

SERVICING A NEW MOTORCYCLE

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)

Service operations to be performed before customer delivery are specified in the applicable model year PREDELIVERY AND SETUP MANUAL.

The performance of new motorcycle initial service is required to keep warranty in force and to ensure proper emissions systems operation. See [1.3 MAINTENANCE SCHEDULE](#) for details.

SAFE OPERATING MAINTENANCE

IMPORTANT NOTES

- **Do not attempt to retighten engine head bolts. Retightening can cause engine damage.**
- **During the initial break-in period, use only Harley-Davidson 20W50 engine oil. Failure to use the recommended oil will result in improper break-in of the engine cylinders and piston rings.**

A careful check of certain equipment is necessary after periods of storage, and frequently between regular service intervals, to determine if additional maintenance is required.

Check:

1. Tires for abrasions, cuts and correct pressure.
2. Secondary drive belt for proper tension and condition.
3. Brakes, steering and throttle for responsiveness.
4. Brake fluid level and condition. Hydraulic lines and fittings for leaks. Also, check brake pads and rotors for wear.
5. Cables for fraying, crimping and free operation.
6. Engine oil and transmission fluid levels.
7. Headlamp, passing lamp, tail lamp, brake lamp and turn signal operation.

SHOP PRACTICES

Repair Notes

NOTE

- *General maintenance practices are given in this section.*
- *Repair = Disassembly/Assembly.*
- *Replace = Removal/Installation.*

All special tools and torque values are noted at the point of use.

All required parts or materials can be found in the appropriate PARTS CATALOG.

Safety

Safety is always the most important consideration when performing any job. Be sure you have a complete understanding of the task to be performed. Use common sense. Use the proper tools. Protect yourself and bystanders with approved eye protection. Don't just do the job – do the job safely.

Removing Parts

Always consider the weight of a part when lifting. Use a hoist whenever necessary. Do not lift heavy parts by hand. A hoist and adjustable lifting beam or sling are needed to remove some parts. The lengths of chains or cables from the hoist to the part should be equal and parallel and should be positioned directly over the center of the part. Be sure that no obstructions will interfere with the lifting operation. Never leave a part suspended in mid-air.

WARNING

Always check the capacity rating and condition of hoists, slings, chains or cables before use. Failure to do so can lead to an accident which could result in death or serious injury.

Always use blocking or proper stands to support the part that has been hoisted. If a part cannot be removed, verify that all bolts and attaching hardware have been removed. Check to see if any parts are in the way of the part being removed.

When removing hoses, wiring or tubes, always tag each part to ensure proper installation.

Cleaning

If you intend to reuse parts, follow good shop practice and thoroughly clean the parts before assembly. Keep all dirt out of parts; the unit will perform better and last longer. Seals, filters and covers are used in this vehicle to keep out environmental dirt and dust. These items must be kept in good condition to ensure satisfactory operation.

Clean and inspect all parts as they are removed. Be sure all holes and passages are clean and open. After cleaning, cover all parts with clean lint-free cloth, paper or other material. Be sure the part is clean when it is installed.

Always clean around lines or covers before they are removed. Plug, tape or cap holes and openings to keep out dirt, dust and debris.

Disassembly and Assembly

Always assemble or disassemble one part at a time. Do not work on two assemblies simultaneously. Be sure to make all necessary adjustments. Recheck your work when finished. Be sure that everything is done.

Operate the vehicle to perform any final check or adjustments. If all is correct, the vehicle is ready to go back to the customer.

REPAIR AND REPLACEMENT PROCEDURES

Hardware and Threaded Parts

Install helical thread inserts when inside threads in castings are stripped, damaged or not capable of withstanding specified torque.

Replace bolts, nuts, studs, washers, spacers and small common hardware if missing or in any way damaged. Clean up or repair minor thread damage with a suitable thread chaser.

Replace all damaged or missing lubrication fittings.

Use Loctite 565 thread sealant on pipe fitting threads.

Threadlocking Agents

Always follow specific service manual procedures when working with fasteners containing preapplied threadlocking agents when fastener replacement is recommended.

When re-using fasteners containing threadlocking agents, be sure to completely remove all existing threadlocking agent from fastener threads with a wire brush or wire wheel. Also, be sure to remove residual threadlocking agent from fastener hole using an appropriate thread chasing device and compressed air when using new or existing fasteners.

Always use the recommended threadlocking agent for your specific procedure.

Wiring, Hoses and Lines

Replace hoses, clamps, electrical wiring, electrical switches or fuel lines if they do not meet specifications.

Instruments and Gauges

Replace broken or defective instruments and gauges.

Bearings

Anti-friction bearings must be handled in a special way. To keep out dirt and abrasives, cover the bearings as soon as they are removed from the package.

