

2006 DYNA MODELS

SERVICE MANUAL

Part Number 99481-06

Section 1: Maintenance

Section 2: Chassis

Section 3: Engine

Section 4: Fuel System

Section 5: Starter

Section 6: Drive

Section 7: Transmission

Section 8: Electrical

Appendix

ELECTRICAL DIAGNOSTICS

Part Number 99496-06

Section 1: Starting & Charging

Section 2: Instruments

Section 3: TSM & TSSM

Section 4: Engine Management

Section 5: Wiring

SUBJECT	PAGE NO.
1.1 General	1-1
1.2 Fuel and Oil	1-5
1.3 Maintenance Schedule	1-6
1.4 Engine Oil and Filter	1-9
1.5 Battery Maintenance	1-12
1.6 Brakes	1-15
1.7 Bleeding Brakes	1-17
1.8 Brake Pads and Discs	1-18
1.9 Tires and Wheels	1-23
1.10 Primary Chain	1-25
1.11 Primary Chaincase Lubricant	1-26
1.12 Clutch	1-28
1.13 Transmission Lubricant	1-30
1.14 Rear Belt Deflection	1-31
1.15 Rear Belt and Sprockets	1-33
1.16 Suspension Adjustments	1-35
1.17 Steering Head Bearings	1-36
1.18 Front Fork Oil	1-37
1.19 Spark Plugs	1-38
1.20 Air Cleaner Filter	1-39
1.21 Cable and Chassis Lubrication	1-41
1.22 Throttle Cables	1-42
1.23 Engine Mounts	1-44
1.24 Headlamp Alignment	1-45
1.25 Critical Fasteners	1-47
1.26 Storage	1-48
1.27 Troubleshooting	1-50

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.

After a new motorcycle has been driven its first 1000 miles (1600 km), and at every 5000 mile (8000 km) interval thereafter, have a Harley-Davidson dealer perform the service operations listed under [1.3 MAINTENANCE SCHEDULE](#).

SAFE OPERATING MAINTENANCE

CAUTION

- Do not attempt to retighten engine head bolts. Retightening can cause engine damage.
- During the initial 1000 mile (1600 km) 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, horn 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 could 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.

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

Always verify cleanliness of blind holes before assembly. Tightening a screw with dirt, water or oil in the hole can cause castings to crack or break.

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 tap or die.

Replace all damaged or missing lubrication fittings.

Use Teflon pipe sealant on pipe fitting threads.

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. Replace dials and glass that are so scratched or discolored that reading is difficult.

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.

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. Unless otherwise instructed, never use the same gasket twice. Be sure that gasket holes match up with holes in the mating part. But be aware that sections of a gasket may be used to seal passages.

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.

Bearings

Clean open bearings by soaking them in a petroleum cleaning solution. Never use a solution that contains chlorine.

Let bearings stand and dry. Do not dry using compressed air. Do not spin bearings while they are drying.

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/prybars

- 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 prybar 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.

FUEL

⚠ 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)

⚠ 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)

Use a good quality unleaded gasoline (91 pump octane or higher). Octane ratings are usually shown on the gas pump.

GASOLINE BLENDS

CAUTION

Using gasoline that has an alcohol additive, such as methanol, may cause fuel system rubber components' failure and/or engine damage.

Harley-Davidson motorcycles were designed to give the best performance using unleaded gasoline. Some fuel suppliers sell gasoline/alcohol blends as a fuel. The type and amount of alcohol added to the fuel is important.

- **DO NOT USE GASOLINES CONTAINING METHANOL.** Using gasoline/methanol blends will result in starting and driveability deterioration and damage to critical fuel system components.
- **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. Your motorcycle will run normally using this type of gas.

You may find that some gasoline blends adversely affect the starting, driveability 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 gasoline with a higher octane rating.

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
- CI-4

The preferred viscosities for the diesel engine oils, in descending order, are:

- 20W-50
- 15W-40
- 10W-40

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

See [1.4 ENGINE OIL AND FILTER](#) for all service information.

WINTER LUBRICATION

Combustion in an engine produces water vapor. During starting and warm-up in cold weather, especially in freezing temperatures, the vapor condenses to water before the crankcase is hot enough to exhaust it through the breather system. If the engine is run long enough for the crankcase to become thoroughly heated, the water returns to vapor and is then exhausted.

An engine used for only short trips, and seldom allowed to thoroughly warm up, accumulates increasing amounts of water in the oil pan. Water mixed with oil forms a sludge that causes accelerated engine wear. In freezing temperatures, the water becomes slush or ice, which may clog oil lines and result in engine failure.

Always change the engine oil more often in winter. If the engine is used for short runs, change the oil even more frequently. The farther below freezing the temperature drops the more often the oil should be changed.

