MOTO PORCH

Harley-Davidson Softail Fat Boy Buyer's Kit

Years covered: 1990 to present

The big solid-disc-wheel Softail cruiser. Used ones are easy to find and many are customized. For the Twin Cam years, the cam chain tensioners are the main thing to ask about. For 2018 and later, the frame and engine are all new.

First bike? Comfortable and easy to ride once moving, but it is a heavy bike with wide tires. Sit on one and push it around first. Consider a handling course.

Generations

Evolution (1990 to 1999)
Evolution engine. The Twin Cam cam chain notes below do not apply to these bikes.

Twin Cam 88B (2000 to 2006)
Twin Cam 88B engine, a balanced version made for the rubber-mounted Softail. Spring-loaded cam chain tensioners. Fuel injection arrived on Softails in 2001, according to owner reports.

Twin Cam 96B (2007 to 2011)
Twin Cam 96 engine with a 6-speed transmission. Hydraulic cam chain tensioners. The Fat Boy Lo (FLSTFB) was added in 2010.

Twin Cam 103B (2012 to 2017)
Twin Cam 103 replaced the 96 on Softails. Last years of the old Softail frame with twin rear shocks. The Fat Boy S (FLSTFBS) appears at the end of this run.

Milwaukee-Eight on the new Softail frame (2018 to present)
New steel frame with the engine solid-mounted, and a single shock under the seat. Milwaukee-Eight 107 (FLFB) or 114 (FLFBS). A 117 engine is reported for 2025. The 2018 Softail line replaced the Dyna.

Known problems by year

Spring-loaded cam chain tensioners (2000 to 2006 Twin Cam 88B)
Years: 2000 to 2006 | Concern: high

Rider calls the spring-loaded tensioners on the Twin Cam 88 a widespread flaw. The plastic shoe wears, and debris can score the oil pump and has led to reports of catastrophic engine failure. Rider did not name Softail models, and gave no failure rate. Harley-Davidson sells a hydraulic upgrade kit listed as fitting 2000 to 2006 Softails. Owners on a Softail forum also call the tensioners the main known weak point, though several report high-mileage bikes with no trouble. The original equipment is spring-loaded. Many owners swap to

gear drive cams or hydraulic tensioners.

- [ ] Check: Ask if the tensioners were upgraded (hydraulic tensioners or gear drive cams) and ask for the receipt. If not done, ask when they were last inspected and budget for the work in your offer.

Hydraulic tensioner shoe wear on 2007 to 2017 Twin Cams

Years: 2007 to 2017 | Concern: low

Hot Bike reports the factory moved to hydraulic tensioners by 2007, which eased the problem but did not remove it. Hot Bike's source is a shop that sells related parts. In one owner thread about Twin Cam 96 touring bikes, shoes opened at 50,000 to 100,000 miles were mostly in good shape, while a few owners reported heavy wear. The owners disagreed on how much it matters, and no one found a published factory interval. We found no Softail-specific failure data.

- [ ] Check: On high-mileage bikes, ask when the cam cover was last opened and what the shoes looked like. Ask for records of any tensioner or gear drive work.

Oil sumping on early Milwaukee-Eight Softails

Years: 2018 to 2019 | Concern: medium

Harley-Davidson service bulletin M1450 says 2018 to 2019 Softail models with the Milwaukee-Eight engine can experience sumping during long periods at high rpm or under heavy load. Excess oil stays in the crankcase, which can cause loss of power, strong engine braking and potential engine damage. The bulletin gives dealers a diagnostic procedure and lists replacement oil pump parts. It covers Softail models in general and does not name the Fat Boy, so confirm with a dealer using the VIN. We did not read the full repair procedure.

- [ ] Check: Ask about loss of power or strong engine braking on long high-rpm runs. Ask whether a dealer did work under bulletin M1450 and ask for the records.

Safety recalls on record

Recalls are repaired free by a dealer. Ask the seller for proof the work was done, or have a dealer check the VIN.