Wash bearings in a non-flammable cleaning solution. Knock out packed lubricant inside by tapping the bearing against a wooden block. Wash bearings again. Cover bearings with clean material after setting them down to dry. Never use compressed air to dry bearings.

Coat bearings with clean oil. Wrap bearings in clean paper.

Be sure that the chamfered side of the bearing always faces the shoulder (when bearings installed against shoulders). Lubricate bearings and all metal contact surfaces before pressing into place. Only apply pressure on the part of the bearing that makes direct contact with the mating part. Install bearings with numbered side facing out.

Always use the proper tools and fixtures for removing and installing bearings.

Bearings do not usually need to be removed. Only remove bearings if necessary.

Bushings

Do not remove a bushing unless damaged, excessively worn or loose in its bore. Press out bushings that must be replaced.

When pressing or driving bushings, be sure to apply pressure in line with the bushing bore. Use a bearing/bushing driver or a bar with a smooth, flat end. Never use a hammer to drive bushings.

Inspect the bushing and the mated part for oil holes. Be sure all oil holes are properly aligned.

Gaskets

Always discard gaskets after removal. Replace with **new** gaskets. Never use the same gasket twice. Be sure that gasket holes match up with holes in the mating part.

Lip Type Seals

Lip seals are used to seal oil or grease and are usually installed with the sealing lip facing the contained lubricant. Seal orientation, however, may vary under different applications.

Seals should not be removed unless necessary. Only remove seals if required to gain access to other parts or if seal damage or wear dictates replacement.

Leaking oil or grease usually means that a seal is damaged. Replace leaking seals to prevent overheated bearings.

Always discard seals after removal. Do not use the same seal twice.

O-Rings (Preformed Packings)

Always discard O-rings after removal. Replace with **new** O-rings. To prevent leaks, lubricate the O-rings before installation. Apply the same type of lubricant as that being sealed. Be sure that all gasket, O-ring and seal mating surfaces are thoroughly clean before installation.

Gears

Always check gears for damaged or worn teeth.

Lubricate mating surfaces before pressing gears on shafts.

Shafts

If a shaft does not come out easily, check that all nuts, bolts or retaining rings have been removed. Check to see if other parts are in the way before using force.

Shafts fitted to tapered splines should be very tight. If shafts are not tight, disassemble and inspect tapered splines. Discard parts that are worn. Be sure tapered splines are clean, dry and free of burrs before putting them in place. Press mating parts together tightly.

Clean all rust from the machined surfaces of new parts.

Part Replacement

Always replace worn or damaged parts with **new** parts.

CLEANING

Part Protection

Before cleaning, protect rubber parts (such as hoses, boots and electrical insulation) from cleaning solutions. Use a grease-proof barrier material. Remove the rubber part if it cannot be properly protected.

Cleaning Process

Any cleaning method may be used as long as it does not result in parts damage. Thorough cleaning is necessary for proper parts inspection. Strip rusted paint areas to bare metal before repainting.

Rust or Corrosion Removal

Remove rust and corrosion with a wire brush, abrasive cloth, sand blasting, vapor blasting or rust remover. Use buffing crocus cloth on highly polished parts that are rusted.

TOOL SAFETY

Air Tools

- Always use approved eye protection equipment when performing any task using air-operated tools.
- On all power tools, use only recommended accessories with proper capacity ratings.
- Do not exceed air pressure ratings of any power tools.
- Bits should be placed against work surface before air hammers are operated.
- Disconnect the air supply line to an air hammer before attaching a bit.
- Never point an air tool at yourself or another person.
- Protect bystanders with approved eye protection.

Wrenches

- Never use an extension on a wrench handle.
- If possible, always pull on a wrench handle and adjust your stance to prevent a fall if something lets go.
- Never cock a wrench.
- Never use a hammer on any wrench other than a STRIKING FACE wrench.
- Discard any wrench with broken or battered points.
- Never use a pipe wrench to bend, raise or lift a pipe.

Pliers/cutters/pry bars

- Plastic- or vinyl-covered pliers handles are not intended to act as insulation; don't use on live electrical circuits.
- Don't use pliers or cutters for cutting hardened wire unless they were designed for that purpose.
- Always cut at right angles.
- Don't use any pry bar as a chisel, punch or hammer.

Hammers

- Never strike one hammer against a hardened object, such as another hammer.
- Always grasp a hammer handle firmly, close to the end.
- Strike the object with the full face of the hammer.
- Never work with a hammer which has a loose head.
- Discard hammer if face is chipped or mushroomed.
- Wear approved eye protection when using striking tools.
- Protect bystanders with approved eye protection.

Punches/chisels

- Never use a punch or chisel with a chipped or mushroomed end; dress mushroomed chisels and punches with a file.
- Hold a chisel or a punch with a tool holder if possible.
- When using a chisel on a small piece, clamp the piece firmly in a vise and chip toward the stationary jaw.
- Wear approved eye protection when using these tools.
- Protect bystanders with approved eye protection.

