. It measures the cumulative number of miles (kilometers) traveled.

Two separate trip odometers record mileage until reset. Use the trip odometers for tracking distances between two points or for determining gasoline consumption between fuel stops. The reserve fuel odometer (F-trip) is activated automatically when fuel level drops below about 0.83 gallons (3.1 liters) and counts mileage traveled after low fuel indicator illumination. The F-trip resets, after a 3-minute delay, when enough fuel is added to bring fuel level above about 0.83 gallons (3.1 liters).

1. Turn ignition key to ON.
2. See [Dash Panel: Ulysses Models](#). Press mode (M) button (8) to toggle between odometer, trip odometers and clock. Display window will read **TRIP** in trip odometer modes. The first digit in the window indicates **TRIP 1 or 2**.
3. Zero the trip odometers as follows. Activate trip odometer mode. Press and hold reset (R) button (7) for 2-3 seconds to reset trip odometer.



## Setting Clock

1. Turn ignition key to ON.

2. See [Dash Panel: Ulysses Models](#). Press mode (M) button (8) to toggle to clock display.
3. Simultaneously press (M) and (R) buttons for 2-seconds or until clock display flashes.
4. Press (M) button to set hours and (R) button to set minutes.
5. After time has been set, simultaneously press (M) and (R) buttons to exit setting mode and start clock operation.

## Tachometer

---

### CAUTION

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

See [Dash Panel: Ulysses Models](#). The tachometer (10) registers the engine speed in revolutions per minute (RPM).

## Fuel Injection: Ulysses Models

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[Top of page](#)

### Dynamic Digital Fuel Injection III (DDFI III)

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Your motorcycle features Buell's Dynamic Digital Fuel Injection (DDFI III). This system allows for precise fuel and engine management under different operating conditions.

Fuel injected vehicles have no fuel valve or enrichener system. These functions are controlled by an electronic control module.

### Check Engine Lamp

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See [Dash Panel: Ulysses Models](#). The red check engine lamp (4) is located in the indicator panel to the right of the tachometer. Its purpose is to indicate whether or not the engine management system is operating normally.

The check engine lamp normally illuminates when the motorcycle's ignition is first turned on. The lamp remains on for approximately four seconds at this time. During these four seconds, the engine management system runs a series of self diagnostics.

If the lamp remains continuously lit after the initial four seconds or if it begins blinking, see a Buell dealer. This indicates an event has occurred relating to the proper operation of the engine management system. If the engine lamp comes on at any other time, see a Buell dealer.

See [Operating Recommendations: Ulysses Models](#) for more information on the check engine lamp function.

## Low Fuel Lamp

---

See [Dash Panel: Ulysses Models](#). An amber lamp in the indicator panel to the right of the tachometer serves as a low fuel warning lamp (6). This lamp illuminates automatically when there is approximately 0.83 gallons 3.1 liters of gasoline left in the tank. When the low fuel warning lamp illuminates, the reserve fuel odometer (F-trip) is activated and counts mileage traveled after low fuel indicator illumination.

## Gear Shift Lever

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[Top of page](#)

### CAUTION

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

See [Shifting Sequence \(shown from left side of motorcycle\)](#). The gear shift lever is located on the left side of the motorcycle and is operated with the left foot. The transmission is a five speed sequential gear box.

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

*NOTES:*

- Release the gear shift lever after each gear change.



- *The lever must return to its central position before another gear change can be made.*

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

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

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

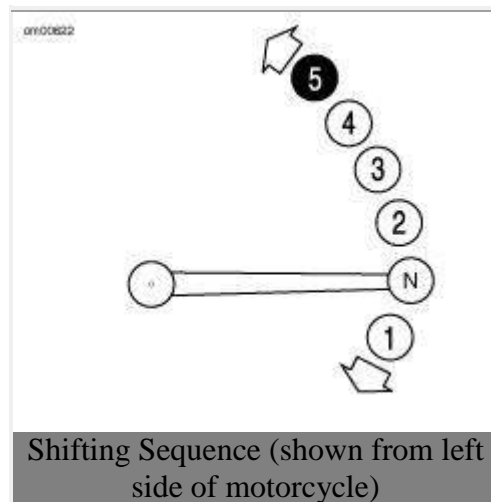
When the motorcycle is standing still and the engine is not running, shifting gears requires a different technique. Before shifting in this condition, move the motorcycle backward and forward with the clutch fully disengaged (clutch lever pulled in). While maintaining slight pressure on the shift lever,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

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

## ⚠ CAUTION

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

See [Shifting Gears](#) for more information.



## Adjusting Gear Shift Lever

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[Top of page](#)

The shift linkage attached to the gear shift lever can be adjusted for rider preference. See a Buell dealer to have this service performed.

## Brake System

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[Top of page](#)

### **⚠ WARNING**

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

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

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

### **⚠ WARNING**

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

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

## Adjusting Front Brake Lever

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[Top of page](#)

The distance of the front brake lever from the throttle control grip may be adjusted to the

rider's preference.

1. See [Front Brake Hand Lever Dial](#). Push brake lever forward.
2. Turn knob to desired position.
  - a. Position "1" locates brake lever farthest from the throttle control grip.
  - b. Position "5" locates brake lever closest to the throttle control grip.



## **⚠WARNING**

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

## **Fuel Filler Cap: XB Models**

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[Top of page](#)

## **⚠WARNING**

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

## **⚠WARNING**

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

## ⚠ CAUTION

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

### Removal

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1. See [Fuel Cap: XB Models](#). Lift tab up.
2. Insert ignition key into filler cap lock.
3. Turn key 1/4 turn counterclockwise.
4. Lift cap off.

### Installation

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1. Replace cap.
2. Turn ignition key 1/4 turn clockwise.
3. Remove key.
4. Push tab down.



Fuel Cap: XB Models



Fuel Filler Opening: XB Models

## Steering Head Lock: XB Models

## ⚠ CAUTION

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

The steering head lock is located on the ignition/headlamp key switch and is operated by the ignition key.

1. Verify sidestand is down. Turn handlebars full left.
2. See [Ignition Key Switch: Ulysses Models](#). Verify that key is in the OFF position.
3. Push in on the ignition key and turn it counterclockwise to the steering head LOCK position. Move handlebars slightly until locked.
4. Attempt to turn the handlebars to the right to verify that the steering head is locked. Handlebars should not turn.
5. Remove key from the ignition/headlamp key switch.

## ⚠ 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)

## Sidestand

---

## ⚠ WARNING

This motorcycle does NOT have a locking sidestand. Park the motorcycle on a level, firm surface. An unbalanced motorcycle can fall, which could result in death or serious injury. (00122a)

The sidestand is located on the left side of the motorcycle and swings down to support the motorcycle for parking.

## ⚠ WARNING

Be sure side stand is fully retracted before riding. If side 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. (00130a)

## Rear View Mirrors

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[Top of page](#)

## ⚠ WARNING

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

Your vehicle is equipped with two convex rear view mirrors.

This type of mirror is designed to give a much wider view to the rear than a flat mirror. However, cars and other objects seen in this type of mirror will look smaller and farther away than they actually are.

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

*NOTE:*

*Adjust mirrors so you can see a small portion of your shoulders in each mirror. This will help you establish the relative distance of vehicles to the rear of your motorcycle.*

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Operation

### Operating Recommendations: Ulysses Models

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[Top of page](#)

#### General

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#### **⚠WARNING**

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

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

This manual contains information specific to 2008 Ulysses Models. Riders may wish to purchase the 2008 Buell XB Models Service Manual (Part No. 99490-08Y). See a Buell dealer for price and availability.

#### **⚠CAUTION**

Do not run the engine at extremely high RPM with clutch disengaged or transmission in neutral. Running an engine at high RPM can result in engine damage. (00177a)

- The maximum recommended safe engine speed is 7100 RPM.
- Sustainable engine speed is 6800 RPM.
- Extended idling or continued operation above 6800 RPM can result in engine damage.

## CAUTION

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

## CAUTION

Cooling fans operate automatically, even when the ignition switch is off. Keep hands away from fan blades. Contact with a rotating fan blade can result in minor or moderate injury. (00093a)

## Indicator Lamps and Cooling

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An engine run long distances at high speed or run at idle for extended periods must be given closer than ordinary attention to avoid overheating and possible consequent damage. Have the engine checked regularly and keep it well tuned.

Your motorcycle has a system designed to warn of potential engine overheating and reduce the likelihood of an overheat condition. If a fuel-injected engine exceeds normal operating temperature, the engine will operate in a "skip spark" mode until the temperature is back in the normal operating range. Reduced power will be experienced until operating temperature returns to the normal range. The check engine lamp will blink warning the rider of this condition. The check engine lamp will only blink as long as the operating temperature remains above normal. If the check engine lamp blinks excessively or potential overheating is not suspected, see a Buell dealer.

## WARNING

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



## ⚠ WARNING

Continuous use of brake causes overheating and reduced efficiency, which could result in death or serious injury. (00042a)

## ⚠ CAUTION

Do not coast for long distances with the engine off. The transmission is properly lubricated only when the engine is running. Coasting long distances can result in transmission damage. (00180a)

## ⚠ WARNING

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

## Break-in Riding Rules

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[Top of page](#)

### The First 500 Miles (800 Kilometers)

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

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

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

5. Avoid hard braking. New brakes need to be broken-in by moderate use for the first 200 miles 300 kilometers .

## Pre-Riding Checklist: Buell Models

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[Top of page](#)

### **⚠WARNING**

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

Before riding your motorcycle at any time, make a general inspection to be sure it is in safe riding condition.

### **⚠WARNING**

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

### **⚠WARNING**

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

### **⚠WARNING**

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

### **⚠CAUTION**

Do not spill fuel onto the motorcycle while refueling. Immediately wipe up fuel spills.

on your motorcycle. Fuel can cause damage to cosmetic surfaces. (00147b)

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

### **⚠WARNING**

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Buell dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00114a)

6. Check tire condition and pressure. Incorrect pressure will result in poor riding characteristics and can affect handling and stability.
7. Check all electrical equipment and switches including the headlamp, stop lamp, turn signals and horn, for proper operation.

*NOTE:*

*Check horn operation with engine running.*

### **⚠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)

8. Check for any fuel, oil or hydraulic fluid leaks.
9. Check secondary belt for wear or damage. Service as necessary.

## **Starting the Engine: XB Models**

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[Top of page](#)

## ⚠ WARNING

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

## ⚠ CAUTION

The engine should be allowed to run slowly for 15-30 seconds. This will allow the engine to warm up and let oil reach all surfaces needing lubrication. Failure to comply can result in engine damage. (00181a)

*NOTE:*

*Buell motorcycles feature a starter interlock. Before starting the engine, all the following conditions must be met.*

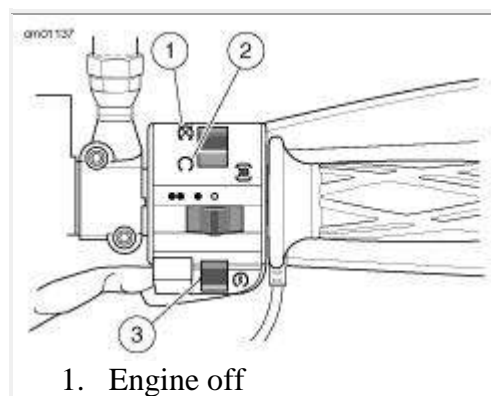
- *Engine OFF/RUN switch on right handlebar control group must be in the ON position.*
- *Clutch lever must be applied (pulled-in) before starting motorcycle in gear. Note that it is not necessary to apply clutch lever before starting the vehicle in neutral.*

*NOTE:*

*The DDFI III fuel injection system compensates for all outside and engine temperatures to assure positive starts.*

1. [Engine Off/Run Switch: Ulysses Models](#). Turn engine OFF/RUN switch to RUN (2).
2. Be sure throttle is closed.
3. Turn ignition/headlamp key switch to ON.
4. Verify transmission is in NEUTRAL position by observing lit green neutral indicator lamp on dash panel and verify neutral position by rolling bike forward and rearward.
5. Press electric starter switch (3) to operate starter.
6. Release electric starter switch when engine starts.

If you read this section and still have questions about the correct operation of your motorcycle, talk to an authorized Buell dealer.



2. Engine run
3. Electric starter switch

Engine Off/Run Switch: Ulysses Models

## Stopping The Engine: XB Models

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[Top of page](#)

1. See [Engine Off/Run Switch: Ulysses Models](#). Push the upper part of the engine OFF/RUN switch to shut the engine OFF.
2. See [Engine Off/Run Switch: Ulysses Models](#). Turn the ignition/headlamp key switch to the OFF position.

## Shifting Gears

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[Top of page](#)

## Getting Started

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### ⚠ CAUTION

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

Gear shift pattern is first gear down, next four gears up.

*NOTE:*

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

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

## Upshift (Acceleration)

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Refer to [Upshift \(Acceleration\) Gear Speeds: XB Models](#). Engage second gear after the motorcycle has reached the appropriate shifting speed.