Table 1-1. Regular Service Intervals For Dyna Models

ITEM SERVICED	PROCEDURE	1000 mi	5000 mi	10,000 mi	15,000 mi	20,000 mi	25,000 mi	NOTES
		1600 km	8000 km	16,000 km	24,000 km	32,000 km	40,000 km	
Engine oil and filter	Replace	X	X	X	X	X	X	
Oil lines and brake system	Inspect for leaks	X	X	X	X	X	X	1
Air cleaner	Inspect, service as required	X	X	X	X	X	X	
Tires	Check pressure, inspect tread	X	X	X	X	X	X	
Wheel spokes	Check tightness	X	X			X		1, 4
Primary chaincase lubricant	Replace	X	X	X	X	X	X	
Transmission lubricant	Replace	X	X	X	X	X	X	
Clutch	Check adjustment	X	X	X	X	X	X	1
Rear belt and sprockets	Inspect, adjust belt	X	X	X	X	X	X	1
Throttle, brake and clutch controls	Check, adjust and lubricate	X	X	X	X	X	X	1, 4
Jiffy stand	Inspect and lubricate	X		X		X		1
Fuel lines and fittings	Inspect for leaks	X	X	X	X	X	X	1, 4
Fuel tank filter screen	Replace						X	1
Brake fluid	Check levels and condition	X	X	X	X	X	X	5
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	
Spark plugs	Inspect	X	X		X		X	
	Replace			X		X		
Electrical equipment and switches	Check operation	X	X	X	X	X	X	
Engine idle speed	Check adjustment	X	X	X	X	X	X	1
Front fork oil	Replace					X		1
Steering head bearings	Adjust	X		X		X		1, 2
Rear fork bearings		Inspect every 30,000 mi (48,000 km)						1
Primary chaincase bearing		Replace every 15,000 mi (24,000 km)						6
Critical fasteners	Check tightness	X		X		X		1
Engine mounts and stabilizer links	Inspect			X		X		1
Battery	Check battery and clean connections							3
Road test	Verify component and system functions	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.
- Disassemble, lubricate and inspect every 30,000 miles (48,000 km).
- Perform annually.
- Not all vehicles are equipped with spoke wheels. Consult appropriate topic in service manual.
- Replace D.O.T. 4 HYDRAULIC BRAKE FLUID and flush system every two years.
- See an authorized Harley-Davidson dealer.

Table 1-2 Quick Reference Maintenance Chart

ITEM SERVICED	SPECIFICATION	DATA
Engine oil and filter	Drain plug torque	14-21 ft-lbs (19.0-28.5 Nm)
	Oil capacity	3 qt. (2.4 L)
	Filter	Hand tighten 1/2-3/4 turn after gasket contact
	Chrome filter part number	63798-99
	Black filter part number	63731-99
Primary chain lubricant	Lubricant capacity	32 oz. (0.95 liters)
	Primary chaincase drain plug torque	36-60 in-lbs (4.1-6.8 Nm)
Clutch adjustment	Free play at adjuster screw	1/2-1 turn
	Adjuster screw locknut torque	72-120 in-lbs (8.1-13.6 Nm)
	Free play at hand lever	1/16-1/8 (1.6-3.2 mm)
	Clutch inspection cover torque	84-108 in-lbs (9.5-12.2 Nm)
Transmission lubricant	Lubricant level	Check with motorcycle at normal operating temperature and parked on jiffy stand. Remove and wipe off dipstick. Place dipstick in filler hole with filler plug resting on threads and remove. Lubricant level should be between upper and lower ends of the oil level indicator marks on the dipstick.
	Lubricant capacity	32 oz (0.95 liters)
	Transmission drain plug torque	14-21 ft-lbs (19.0-28.5 Nm)
	Filler/check plug torque	25-75 in-lbs (2.8-8.5 Nm)
Tire condition and pressure	Pressure for solo rider	Front: 30 psi (207 kPA) Rear: 36 psi (248 kPA)
	Pressure for rider and passenger	Front: 30 psi (207 kPA) Rear: 40 psi (276 kPA)
	Wear	Replace tire if 1/32 in. (0.8 mm) or less of tread pattern remains
Wheel spokes	Spoke nipple torque	40-50 in-lbs (4.5-5.6 Nm)
Brake fluid reservoir level	D.O.T. 4 hydraulic brake fluid part numbers	99953-99A (12 oz.)
	Proper fluid level	1/8-1/4 in. (3.2-6.4 mm) below gasket surface
	Master cylinder reservoir cover torque	6-8 in-lbs (0.7-0.9 Nm)
Brake pad linings and discs	Minimum brake pad thickness	0.04 in. (1.02 mm)
	Minimum brake disc thickness	See stamp on side of disc

Table 1-2 Quick Reference Maintenance Chart

ITEM SERVICED	SPECIFICATION	DATA
Drive belt	Upward measurement force applied at midpoint of bottom belt strand	10 lb. (4.5 kg)
	Measure belt deflection with motorcycle cold and the approximate weight of the owner on motorcycle.	5/16-3/8 in. (7.9-9.5 mm)
Air cleaner	Air cleaner cover bracket screw torque	20-40 in-lbs (2.3-4.5 Nm)
	Air cleaner cover screw torque	36-60 in-lbs (4.1-6.8 Nm)
	Adhesive for air cleaner cover screw	LOCTITE THREADLOCKER 243 Part No. 99642-97 (6 ml)
Clutch and throttle cables	Lubricant	SUPER OIL Part No. 94968-85TV (1/4 fl. oz.)
	Handlebar switch housing screw torque	35-45 in-lbs (4.0-5.1 Nm)
Spark plugs	Type	HD-6R12
	Gap	0.038-0.043 in. (0.97-1.09 mm)
	Torque	12-18 ft-lbs (16.3-24.4 Nm)
Engine idle speed	Idle speed	950-1050 RPM
Front fork oil	Amount	See section 2.18 FRONT FORK
	Type	HYDRAULIC FORK OIL (TYPE E) Part No. 99884-80 (16 oz.)
Battery	Battery terminal torque	60-96 in-lbs (6.8-10.9 Nm)

[Table Of Contents](#)

