FREE SAMPLE

The opening pages of

1970 Harley-Davidson Shovelhead Buyer's Guide

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IRONHEAD

The 1970 Harley-Davidson Shovelhead Buyer & Restoration Guide

KEY FACTS AT A GLANCE

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Manufacturer History

The Shovelhead story starts in 1966. Harley-Davidson needed more power from its Big Twin to move the heavy Electra Glide dresser, and the answer was the Power Pac: new aluminum cylinder heads with larger valves and ports on the existing Panhead-style lower end, with the rocker boxes shaped like the business end of a coal shovel — the name every Harley fan knows today.

The first Shovelhead generation runs from 1966 through 1969: the generator (slabside) years. The generator hangs off the front of the engine cases, the ignition is breaker points, and ownership identification is the engine serial number. In 1970 the motor changed fundamentally — the alternator replaced the generator inside a redesigned cone-shaped timing case, the ignition points moved into the nose cone, and a nine-character VIN appeared. That cone motor is the second Shovelhead generation, and it runs all the way to 1984.

The model line grew with the motor. The 1971 FX Super Glide — Willie G. Davidson's factory custom combining the FL frame and 74-ci engine with a Sportster front end and the boat-tail rear — invented the cruiser category. The line expanded through the 1970s: electric-start FXE, the FXS Low Rider (mid-1977), the FXEF Fat Bob (1979), the belt-drive FXB Sturgis and FXWG Wide Glide and the all-new FLT Tour Glide (1980). Displacement grew from 74 cubic inches to an 80-ci option (mid-1978) and then the all-1340 line (1981). Carburetion moved from Linkert (1966) to Tillotson (1967–1970) to Bendix (1971–1975) to Keihin (1976 on). Breaker points gave way to Prestolite electronic ignition late in 1978. The 17-digit federal VIN arrived for 1981, and in June 1981 Harley's executives bought the company back from AMF. The FXR chassis (1982) brought rubber mounting and a 5-speed to the FX line, and in 1984 the Evolution engine arrived — ending the Shovelhead era that this guide covers.

Model History

This guide covers one model year only. The Shovelhead Big Twin line for the covered year is described in the key-facts section; model codes, carburetion, ignition, and chassis details are year-specific and must be verified against the year parts book. The through-line of the era is the cone motor introduced for 1970 (alternator, nose-cone points, nine-character VIN), refined year by year until the 1984 split between the final Shovelheads and the first Evolutions.

What Is Unique About 1970

CONE SHOVEL — the alternator replaces the generator inside the primary case, and the points move into the redesigned cone-shaped timing (gear-case) cover, driven off the camshaft. This is the single biggest mechanical break in Shovelhead history: the lower end is no longer Panhead-interchangeable.

Wider primary, moved footboards — the alternator widens the primary housing and pushes the footboards outward; period riders complained the boards and exhaust dragged too easily. Correct 1970 primary hardware and board position are originality points.

First-year 9-character VIN — the ownership number moves to the steering head (duplicated on the engine): e.g. 2A12345H0 (2A = FLH-1200, H0 = 1970). A 1970 with only an engine serial, or a mismatched steering-head/engine pair, needs paperwork scrutiny.

Last Tillotson year — 1970 is the only cone-motor year with the Tillotson carburetor; 1971 brings the Bendix. A Bendix on a 1970 is a later swap.

What 1970 Did Not Have

- No generator or kidney timing cover (1966–1969); no Bendix carburetor (1971); no front disc brake (1972).
- No engine-serial-only identification — 1970 has the steering-head VIN; verify both stampings match.
- **Model year covered:** 1970 only (FL and FLH Electra Glide). The cone-motor year.
- **Engine:** 1,207 cc (74 cu in) air-cooled 45-degree OHV V-twin; 3.4375 x 4.00 in bore x stroke; 8.0:1 compression.

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- **The cone change:** Alternator replaces the generator; breaker points move into the new cone-shaped timing cover, driven off the camshaft. The lower end is no longer Panhead-interchangeable.
- **Fuel system:** Tillotson diaphragm-type carburetor (last year; Bendix follows for 1971).
- **Charging:** Alternator inside the primary case — the wider primary housing moves the footboards outward (a documented period complaint: easier dragging).
- **Starting:** Electric starter with kick-starter backup.
- **Transmission:** 4-speed constant-mesh; right-foot shift; chain final drive; dry multi-plate clutch.
- **Chassis:** Telescopic fork; dual rear shocks; drum brakes front and rear; 16-inch wire-spoked wheels.
- **Identification:** 9-character VIN at the steering head AND on the engine (new for 1970): two-character model code + five-digit sequence + two-character year code (H0 for 1970).
- **Key 1970-only features:** First-year cone motor with last-year Tillotson — the only year that combination exists.

1970 Technical Specification

- **Models covered:** the FL and FLH Electra Glide
- **Engine:** 1,207 cc (74 cu in) air-cooled 45-degree OHV V-twin (Shovelhead)
- **Bore x stroke:** 3.4375 x 4.00 in (87.3 x 100.8 mm)
- **Compression ratio:** 8.0:1
- **Power:** FLH 60 bhp; FL 54 bhp
- **Carburetion:** Tillotson diaphragm-type (last year)
- **Ignition:** 12-volt battery and coil; breaker points moved into the nose cone (cam-cover timer), driven off the camshaft
- **Starting:** Electric starter with kick-starter backup
- **Transmission:** 4-speed constant-mesh; right-foot shift; chain final drive; dry multi-plate clutch
- **Brakes:** Drum brakes front and rear
- **Wheels:** 16-inch wire-spoked wheels front and rear

Identification: Engine Serial and VIN

For 1966 through 1969, ownership identification is the engine serial number stamped on the left engine case. From 1970, Harley-Davidson used a nine-character VIN: the first two characters identify the model, the next five are the production sequence, and the last two are the model year (H0–H9 = 1970–1979, J0 = 1980). From 1981, the federal 17-digit VIN applies (10th character = model year).