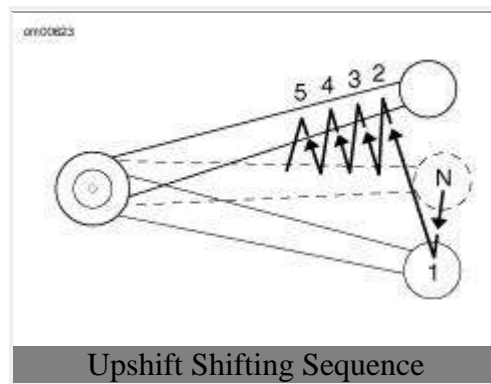
### Upshift (Acceleration) Gear Speeds: XB Models

GEAR CHANGE	MPH	KPH
First to second	15	25
Second to third	25	40
Third to fourth	40	65
Fourth to fifth	50	80

1. Close the throttle.
2. Disengage the clutch (pull clutch lever in).
3. See [Upshift Shifting Sequence](#). Lift the gear shift lever up to the end of its travel and release.
4. Engage the clutch (release clutch lever) and gradually open the throttle.
5. Repeat the previous steps to engage third, fourth, and fifth gears.

#### NOTES:

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



## Downshift (Deceleration)

---

**⚠ WARNING**

Do not downshift at speeds higher than those listed in the Changing Gear Speeds table. Shifting to lower gears when speed is too high can cause the rear wheel to lose traction and lead to loss of vehicle control, which could result in death or serious injury. (00045a)

Gear shift pattern is fourth gear down; next three gears down. Refer to [Downshift \(Deceleration\) Gear Speeds: XB Models](#) for shifting speeds.

#### Downshift (Deceleration) Gear Speeds: XB Models

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

*NOTE:*

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

See [Downshift Shifting Sequence](#). When engine speed decreases, as in climbing a hill or running at a reduced speed, shift to the next lower gear while partially closing the throttle so the engine accelerates as soon as the clutch lever is released.

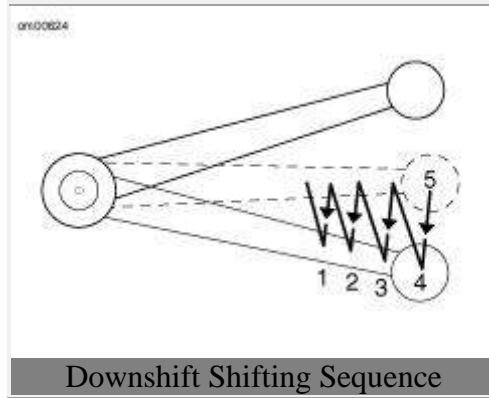
*NOTES:*

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

### CAUTION

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

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



## Windshield: Ulysses XB12X

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[Top of page](#)

### Removal

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See [Windshield: Ulysses XB12X](#). Grasp the windshield firmly and pull the four windshield mounting pins out of the four grommets in the windscreen.

### Installation

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1. Align the four windshield mounting pins with the four grommets in the windscreen.
2. Press each windshield mounting pin into the grommet on the windscreen.



## Seat: Ulysses XB12X



## Removal

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Rotate Triple Tail™ to upright or rearward position. Refer to [Triple Tail™](#).

See [Seat Lock: Ulysses XB12X](#). Insert ignition key into seat lock and rotate a 1/4 turn clockwise. Grip the rear of seat and pull toward the rear of the motorcycle.

## Installation

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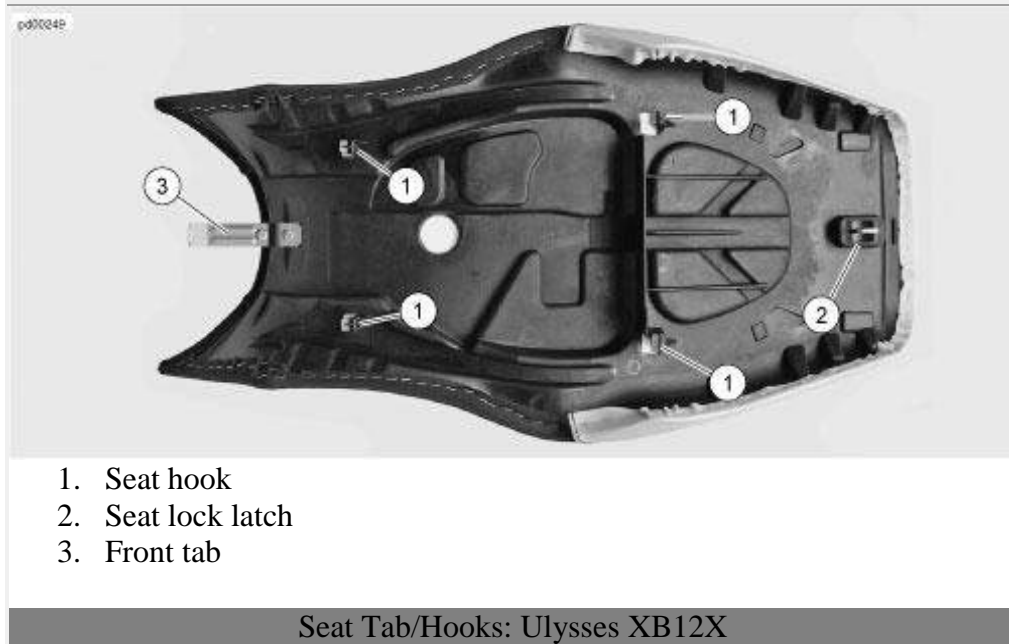
See [Seat Tab/Hooks: Ulysses XB12X](#). Position seat and slide forward to engage the front tab (3) with the slot in the frame and the four seat hooks (1) with the posts on the tail section. Check that the front tab engages the frame slot and that all four hooks engage the tail section.

### **⚠WARNING**

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

Press down firmly on rear of seat to engage seat latch (2). Pull up on rear of seat to make sure latch is engaged.





## Triple Tail™

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[Top of page](#)

See [Triple Tail™](#). Depending on its position, the Triple Tail™ can serve one of three functions, forward luggage rack, passenger backrest, or rearward luggage rack.

### Operation

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1. See [Triple Tail™ Locking Detent and Locking Collar](#). Use the thumb tab on the locking collar to snap the locking collar out of the locked position and rotate it to the fully open position.
2. Press key into Triple Tail locking detent to release lock while pulling the Triple

- Tail toward the left hand grabrail out of the locking splines in the right hand grabrail.
3. Rotate the Triple Tail to one of three positions.
  4. Push the Triple Tail toward the right hand grabrail until it engages the locking splines
  5. Verify that the Triple Tail is locked into position and rotate the locking collar to snap it back into its locked position.

**NOTES:**

- *The Triple Tail locking collar must be locked in position before operating the motorcycle.*
- *Do not use the Triple Tail as a passenger seat in either the forward or rearward positions.*
- *Maximum load capacity of the Triple Tail is 11 lbs (5 Kg).*
- *See [Tie Down Locations: Ulysses XB12X](#) for tie down locations in the forward luggage rack or the rearward luggage rack positions.*

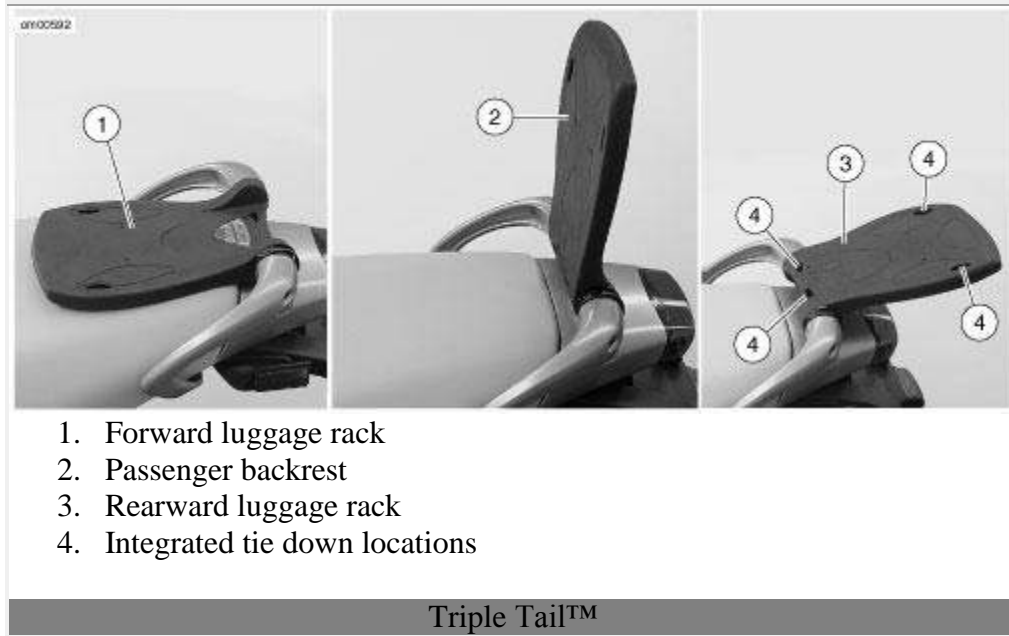
## ⚠ WARNING

Do not exceed luggage rack weight capacity. Too much weight can cause loss of control, which could result in death or serious injury. (00373a)



1. Locking detent
2. Locking collar
3. Triple tail

Triple Tail™ Locking Detent and  
Locking Collar



## Tie Down Locations: Ulysses XB12X

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[Top of page](#)

### Rearward Luggage Rack

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See [Triple Tail™](#). When the Triple Tail™ is in the rearward luggage rack position, the integrated tie down locations are suitable for attaching tie downs.

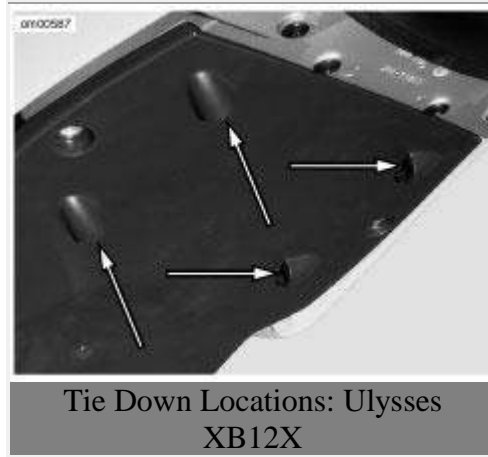
### Forward Luggage Rack

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See [Tie Down Locations: Ulysses XB12X](#). When the Triple Tail™ is in the forward luggage rack position, there are four locations under the tail piece suitable for attaching tie downs.

*NOTE:*

See [Accessories and Cargo: XB Models](#)



## Helmet Lock: Ulysses XB12X

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[Top of page](#)

See [Helmet Lock: Ulysses XB12X](#). Insert ignition key into seat lock and turn the key 1/4 turn clockwise.

Insert D-ring from helmet into open clasp and turn the key 1/4 counterclockwise to close clasp and secure helmet.

*NOTE:*

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



## Auxiliary Power Outlets: Ulysses XB12X

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See [Auxiliary Power Outlet: Ulysses XB12X \(on dash\)](#) and [Auxiliary Power Outlet: Ulysses Models \(under seat\)](#). Two auxiliary power outlets provide power for a several accessories. One auxiliary power outlet is located on the dash and the other is located under the seat.

*NOTE:*

*The auxiliary power outlets deliver 12 volts at 120 watts with a maximum combined accessory draw of 10 amps.*

Install the auxiliary power outlet covers whenever the motorcycle is being operated without the accessories installed.



Auxiliary Power Outlet: Ulysses  
XB12X (on dash)



Auxiliary Power Outlet: Ulysses  
Models (under seat)

## Tool Kit: Buell Models

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[Top of page](#)

Buell motorcycles come with a standard tool set in a pouch which is under the seat. The tool set consists of the following components:

- Tool kit pouch.
- 4-in-1 screwdriver.
- 8 mm nut driver.
- Combination wrench.
- Spanner with 19 mm wrench.
- Axle hex wrench.
- 5 mm L-style hex key.
- T27 TORX wrench.
- Security cable.

Store tool kit with the zipper facing down to prevent the zipper from contacting the battery post.

## **Suspension Adjustments: Buell Models**

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[Top of page](#)

Each Buell motorcycle uses suspension components tailored to the vehicle's weight and function. On all models, 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.). Your Buell dealer can assist you in setting the preload when you take delivery of your motorcycle.

If the preload adjustment is correct, and you have the rebound and compression damping set at the factory recommended points, the motorcycle should handle and ride properly. 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: Buell Models**

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[Top of page](#)

**Damping:** Resistance to 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.

**Rebound:** The suspension is rebounding when it is moving back from being compressed.

**Vehicle Sag:** The amount the rear shock and fork springs are compressed by the weight of the motorcycle.

**Rider Sag:** The amount the rear shock and fork springs are compressed by the weight of the rider on the motorcycle.

**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.

## ⚠ CAUTION

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

Before evaluating and adjusting suspension settings, check the motorcycle's tires. Refer to [Tires/Air Pressures: 2008 Ulysses Models](#). They must be in good condition and properly inflated.

## Fine Tuning Suspension: Ulysses Models

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[Top of page](#)

See [Factory Suspension Settings: Ulysses XB12X](#). The settings are the best balance of handling, ride, and stability. Suspension can be changed to accommodate rider preferences for ride quality and handling for road conditions and load changes.

### NOTES:

- Do not continue to repeat the steps involved with the following settings beyond those which are listed.
- Adjust suspension to the recommendation if possible, but never force adjusters beyond the mechanical stops.

## ⚠ WARNING



Do not operate motorcycle with loose, worn or damaged steering or suspension systems. Contact a Buell 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. (00113a)

## Changes in Load

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Changes in the load carried requires changes in the preload setting(s). 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.

### **⚠WARNING**

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

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

## Ride Quality Enhancement

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The stock settings are designed to offer sufficient chassis control, but some may choose to enhance ride comfort over rougher road conditions or for long rides. Adjusting the compression setting will reduce both high and low speed damping.