SUBJECT	PAGE NO.
2.1 Specifications	2-1
2.2 Torque Values	2-2
2.3 Vehicle Identification Number (V.I.N.)	2-4
2.4 Front Wheel	2-6
2.5 Rear Wheel	2-11
2.6 Sealed Wheel Bearings	2-15
2.7 Wheel Lacing: 17 In. Rim	2-18
2.8 Wheel Lacing: 19 In. Rim	2-21
2.9 Wheel Lacing: 21 In. Rim	2-26
2.10 Truing Laced Wheel	2-29
2.11 Cast Wheel Runout	2-32
2.12 Tires	2-33
2.13 Vehicle Alignment	2-36
2.14 Front Brake Master Cylinder	2-39
2.15 Rear Brake Master Cylinder	2-45
2.16 Front Brake Caliper	2-48
2.17 Rear Brake Caliper	2-53
2.18 Front Fork	2-58
2.19 Steering Head	2-63
2.20 Rear Shock Absorbers	2-66
2.21 Rear Fork	2-68
2.22 Belt Guard	2-70
2.23 Debris Deflector	2-71
2.24 Throttle Control	2-72
2.25 Clutch Control	2-74
2.26 Front Fender	2-75
2.27 Rear Fender	2-76
2.28 Jiffy Stand	2-79
2.29 Fork Lock	2-80
2.30 Seat	2-81
2.31 Engine Mounts	2-82

ITEM	FXD		FXDC		FXDL		FXDWG		FXD35		FXDB	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
Wheel base	64.2	1630	64.2	1630	64.6	1640	68.3	1735	64.2	1630	64.2	1630
Overall length	92.8	2357	92.6	2353	93.1	2364	97.5	2477	92.9	2360	92.8	2358
Overall width	36.7	931	34.9	886	36.3	921	36	915	38.9	989	37.5	953
Road clearance	6.0	153	6.0	153	5.6	142	6.2	158	6.0	153	5.6	142
Overall height	46.8	1189	47.6	1210	47.0	1194	49.3	1251	47.7	1212	50.4	1279
Saddle height	27.6	700	27.8	705	26.8	680	28.5	723	27.8	705	26.8	680

MODEL	FRONT FORK		FUEL TANK TOTAL		FUEL TANK RESERVE *		OIL TANK W/FILTER		TRANSMISSION (APPROX.)		PRIMARY CHAINCASE	
	oz.	liter	gal.	liter	gal.	liter	qt.	liter	oz.	liter	oz.	liter
FXDWG/FXD35	29.6**	0.875**	5.1	19.3	1.2	4.5	3.0	2.8	32.0	0.95	32.0	0.95
FXDL/FXDB/ FXD35	26.6	0.787	4.7	17.8	0.8-1.2	3.0-4.5						
FXD/C			4.8	18.2	0.8-1.2	3.0-4.5						

* Reserve when low fuel light illuminates.
**FXD35 fork fluid capacity is same as FXD

ITEM	FXD		FXDC		FXDL		FXDWG		FXD35		FXDB	
	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg	lb.	kg
Weight (as shipped from factory)	632	287	641	291	641	291	650	295	645	293	634	285
GVWR	1085	493	1085	493	1085	493	1085	493	1085	493	1085	493
GAWR front	390	177	390	177	390	177	390	177	390	177	390	177
GAWR rear	695	316	695	316	695	316	695	316	695	316	695	316

NOTE

Gross vehicle weight rating (GVWR) (maximum allowable loaded vehicle weight) and corresponding gross axle weight rating (GAWR) are given on a label located on the frame steering head.

NOTE

See 1.9 TIRES AND WHEELS for important information regarding tire data and tire inflation.

ITEM	TORQUE		NOTES
Axle cap fastener	12 ft-lbs	16.3 Nm	page 2-10
Belt guard fasteners	10-15 ft-lbs	13.6-20.3 Nm	page 2-70
Belt sprocket screws	55-60 ft-lbs	74.6-81.3 Nm	Apply several drops of LOCTITE® thread locker 262 (red) to last few threads. page 2-12
Brake disc screws, front	16-24 ft-lbs	21.7-32.5 Nm	page 2-8
Brake disc screws, rear	30-45 ft-lbs	40.7-61.0 Nm	Apply several drops of LOCTITE® thread locker 243 (blue) to last few threads. page 2-12
Debris deflector screws	40-60 in-lbs	4.5-6.8 Nm	page 2-14, page 2-71
Fork stem nut	35-40 ft-lbs	47.5-54.2 Nm	page 2-65
Fork tube caps	16-43 ft-lbs	22-58 Nm	page 2-62
Front axle nut	50-55 ft-lbs	67.8-74.6 Nm	page 2-9
Front brake caliper bleeder valve	80-100 in-lbs	9.0-11.3 Nm	page 2-50
Front brake caliper bridge bolts	28-38 ft-lbs	38.0-51.5 Nm	page 2-50
Front brake caliper lower mounting bolt	28-38 ft-lbs	38.0-51.5 Nm	Short bolt, 12 pt/10 mm, page 2-11, page 2-51
Front brake caliper top mounting bolt	28-38 ft-lbs	38.0-51.5 Nm	Long bolt, 12 pt/10 mm, page 2-11, page 2-51
Front brake reservoir cover screws	6-8 in-lbs	0.7-0.9 Nm	page 2-52
Front fender nuts	15-21 ft-lbs	20.3-28.5 Nm	page 2-75
Front master cylinder banjo bolt	17-22 ft-lbs	23.0-29.8 Nm	page 2-43
Isolator mounting bolts	25 ft-lbs	33.9 Nm	page 2-38
Jiffy stand bolt	19 ft-lbs	25.8 Nm	page 2-79
Lower shock mounting fasteners	30-40 ft-lbs	40.7-54.2 Nm	page 2-14, page 2-67
Master cylinder clamp screw	70-80 in-lbs	7.9-9.0 Nm	T27 TORX, page 2-43
Pivot shaft nut	71-75 ft-lbs	96.3-101.7 Nm	page 2-69
Rear axle nut	60-65 ft-lbs	81.3-88.1 Nm	page 2-14
Rear brake caliper bleeder valve	80-100 in-lbs	9.0-11.3 Nm	page 2-56
Rear brake caliper bridge bolts	28-38 ft-lbs	38.0-51.5 Nm	page 2-56
Rear brake pad pins	15-16 ft-lbs	20.3-22.6 Nm	12 pt/0.25 in., page 2-51, page 2-57
Rear brake reservoir cover screws	6-8 in-lbs	0.7-0.9 Nm	page 2-47
Rear master cylinder banjo bolt	17-22 ft-lbs	23.0-29.8 Nm	page 2-47
Rear master cylinder mounting nut	40-50 ft-lbs	54.2-67.8 Nm	page 2-47