Screwdrivers

- Don't use a screwdriver for prying, punching, chiseling, scoring or scraping.
- Use the right type of screwdriver for the job; match the tip to the fastener.
- Don't interchange POZIDRIV®, PHILLIPS® or REED AND PRINCE screwdrivers.
- Screwdriver handles are not intended to act as insulation; don't use on live electrical circuits.
- Don't use a screwdriver with rounded edges because it will slip – redress with a file.

Ratchets and Handles

- Periodically clean and lubricate ratchet mechanisms with a light grade oil. Do not replace parts individually; ratchets should be rebuilt with the entire contents of service kit.
- Never hammer or put a pipe extension on a ratchet or handle for added leverage.
- Always support the ratchet head when using socket extensions, but do not put your hand on the head or you may interfere with the action of its reversing mechanism.
- When breaking loose a fastener, apply a small amount of pressure as a test to be sure the ratchet's gear wheel is engaged with the pawl.

Sockets

- Never use hand sockets on power or impact wrenches.
- Select the right size socket for the job.
- Never cock any wrench or socket.
- Select only impact sockets for use with air or electric impact wrenches.
- Replace sockets showing cracks or wear.
- Keep sockets clean.
- Always use approved eye protection when using power or impact sockets.

Storage Units

- Don't open more than one loaded drawer at a time. Close each drawer before opening up another.
- Close lids and lock drawers and doors before moving storage units.
- Don't pull on a tool cabinet; push it in front of you.
- Set the brakes on the locking casters after the cabinet has been rolled to your work.

BRAKE FLUID

WARNING

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)

Use only **D.O.T. 4 BRAKE FLUID** (Part No. 99953-99A).

FRONT FORK OIL

Use only **TYPE E FORK OIL** (Part No. HD-99884-80).

ENGINE OIL

Use the proper grade of oil for the lowest temperature expected before the next oil change.

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 20W-50, 15W-40 and 10W-40. At the first opportunity, see a Buell dealer to change back to 100 percent Harley-Davidson oil.

PRIMARY DRIVE/TRANSMISSION FLUID

Use only Genuine Harley-Davidson **FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT** (Part No. 99851-05).

Table 1-1. Regular Service Intervals For Buell Blast Models

ITEM SERVICED	PROCEDURE	1 0 0 0 mi	2 5 0 0 mi	5 0 0 0 mi	7 5 0 0 mi	1 0 0 0 mi	1 2 5 0 mi	1 5 0 0 mi	1 7 5 0 mi	2 0 0 0 mi	2 2 5 0 mi	2 5 0 0 mi	NOTES
		1 6 0 0 km	4 0 0 0 km	8 0 0 0 km	1 2 0 0 km	1 6 0 0 km	2 0 0 0 km	2 4 0 0 km	2 8 0 0 km	3 2 0 0 km	3 6 0 0 km	4 0 0 0 km	
Engine oil and filter	Replace	X		X		X		X		X		X	
	Inspect		X		X		X		X		X		
Oil lines and brake system	Inspect for leaks	X	X	X	X	X	X	X	X	X	X	X	1
Air cleaner	Inspect, service as required					X				X			
Crankcase breather hose	Drain	X		X		X		X		X		X	
Tires	Check pressure, inspect tread	X	X	X	X	X	X	X	X	X	X	X	
Transmission lubricant	Replace	X				X				X			1
Clutch	Check adjustment	X		X		X		X		X		X	1
Primary chain	Check adjustment	X	X	X	X	X	X	X	X	X	X	X	1
Rear belt and rear sprocket	Replace							X					1
Throttle control	Check operation	X	X	X	X	X	X	X	X	X	X	X	1
Throttle, brake and clutch controls, jiffy stand	Lubricate			X		X		X		X		X	1
Fuel valve, lines and fittings	Inspect for leaks	X	X	X	X	X	X	X	X	X	X	X	1
Fuel tank filter screen	Clean									X			1
Brake fluid	Check levels and condition	X		X		X		X		X		X	3
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	X	X	X	X	X	
Rear brake pads and rear brake pins	Replace							X					1
Rear brake pedal	Check operation	X		X		X		X		X		X	1
Spark plug	Replace					X				X			
Electrical equipment and switches, starter interlock	Check operation	X	X	X	X	X	X	X	X	X	X	X	
Engine idle speed	Check adjustment	X	X	X	X	X	X	X	X	X	X	X	1
Ignition timing	Check					X				X			1
Front fork oil	Replace									X			1
Steering head bearings	Lubricate and adjust									X			1
Rear shock absorber	Check					X				X			
Wheel bearings	Inspect												2
Exhaust system hardware including muffler strap	Inspect					X				X			1
Critical fasteners	Check tightness					X				X			1
Engine mounts and stabilizer links	Inspect					X				X			1
Battery	Check battery and clean connections	X	X	X	X	X	X	X	X	X	X	X	
Road test	Verify component and system functions	X	X	X	X	X	X	X	X	X	X	X	

NOTES:

- Should be performed by an authorized Harley-Davidson dealer, unless you have the proper tools, service data and are mechanically qualified.
- Inspect wheel bearings whenever wheel is removed (tire change, fork fluid change, etc.)
- Change brake fluid every two (2) years.