1. Adjust suspension for rider weight. See [Factory Suspension Settings: Ulysses XB12X](#).
2. Increase ride quality by reducing front and rear compression damping by turning adjuster counterclockwise 1/4-1 turn.
3. If additional ride quality is desired, reduce front preload by turning adjuster counterclockwise one turn.
4. If maximum ride quality is desired, decrease front and rear rebound damping by turning adjusters counterclockwise by 1/4-1/2 turn.

## Enhanced Steering Quickness

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The response to steering input (quickness) may be enhanced by adjusting the vehicles front/rear ride height. This adjustment effectively decreases the vehicles rake angle. This is achieved by adjusting the preload to increase front sag and reduce rear sag.

1. Adjust suspension for rider weight. See [Factory Suspension Settings: Ulysses XB12X](#).
2. Reduce steering effort by increasing the rear preload 4 turns (8 clicks).
3. If more enhanced steering and cornering control is desired, reduce front preload by turning adjuster counterclockwise one turn.
4. If additional enhanced steering and cornering control is desired, increase rear compression damping by turning adjuster clockwise by 1/4-1/2 turn.
5. If maximum enhanced steering and cornering control is desired, increase front rebound damping by turning adjuster clockwise 1/4 turn.

## Chassis Control/Handling Enhancement

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To provide more road surface feedback on smoother road conditions, increase compression and rebound settings.

1. Adjust suspension for rider weight. See [Factory Suspension Settings: Ulysses XB12X](#).
2. Increase chassis/handling control by increasing front and rear compression damping by turning adjuster clockwise by 1/2-1 1/2 turns.
3. If maximum chassis control/handling control is desired, increase front and rear rebound damping by turning adjuster clockwise by 1/4-1/2 turn.

## Cold Weather Riding Less Than 65° F (18° C)

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The viscosity of the suspension fluid increases as the temperature decreases. As the fluid viscosity increases so does the damping. It is recommended to compensate for the varying fluid viscosity by readjusting the damping adjuster positions when operating outside the normal ambient temperature range of 65-95° F (18-35° C).

1. Adjust suspension for rider weight. See [Factory Suspension Settings: Ulysses XB12X](#).
2. Reduce front and rear compression damping and rebound damping by turning adjuster counterclockwise 1/4-1/2 turn.

## Suspension Tuning: Buell Models

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**⚠ WARNING**

Do not operate motorcycle with loose, worn or damaged steering or suspension systems. Contact a Buell 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. (00113a)

Make all suspension adjustments in small increments. Radical setting changes may cause you to skip the best adjustment, but always remember that any setting chosen is a compromise.

Refer to [Suspension Tuning: XB Models](#). 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.

See [Factory Suspension Settings: Ulysses XB12X](#). Begin the process by putting all the damping settings as recommended. Ride the motorcycle over a variety of surfaces and bumps at different speeds. If the suspension is set properly, the vehicle will feel stable and comfortable.

Suspension Tuning: XB Models

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

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[Top of page](#)

Changes in the load carried requires changes in the preload setting(s). 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.

### **⚠WARNING**

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

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

### **⚠WARNING**

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

## Adjusting Preload: Ulysses Models

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[Top of page](#)

See [Factory Suspension Settings: Ulysses XB12X](#) for more information about suspension tuning.

## Setting Rear Shock Preload

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See [Rear Shock Preload Adjuster: Ulysses XB12X](#). Change the preload by turning the preload adjuster. See [Suspension Adjustments: Buell Models](#) for factory settings.

- The rear shock preload adjuster is located on the left side of the motorcycle.
- Rotate adjuster clockwise to increase preload.
- Rotate adjuster counterclockwise to decrease preload.

## Setting Front Fork Preload

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1. See [Front Fork Preload and Rebound Adjuster: Ulysses Models](#). Turn preload adjuster nut (2) counterclockwise until it stops. This is the minimum preload setting.

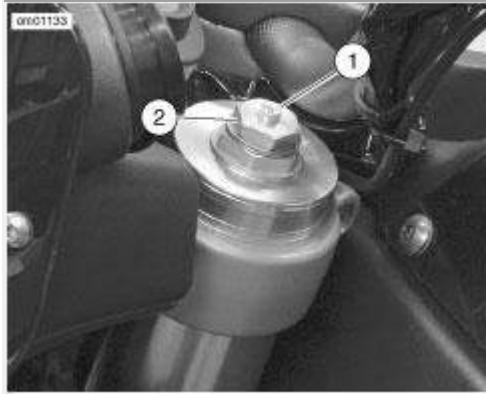
### **⚠WARNING**

Both forks should be adjusted equally. Forks that are not properly adjusted can lead to loss of control, which could result in death or serious injury. (00124b)

2. Turn the adjuster nut clockwise the recommended amount specified in [Suspension Adjustments: Buell Models](#).



Rear Shock Preload Adjuster:  
Ulysses XB12X



1. Rebound adjuster screw
2. Preload adjuster nut

Front Fork Preload and Rebound  
Adjuster: Ulysses Models

## Adjusting Suspension Damping: Ulysses Models

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[Top of page](#)

For the recommended rebound and compression damping settings for various road and riding conditions, see [Factory Suspension Settings: Ulysses XB12X](#).

*NOTE:*

*Adjust suspension to the recommendation if possible, but never force adjusters beyond the mechanical stops.*

### Setting Front Fork Rebound Damping

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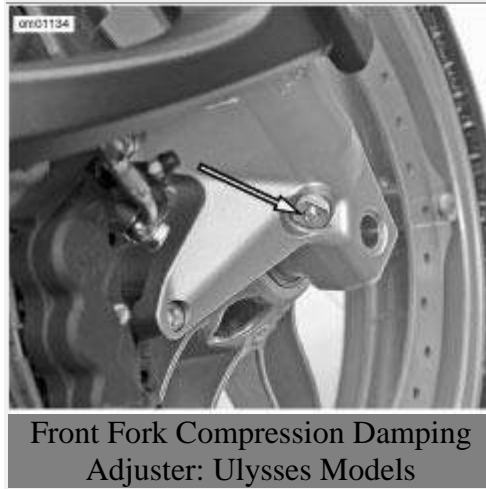
1. See [Front Fork Preload and Rebound Adjuster: Ulysses Models](#). Using a screwdriver, turn the rebound adjuster screw (1) clockwise until it stops. This is the maximum rebound damping setting.
2. Turn the adjuster screw counterclockwise the recommended amount specified in [Recommended Suspension Settings: Ulysses Models](#).

### Setting Front Fork Compression Damping

---

1. See [Front Fork Compression Damping Adjuster: Ulysses Models](#). Using a screwdriver, turn the compression damping adjuster clockwise until it stops. This is the maximum compression damping setting.
2. Turn the adjuster counterclockwise the recommended amount specified in

## [Recommended Suspension Settings: Ulysses Models.](#)



### Setting Rear Shock Rebound Damping

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1. See [Rear Shock Rebound Damping Adjuster: Ulysses XB12X](#). Using a screwdriver, turn the rebound adjuster clockwise until it stops. This is the maximum rebound damping setting.
2. Turn the rebound adjuster counterclockwise the recommended amount specified in [Recommended Suspension Settings: Ulysses Models](#).

### Setting Rear Shock Compression Damping

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1. Remove seat. See [Seat: Ulysses XB12X](#).
2. See [Removing/Installing Air Flow Guide \(Right Side\): Ulysses Models](#). Squeeze and pull the right side air flow guide from vehicle.
3. See [Rear Shock Compression Damping Adjuster: Ulysses Models](#). Using a screwdriver, turn the compression adjuster clockwise until it stops. This is the maximum compression damping setting.
4. Turn the compression adjuster counterclockwise the recommended amount specified in [Recommended Suspension Settings: Ulysses Models](#).
5. Snap air flow guide into place.

## **⚠ WARNING**

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

6. Install seat.



Rear Shock Rebound Damping  
Adjuster: Ulysses XB12X



Removing/Installing Air Flow Guide  
(Right Side): Ulysses Models



Rear Shock Compression Damping  
Adjuster: Ulysses Models

## Factory Suspension Settings: Ulysses XB12X



Refer to [Recommended Suspension Settings: Ulysses Models](#) for factory recommended suspension settings.

Recommended Suspension Settings: Ulysses Models

LOAD***		FRONT FORKS			REAR SHOCK		
LB	KG	*PRELOAD: TURNS IN FROM MINIMUM	**COMPRESSION: TURNS OUT FROM MAXIMUM	**REBOUND: TURNS OUT FROM MAXIMUM	*PRELOAD: TURNS IN FROM MINIMUM**	**COMPRESSION: TURNS OUT FROM MAXIMUM	**REBOUND: TURNS OUT FROM MAXIMUM
Under 170	Less than 77	1.5	2.5	1.5	3	2.5	2
170- 200	77- 91	2	2.25	1.25	6	2	1.875
200- 230	91- 104	3	2	1.25	9	1.75	1.5
230- 260	104- 118	3.5	2	1.125	13	1.5	1.25
260- 290	118- 132	3.5	1.875	1	16	1.125	1
290- 320	132- 145	4	1.875	1	18	0.875	0.75
320- GV WR	145- GV WR	4	1.75	0.875	max	0.5	0.625

\*Both Front and Rear Spring Preload is set by loosening adjuster counterclockwise until it stops at minimum and then counting the number of turns in to get to the desired setting. The rear preload knob clicks every 1/2 turn.

\*\*All damping adjuster settings are done by tightening adjuster clockwise until it stops at maximum setting and then counting the turns counterclockwise to get to the desired setting.

\*\*\*Load includes rider, passenger, cargo, accessories and riding gear.



# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Maintenance and Lubrication

### Safe Operating Maintenance

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[Top of page](#)

#### **⚠ WARNING**

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

#### **⚠ WARNING**

If you operate your motorcycle under adverse conditions (severe cold, extreme heat, very dusty environment, very bad roads, through standing water, etc.) you should

perform the regular maintenance intervals more frequently to ensure the safe operation of your motorcycle. Failure to maintain your motorcycle could result in death or serious injury. (00094a)

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

Check the following items:

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

## Break-in Maintenance: Buell Models

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[Top of page](#)

*NOTE:*

*New motorcycle initial service is required to keep your new motorcycle warranty in force and to assure proper emissions system operation.*

After a new motorcycle has been ridden its first 1000 miles 1600 kilometers , take it to an authorized Buell dealer to have an initial service performed.

If it is impossible to take it to a dealer at the mileage intervals noted, the owner should:

1. Give the following outlined items attention or arrange to have the motorcycle serviced.
2. Take the motorcycle to a dealer for more complete servicing as soon as possible.

We recommend a Buell dealer perform the initial service.

### **⚠WARNING**

When supporting motorcycle, do not place supports under rear brake pedal. Damage to the brake system can occur, which could result in death or serious injury. (00100a)

## Initial Service Check: XB Models

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[Top of page](#)

### First 1000 Miles (1600 Kilometers)

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The first scheduled maintenance is at 1000 miles 1600 kilometers . See [Regular Service Intervals: Buell Models](#) for complete list of required services.

1. Change engine oil.
2. Replace oil filter.
3. Change transmission fluid and clean magnetic drain plug.
4. Check and adjust primary chain.
5. Inspect brake fluid level and condition. Check hydraulic brake lines and fittings for leaks.
6. Check brake pads and rotors for wear.
7. Adjust clutch adjustment.
8. Check oil lines for leaks.
9. Check tire pressure and inspect tread.
10. Inspect air cleaner filter.
11. Check throttle cable adjustments.
12. Check operation of all electrical equipment and switches.
13. Road test.

## Service Intervals and Performance: Buell Models

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[Top of page](#)

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

See [Regular Service Intervals: Buell Models](#) for more information.

*NOTE:*

*Refer to [Regular Service Intervals: 2008 XB Models](#). Regular maintenance interval operations are required to keep your new motorcycle warranty in force. The use of other than Buell approved parts and service procedures may void the warranty. Any alterations to the emission system components, such as the DDFI and exhaust system, may be in violation of Federal and State laws.*

## ⚠ 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)

## Engine Lubrication

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[Top of page](#)

## ⚠ CAUTION

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

Engine oil is a major factor in the performance and service life of the engine. Always use the proper grade of oil for the lowest temperature expected before the next scheduled oil change. Refer to [Recommended Engine Oils](#). Your authorized dealer has the proper oil to suit your requirements.

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

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

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

## Recommended Engine Oils

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

## Checking Oil Level: XB Models

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[Top of page](#)

An accurate engine oil level reading can only be obtained with the engine at normal operating temperature (hot check). The engine will require a longer warm up period in colder temperatures.

For preride inspection, simply verify that there are no oil leaks from the oil filter and oil lines prior to operating the motorcycle.

*NOTE:*

*Perform a hot check of the engine oil level at each fuel stop.*

**⚠ CAUTION**

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

**⚠ CAUTION**

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

## ⚠ CAUTION

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

Ride motorcycle for approximately 10 minutes to ensure the oil is hot and the engine is at normal operating temperature.

1. The motorcycle must be on level ground, on the sidestand, with the engine off.
2. See [Filler Plug/Dipstick Location: Ulysses XB12X](#). Unscrew and remove dipstick from oil tank/swingarm filler hole. Wipe dipstick clean.
3. Insert dipstick into oil tank filler hole, screwing dipstick in completely.