ITEM	TORQUE		NOTES
Seat pipe screw	106-159 in-lbs	12-18 Nm	page 2-62
Seat strap nut	60-90 in-lbs	6.78-10.17 Nm	page 2-81
Spoke nipples	55-65 in-lbs	6.2-7.3 Nm	page 2-20, page 2-25, page 2-28
Throttle housing screws	35-45 in-lbs	4.0-5.1 Nm	page 2-72
Upper shock mounting fasteners	75-85 ft-lbs	101.7-115.2 Nm	page 2-14
Upper shock mounting fasteners	75-85 ft-lbs	101.7-115.2 Nm	page 2-67
Valve stem nut	12-15 in-lbs	1.4-1.7 Nm	page 2-34
Wheel spoke nipples	55-65 in-lbs	6.2-7.3 Nm	page 2-31

GENERAL

See Figure 2-1. The full 17 digit serial, or Vehicle Identification Number (V.I.N.) is stamped on the right side of the steering head and on a label located on the right side down tube.

An abbreviated V.I.N. is stamped on the left side crankcase at the base between the cylinders.

Sample V.I.N. as it appears on the steering head - **1HD1GP1116K110000**

Sample abbreviated V.I.N. as it appears on the left crankcase **GP16110000**

NOTE

Always give the full 17 digit Vehicle Identification Number when ordering parts or making any inquiry about your motorcycle.



Figure 2-1. V.I.N. Location

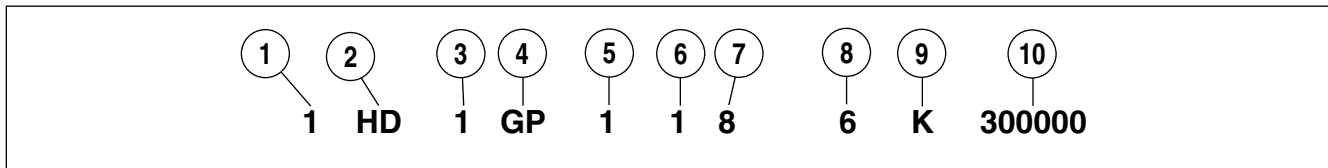


Figure 2-2. Dyna Vehicle Identification Number (typical)

Table 2-1. 2006 Dyna Model
V.I.N. Codes

CODE	MODEL NAME
GM	FXD
GN	FXDL
GP	FXDWG
GV	FXDC
GW	FXD35
GX	FXDB

Table 2-2. Harley-Davidson 2006 Dyna Model V.I.N. Description

ITEM	DESCRIPTION	POSSIBLE VALUES
1	Market destination	1=Originally manufactured for sale <u>within</u> the United States 5=Originally manufactured for sale <u>outside</u> of the United States
2	Manufacturer and make	HD=Harley-Davidson
3	Motorcycle type	1=Heavyweight motorcycle 901 cc and larger
4	Model	see model V.I.N. table
5	Engine type	1=Twin Cam 88, 1450cc air-cooled, fuel injected
6	Introduction date	1=Regular 2=Mid-year 3=California/regular 4=Cosmetic changes and/or special introductory date 5=California/cosmetic changes and/or special introductory date 6=California/mid-year
7	VIN check digit	Can be 0-9 or X
8	Model year	6=2006
9	Plant of manufacture	K=Kansas City, MO., U.S.A.
10	Sequential number (last 6 digits)	varies

REMOVAL

1. Block motorcycle underneath frame so front wheel is raised off the ground.
2. Inspect wheel bearing end play and service bearings if necessary. See [2.6 SEALED WHEEL BEARINGS](#).
3. See [Figure 2-3](#). Remove brake caliper. Support caliper using a rubber bungee cord.