Table 1-2. Quick Reference Maintenance Chart

ITEM SERVICED	SPECIFICATION	DATA
Engine oil and filter	Type	See 1.2 FLUID REQUIREMENTS
	Drain plug torque	Plug with spring clamp.
	Oil capacity	2.0 qt. (1.89 L) Until oil registers between marks on dipstick.
	Filter	Hand tighten 1/2-3/4 turn after gasket contact.
	Black filter part number	63806-00Y
Primary chain tension	Deflection with hot engine	NONE
	Deflection with cold engine	Tighten chain limiting screw to 24 in-lbs (2.7 Nm) Back-off chain limiting screw 3/4 turn (4 1/2 "flats").
	Chain tensioner nut torque	Hold chain limiting screw while tightening jam nut. Tighten to 20-25 ft-lbs (28-33 Nm).
	Primary chain inspection cover torque	N/A
Clutch adjustment	Free play at adjuster screw	1/4 - 1/2 turn
	Free play at hand lever	0.0625-0.125 in. (1.6-3.2 mm)
	Clutch inspection cover torque	84-108 in-lbs (9.5-12.2 Nm)
Primary chain/transmission lubricant	Type	FORMULA+ TRANSMISSION AND PRIMARY CHAINCASE LUBRICANT (Part No. 99851-05)
	Lubricant level	Inspect fluid level with motorcycle in upright position. Level with bottom of clutch shell.
	Lubricant capacity	32 oz. (946 mL)
	Transmission drain plug torque	14-30 ft-lbs (19-40.7 Nm)
Tire condition and pressure	Pressure for solo rider	Front: 28 psi (1.9 bar) Rear: 30 psi (2.1 bar)
	Pressure for rider and passenger	Front: 32 psi (2.2 bar) Rear: 36 psi (2.5 bar)
	Wear	Replace tire if 1/32 in. (0.8 mm) or less of tread pattern remains.
Brake fluid reservoir level	Type	D.O.T. 4 BRAKE FLUID (Part No. 99953-99A)
	Proper fluid level	Front: 1/8 in. (3.2 mm) from the top Rear: Between upper and lower marks
	Front master cylinder reservoir cover torque	9-13 in-lbs (1.0-1.5 Nm)
Brake pad linings and discs	Minimum brake pad thickness	0.1 in. (2.5 mm) or less
	Minimum brake disc thickness	0.180 in. (4.5 mm)
Drive belt	Upward measurement force applied at midpoint of bottom belt strand	10 lb. (4.5 kg)
	Belt deflection with motorcycle on jiffy stand and a 160 lb. rider or equivalent weight sitting on the motorcycle.	Maximum allowable deflection is 0.5 in. (12.7 mm) at the bottom strand.

Table 1-2. Quick Reference Maintenance Chart

ITEM SERVICED	SPECIFICATION	DATA
Air cleaner	Air cleaner cover bracket screw torque	36-60 in-lbs (4.1-6.8 Nm)
	Air cleaner cover screw torque	4-6 in-lbs (0.5-0.7 Nm)
	Adhesive for air cleaner bracket screws	Loctite Threadlocker 222 (purple) Part No. 99811-97 (6 ml)
Fuel valve fasteners	Two allen head screws torque	18-21 in-lbs (2.1-2.3 Nm)
Enrichener control	Phillips screw (with lock washer)	13-23 in-lbs (2-3 Nm)
Clutch and throttle cables	Lubricant	SUPER OIL Part No. 94968-85TV (1/4 fl. oz.)
	Handlebar clamp screw torque	120-144 in-lbs (14-16 Nm)
	Handlebar switch housing screw torque	25-33 in-lbs (3-4 Nm)
Spark plugs	Type	10R12A
	Gap	0.035 in. (0.9 mm)
	Torque	12-18 ft-lbs (16-24.4 Nm)
Engine idle speed	Idle speed	1200 RPM
Front fork oil	Type	HYDRAULIC FORK OIL (TYPE E) Part No. 99884-80 {9.2 oz. (272.1 ml)}
Battery	Lubricant	ELECTRICAL CONTACT LUBRICANT Part No. 99861-02 (1 oz.)
	Battery terminal torque	72-96 in-lbs (8-11 Nm)