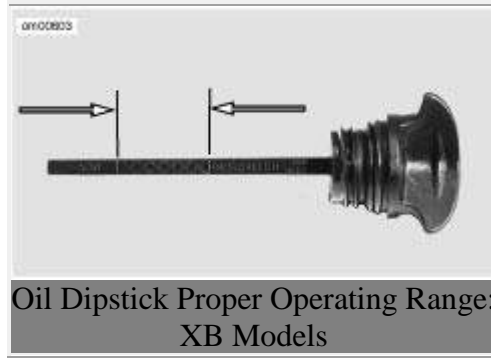
*NOTE:*

*See [Oil Dipstick Proper Operating Range: XB Models](#). The area between the upper and lower registration marks is the operating range.*

4. Unscrew and remove dipstick and note oil level.
  - a. Oil level should be within the operating range (between upper and lower registration marks) on dipstick.
  - b. If oil level is below lower registration mark, add only enough oil to bring oil level between lower and upper registration marks.



Filler Plug/Dipstick Location:  
Ulysses XB12X



## Engine Oil Change: XB Models

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[Top of page](#)

### ⚠ CAUTION

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

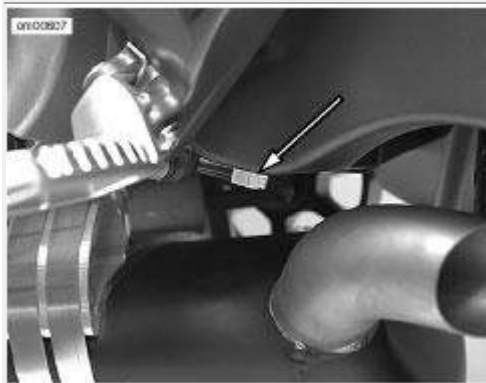
### ⚠ WARNING

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

Ride motorcycle for approximately 10 minutes to ensure the oil is hot and the engine is at normal operating temperature. Turn engine off.

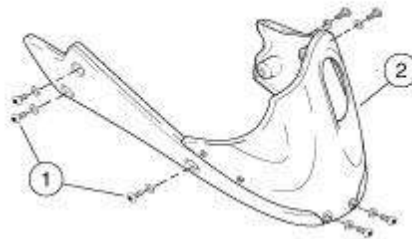
1. Place a suitable container under the motorcycle.
2. See [Oil Tank/Swingarm Drain Plug: Ulysses Models](#). Using a 5/8 in. wrench, remove drain plug from under oil tank/swingarm. Wipe any accumulated debris from magnetic tip on drain plug. Replace o-ring if torn or damaged.
3. Unscrew and remove dipstick from oil fill hole on top of oil tank/swingarm.
4. See [Chin Fairing](#). Remove chin fairing by removing fasteners.





Oil Tank/Swingarm Drain Plug:  
Ulysses Models

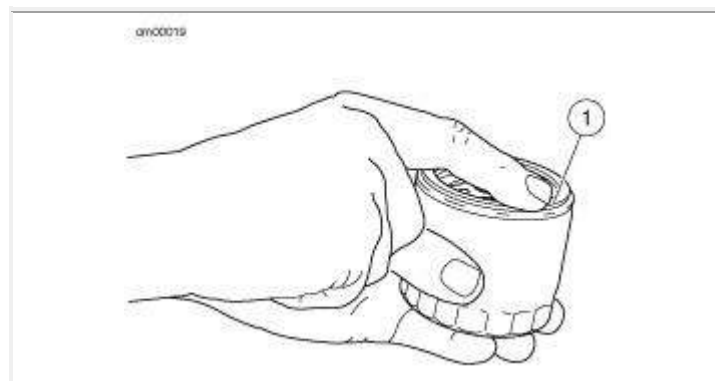
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1. Fasteners with washers (7)
2. Chin fairing

Chin Fairing

5. Remove oil filter using pliers (Snap-on YA0450B) or belt type OIL FILTER WRENCH.
6. Clean filter gasket contact surface on crankcase. Surface should be smooth and free of any debris or old gasket material.
7. Replace drain plug in oil tank/swingarm after oil is thoroughly drained. Use LOCTITE 565 PST THREAD SEALANT on fastener and tighten plug to 35-39 Nm (26-29 ft-lbs).
8. See [Prepare Oil Filter](#). Apply a thin film of clean engine oil to filter gasket.



1. Apply thin film of clean engine oil to gasket

#### Prepare Oil Filter

9. Pour 4.0 fluid ounces 0.12 liter of clean engine oil into new filter when changing oil (until filter is approximately 1/2 full).
10. Screw filter onto adapter until filter gasket touches crankcase surface. Rotate filter another 1/2-3/4 turn by hand.

### ⚠ WARNING

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

11. Fill oil tank through filler (dipstick) hole with recommended oil from [Recommended Engine Oils](#). Oil tank capacity with filter change is approximately 2.5 U.S. quarts 2.4 liters and includes the 4.0 fluid ounces 0.12 liter poured into the filter. Always verify proper hot oil level on dipstick. Do not overfill.
12. Install (screw in) dipstick into oil tank/swingarm fill hole. Make sure dipstick is screwed in completely.

### ⚠ WARNING

Compressed air can pierce the skin and flying debris from compressed air could cause serious eye injury. Wear safety glasses when working with compressed air. Never use your hand to check for air leaks or to determine air flow rates. (00061a)

13. Inspect oil cooler fins for debris or damage. Blow out any debris from fins with compressed air from the inside of the cooler.
14. Wipe up any spilled oil on muffler.
15. Start engine. Verify that oil pressure signal lamp on instrument panel turns off after a few seconds when engine speed is 1000 RPM or above.
16. Check for oil leaks at oil filter, drain plug, hoses and oil cooler.
17. Install chin fairing. Use LOCTITE 271 (red) on fasteners and tighten to 4-5 Nm (36-48 in-lbs ).
18. Check (hot) oil level. See [Checking Oil Level: XB Models](#).

*NOTE:*

*For ease of installation, apply a light film of clean engine oil to the dipstick o-ring.*

# Winter Lubrication

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[Top of page](#)

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

*NOTE:*

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

Water vapor is a normal by-product of combustion in any engine. During cold weather operation, some of the water vapor condenses to liquid form on the cool metal surfaces inside the engine. In freezing weather this water will become slush or ice and, if allowed to accumulate too long, may block the oil lines and cause damage to the engine.

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

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

## Fuel Filter: XB Models

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[Top of page](#)

The fuel pump assembly located in the frame fuel cell includes a fuel filter. The fuel filter does not require any maintenance.

## Transmission Lubrication: XB Models

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[Top of page](#)

Refer to [Regular Service Intervals: 2008 XB Models](#). The transmission should be drained and refilled with fresh lubricant at proper intervals. For best results, drain

lubricant while hot.

*NOTE:*

*When checking the transmission lubricant level, motorcycle should be standing STRAIGHT UP, not leaning on the side stand. Keep motorcycle upright for a short period of time to equalize lubricant level in the transmission compartments.*

## Check Lubricant Level

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1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. Position motorcycle straight up.
3. See [Primary Drain Plug: XB Models](#). Remove screws with washers from clutch inspection cover (1). Remove clutch inspection cover from primary cover.

*NOTE:*

*The filler access is the clutch inspection cover.*

### ⚠ CAUTION

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

### ⚠ WARNING

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

### ⚠ CAUTION

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

4. See [Primary Lubricant Level: XB Models](#). Verify that lubricant level is even with bottom of clutch diaphragm spring.

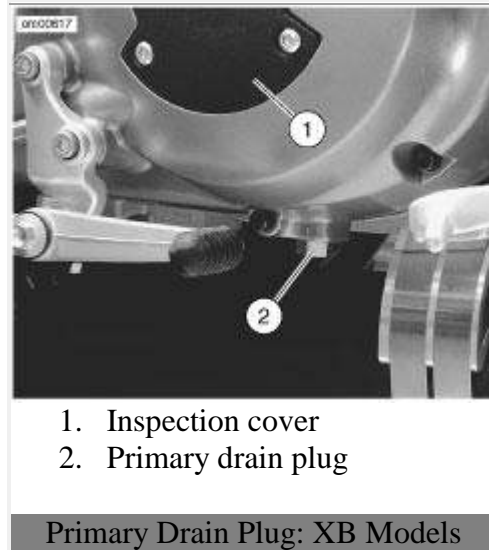
*NOTE:*

*Add only enough of GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 98851-05, U.S. quart) through clutch inspection cover opening until the lubricant reaches the bottom of clutch diaphragm spring.*

5. Install clutch inspection cover and **new** gasket on primary cover using screws

with washers removed in step 3. Tighten screws in a crosswise pattern to 9.5-12.2 Nm (84-108 in-lbs ).

6. Start engine. Check for any lubricant leaks.
7. Turn engine off.



## Changing Lubricant

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1. Ride motorcycle until engine is warmed up to normal operating temperature.
2. When the engine reaches normal operating temperature, turn the engine off and position motorcycle on side stand. This will allow the chaincase lubricant to drain out of transmission.
3. See [Primary Drain Plug: XB Models](#). Position a suitable container under primary drain plug (2).

*NOTE:*

*The drain plug is located under the clutch, on the underside of the chaincase.*

4. Remove drain plug and drain lubricant.
5. Position the motorcycle STRAIGHT UP and LEVEL. This allows additional fluid to be drained from clutch compartment.

*NOTE:*

*Dispose of transmission lubricant in accordance with local regulations.*

6. Remove foreign material from magnetic drain plug. Apply LOCTITE 565 PST THREAD SEALANT (Part No. 99818-97) and install drain plug and tighten to 19-41 Nm (14-30 ft-lbs).

## ⚠ CAUTION

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

## ⚠ CAUTION

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

## ⚠ WARNING

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

## ⚠ CAUTION

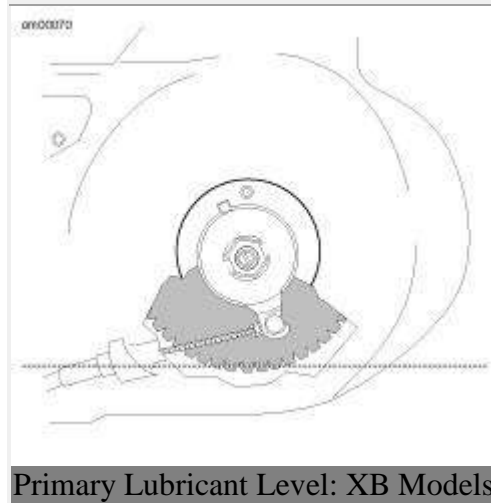
Do not overfill the primary chaincase with lubricant. Overfilling can cause rough clutch engagement, incomplete disengagement, clutch drag and/or difficulty in finding neutral at engine idle. (00199b)

7. See [Primary Drain Plug: XB Models](#). Remove screws with washers from clutch inspection cover (1). Remove clutch inspection cover from primary cover.

*NOTE:*

*The filler access is the clutch inspection cover.*

8. See [Primary Lubricant Level: XB Models](#). Add 32 fluid ounces 0.95 liters of GENUINE Harley-Davidson FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 98851-05, U.S. quart) through the clutch inspection cover opening or until the lubricant reaches the bottom of clutch diaphragm spring (1).
9. Install a **new** clutch inspection cover gasket.
10. Install clutch inspection cover on primary cover using screws with washers removed. Tighten screws in a crosswise pattern to 9.5-12.2 Nm (84-108 in-lbs ).
11. Start engine. Check for any lubricant leaks.
12. Turn engine off.



Primary Lubricant Level: XB Models

## Primary Chain: XB Models

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[Top of page](#)

Check the primary (front) chain adjustment at proper mileage intervals. Refer to [Regular Service Intervals: 2008 XB Models](#).

Chains allowed to run loose will cause the motorcycle to jerk when running at low speed. This will result in excessive chain and sprocket wear.

## Primary Chain Inspection

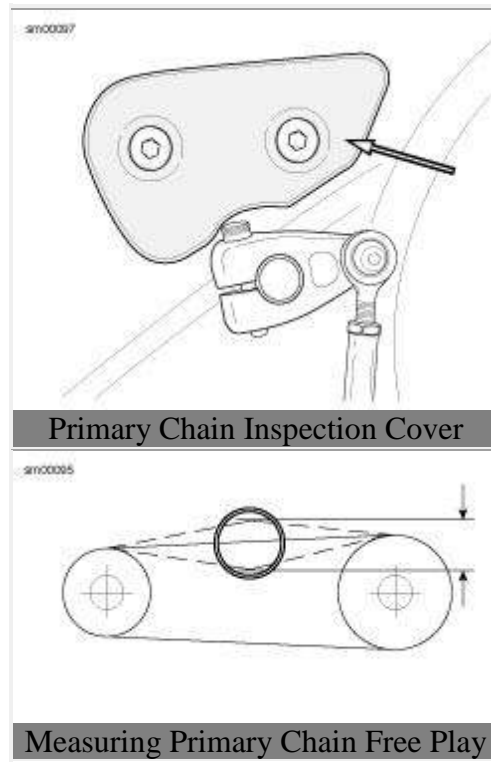
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[Top of page](#)

See [Primary Chain Inspection Cover](#). Measure primary chain tension through the inspection cover opening. Adjust primary chains not meeting vertical free play specifications.

1. See [Primary Chain Inspection Cover](#). Remove two fasteners with captive washers and primary chain inspection cover with gasket from primary cover.
2. See [Measuring Primary Chain Free Play](#). Check primary chain tension by measuring vertical free play.
  - a. Measure vertical free play through chain inspection cover opening.
  - b. Rotate engine to move primary chain to a different position on sprockets.
  - c. Measure vertical free play several times, each time with primary chain moved so that the measurement is taken with sprockets rotated to the

- tightest chain position.
- The tightest measurement taken in Step 2 must be within the specifications listed in [Primary Chain Free Play: XB Models](#). If necessary, adjust as described under [Primary Chain Adjustment](#).
  - See [Primary Chain Inspection Cover](#). Install primary chain inspection cover and **new** gasket to primary cover using two fasteners with captive washers. Tighten fasteners to 10-12 Nm (84-108 in-lbs ).



