FREE SAMPLE

The opening pages of

1950 Harley-Davidson Panhead Buyer's Guide

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IRONHEAD

1950 Harley-Davidson Panhead — Factory-Correct Restoration Guide

IronHead single-year guide · Model year 1950 only · Covers all 1950 Panhead Big Twins — the 61ci EL and the 74ci FL, including sidecar variants · The 1949 Hydra-Glide and all later years are out of scope except where differences are noted

Factory-correct restoration guides for classic motorcycles

KEY FACTS AT A GLANCE

- **Model year covered:** 1950 only — the third year of the Panhead and the first year of the improved cylinder heads. EL (61ci) and FL (74ci) Big Twins, plus ES/FS sidecar-geared variants.
- **Engine:** 74ci (73.66 cu in) 45-degree air-cooled OHV V-twin; 3-7/16 x 3-31/32 in bore x stroke; 7.0:1 compression (FL). 61ci EL: 3-5/16 x 3-1/2 in, 60.32 cu in, 7.0:1. Aluminum heads, hydraulic lifters, internal oil lines.
- **New for 1950:** redesigned cylinder heads with enlarged intake ports and enlarged inlet valves — about 10 percent more power; bronze valve guides; revised fixed-jet carburetor with revised jetting; remote-mounted oil filter.
- **Ignition:** 6-volt battery, breaker points; kick start only.
- **Transmission:** 4-speed constant-mesh; hand shift, foot clutch. No foot-shift option in 1950.
- **Chassis:** Wishbone rigid frame; Hydra-Glide telescopic fork with new die-cast (rather than forged) sliders; 8-inch front drum brake.
- **Wheels/tires:** Wire-spoked wheels; factory tire data lists 4.00 x 18, 4.50 x 18, and 5.00 x 16 fitments.
- **Dimensions:** 59.5-inch wheelbase.
- **1950 colors:** Brilliant Black, Ruby Red, Riviera Blue, Police Silver, Metallic Green, White, Flight Red, Azure Blue (Metallic Green, White, Flight Red, and Azure Blue at extra cost).

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- **Identification:** No frame VIN — the engine serial (left case, between the cylinders, e.g. 50FL1234) is the ownership number. Belly numbers on both crankcase halves must match each other.
- **Production:** EL 2,046; FL 7,407; ES 268; FS 544 — 10,265 across the listed models (compiled figures; Harley-Davidson published no official year totals; E and F figures are not reported).
- **1950 price new:** $750 (FL), $735 (EL).
- **Key 1950-only details:** primary-cover inspection screws move from 3/9 o'clock to 6/12 o'clock; "Hydra-Glide" script stamped on the fork panel; Mellow-Tone mufflers; die-cast fork sliders; new rocker covers and revised throttle control.

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1. Manufacturer history: Harley-Davidson

Harley-Davidson was founded in Milwaukee, Wisconsin, in 1903 by William S. Harley and Arthur Davidson, with Walter and William A. Davidson joining the effort. The first factory went up in 1906; the first V-twin appeared in 1909. Through the 1910s and 1920s Harley built its name on V-twins and racing success; the 45-cubic-inch flathead models of the 1930s kept the company alive through the Depression, and the 1936 EL Knucklehead brought overhead valves to the Big Twin line.

The 1948 Panhead — aluminum heads, hydraulic lifters, internal oiling on the Knucklehead bottom end — was Harley's answer to the Knucklehead's heat and oil troubles, and the 1949 Hydra-Glide gave it telescopic forks and the Brooks Stevens look. By 1950 the Panhead was established as Milwaukee's flagship, and the factory's attention turned to making it breathe better.

The Panhead era that followed is the backbone of this brand: the 1958 Duo-Glide added rear suspension, and the 1965 Electra Glide added electric start and 12-volt electrics. The Panhead ran from 1948 through the 1965 model year, when the Shovelhead took over for 1966.

For the restorer, the authority is the factory literature: the Harley-Davidson Panhead service manual (1948–1957) and the year parts catalogs, backed by Bruce Palmer's *How to Restore Your Harley-Davidson*, Greg Field's *Original Harley-Davidson Panhead*, and the production research compiled by the Panhead & Flathead Site. This guide cites those sources throughout.