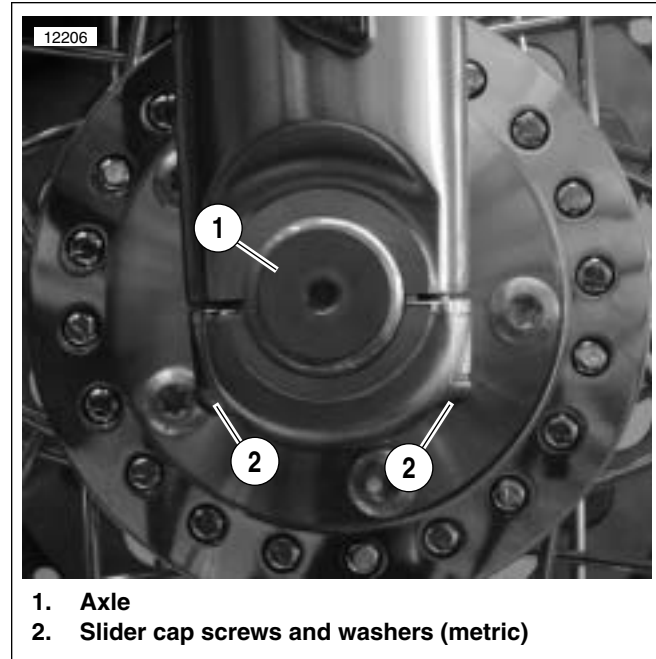
CAUTION

Be careful not to scratch the fender paint.

NOTE

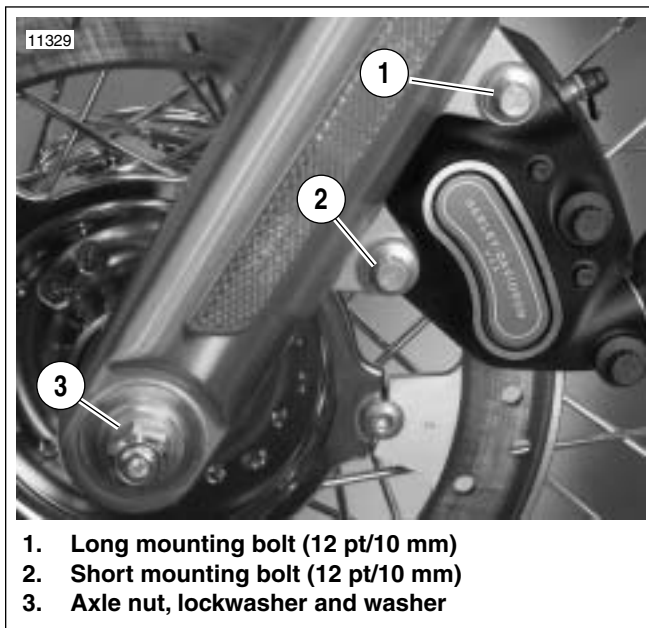
Do not operate front brake lever with the front wheel removed or the caliper piston may be forced out of piston bore. Reseating the piston requires disassembly of the caliper.

4. Remove axle nut, lockwasher and washer (3).
5. See [Figure 2-4](#). Loosen the slider cap screws (2) and pull the axle (1) free.
6. Remove wheel from forks.



1. Axle
2. Slider cap screws and washers (metric)

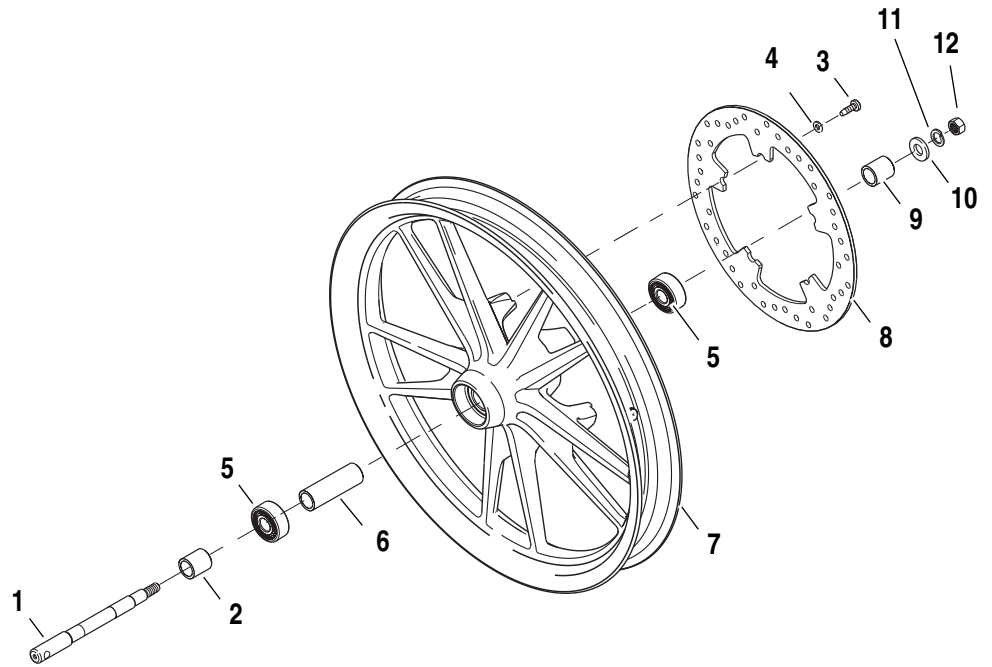
Figure 2-4. Front Wheel Mounting (Right Side)



1. Long mounting bolt (12 pt/10 mm)
2. Short mounting bolt (12 pt/10 mm)
3. Axle nut, lockwasher and washer

Figure 2-3. Caliper Mounting Bolts (Left Side)