Primary Chain Free Play: XB Models

ENGINE TEMPERATURE	FREE PLAY	
	Cold	3/8-1/2 in.
Operating temperature	1/4-3/8 in.	6.4-9.5 mm

## Primary Chain Adjustment

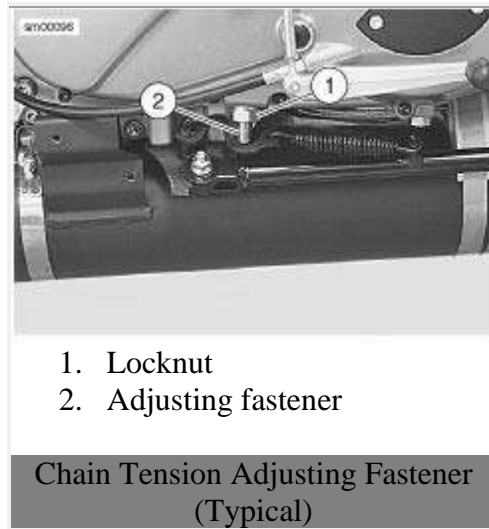
[Top of page](#)



NOTE:

If vertical free play cannot be set within the limits specified, then primary chain and/or chain adjuster are worn beyond adjustment limits. See a Buell dealer or service manual to replace worn parts.

1. See [Chain Tension Adjusting Fastener \(Typical\)](#). Loosen locknut (1).
2. Turn adjusting fastener (2):
  - a. Clockwise (inward) to increase tension (reduce free play).
  - b. Counterclockwise (outward) to reduce tension (increase free play).
3. Tighten locknut (1) to 27-34 Nm (20-25 ft-lbs).



## Rear Drive Belt: XB Models

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[Top of page](#)

The rear drive belt inner tooth surface has a thin coating of UHMW plastic. During initial operation, this coating will wear as it is burnished into the belt fabric. This is a normal condition and not an indication of excessive belt wear.

No belt adjustment is required. Refer to [Regular Service Intervals: 2008 XB Models](#) for inspection intervals.

## Chassis Lubrication: XB Models

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[Top of page](#)

## ⚠ 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)

## ⚠ CAUTION

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

1. The steering head bearings are sealed, angular contact bearings and do not require additional lubrication.
2. See a dealer or service manual and check steering head bearing resistance:
  - a. At every 5000 mile (8000 kilometer) service interval.
  - b. When storing or removing the motorcycle for the season.
3. Front and rear wheel bearings are sealed and do not require additional lubrication. Check every 5000 miles (8000 kilometers) (more often in adverse conditions) or yearly if operated under winter conditions. Replace bearing spacers if they show any wear or distortion.
4. Remove and lubricate handlebar throttle control grip sleeve with graphite every 5000 miles (8000 kilometers), once each year or when operation indicates lubrication is necessary.
5. Every 5000 miles (8000 kilometers) lubricate throttle control cables and clutch control cable. Lubricate front brake hand lever, clutch control hand lever, filler cap, and ignition switch only if necessary. Lubricate sidestand pivot. Lubricate interactive exhaust system cable and active intake cable (if equipped).
6. Rear swingarm pivot bearings are sealed and do not require additional lubrication. Inspect rear swingarm pivot bearings at 10,000 mile (16,000 kilometer) intervals.

*NOTE:*

*Lubricate all control connections and parts regularly. Pay particular attention to lubrication needs after washing motorcycle or driving in wet weather.*

## Front Fork Oil: Buell Models

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[Top of page](#)

## ⚠ WARNING

Incorrect amount of fork oil can adversely affect handling and lead to loss of vehicle control, which could result in death or serious injury. (00298a)

Drain front fork oil and refill with TYPE E FORK OIL (Part No. 99884-80) at proper mileage intervals. Refer to [Regular Service Intervals: 2008 XB Models](#).

## ⚠ WARNING

Incorrect amount of fork oil can adversely affect handling and lead to loss of vehicle control, which could result in death or serious injury. (00298a)

If either fork leaks oil or does not seem to be working properly, see a Buell dealer. Forks must contain equal amounts of fork oil for proper damping.

Incorrect recoil action will result if there is insufficient oil in either side of fork.

## Air Filter: XB Models

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[Top of page](#)

## ⚠ CAUTION

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

See [Air Intake Screen: XB Models](#). Clean the air intake screen as needed.

*NOTE:*

*Do not cover or restrict the air intake screen. Certain tank bags or accessories may cover or restrict the air intake screen. This may reduce power and performance.*

See [Air Filter: Ulysses XB12X](#). Remove air box cover and air filter cover and inspect filter element at proper mileage intervals. Refer to [Regular Service Intervals: 2008 XB Models](#). Inspect more often under dusty conditions. See a Buell dealer or Service Manual for more information.



Air Intake Screen: XB Models



Air Filter: Ulysses XB12X

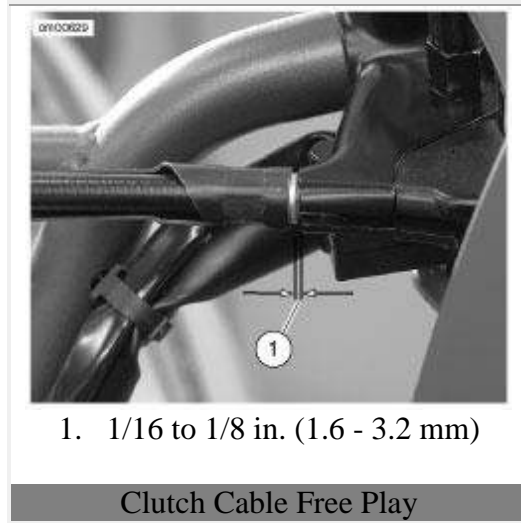
## Clutch: Ulysses XB12X

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[Top of page](#)

Clutch control cable adjustment is required to compensate for normal clutch lining wear. Oil and adjust the clutch control cable with LUBIT-8 TUFOIL CHAIN AND CABLE LUBE (Part No. 94968-85TV).

See [Clutch Cable Free Play](#). If the clutch cable free play at the clutch lever bracket is out of specification, if the clutch slips under load, or if the clutch drags when released, adjust the clutch control cable. See a Buell dealer or a service manual for more information.



## Brakes: XB Models

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[Top of page](#)

### **⚠WARNING**

Inspect brake pads for wear at service maintenance intervals. If you ride under adverse conditions (steep hills, heavy traffic, etc.), inspect more frequently. Excessively worn brake pads can lead to brake failure, which could result in death or serious injury. (00052a)

The brake system needs routine inspections and maintenance at certain intervals. Refer to [Regular Service Intervals: 2008 XB Models](#) for more information.

### **⚠WARNING**

Brakes are a critical safety component. Contact a Buell dealer for brake repair or replacement. Improperly serviced brakes can adversely affect brake performance, which could result in death or serious injury. (00117a)

These tasks may include:

- Inspecting front and rear brake pads and brake discs for wear.
- Checking the fluid level in the front and rear master cylinder reservoirs.
- Replacing the front and rear brake pads and pin.

- Changing the brake fluid and having the brakes serviced. Use only D.O.T. 4 HYDRAULIC BRAKE FLUID.

Always take your motorcycle to a Buell dealer for brake system maintenance.

### **⚠CAUTION**

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

### **⚠CAUTION**

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

## **Tires: Buell Models**

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[Top of page](#)

### **⚠WARNING**

Do not inflate tire beyond maximum pressure as specified on sidewall. Over inflated tires can blow out, which could result in death or serious injury. (00027a)

Keep the tires properly inflated. Check tire pressure before riding when tires are cold.

### **⚠WARNING**

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Buell dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00114a)

Check inflation pressure and inspect tread for punctures, cuts, breaks, etc. Inspect at least weekly if in daily use or before each trip if used occasionally.

Refer to [Tires/Air Pressures: 2008 Ulysses Models](#) for tire pressures and sizes.

## **⚠WARNING**

Match tires, tubes, air valves and caps to the correct wheel rim. Contact a Buell dealer. Mismatching can result in damage to the tire bead, allow tire slippage on the rim or cause tire failure, which could result in death or serious injury. (00162a)

## **⚠WARNING**

Use only Buell approved tires. See a Buell dealer. Using non-approved tires can adversely affect stability, which could result in death or serious injury. (00133a)

Replace worn tires with new tires identical to those that came on the motorcycle as original equipment. Other tires may not fit correctly or may be hazardous to use.

## **⚠WARNING**

Tires are a critical safety component. Contact a Buell dealer for tire repair or replacement. Improper tire service can adversely affect stability and handling, which could result in death or serious injury. (00134a)

## **⚠WARNING**

Replace punctured or damaged tires. In some cases, small punctures in the tread area may be repaired from within the demounted tire by a Buell dealer. Speed should NOT exceed 50 mph (80 km/h) for the first 24 hours after repair, and the repaired tire should NEVER be used over 80 mph (130 km/h). Failure to follow this warning could result in death or serious injury. (00118a)

## **⚠WARNING**

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

# Tire Replacement: Buell Pirelli Tires

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[Top of page](#)

## Inspection

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

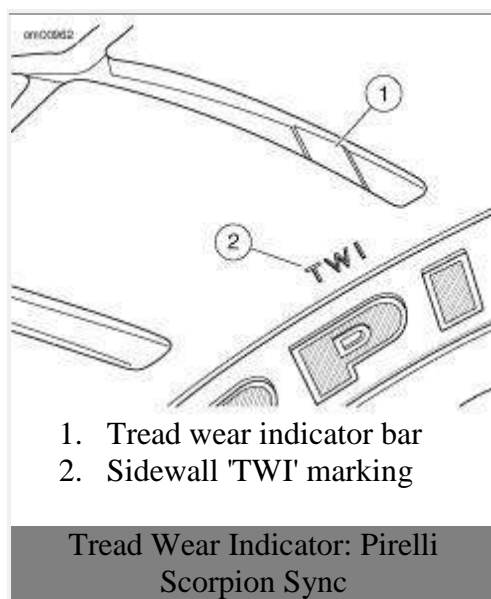
See [Tread Wear Indicator: Pirelli Scorpion Sync](#) and [Tread Wear Bars: Pirelli Scorpion Sync](#). The location of tread wear indicator bars are identified by 'TWI' markings on the sidewalls of the tire.

## When To Replace Tires

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

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







## Shock Absorber: Buell Models

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[Top of page](#)

The rear shock absorber requires inspections and maintenance at proper mileage intervals. Refer to [Regular Service Intervals: 2008 XB Models](#).

- Inspect shock absorber for oil leaks.
- Inspect rubber shock eye bushings for deterioration.
- Check for loose mounting hardware.

See a Buell dealer for all shock absorber repairs.

## Spark Plugs: XB Models

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[Top of page](#)

Spark plugs require inspection and replacement at specific mileage intervals. Refer to [Regular Service Intervals: 2008 XB Models](#).

See a Buell dealer or service manual for details. Refer to [Ignition System: 2008 XB Models](#) for ignition specifications.

## Ignition Timing: XB Models

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[Top of page](#)

Spark timing is advanced electronically as engine speed increases to suit starting, low speed and high speed requirements.

## Valve Tappets

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[Top of page](#)

Valve tappets are the self-adjusting, hydraulic type. They automatically adjust length to compensate for engine expansion and valve mechanism wear. Self-adjusting tappets keep the valve mechanism free of lash when the engine is running. No adjustment is required.

## Wheel Bearings

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[Top of page](#)

The wheel bearings are sealed units. No greasing or maintenance is required.

Inspect wheel bearings each time the wheel is removed. Replace when worn.

*NOTE:*

*Excessive play or roughness indicates worn bearings that require replacement.*

## Voltage Regulator: Buell Models

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[Top of page](#)

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

- The voltage regulator increases charging rate when battery voltage is low.
- The voltage regulator decreases charging rate when battery charge is up.

## ⚠ CAUTION

It is possible to overload your motorcycle's charging system by adding too many electrical accessories. If your combined electrical accessories operating at any one time consume more electrical current than your vehicle's charging system can produce, the electrical consumption can discharge the battery and cause vehicle electrical system damage. See a Buell dealer for advice about the amount of current consumed by additional electrical accessories, or for necessary wiring changes. (00249b)

NOTE:

*The voltage regulator does not require any scheduled maintenance. If any electrical system trouble is experienced that might be traceable to the alternator or voltage regulator, take the motorcycle to a Buell dealer. Dealers have the necessary parts and testing equipment to perform electrical service.*

## Idle Speed

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[Top of page](#)

Idle speed is monitored and controlled by the Electronic Control Module (ECM) and Idle Air Control (IAC).

### Engine Idle Speed

MODEL	REGULAR IDLE
Ulysses XB12X	1050-1150 RPM

## Interactive Exhaust System

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[Top of page](#)

The interactive exhaust system utilizes an actuator valve in the muffler which is connected to a servo motor via a cable. The valve position automatically adjusts to enhance engine performance. See a Buell dealer or service manual for details.