2. Model history: the Panhead Big Twin, 1948–1965

The 1948 Panhead kept the Knucklehead's proven crankcases, flywheels, and gear train and changed everything above the cylinders: finned aluminum heads with bronze valve seats and steel inserts, pushrod-operated hydraulic lifters, and redesigned rocker arms under pan-shaped covers. 1949 brought the Hydra-Glide telescopic fork, the 8-inch front drum, and the Brooks Stevens restyle.

1950 was the breathing year. Harley redesigned the cylinder heads with enlarged intake ports and enlarged inlet valves, fitted bronze valve guides, and revised the carburetor with a new fixed jet and revised jetting — the factory claimed about 10 percent more power from the combination. The oil filter moved to a remote mounting, the primary cover's inspection screws moved from the 3 and 9 o'clock positions to 6 and 12 o'clock, the fork sliders changed from forged to die-cast, "Hydra-Glide" was stamped on the fork panel, and the bikes got Mellow-Tone mufflers, new rocker covers, and a revised throttle control.

The model letters work like this. **E** = 61ci medium-compression (6.5:1); **EL** = 61ci high-compression (7.0:1); **F** = 74ci medium-compression (6.6:1); **FL** = 74ci high-compression (7.0:1). **S** = sidecar gearing. **H** (1955 on) = Super Sport; **B** (1965) = electric start; **F** (not first letter, 1952 on) = foot shift; **E** as third letter = Traffic Combination motor with 61ci cam and M61 carburetor.

Year	What changed
1948	First Panhead: aluminum heads, hydraulic lifters, internal oiling; wishbone frame; springer fork (one year only); chromed pan covers (one year only); E/EL and F/FL.
1949	Hydra-Glide telescopic fork replaces the springer; Brooks Stevens restyle; front brake grows 7.25 to 8 inches; Harley-Davidson makes its own breaker points.

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Year	What changed
1950	**Redesigned cylinder heads with enlarged intake ports and inlet valves (about 10 percent more power); bronze valve guides; fixed-jet carburetor with revised jetting; remote oil filter; primary inspection screws to 6/12 o'clock; die-cast fork sliders; "Hydra-Glide" stamped on fork panel; Mellow-Tone mufflers; new rocker covers.**
1951	Two-piece cam with ramps both sides; rocker arms machined with pushrod sockets; mid-year Linkert M-74B carburetor (stays through 1965); larger pinion shaft; new script tank emblem.
1952	Foot-shift option; all Panheads high-compression only; last year for the 61ci EL; rotating exhaust valves late in the year; generator model 52.
1953	Lifters relocated from top of pushrods to below them; FLE Traffic Combination introduced; 4-rib gearcase cover; 24-roller pinion shaft.
1954	Golden Anniversary brass medallion on front fenders; tapered pinion shaft; Jubilee trumpet horn; first optional dual exhaust; winged fireball emblems.
1955	FLH Super Sport introduced — 8:1 compression, 60 hp @ 5,500 rpm; stronger bottom end with Timken mains; oval taillight; "V" tank emblem.
1956	"Victory" high-lift cam for the FLH and a flow-through air cleaner — about 12 percent more power; redesigned right crankcase oiling.
1957	Round Lucite tank emblem (first plastic emblem); polished aluminum rocker covers; steel-alloy valve guides from February 1; stronger valve springs from 57FLH4444.
1958	Duo-Glide: swingarm rear suspension and hydraulic rear drum brake; thicker cylinder-head fins; brush generator; step-down straight-leg frame.
1959	Arrow-Flite tank emblem; green neutral indicator on the foot-shift dash; chrome front fender tip; black footboards.
1960	Two-piece aluminum fork nacelle; Stellite-faced exhaust valves; rail-type oil-control rings; extra-heavy valve springs.
1961	Dual-point single-fire ignition with individual condensers; rear-cylinder timing mark added mid-year; four-point-star tank emblem.
1962	"Tombstone" speedometer; three round indicator lights; brushed-aluminum trim pieces.
1963	External oil lines to the cylinder heads; wider rear brake hub and shoes; round turn-signal housings; fiberglass saddlebags; new bar-and-shield tank emblem.

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Year	What changed
1964	Breather hole in the primary housing; oil-pressure switch; hollow hex timer adjuster; last year of the Duo-Glide.
1965	Electra Glide: electric start, 12-volt electrics, new frame, aluminum primary cover, automatic spark advance; last year of the Panhead.

