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The opening pages of

1978 Harley-Davidson Sportster Buyer's Guide

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IRONHEAD

1978 Harley-Davidson Sportster

Factory-Correct Restoration Guide

IronHead single-year guide · Model year 1978 only

KEY FACTS AT A GLANCE

- **Model year covered:** 1978 only (XLH, XLCH, XLT, and XLCR). The siamese-exhaust and solid-state-electronics year.
- **Engine:** 997.5 cc (60.9 cu in) air-cooled 45-degree OHV V-twin; 3.188 x 3.8125 in bore x stroke; 9.0:1 compression.
- **Exhaust:** Siamese 2-into-1-into-2 exhaust fitted across the line (new for 1978; debuted on the 1977 XLCR).
- **Charging:** Solid-state charging-system electronics (new for 1978).
- **Brakes:** Dual front discs (XLH/XLCH); rear drum (standard models).
- **Ignition:** Breaker points through most of 1978; electronic ignition phased in late in the year.
- **Specials:** 75th-anniversary editions — black paint, gold cast wheels, gold trim.
- **Carburetor:** Keihin butterfly-type.
- **Starting:** XLH/XLT: electric. XLCH: kick. XLCR: electric.
- **Transmission:** 4-speed; left-foot shift; chain final drive; wet multi-disc clutch.
- **1978 colors:** Not documented in the sources checked — verify against the 1978 parts catalog and survivor bikes (75th-anniversary trim: black with gold).
- **Identification:** 9-character VIN on the steering head and engine (H8 suffix for 1978).
- **Production:** No audited model-year split published in the period literature.
- **Key 1978-only features:** siamese exhaust standard; solid-state charging electronics; dual front discs; 75th-anniversary editions; the ignition changeover year.

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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, and the 45-cubic-inch flathead models of the 1930s kept the company alive through the Depression.

The 1936 EL Knucklehead introduced overhead valves to the Big Twin line, and the 1948 Panhead refined the formula. For the sporting rider, the key ancestor is the 1952 K-series: a unit-construction 45-cubic-inch side-valve twin with foot shift and swingarm rear suspension, built to answer the British imports. The K was the direct basis for the 1957 XL Sportster — essentially the K bottom end with larger displacement, overhead valves, and higher compression.

The 1960s brought the Duo-Glide (1958) and Electra Glide (1965) to the touring line while the Sportster carried the sporting brief almost alone. In January 1969 the American Machine and Foundry Company (AMF) bought Harley-Davidson, bankrolling expansion — including Sportster assembly at York, Pennsylvania, from 1973 — through a decade of variable quality control. In June 1981 a group of Harley executives bought the company back from AMF. The Ironhead Sportster ran through the 1985 model year; for 1986 the Evolution engine replaced the cast-iron-top-end motor the "Ironhead" name describes.

For the restorer, the authority is the factory literature: the Harley-Davidson service manuals (1957-1969, 1970-1978, and 1979-1985 XL/XR) and the year parts catalogs. Sportsterpedia's marque research is the strongest secondary source for year-to-year differences; this guide cites it throughout.

2. Model history: the Ironhead Sportster

The 1957 XL was Harley-Davidson's answer to the British 650 twins that were eating its lunch: take the K-model's unit-construction bottom end, bore it to 883 cc, fit overhead valves with hemispherical cast-iron heads, and raise compression. The result made a claimed 42 bhp — nearly half as much again as the side-valve K it replaced — and the Sportster has been in the Harley range continuously ever since.

The designations work like this. **XL** was the 1957 base model (and the name reappears on a basic model in some later literature). **XLH** (1958 on) is the high-compression touring version — bigger tank, lower bars, the volume seller. **XLCH** (1958-1979, "Competition Hot") is the sportier, stripped version: high pipes, small peanut tank, and for most of its life kick-start only. **XLRTT** was a limited-production race model of the mid-1960s. **XLS** (1979 on) is the Roadster. **XLT** (1977-1978) was a short-lived touring variant with hard bags and a windshield. **XLCR** (1977-1979) is Willie G. Davidson's cafe racer. **XLX-61** (1983-1984) was the stripped budget Sportster. **XR1000** (1983-1984) was the street-going XR with race-type heads and twin Dell'Orto carburetors. The **XR-750** (1970 on) is the pure dirt-track racer — not a street model and not covered by this guide except as context.

Engineering constants across the whole Ironhead run: a 45-degree air-cooled V-twin with four gear-driven camshafts, cast-iron cylinder heads (the source of the "Ironhead" nickname), unit-construction four-speed gearbox, and chain final drive. Displacement was 883 cc (advertised as 900) through 1971 and 997.5 cc (advertised as 1000) from 1972 on.

Year	What changed
1957	First XL: 883 cc OHV V-twin (3.000 x 3.8125 in, 7.5:1), 42 bhp, Linkert DC carburetor, 6-volt electrics, kick start, drum brakes.