## Battery: General

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## Type

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

### Antidotes for Battery Acid

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

### **⚠WARNING**

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

### **⚠WARNING**

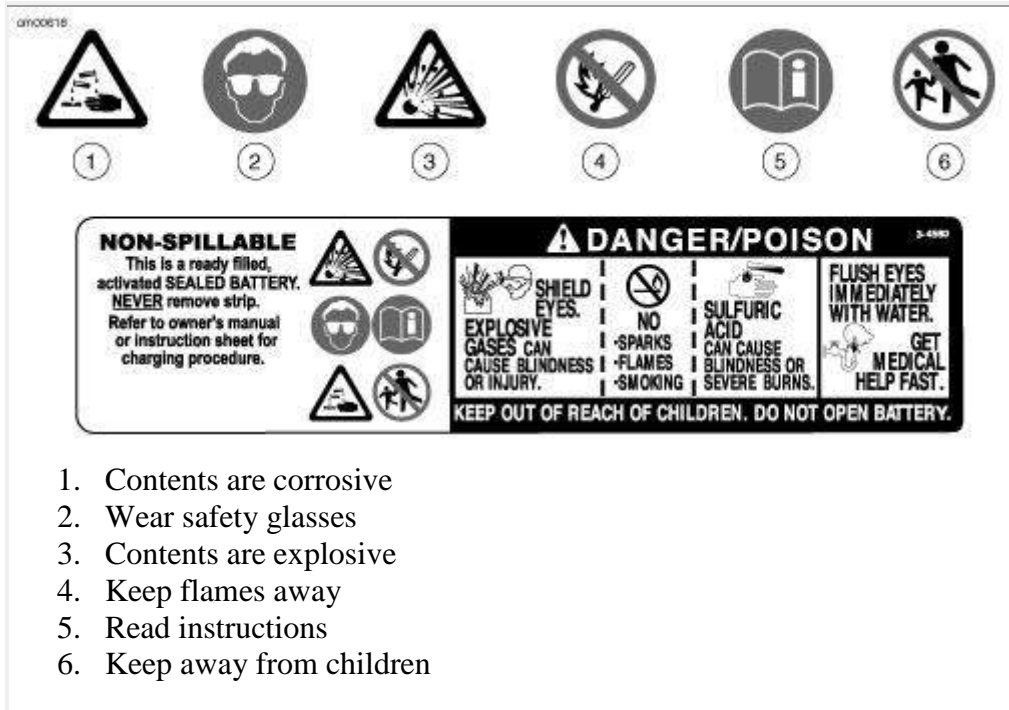
Explosive hydrogen gas, which escapes during charging, could cause death or serious injury. Charge battery in a well-ventilated area. Keep open flames, electrical sparks and smoking materials away from battery at all times. **KEEP BATTERIES AWAY FROM CHILDREN.** (00065a)

### **⚠WARNING**

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

## ⚠ WARNING

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



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

Battery Warning Label



Battery Warning Label

## Voltmeter Test

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

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

#### Voltmeter Test

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

### Cleaning and Inspection

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Battery top must be clean and dry. Dirt and electrolyte on top of the battery can cause battery to self-discharge.

1. Clean battery top.
2. Clean cable connectors and battery terminals using a wire brush or fine grit sandpaper to remove any oxidation.
3. Inspect and clean the battery screws, clamps and cables. Check for breakage, loose connections and corrosion.
4. Check the battery posts for melting or damage caused by overtightening.
5. Inspect the battery for discoloration, a raised top or a warped or distorted case. This might indicate that the battery has been frozen, overheated or overcharged.
6. Inspect the battery case for cracks or leaks.

### Charging

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Never charge a battery without first reviewing the instructions for the charger being used. In addition to the manufacturer's instructions, follow these general safety precautions.

Charge the battery if any of the following conditions exist:

- Vehicle lamps appear dim.
- Electric starter sounds weak.
- Battery has not been used for an extended period of time.

## ⚠ WARNING

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

## ⚠ WARNING

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

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

## ⚠ CAUTION

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

2. Remove the battery from the motorcycle. See [Battery: XB Models](#).
3. Place the battery on a level surface.

## ⚠ WARNING

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

## ⚠ WARNING

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

## ⚠ WARNING

Disconnect negative (-) battery cable first. If positive (+) cable should contact

ground with negative (-) cable connected, the resulting sparks can cause a battery explosion, which could result in death or serious injury. (00049a)

## ⚠ CAUTION

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

### NOTES:

- The figures listed in the Amp-hour table assume that the battery is charging at room temperature. If warmer than room temperature, use a slightly shorter charging time. If colder, use a slightly longer charging time.
  - The use of constant current chargers to charge sealed maintenance free batteries is not recommended. Any overcharge will cause dry-out and premature battery failure. If a constant current charger is the only type available, do not exceed the charge times listed in [12 Amp-Hour Battery Charging Rates and Times](#) and do not continue charging the battery if it gets hot. When charging, never exceed 15 volts.
4. Connect the red battery charger lead to positive (+) terminal of the battery.
  5. Connect the black battery charger lead to negative (-) terminal of the battery.

### NOTE:

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

6. Step away from the battery and turn on the charger.

## ⚠ WARNING

Unplug or turn OFF battery charger before disconnecting charger cables from battery. Disconnecting clamps with charger ON can cause a spark and battery explosion, which could result in death or serious injury. (00067a)

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

### 12 Amp-Hour Battery Charging Rates and Times

READING (VOLTS)	PERCENT CHARGE	3 AMP CHARGER	6 AMP CHARGER	10 AMP CHARGER	20 AMP CHARGER
12.7	100	N/A	N/A	N/A	N/A
12.6	75	1 hour 10 minutes	34 minutes	20 minutes	10 minutes
12.3	50	2 hours 20	70 minutes	40 minutes	20 minutes



		minutes			
12.0	25	3 hours 20 minutes	1 hour 40 minutes	1 hour	30 minutes
11.8	0	4 hours 30 minutes	2 hours 14 minutes	1 hour 20 minutes	40 minutes

## Storage

### ⚠ CAUTION

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

### ⚠ CAUTION

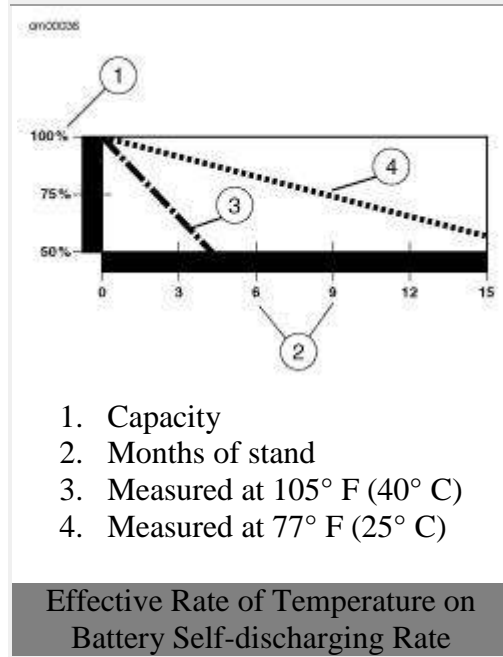
Do not allow battery to completely discharge. The electrolyte in a discharged battery will freeze. The more discharged a battery is, the more easily it can freeze and crack the battery case. (00218a)

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

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

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

- Batteries discharge at a faster rate at higher ambient temperatures.
- To reduce the self-discharge rate, store battery in a cool (not freezing), dry place.
- Charge the battery every month if stored at temperatures below 60° F 16° C .
- Charge the battery more frequently if stored in a warm area above 60° F 16° C .



## Battery: XB Models

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[Top of page](#)

The battery is below the seat in the center of the vehicle. If it is necessary to remove the battery from your motorcycle, consult your service manual for detailed instructions.

Owners should clean connections and check tightness every 5000 miles 8000 kilometers or once monthly. Battery terminals should be tightened to 8-11 Nm (72-96 in-lbs ).

## Jump-Starting Buell Motorcycles

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[Top of page](#)

Buell does not recommend jump-starting a motorcycle. However, there may be circumstances when it is necessary to do so. Therefore, we suggest jump-starting be performed as follows:



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

## WARNING

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

## CAUTION

Buell motorcycles have a 12 Volt battery. Be sure the booster vehicle has a 12 Volt system. Failure to do so could result in vehicle damage. (00242a)

*NOTE:*

*This procedure presumes the BOOSTER battery is in another vehicle.*

1. Turn off all unnecessary lamps and accessories.

### Positive Cable

---

2. See [Jump Start Cable Connections](#). Connect one end of a jumper cable to the DISCHARGED battery positive (+) terminal (1).
3. Connect the other end of the same cable to the BOOSTER battery positive (+) terminal (2).

### Negative Cable

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## WARNING

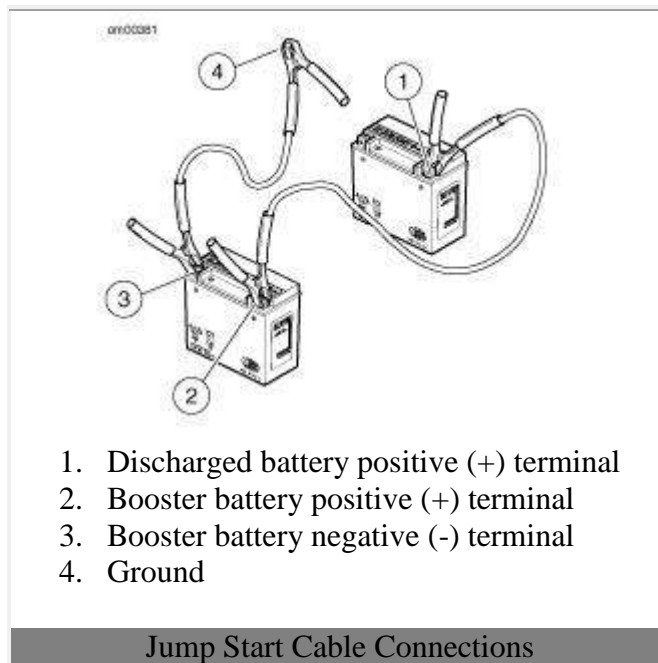
Do not connect negative (-) cable to or near the discharged battery negative (-) terminal. Doing so could cause a spark and explosion, which could result in death or serious injury. (00073a)

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

## ⚠ CAUTION

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

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



## Headlamp: Ulysses XB12X

[Top of page](#)

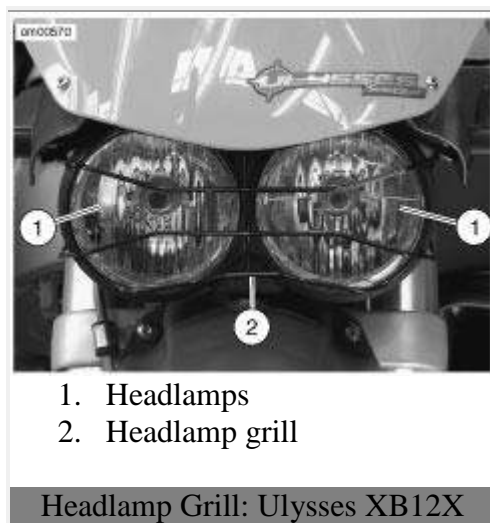
The Ulysses XB12X has two headlamps. Only one headlamp is illuminated during either low or high beam operation. See a Buell dealer for replacement headlamp bulbs. See a service manual for the headlamp aiming procedure.

## ⚠ WARNING

The automatic on headlamp feature provides increased visibility of the rider to other

motorists. Be sure headlamp is on at all times. Poor visibility of rider to other motorists can result in death or serious injury. (00030b)

See [Headlamp Grill: Ulysses XB12X](#). The XB12X has a headlamp grill to provide additional protection for the headlamp assembly. When spreading the headlamp grill during removal/installation be careful not to spread the grill too far. If this happens simply compress the grill until it fits snugly on the headlamp assembly.



## Electrical Protection: Ulysses Models

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[Top of page](#)

### Fuses and Relays

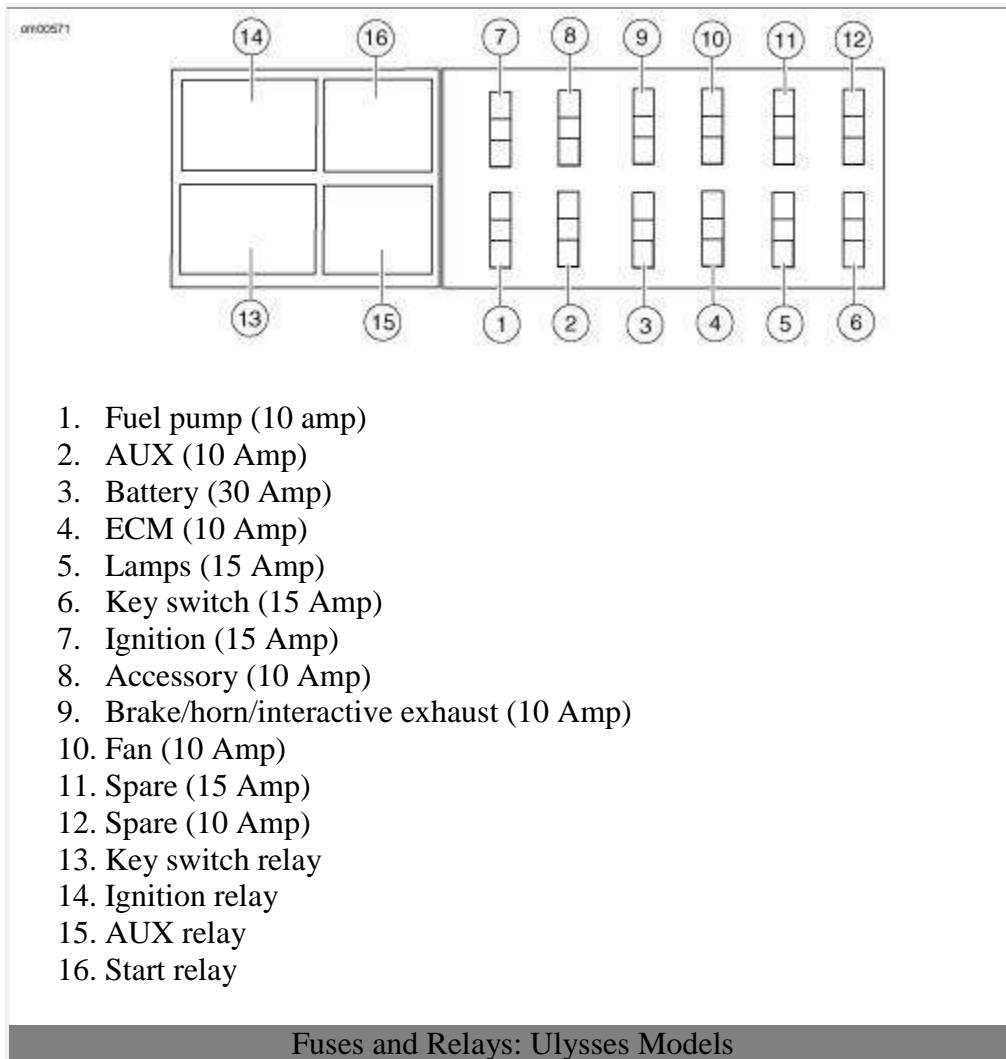
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See [Fuses and Relays: Ulysses Models](#). To protect the motorcycle's electrical components from overload, your vehicle has circuit fuses and a main fuse. The fuse block and relays are located under the seat. The fuse block contains replaceable fuses.