- [ ] 2025 to 2026: engine and engine cooling:exhaust system:emission control:crankcase (pcv) (NHTSA #26V270000, listed for FLFB) - confirm by VIN
- [ ] 2017: power train:clutch assembly (NHTSA #18V734000, listed for FLSTFBS) - confirm by VIN
- [ ] 2016: power train:clutch assembly (NHTSA #16V471000, listed for FLSTFBS) - confirm by VIN
- [ ] 2007: electrical system:12v/24v/48v battery:cables (NHTSA #07V173000, listed for FLSTF) - confirm by VIN
- [ ] 2002 to 2005: equipment:other:labels (NHTSA #05V151000, listed for FLSTF, FLSTFI) - confirm by VIN
- [ ] 1999: fuel system, gasoline:storage:tank assembly (NHTSA #99V200000, listed for FLSTF) - confirm by VIN
- [ ] 1990 to 1992: electrical system:starter assembly:relay (NHTSA #92V180000, listed for FLSTF) - confirm by VIN

Softail Fat Boy-specific checks

- [ ] Confirm the engine family from the year and the engine case: 88B, 96B, 103B or Milwaukee-Eight.

- [ ] 2000 to 2006: ask for proof of a cam tensioner upgrade. If none, ask when the tensioners were last inspected.
- [ ] 2007 to 2017: on high-mileage bikes, ask if the cam cover has been opened and what was found.
- [ ] 2018 and later: ask about loss of power on long high-rpm runs and any dealer work under bulletin M1450.
- [ ] Check the belt for cracks, missing teeth and rock damage, and ask when it was last replaced.
- [ ] Look closely at the chrome and the solid disc wheels for pitting, peeling and curb damage. Both are costly to fix.
- [ ] Check the exhaust for heat discoloration, dents and aftermarket pipes. Ask what tune is installed and for the dyno or tuner sheet.
- [ ] Look at the rear tire. Fat Boys carry wide tires and wear patterns can show riding style or misalignment.
- [ ] Check that the forks are not leaking and the steering is straight, since the fork and front end are heavy.
- [ ] Ask for a list of every modification, who did it, and whether the stock parts come with the bike.

Before you go

- [ ] Ask the seller not to start or warm up the bike before you arrive. A cold start shows problems a warm engine hides.
- [ ] Ask for the VIN by text and run a recall check at nhtsa.gov/recalls before you drive over.
- [ ] Ask for a photo of the title. Confirm it is in the seller's name and is not marked salvage, rebuilt or flood.
- [ ] Bring a flashlight, a rag, a tire pressure gauge, and cash or a payment plan you have already agreed on.
- [ ] If you are a new rider, bring someone who can ride the bike for you on the test ride.

Paperwork

- [ ] VIN on the frame (steering head) matches the VIN on the title.
- [ ] Title is in the seller's name, with no lien listed (or a lien release in hand).
- [ ] Title is not branded salvage, rebuilt, flood or junk.
- [ ] Seller's ID matches the name on the title.
- [ ] Service records, receipts or a logbook, if any.
- [ ] Both keys are present.

Walkaround

- [ ] Tires: check tread depth and the 4-digit DOT date code (week and year). Tires older than about 5 to 6 years should be replaced regardless of tread.
- [ ] Chain and sprockets (if chain drive): hooked or pointed sprocket teeth, kinked or rusty links, or a chain that pulls far off the rear sprocket mean replacement soon.