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Nine-character VIN model codes (1970-1980 era)

Code	Model	Years
1A	FL-1200	1966–1973 (74 ci dresser)
2A	FLH-1200	1966–1980 (74 ci Electra Glide)
2C	FX-1200	1971–1974 (74 ci Super Glide)
2D	FX-1200	1975–1976 (74 ci Super Glide)
2E	FX-1200	1977 (74 ci Super Glide)
9D	FXE-1200	1974–1977 (74 ci Super Glide, electric start)
2F	FXS-1200	1977–1978 (74 ci Low Rider)
4F	FXS-80	1979–1980 (80 ci Low Rider)
6F	FXEF	1979 (Fat Bob)
7F	FXEF-80	1979–1980 (80 ci Fat Bob)
5F	FXE-80	1979–1980 (80 ci Super Glide)
3G	FLH-80	1978–1984 (80 ci Electra Glide)
5G	FLT-80	1980–1983 (80 ci Tour Glide)
6G	FXE-80	1981 (80 ci Super Glide)
7G	FXWG-80	1980–1984 (80 ci Wide Glide)
8G	FXB-80	1980–1982 (80 ci Sturgis)

Nine-character year codes: 1970 = H0, 1971 = H1, 1972 = H2, 1973 = H3, 1974 = H4, 1975 = H5, 1976 = H6, 1977 = H7, 1978 = H8, 1979 = H9, 1980 = J0.

Federal 17-digit years: The 10th character of the 17-digit federal VIN is the model-year code: 1981 = B, 1982 = C, 1983 = D, 1984 = E.

What to Check Before You Buy

Cone-cover and alternator correctness. The 1970 cone cover, rotor/stator, and solid-state-era wiring are frequently swapped — verify the charging system charges under load and the timer is the nose-cone type.

1970-only parts trap. First-year cone parts (primary hardware, covers, mounts) differ from both the generator bikes and the settled 1971+ parts — the year parts book is essential.

Footboard dragging. The wider primary is a real riding characteristic, not a defect — but check boards, mounts, and exhaust for crash damage from it.

Paint and Finishes

- Verify the bike's original color against the year parts book (Painted Parts section); repaint in a non-factory color is the single biggest value deduction on a restored bike.
- **Hidden original paint:** check under the seat, inside the side covers, and behind badges for the original finish before trusting any color claim.

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Production

No reliable model-year production total for 1970 was found in the sources consulted. Do not trust round-number "production figures" quoted without a factory or marque-archive citation.

The Technical Restoration Content

Casting and date codes

Engine cases, cylinders, and heads carry casting numbers and date codes. A factory-correct restoration matches casting numbers to the model year and checks date codes against the build date — parts cast months after the bike's assembly date are replacements. Photograph every casting number before disassembly; the year parts book lists the correct numbers.

Torque specs

Do not use torque values from memory or from generic charts. Head bolts, case bolts, and critical fasteners are torque-to-yield or angle-sensitive on these engines, and published values vary between sources. Use the year-correct Harley-Davidson factory service manual for every torque value, and follow its sequence. If you cannot verify a number, follow the factory manual procedure — a wrong torque value breaks cases.

Gaskets and seals

Shovelheads mark their territory. A restoration that aims at correctness uses the right gasket materials for the year (cork, paper, or composition as the parts book specifies), and a restoration that aims at riding replaces every seal in the primary, the rocker boxes, and the pushrod tubes as a matter of course. Budget for it; there is no cheap way around it.

The top end

The Shovelhead's aluminum heads are its glory and its weakness. Check valve guides, seats, and the head gasket surface before committing to machine work. Overheating history shows in discolored fins and pulled head-bolt inserts — both are repairable, both cost money, and both should be found before paint.

The bottom end

The 1966–1969 generator lower end and the 1970-on cone lower end share the Shovelhead top end but differ in the timing chest, oiling, and charging system — parts do not freely interchange between the generations. Verify the case casting against the model year before buying a "rebuilt" engine.

Rust-prone areas

Check the frame at the steering head and swingarm pivot, the inside of the gas tanks, the fender mounting points, and the floorboard/forward-control brackets. Chrome that looks tired is usually telling the truth about the metal underneath — budget for re-chroming, not polishing.

Restoration sequence

1. Verify numbers (engine serial / VIN, title, model codes) before spending anything.
2. Assess the engine: compression, leak-down, oil pressure history.
3. Frame and sheet metal: straighten, repair, then paint — never paint before the mechanical assessment.
4. Rebuild the engine and transmission to the year-correct specification.
5. Re-chrome and re-plate to the year-correct finish.
6. Reassemble with the year parts book open — fasteners, clamps, and finishes are year-specific.

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7. Final verification: every number, every code, every finish against the book.

Shop the Supplies

The parts and tools for this restoration are covered in the IronHead parts-and-tools box at ironheadguides.com. Buy the year-correct factory service manual first — it is the single most valuable tool in a Shovelhead restoration.

Sources

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