### **⚠ 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)

For diagnosis and repair of electrical problems, see a Buell dealer. They have the necessary parts and equipment to perform electrical service.



## Storage: XB Models

[Top of page](#)

**CAUTION**

Proper storage is important for the trouble-free operation of your motorcycle. See your Owner's Manual for storage recommendations or see a Buell dealer. Improper

storage procedures can lead to equipment damage. (00128a)

If the motorcycle will not be operated for several months, such as during the winter season, follow the procedure below. Proper storage preparation will protect parts against corrosion, preserve the battery and to prevent the build-up of gum and varnish in the fuel system. Improper storage may adversely effect the warranty. See [Warranty and Service Information: Buell Models](#) for more information.

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

## ⚠ WARNING

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

## Placing Motorcycle In Storage

---

## ⚠ CAUTION

If motorcycle is to be covered, use a material such as light canvas that will breathe. Plastic materials that do not breathe promote the formation of condensation which can damage the finish of the motorcycle. (00247a)

1. Warm motorcycle to operating temperature. Change oil and turn engine over to circulate the new oil.
2. Fill fuel tank and add a gasoline stabilizer. Use one of the commercially available gasoline stabilizers and follow the manufacturer's instructions.
3. Run engine until gasoline stabilizer has had a chance to reach fuel injectors.
4. Check rear drive belt wear.
5. Check tire inflation. Adjust to proper inflation pressure.
6. Wash and polish molded-in-color, painted and chrome surfaces.
7. See [Battery: General](#) for proper battery care. Remove battery from the motorcycle and charge. Store the battery above freezing temperatures and trickle charge once a month.

## Removal From Storage

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## **⚠WARNING**

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

## **⚠WARNING**

The clutch failing to disengage can cause loss of control, which could result in death or serious injury. Prior to starting after extended periods of storage, place transmission in gear and push vehicle back and forth several times to assure proper clutch disengagement. (00075a)

1. Install charged battery if removed.
2. Remove and inspect the spark plugs. See service manual.
3. Clean the air cleaner filter element.
4. Start the engine and run until it reaches normal operating temperature. Turn engine and ignition/headlamp key switch off.
5. Check oil tank level. Check transmission lubricant level.
6. Check controls to be sure they are operating properly. Operate the front and rear brakes, throttle control, clutch lever and gear shift lever.
7. Check steering for smoothness by turning the handlebars through the full operating range.

## **⚠WARNING**

Be sure tires are properly inflated, balanced and have adequate tread. Inspect your tires regularly and see a Buell dealer for replacements. Riding with excessively worn, unbalanced or under-inflated tires can adversely affect stability and handling, which could result in death or serious injury. (00114a)

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

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Cosmetic Maintenance

### Cleaning Your Buell

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[Top of page](#)

Aluminum parts must be maintained regularly to retain their original shine and luster. Frequently clean and wax your new Buell motorcycle to inhibit rust and corrosion.

To aid you in keeping your motorcycle clean, see a Buell dealer for cleaning, touch-up, polishing and waxing products.

#### **⚠ CAUTION**

Do not use pressure washers to clean wheel bearings, sprocket bearings, steering head bearings and swingarm pivot bearings. Doing so can result in equipment damage.  
(00489b)

## ⚠WARNING

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

## ⚠WARNING

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

## ⚠CAUTION

Do not use abrasive cleaners on frame, side stand, swingarm and wheels. The finish on these parts could be damaged if abrasive cleaners are used. (00244a)

## Windshield Maintenance: Buell Models

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[Top of page](#)

## ⚠CAUTION

Buell windscreens/windshields are made of Lexan. Lexan is a more durable and distortion-resistant material than other types of motorcycle windshield material but still requires attention and care to maintain. Failure to maintain Lexan properly can result in damage to the windscreen/windshield. (00483c)

Windshields require special care. Buell recommends using Harley Softcloths with the following products to clean your windshield. To minimize swirl marks, cleaning should be done when motorcycle is cool and parked in the shade.

- HARLEY-DAVIDSON BUG REMOVER (Part No. 94657-98).
- HARLEY-DAVIDSON SUNWASH (Part No. 94659-98).
- NOVUS 1 CLEANER/PROTECTANT (Part No. 99837-94T).
- NOVUS 2 SCRATCH REMOVER (Part No. 99836-94T).
- HARLEY GLAZE (Part No. 99701-84) to polish and seal after cleaning.

*NOTE:*

*Faint swirl marks are normal and may be more visible on tinted than on clear windshields.*

## Molded-In-Color Body Panel Care

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[Top of page](#)

### Molded-In-Color Surfaces

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#### ⚠ CAUTION

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

#### ⚠ CAUTION

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

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Products recommended for the proper care and maintenance of molded-in-color body panels are listed below:

- HARLEY WASH (Part No. 99715-90) or HARLEY SUN WASH (Part No. 94659-98).
- HARLEY GLOSS (Part No. 94627-98).
- HARLEY GLAZE POLISH AND SEALANT (Part No. 99701-84).
- HARLEY SWIRL AND SCRATCH TREATMENT (Part No. 94655-98).

### Washing

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

1. Rinse surface with water.
2. Wash with Harley Wash or Harley Sun Wash.
3. Rinse surface thoroughly with water.
4. Dry with a clean chamois or soft dry natural fiber cloth.

## Cleaning Between Washings

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Untreated molded-in-color body panels sometimes have a static charge that attracts dust. Applying Harley Gloss or Harley Glaze Polish and 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 Harley Gloss onto surface and wipe with a clean soft natural fiber cloth or Harley Softcloth.

*NOTE:*

*Rain or water will remove Harley Gloss from body panels.*

2. Reapply Harley Gloss 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 Harley Glaze Polish and 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 Harley Glaze Polish and 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 Harley Glaze Polish and Sealant dry to a haze and buff off residue with a clean soft cloth or Harley Softcloth.

## Minor Scratch Removal

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## ⚠ CAUTION

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

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

1. To remove light surface scratches and rubs, use Harley Swirl and Scratch Treatment as recommended.
2. Make sure Swirl and Scratch Treatment is applied with a moist cloth and by hand (not by machine).
3. After scratch or rub has been repaired, polish surface lightly with Harley Glaze.

*NOTE:*

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

## Major Scratch Removal

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

## Cloth Care

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[Top of page](#)

1. Vacuum or blow dust off.
2. Use mild soap and warm water for more difficult stains on the cloth. Rinse thoroughly. Always allow cloth to dry completely before using.

## Vinyl Care

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[Top of page](#)

Wash with a good quality detergent or S100<sup>®</sup>.

## Wheel Care: Ulysses Models

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[Top of page](#)

To maintain the original luster and appearance of the wheels on your Buell motorcycle, clean and polish wheels as often as possible to inhibit rust and corrosion. Damage from harsh chemicals, acid based wheel cleaners, brake dust and lack of maintenance can occur. Regular washing and the use of a corrosion protectant will help to maintain their original appearance.

Harley-Davidson WHEEL AND TIRE CLEANER (Part No. 94658-98) is recommended for cleaning wheels and tires. Then use HARLEY GLOSS™ (Part No. 94627-98) to protect the wheel surfaces.

*NOTES:*

- *It is imperative that the wheels are cared for weekly to guard against pitting and corrosion.*
- *Corrosion of these components is not considered to be a defect in materials or workmanship.*

Buell recommends the following products:

- WHEEL AND TIRE CLEANER (Part No. 94658-98): cleaner/degreaser for wheels, tires and engine.
- HARLEY GLOSS™ (Part No. 94627-98): all purpose surface protection the provides UV protection and a gloss finish.

See a Buell dealer for cleaning, polishing and waxing products.

## Frame and Swingarm Care: XB Models

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[Top of page](#)

### **⚠WARNING**

The aluminum frame of this motorcycle is the fuel tank. Drilling, welding, cutting, grinding, sanding, polishing or other modifications to this frame can weaken it or cause a fire, which could result in death or serious injury. (00126b)

### **⚠WARNING**

The aluminum swingarm of this motorcycle is the oil tank. Drilling, welding, cutting, grinding, sanding, polishing or other modifications to this swingarm can weaken it, cause a fire or an oil leak, which could result in death or serious injury. (00127b)

To aid you in cleaning of the frame and swingarm, see a Buell dealer for cleaning supplies and touch-up paint.

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## Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

# Troubleshooting

## Troubleshooting: General

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[Top of page](#)

### **⚠WARNING**

The troubleshooting section of the Owner's Manual is a guide to diagnose problems. Read the service manual before performing any work. Improper

repair and/or maintenance could result in death or serious injury. (00080a)

The following checklist of possible operating troubles and their probable causes will be helpful in keeping your motorcycle in good operating condition. More than one of these conditions may be causing trouble and should be carefully checked.

## **Engine: XB Models**

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[Top of page](#)

### **Starter Does Not Operate or Does Not Turn Engine Over**

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1. Engine run switch in OFF position.
2. Ignition switch not ON.
3. Discharged battery or loose or corroded connections (solenoid chatters).

### **Engine Turns Over But Does Not Start**

---

1. Fuel tank empty.
2. Discharged battery or loose or broken battery terminal connections.
3. Fouled spark plugs.
4. Spark plug cable connections loose or in bad condition and shorting.
5. Loose or corroded wire or cable connection(s) at coil or battery.
6. Engine oil too heavy (winter operation).
7. No output from ECM. See dealer.
8. Inadequate fuel pressure in fuel lines (possible leak). See dealer.
9. Clogged fuel filter. See dealer.
10. Clogged fuel injectors. See dealer.
11. Tripped bank angle sensor. Turn key to OFF and then back to ON again to start bike.
12. No output from CKP sensor. See dealer.
13. Inoperative fuel pump. See dealer.

### **Starts Hard**

---

1. Spark plugs in bad condition, have improper gap, or are partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Battery nearly discharged.



4. Loose wire or cable connection(s) at one of the battery terminals or at coil.
5. Engine oil too heavy (winter operation).
6. Water or dirt in fuel system.
7. IAT or ET sensors damaged or malfunctioning. See dealer.
8. Intake manifold leak. See dealer.

## **Starts But Runs Irregularly or Misses**

---

1. Spark plugs in bad condition or partially fouled.
2. Spark plug cables in bad condition and leaking.
3. Spark plug gap too close or too wide.
4. Battery nearly discharged.
5. Damaged wire or loose connection at battery terminals or coils.
6. Intermittent short circuit due to damaged wire insulation.
7. Water or dirt in fuel system.
8. O2, IAT or ET sensors damaged or malfunctioning. See dealer.
9. Fuel level too low. Add gasoline.
10. Inoperative fuel injector. See dealer.
11. Obstructed fuel tank vent valve or pinched vent tube. See dealer.
12. Intake manifold leak. See dealer.
13. Interactive exhaust system not functioning correctly. See dealer.
14. Air intake screen covered or restricted.

## **A Spark Plug Fouls Repeatedly**

---

1. Fuel mixture too rich.
2. Incorrect spark plug.
3. Air intake screen covered or restricted.

## **Pre-ignition or Detonation (Knocks or Pings)**

---

1. Incorrect fuel.

## **Overheats**

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1. Insufficient oil supply or oil not circulating.
2. Heavy carbon deposit from lugging engine. See dealer.
3. Oil cooler obstructed.
4. Cooling fan inoperative. See dealer.

## **Excessive Vibration**

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1. Tie bar (engine isolation) mounts loose. See dealer.
2. Swingarm pivot shaft loose. See dealer.
3. Broken frame. See dealer.
4. Front chain or links tight as a result of insufficient lubrication or belt badly worn.
5. Wheels and/or tires damaged. See dealer.