- [ ] Brakes: pad thickness, rotor grooves or lip, and brake fluid color (clear to light amber is good, dark brown is overdue).
- [ ] Fork tubes: look for oil on the tubes or below the seals, and pitting on the chrome.
- [ ] Drop damage: scuffed bar ends, levers, footpegs, mirrors, engine covers, frame sliders and the tank. Bent levers or a crooked handlebar mean it went down.
- [ ] Frame and subframe: cracks, kinks, fresh paint or welds near the steering head, footpeg mounts and swingarm pivot.
- [ ] Leaks: oil or coolant under the engine, around the cylinder head, the water pump and the drain plug.
- [ ] Fluids: oil level and color in the sight glass or dipstick. Milky oil can mean coolant mixing in.
- [ ] Steering head bearings: with the front wheel off the ground (or a friend leaning the bike back), turn the bars slowly. Notchy or a center detent means worn bearings.
- [ ] Wheel bearings: grab each wheel top and bottom and try to rock it. Any clunk means worn bearings.
- [ ] Electrics: headlight high and low, brake light from both the lever and pedal, turn signals, horn, neutral light, kill switch and side stand switch.
- [ ] Modifications: aftermarket exhaust, intake or wiring. Ask what was changed and whether the fuel system was tuned to match.

Cold start

- [ ] Feel the engine before starting. If it is already warm, ask why.
- [ ] Starter should spin the engine briskly. A slow crank points to a weak battery or charging problem.
- [ ] Watch the exhaust on startup. Blue smoke means burning oil. White smoke that does not clear after warm-up can mean coolant.
- [ ] Listen for knocking, loud ticking or rattles that do not settle as it warms up.
- [ ] With a multimeter: about 12.6V at the battery engine off, and roughly 13.5V to 14.5V with the engine at a fast idle. Outside that range, suspect the charging system.

Test ride

- [ ] Clutch: in a higher gear at low RPM, open the throttle firmly. If RPM rises but speed does not, the clutch slips.
- [ ] Shifting: every gear, up and down. Watch for false neutrals or jumping out of gear.
- [ ] Brakes: firm lever and pedal, straight stops, no pulsing.
- [ ] Handling: no wobble or pull with relaxed hands on a straight road.
- [ ] Throttle: smooth pickup, no stumbling, and the throttle snaps closed on its own.
- [ ] After the ride: look under the bike again for fresh leaks and check that the cooling fan runs when hot (liquid-cooled bikes).

Questions to ask the seller

- [ ] How long have you owned it, and why are you selling?
- [ ] Has it ever been dropped, laid down or in an accident?
- [ ] Do you have service records? When was the last oil change?
- [ ] When were the valve clearances last checked?
- [ ] How old are the tires, chain and battery?
- [ ] What modifications have been made, and do you have the original parts?
- [ ] Have all recalls been done by a dealer?
- [ ] Is the title in your name, and is there a loan on it?
- [ ] Has it been stored outside or through winters without being ridden?

Red flags: walk away if you see these

- The title is not in the seller's name, or the VIN does not match.
- The seller warmed the bike up before you arrived and will not let you see a cold start.
- The seller refuses a test ride with cash in hand or a second rider present.
- Fresh paint, new levers and new mirrors on one side only (a hidden crash).
- Milky oil, steady blue smoke, or a clutch that slips on the test ride.
- A story that changes when you ask the same question twice.

Price worksheet

List 5 to 10 comparable bikes (same model, similar year and miles) before you go.

Listing / source	Year	Miles	Asking $	Notes

Costs this bike will need soon (tires, chain, brakes, service, recall work, damage):

Listing / source	Year	Miles	Asking $	Notes

Negotiation script

- Before you go, find 5 to 10 comparable listings (same model, similar year and miles) and note their asking prices on the worksheet.
- Write down every item from your inspection that will cost money: tires, chain and sprockets, brake pads, overdue service, recall work, damaged parts. Get a rough price for each.
- Open with the facts, not a lowball: "It needs tires and a chain soon, which is about $X. Comparable bikes are listed at $Y. I can do $Z today."
- Stay quiet after your offer. Let the seller answer.
- Decide your walk-away price before you arrive and stick to it. There is always another bike.

Important

This kit helps you ask better questions and spot common problems. It is not a mechanical inspection and cannot tell you whether a specific motorcycle is safe. If you are unsure, pay a qualified mechanic for a pre-purchase inspection or walk away. Recall data comes from NHTSA; confirm open recalls for the exact VIN with a dealer or at nhtsa.gov/recalls.