The company context matters when judging a bike. The postwar boom made the late 1940s Harley's biggest years yet; by the mid-1950s British imports were pressuring the sporting end of the market (answered by the 1952 K-model and the 1957 Sportster), while the Big Twin settled into its long career as America's touring motorcycle. The 1969 AMF takeover came after the Panhead era; no Panhead left Milwaukee under AMF ownership.

3. What is unique about the 1950 Panhead

The 1950 is the breathing year — the first head redesign of the Panhead era — and the details that separate a correct 1950 are mostly above the cylinders and around the primary. It is the only year that combines the 1949 look with the revised heads and the primary-cover screw change.

1950 details to get right:

- **Redesigned cylinder heads** — enlarged intake ports and enlarged inlet

valves, bronze valve guides. The 1950 heads are visually close to the 1949s but differ in port and valve sizing; confirm against the factory parts catalog, not a generic "Panhead head."

- **Revised fixed-jet carburetor** with revised jetting — not the 1948–1949

calibration, not the 1951 M-74B.

- **Remote-mounted oil filter.**
- **Primary cover:** inspection screws at 6 and 12 o'clock — 1948–1949 bikes

have them at 3 and 9. This is the quick visual tell for a 1950-and-up primary.

- **Die-cast fork sliders** replace the 1949 forged sliders; "Hydra-Glide"

stamped on the fork panel.

- **Mellow-Tone mufflers**; new rocker covers; revised throttle control.

What did NOT exist in 1950 (common mix-ups):

- No Linkert M-74B (mid-1951), no foot shift (1952), no FLH (1955), no rear

suspension (1958), no 12-volt system or electric start (1965).

1950 buyer cautions:

- **Head-swap history.** The 1950 head improvements were a known retrofit —

many 1948–1949 bikes received 1950 (or later) heads. Casting and date codes decide whether a 1950's heads are original to the year.

- **Primary-cover mix-ups.** The 6/12-o'clock screw pattern is easy to miss

at a glance; a 1949-pattern cover on a 1950 is a giveaway of swapped tin.

- **Same first-generation lifter position:** 1950 lifters still sit atop the

pushrods (relocated in 1953), with the oil-supply caveats in the 1948 guide's wear notes.

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4. Technical restoration data — 1950 Harley-Davidson Panhead

4.1 Frame and engine numbers (1950)

Pre-1970 Harleys carry no frame VIN — the engine number is the ownership number. It is stamped on the left crankcase between the cylinders, in the form year-digits + model letters + sequential number, for example:

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50FL1234
50 = model year | FL = model | 1234 = sequential number
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The frame carries only manufacturing stampings and casting numbers.

Belly numbers are stamped on the bottom of each crankcase half. They were stamped by the machinist to identify a matched pair of cases through line boring and final machining — the two halves must carry the SAME belly number, and the belly number has no direct relationship to the engine serial.

4.2 Engine specifications (1950)

Item	Specification
Configuration	45-degree air-cooled OHV V-twin; pushrod hydraulic lifters; aluminum heads
Displacement	73.66 cu in (74ci class) / 60.32 cu in (61ci class)
Bore x stroke	3-7/16 x 3-31/32 in (87.3 x 100.8 mm) — 74 / 3-5/16 x 3-1/2 in — 61
Compression ratio	FL/EL: 7.0:1; F: 6.6:1; E: 6.5:1
Claimed output	FL: 50 hp @ 4,800 rpm (reported for the 1948 FL; the 7.0:1 FL engine carried through 1954 — confirm against the factory service manual for the exact year). No published figure survives for the 61 — do not quote internet estimates.
Carburetor	Fixed-jet carburetor, revised calibration and jetting for 1950
Ignition	6-volt battery, breaker points
Starting	Kick starter only
Clutch	Dry multi-plate
Lubrication	Dry sump; remote-mounted oil filter; gear-driven oil pump

4.3 Carburetion and electrical

- 1950-only fixed-jet carburetor calibration — revised jetting over

1948–1949; rebuild with the correct 1950 settings

- 6-volt battery ignition with breaker points; verify charging under load
- Kick starter only

4.4 Transmission and final drive

- Four-speed constant-mesh gearbox, separate from the engine
- Hand shift, foot clutch — the only arrangement in 1950

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