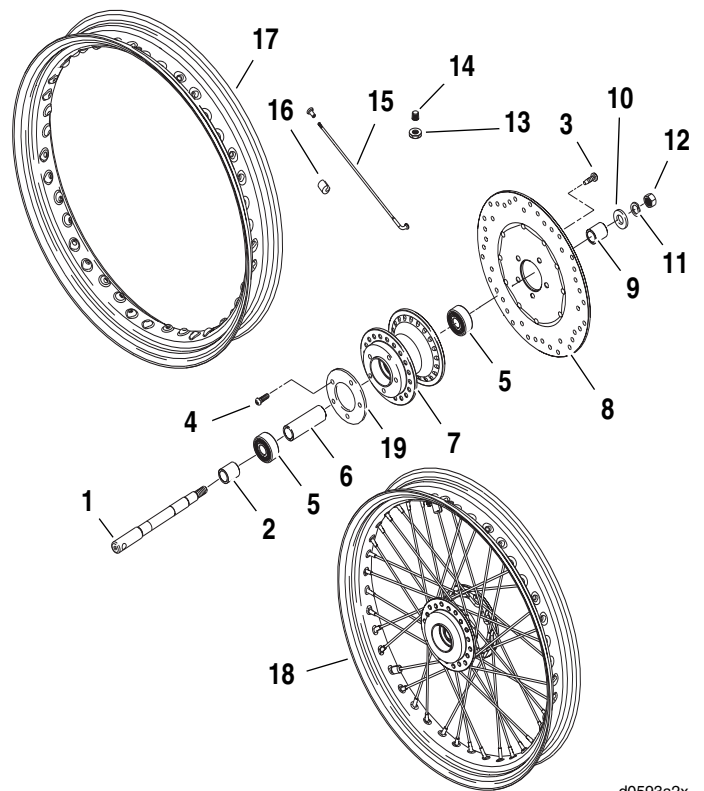
1. Axle
2. Right bearing spacer
3. Screw (5)
4. Washer (5)
5. Bearing (2)
6. Sleeve
7. Cast wheel
8. Brake disc
9. Left bearing spacer
10. Washer
11. Lockwasher
12. Axle nut



d0451a2x

Figure 2-5. Cast Front Wheel

1. Axle
2. Right bearing spacer
3. Screw (5)
4. Screw (5)
5. Bearing (2)
6. Sleeve
7. Wheel hub
8. Brake disc
9. Left bearing spacer
10. Washer
11. Lockwasher
12. Axle nut
13. Valve stem nut
14. Valve cap
15. Spoke & nipple kit
16. Balance weight
17. Rim
18. Laced wheel assembly
19. Hubcap (not on FXDWG & FXD)



d0593a2x

Figure 2-6. Laced Front Wheel

DISASSEMBLY

NOTE

See [2.12 TIRES](#) to service tire or valve stem assembly.

Cast Wheel

1. See [Figure 2-5](#). Remove spacers (2, 9) from left and right sides.
2. If necessary, remove brake disc (8). On left side of wheel, remove five screws (3) and washers (4) to detach brake disc (8).
3. Label all components so they may be installed in their original locations.

Laced Wheel

1. See [Figure 2-6](#). Remove spacers (2, 9) from left and right sides.
2. If necessary, remove brake disc(s) (8). On left side of wheel, remove five screws (3) to detach brake disc (8).
3. Label all components so they may be installed in their original locations.

CLEANING AND INSPECTION

1. Inspect all parts for damage or excessive wear.

WARNING

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

2. Inspect brake rotor and pads. See [1.8 BRAKE PADS AND DISCS](#).

ASSEMBLY

Cast Wheel

WARNING

Be sure that brake fluid or other lubricants do not contact brake pads or discs. Such contact can adversely affect braking ability, which could cause loss of control, resulting in death or serious injury. (00290a)

1. See [Figure 2-5](#). If necessary, install brake disc (8). Verify that brake disc is clean.
2. On left side of wheel, install five **new** screws (3) and washers (4) to attach brake disc (8). Tighten fasteners to 16-24 ft-lbs (21.7-32.5 Nm).
3. Install spacers (2, 9) with largest chamfered end facing away from wheel.
4. Verify that wheel and tire are true. See [2.11 CAST WHEEL RUNOUT](#).

Laced Wheel

1. If hub and rim were disassembled, see, [2.8 WHEEL LACING: 19 IN. RIM](#), or [2.9 WHEEL LACING: 21 IN. RIM](#).

WARNING

Be sure that brake fluid or other lubricants do not contact brake pads or discs. Such contact can adversely affect braking ability, which could cause loss of control, resulting in death or serious injury. (00290a)

1. See [Figure 2-5](#). If necessary, install brake disc (8). Verify that brake disc is clean.
2. On left side of wheel, install five **new** screws (3) and washers (4) to attach brake disc (8). Tighten fasteners to 16-24 ft-lbs (21.7-32.5 Nm).
3. Install spacers (2, 9) with largest chamfered end facing away from wheel.
4. Verify that wheel and tire are true. See [2.10 TRUING LACED WHEEL](#).

INSTALLATION

1. Apply a light coat of LOCTITE ANTI-SEIZE LUBRICANT to the axle.
2. See [Figure 2-7](#). Place wheel into front fork and install axle. Verify that axle spacers (1) on right and left side are properly installed.
3. Install the washer, lockwasher, and slider cap screws. Tighten axle nut to 50-55 ft-lbs (67.8-74.6 Nm). Hold axle stationary with a steel rod or screwdriver inserted through hole on right end of axle while tightening.
4. See [Figure 2-8](#).
 - a. Loosen axle cap fasteners.
 - b. Insert 7/16 in. drill bit (2) as far as it will go into hole in axle (1).
 - c. Position fork leg against edge of drill bit. Contact point must have edge of drill bit touching the edge of fork leg.