## **Poor Fuel Economy**

---

1. O2 sensor damaged or malfunctioning (bike running rich). See dealer.
2. Air intake screen covered or restricted.

## **Lubrication System**

---

[Top of page](#)

## **Oil Does Not Return to Oil Tank**

---

1. Oil tank empty.
2. Restricted oil lines or fittings. See dealer.
3. Restricted oil filter. See dealer.

## **Engine Leaks Oil From Cases, Push Rods, Hoses**

---

1. Loose parts. See dealer.
2. Imperfect seal at gaskets, push rod cover, washers, etc. See dealer.
3. Restricted oil return line to tank. See dealer.

## **Electrical System**

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[Top of page](#)

## **Alternator Does Not Charge**

- 
1. Module not grounded. See dealer.
  2. Engine ground wire loose or broken. See dealer.
  3. Loose or broken wires in charging circuit. See dealer.

### **Alternator Charge Rate is Below Normal**

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1. Weak battery.
2. Excessive use of add-on accessories.
3. Loose or corroded connections.
4. Extensive periods of idling or low speed riding.

## **Transmission: XB Models**

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[Top of page](#)

### **Transmission Shifts Hard**

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1. Transmission shifting mechanism worn. See dealer.

### **Transmission Jumps Out of Gear**

---

1. Worn shifter dogs in transmission. See dealer.

### **Clutch Slips**

---

1. Clutch controls improperly adjusted. See dealer.
2. Worn friction discs. See dealer.
3. Insufficient clutch spring tension. See dealer.

### **Clutch Drags or Does Not Release**

---

1. Clutch controls improperly adjusted. See dealer.
2. Insufficient clutch spring tension. See dealer.
3. Clutch discs warped. See dealer.

## Clutch Chatters

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

## Brakes

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[Top of page](#)

### Brakes Do Not Hold Normally

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

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

## Warranties and Responsibilities

### Warranty and Maintenance: Buell Models

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[Top of page](#)

See [Regular Service Intervals: Buell Models](#). This Owner's Manual contains your new motorcycle warranty and a maintenance record.

The maintenance record is a scheduled mileage interval that contains a specific maintenance checklist for upkeep of your motorcycle. It is the owner's responsibility to follow the scheduled mileage intervals as specified. All of the specified maintenance services must be performed to keep your warranty valid.

1. Make an appointment with a Buell dealer for inspection and service prior to first 1000 miles 1600 kilometers .
2. Bring this Owner's Manual with you when you visit the dealer to have your motorcycle inspected and serviced.
3. Have the owner record stubs dated and signed for required proof of service during the warranty period.
4. Keep receipts covering any parts, service or maintenance performed.

These records should be transferred to each subsequent owner.

## **⚠ WARNING**

Do not use aftermarket parts and custom made front forks which can adversely affect performance and handling. Removing or altering factory installed parts can adversely affect performance and could result in death or serious injury. (00001a)

Use only Buell approved parts and accessories. Use of certain other manufactures performance parts may void your warranty. See a Buell dealer.

Buell dealerships are independently owned and operated and may sell parts and accessories that are not manufactured or approved by Buell. Therefore, you should understand that we are not and cannot be responsible for the quality, suitability, or safety of any non-Buell part, accessory or design modification, including labor, which may be sold and/or installed by our dealers.

*NOTE:*

*If you move from your present address or sell your motorcycle, please fill out and mail the post card at the back of this manual. This is necessary in the event that the Buell Motorcycle Company needs to contact the owner concerning information that could affect the safe operation of this motorcycle.*

## **Keeping It All Buell**

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[Top of page](#)

Insist that your dealer uses only Genuine<sup>®</sup> Buell replacement parts to keep your Buell motorcycle and its warranty intact.

*NOTE:*

*Installing off-road or competition parts to enhance performance may void your new motorcycle warranty. See a Buell dealer for details.*

## ⚠ CAUTION

It is possible to overload your motorcycle's charging system by adding too many electrical accessories. If your combined electrical accessories operating at any one time consume more electrical current than your vehicle's charging system can produce, the electrical consumption can discharge the battery and cause vehicle electrical system damage. See a Buell dealer for advice about the amount of current consumed by additional electrical accessories, or for necessary wiring changes.  
(00249b)

## California Evaporative Emission Control: Buell Models

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[Top of page](#)

All new 2008 Buell motorcycles sold in the state of California are equipped with an evaporative emission control system. This system is designed to meet the CARB regulations in effect at the time of manufacture.

The system requires a small amount of maintenance. Periodic inspection is required to make sure hoses are properly routed, not kinked or blocked, and that all fittings are secure. Mounting hardware should also be checked periodically for tightness.

## EPA Noise Regulations in the United States: Buell Models

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[Top of page](#)

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

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

AMONG THOSE ACTS PRESUMED TO CONSTITUTE TAMPERING ARE THE

ACTS LISTED BELOW.

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

Buell recommends that any and all noise related maintenance be done by an authorized Buell dealer using Genuine<sup>®</sup> Buell parts.

## Warranty and Service Information: Buell Models

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[Top of page](#)

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

For normal service work or warranty work under the above conditions, you may obtain the name and location of your nearest U.S. Buell dealer by calling 1-800-490-9635 (toll free), in any state except Alaska and Hawaii. To find dealers worldwide, see [www.buell.com](http://www.buell.com).

*NOTE:*

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

## Reporting Safety Defects in the United States: Buell Models

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[Top of page](#)

### U.S. Only

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



## NHTSA Statement

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

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

Refer to [NHTSA Contacts](#) to contact NHTSA.

### NHTSA Contacts

ITEM	DATA
Phone	Call the Auto Safety Hot Line toll-free at 1-888-DASH-2DOT
Mail	U.S. Department of Transportation, National Highway Traffic Safety Administration, Office of Defects Investigation, NVS-210, 400 7th Street S.W., Washington, D.C. 20590
Web site	<a href="http://www.nhtsa.dot.gov">www.nhtsa.dot.gov</a>

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

*NOTE:*

*If you move from your present address, or sell your motorcycle, please fill out and mail the post card at the back of this manual. This is necessary in the event that the Company needs to contact the owner concerning information that could affect the safe operation of this motorcycle.*

## Owner Transfer Identification Form

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[Top of page](#)

When purchasing a pre-owned Harley-Davidson or Buell, we encourage you to submit an Owner Transfer Notification Form. It is critical that new owner information is communicated to Harley-Davidson. New owner information is required to be on file

with Harley-Davidson to transfer an Extended Service Plan Contract. Harley-Davidson is also required by the National Traffic and Motor Vehicle Safety Act to notify all owners in the event of a recall. The form may be obtained at any Harley-Davidson dealer.

## **Required Documentation For Imported Buell Motorcycles**

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[Top of page](#)

If a Buell is imported into the United States, additional documentation is required to be eligible for the United States Manufacturer's Limited Warranty. A Buell dealer can provide a form explaining the requirements.

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## **Owner's Manuals**

[CLOSE PRINT](#)

[Home](#)

## **Limited Motorcycle Warranty**

<https://www.motorcycle-manual.com/>

# 2008 BUELL MOTORCYCLE LIMITED WARRANTY

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[Top of page](#)

## 24 Months/Unlimited Miles

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Buell warrants for any new 2008 Buell motorcycle that an authorized Buell dealer will repair or replace without charge any parts found under normal use to be defective in factory materials or workmanship. Such repair and replacement will be Buell's sole obligation and the customer's sole remedy under this warranty.

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

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

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

The following terms and conditions apply to this warranty:

### Duration

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

- warranty.
2. Any unexpired portion of this limited warranty will be transferred to subsequent owners, upon the resale of the motorcycle during the warranty period.

## **Owner's Obligations**

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To obtain warranty service, return your motorcycle at your expense within the warranty period to an authorized dealer. Our dealer should be able to provide warranty service during normal business hours and as soon as possible, depending upon the workload of the dealer's service department and the availability of necessary parts.

Buell Motor Company, P.O. Box 653, Milwaukee, Wisconsin 53201, U.S.A.

## **Exclusions**

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This warranty will not apply to any motorcycle/sidecar as follows:

1. Which has not been operated or maintained as specified in the Owner's Manual.
2. Which has been abused, misused, improperly stored, used "off the highway," or used for racing or competition of any kind.
3. Which is not manufactured to comply with the laws of the market in which it is registered.
4. Installing off-road or competition parts to enhance performance may void all or part of your new motorcycle warranty. See a Buell dealer for details.

## **Other Limitations**

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This warranty does not cover:

1. Parts and labor for normal maintenance as recommended in the Owner's Manual, or the replacement of parts due to normal wear and tear including such items as the following: tires, lubrication, oil and filter change, fuel system cleaning, battery maintenance, engine tune-up, spark plugs, brake, clutch and chain/belt adjustment (including chain replacement).
2. Cosmetic concerns that arise as a result of owner abuse, lack of proper maintenance or environmental conditions (except concerns that result from defects in material or workmanship, which are covered by this

- warranty for the duration of the warranty period).
3. Any cosmetic condition existing at the time of retail delivery that has not been documented by the selling dealer prior to retail delivery.
  4. Defects or damage to the motorcycle caused by alterations outside of Buell factory specifications.

### **Important: Read Carefully**

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1. Our dealers are independently owned and operated and may sell other products. Because of this, **BUELL IS NOT RESPONSIBLE FOR THE SAFETY, QUALITY, OR SUITABILITY OF ANY NON-BUELL PART, ACCESSORY OR DESIGN MODIFICATION INCLUDING LABOR WHICH MAY BE SOLD AND/OR INSTALLED BY OUR DEALERS.**
2. This warranty is a contract between you and the manufacturer. It is separate and apart from any warranty you may receive or purchase from the dealer. The dealer is not authorized to alter, modify, or in any way change the terms and conditions of this warranty.
3. Any warranty work or parts replacement authorized by the manufacturer will not preclude the manufacturer from later relying on any exclusion where applicable.

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## **Owner's Manuals**

[CLOSE PRINT](#)

[Home](#)

# Limited Noise Warranty

## 2008 Buell Noise Control System Limited Warranty

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[Top of page](#)

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

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

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

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

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

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

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

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

## **Other Rights**

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

## **Recommendations for Required Maintenance**

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

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# Owner's Manuals

[CLOSE PRINT](#)

[Home](#)



# Limited Emission Warranty

## 2008 Buell Emission Control System Limited Warranty

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[Top of page](#)

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

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

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

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

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

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

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

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

## Other Rights

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

## Recommendations for Required Maintenance

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

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Owner's Manuals

[CLOSE PRINT](#)

[Home](#)

# Maintenance Scheduling

## Regular Service Intervals: Buell Models

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

NOTES:

- Refer to [Regular Service Intervals: 2008 XB Models](#). Regular maintenance interval operations are required to keep your new motorcycle warranty in force. The use of other than Buell approved parts and service procedures may void the warranty. Any alterations to the emission system components, such as the fuel and exhaust system, may be in violation of Federal and State laws.
- Refer to [Owner's Maintenance Records](#). When servicing your motorcycle, bring this owner's manual to the dealership and complete the information needed in the blank columns listed.

**⚠ WARNING**

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

**⚠ WARNING**

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

Regular Service Intervals: 2008 XB Models

ITEM SERVICED	PROCEDURE	1000	5000	10,000	15,000	20,000	25,000	NOTES
		MI.	MI.	MI.	MI.	MI.	MI.	
		1600	8000	16,000	24,000	32,000	40,000	
		KM	KM	KM	KM	KM	KM	
Engine oil and filter	Replace	X	X	X	X	X	X	
Air cleaner	Inspect, service as required	X	X	X	X		X	
	Replace filter element					X		

Tires	Check condition and tread	X	X	X	X	X	X	
Transmission lubricant	Replace	X		X		X		
Clutch	Check adjustment	X	X	X	X	X	X	1
Primary chain	Check adjustment	X	X	X	X	X	X	1
Rear belt and idler sprockets	Inspect	X	X	X	X	X	X	1
Throttle, brake, clutch controls, sidestand, active muffler cable and active intake cable adj (if equipped)	Check, adjust, lubricate	X	X	X	X	X	X	1
Brake fluid	Check levels and condition	X	X	X	X	X	X	2
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	
Spark plugs	Replace			X		X		1
Electrical switches and equipment	Check operation	X	X	X	X	X	X	
Front fork oil	Replace			X		X		1
Steering head bearings	Perform resistance test		X	X	X	X	X	1
Oil cooler fins	Clean	X	X	X	X	X	X	
Brake system, oil lines, front forks, rear shock, exhaust system, exhaust system mounting, evaporative emission system (if applicable)	Inspect	X	X	X	X	X	X	1
Critical fasteners	Check tightness			X		X		1

Engine mounts, stabilizer, and links	Inspect			X		X		1
Road test	Verify component and system functions	X	X	X	X	X	X	
<b>NOTES:</b>	<p>1. Should be performed by an authorized Buell dealer, unless you have the proper tools, service data and are mechanically qualified.</p> <p>2. Change brake fluid every two (2) years.</p>							

### Owner's Maintenance Records

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

## Service Literature: Buell Models

[Top of page](#)

Refer to [Service Literature: 2008 Ulysses Models](#). Visit any Buell dealer or go to [www.buell.com](http://www.buell.com) to purchase a service or parts manual for your motorcycle. Factory authorized manuals are the most complete and detailed source of information outside of

your Buell dealer.

### Service Literature: 2008 Ulysses Models

<b>DOCUMENT</b>	<b>LANGUAGE</b>	<b>PART NUMBER</b>
2008 Buell XB Models Service Manual	English	99490-08Y
2008 Buell XB Models Electronic Diagnostics Manual	English	99493-08Y
2008 Buell Ulysses Models Parts Catalog	English	99575-08Y

## **H-D Michigan, Inc. Trademark Information**

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[Top of page](#)

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