Figure 2-7. Front Axle Assembly

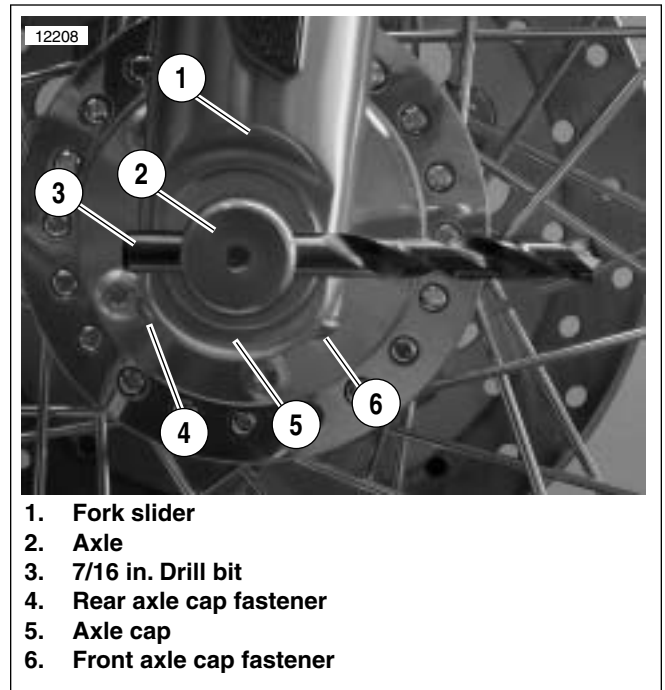


Figure 2-8. Fork Alignment

- d. See [Figure 2-9](#). With cast in spacer (1) of axle cap facing rear of vehicle, tighten rear axle cap fastener (2) to 12 ft-lbs (16.3 Nm) while holding slider against 7/16 drill bit if necessary.
 - e. While holding slider against 7/16 drill bit if necessary, tighten front axle cap fastener to 12 ft-lbs (16.3 Nm). Remove drill bit.
5. See [Figure 2-3](#). Install the brake caliper to the fork legs.
 - a. Loosely install long mounting bolt (1) (12 pt/10 mm) into top hole on fork leg.
 - b. Install short mounting bolt (2) (12 pt/10 mm) into bottom hole on fork leg. Tighten bottom mounting bolt to 28-38 ft-lbs (38.0-51.5 Nm).
 - c. Final tighten the top mounting bolt to 28-38 ft-lbs (38.0-51.5 Nm).

⚠ WARNING

Whenever a wheel is installed and before moving the motorcycle, pump brakes to build brake system pressure. Insufficient pressure can adversely affect brake performance, which could result in death or serious injury. (00284a)

6. Pump brake hand lever to move pistons out until they contact both brake pads. Verify piston location against pads.

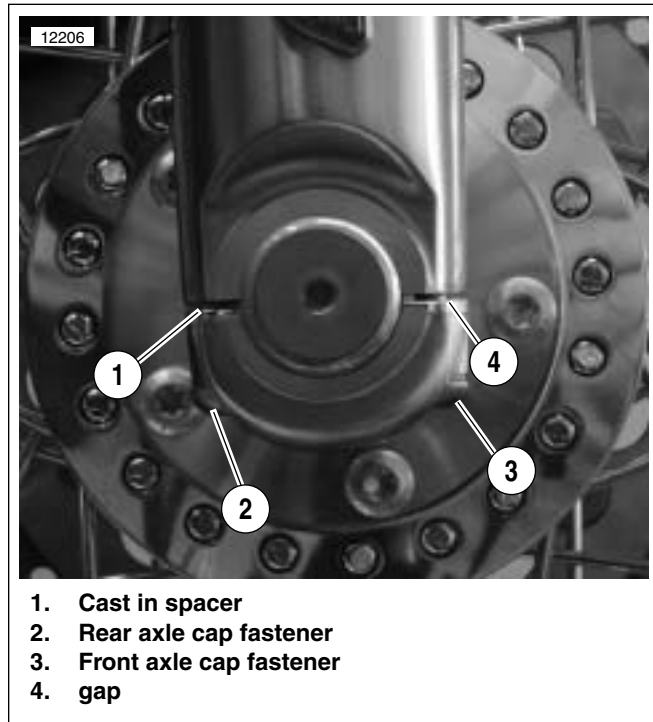


Figure 2-9. Axle cap



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REMOVAL

1. Block motorcycle underneath frame so rear wheel is raised off the ground.
2. Remove three screws to detach the debris deflector from rear fork. See [2.23 DEBRIS DEFLECTOR](#).
3. Inspect wheel bearing end play and service bearings if necessary. See [2.6 SEALED WHEEL BEARINGS](#).
4. See [Figure 2-10](#). Remove retaining ring (1), axle nut (2), and washer (3) from left side of axle.
5. See [Figure 2-11](#). Loosen, but do not remove, left and right **upper** mounting screws (1).
6. Remove left and right **lower** shock mounting screws (2).
7. Allow rear fork and wheel to lower.
8. Remove belt guard. See [2.22 BELT GUARD](#).
9. Pry brake pads away from rotor.
10. Remove retaining pins and brake pads. See [1.8 BRAKE PADS AND DISCS](#).

NOTE

Caliper to rear wheel clearance is minimal. To prevent damage to surfaces, be careful when removing caliper from rear fork.

11. Remove caliper assembly from rear fork. See [2.17 REAR BRAKE CALIPER](#) in this section.
12. Remove axle from wheel.
13. Move wheel forward and slip belt off sprocket.

NOTE

Tension may have to be relieved before belt will slip off. Spacer may fall out when tension is relieved.

14. Pull wheel and belt sprocket from rear fork.

NOTE

Do not operate rear brake pedal with the rear wheel removed or the caliper piston may be forced out of piston bores. Reseating the piston requires disassembly of the caliper.

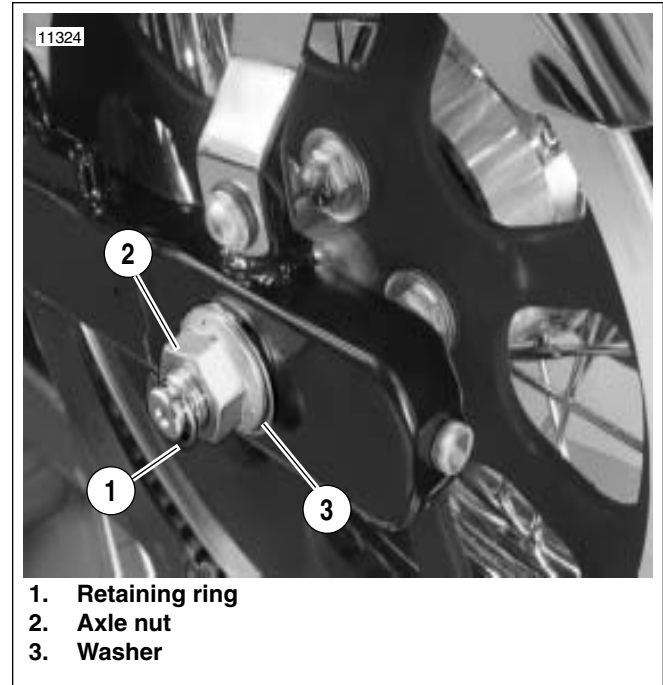


Figure 2-10. Rear Axle

DISASSEMBLY

NOTE

With the exception of the sprocket cover (13), component parts for cast and laced rear wheels are identical.

1. See [Figure 2-12](#). Remove spacers (2, 11) from left and right sides.
2. If necessary, remove brake disc and/or rear sprocket. Label components so they may be installed in their original locations.
 - a. On left side of wheel, remove five screws (15) and washers (16) to detach rear sprocket (9).
 - b. On right side of wheel, remove five screws (3) to remove rear brake disc (4).

ASSEMBLY

1. If hub and rim were disassembled, see [2.7 WHEEL LACING: 17 IN. RIM](#), [2.8 WHEEL LACING: 19 IN. RIM](#), or [2.9 WHEEL LACING: 21 IN. RIM](#).
2. See [Figure 2-12](#). Install brake disc (4) on valve stem side of wheel if removed.
 - a. Apply a drop of LOCTITE THREADLOCKER 243 (blue) to the five screws (3).
 - b. Tighten to 30-45 ft-lbs (40.7-61.0 Nm).

CLEANING AND INSPECTION

1. Inspect all parts for damage or excessive wear.

WARNING

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

2. Inspect brake rotor and pads. See [1.8 BRAKE PADS AND DISCS](#).
3. Inspect rear belt and sprocket. [1.15 REAR BELT AND SPROCKETS](#).
4. Install belt sprocket (9) if removed.
 - a. Apply two drops of LOCTITE THREADLOCKER 262 (red) to the five screws (15). Install sprocket using screws (15) and washers (16).
 - b. Tighten screws to 55-60 ft-lbs (74.6-81.3 Nm).
5. Install spacers (2, 10) into hub with largest chamfered end facing away from wheel.
6. Verify that wheel and tire are true.
 - a. For laced wheels, see [2.10 TRUING LACED WHEEL](#).
 - b. For cast wheels, see [2.11 CAST WHEEL RUNOUT](#).

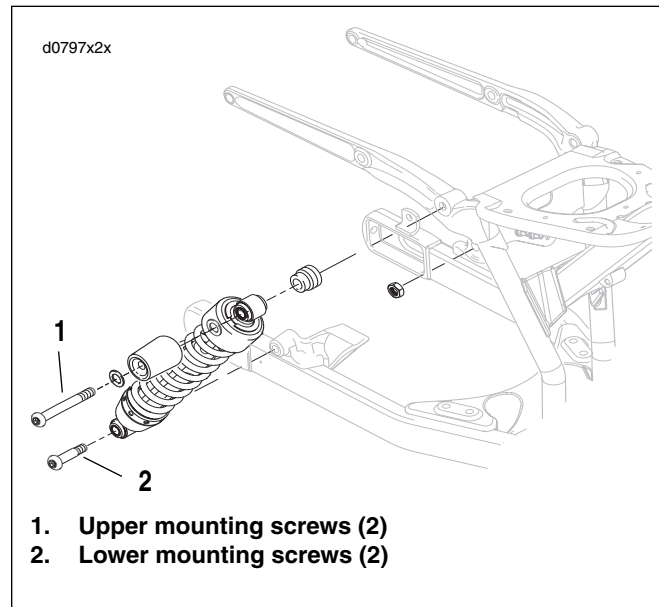


Figure 2-11. Rear Shock Mount

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