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Year	What changed
1958	XLH (high-compression touring) and XLCH (Competition Hot) replace the single XL; higher compression, domed pistons, larger ports and valves; XLCH gets high pipes, magneto ignition, peanut tank.
1959	High-lift camshafts; period reports of 115 mph and sub-14-second quarter-miles.
1960	Detail refinements on the established 1958 formula.
1961	Hi-Fi color combinations introduced.
1962	Staggered shorty exhausts; the even/odd serial-number rule begins.
1963	Alloy fork brackets and motor mounts offered.
1964	Alloy front hubs fitted.
1965	12-volt electrical system replaces 6-volt.
1966	Tillotson diaphragm carburetor; hotter camshafts.
1967	Electric starting on the XLH (kick starter retained for 1967); new stronger crankcases and a stretched frame and swingarm for the XLH; the XLCH stays short-frame and kick-only.
1968	XLH becomes electric-start only (kicker optional); new front forks with more travel; about 58 bhp.
1969	Larger intake valves and revised cast-iron heads; AMF buys Harley-Davidson in January.
1970	Ownership VIN moves to the steering head (9-character format); XLCH gains electric start and battery-and-coil ignition; fiberglass boat-tail tail section; XR-750 racer debuts; about 8,650 Sportsters outsell the Electra Glide.
1971	New crankcases: the ignition timer moves into the cam-cover nose cone with automatic spark advance; wet multi-disc clutch; last year for the boat-tail option.
1972	Engine enlarged to 997.5 cc (3.188 x 3.8125 in, 9:1), 61 bhp; Bendix/Zenith carburetor; revised timer cam (dwell 90 to 140 degrees).
1973	Front disc brake; 35 mm Kayaba-type fork; turn signals standard; speedometer drive moves to the front axle; York, PA assembly begins.
1974	Cast wheels available; sales top 20,000.
1975	Left-side shift with right-side rear brake (DOT mandate), worked through linkage behind the engine; sales slump below 6,000.
1976	Bicentennial special edition; otherwise a steady year.

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Year	What changed
1977	New crankcases with gerotor oil pump (frame tube notched for access); Keihin carburetor; XLCR cafe racer and XLT touring model introduced; limited Confederate Edition.
1978	**Siamese 2-into-1-into-2 exhaust across the line; solid-state charging electronics; dual front discs; 75th-anniversary editions; electronic ignition phased in late in the year.**
1979	New lighter, stiffer frame; rear disc brake; electronic ignition standard; XLS Roadster introduced; last year for the XLCH.
1980	Timing marks revised (advance = single dot, TDC = lazy eight); 9-character VIN with J0 suffix.
1981	17-digit federal VIN; AMF sells Harley-Davidson to the investor group in June.
1982	25th-anniversary XLH and XLS editions; Hitachi generator in the charging system.
1983	XLX-61 budget Sportster; XR1000 street model (twin 36 mm Dell'Ortos, XR750-type heads, about 70 bhp).
1984	XR1000 final year; late-year charging-system running change (the factory manual treats Late 1984-1985 as its own variant).
1985	Final year of the Ironhead Sportster; the Evolution engine follows for 1986.

The company context matters when judging a bike. The 1969 AMF takeover funded the York plant and the 1970s expansion, but the AMF years are also the era of the most variable factory quality control — which is why matching numbers, correct fasteners, and year-correct trim matter more, not less, on a 1970s Ironhead. The 1981 buyback steadied the company; the 1986 Evolution engine kept the Sportster alive by fixing the Ironhead's oil-leak and overheating reputation at its root.

3. What is unique about the 1978 Sportster

1978 spreads the XLCR's innovations across the line: the siamese 2-into-1-into-2 exhaust becomes standard, solid-state electronics arrive in the charging system, and dual front discs appear on the standard models. It is also the ignition changeover year — breaker points through most of 1978, with electronic ignition phased in late in the year — which makes the 1978/1979 boundary the trickiest in the Ironhead line for electrical parts. The 75th-anniversary editions (black paint, gold cast wheels, gold trim) are the year's collectible trim.

1978-specific details:

- **Siamese exhaust standard** — the XLCR's 2-into-1-into-2 system on every model; check the collector junction for cracking.
- **Solid-state charging electronics** — new for 1978; the generator itself continues (this is not an alternator conversion).
- **Dual front discs** on XLH/XLCH; rear drum continues on standard models.
- **Ignition changeover:** points most of the year, electronic ignition

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phased in late 1978. Verify which system a bike has before ordering any ignition part — do not assume.

- **75th-anniversary editions:** black with gold cast wheels and gold trim.

What did NOT exist in 1978 (common mix-ups):

- No rear disc on standard models (1979); no standard electronic ignition

across the full year (phased in late); no new lighter frame (1979); no XLS (1979).

1978 buyer cautions:

- **Which ignition?** The late-1978 phase-in means two 1978s can have

different ignition systems. Identify the system physically before buying parts — the nose-cone hardware differs completely.

- **Charging-system diagnosis.** Solid-state 1978 electronics test

differently from the earlier mechanical regulators — use the 1978 procedure, not the 1977 one.

- **Anniversary trim.** Verify the 75th-anniversary package against factory

literature; black-and-gold repaints on standard bikes are common.

4. Technical restoration data — 1978 Harley-Davidson Sportster

4.1 Frame and engine numbers (1978)

1970 is the first year of the ownership VIN on the frame. The 9-character VIN is stamped on the engine and on the frame, with a label on the steering head showing the VIN and date of manufacture. Format:

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3A13675H0

3A = model code (3A = XLH, 4A = XLCH) | 13675 = five-digit serial

H = fixed character before the year digit | 0 = model year (1970)
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A 1971 example reads 4A13675H1 (4A = XLCH, H1 = 1971). Note a one-year quirk: on 1970 engines (and some early 1971 engines built with carryover 1970 cases) the VIN pad sits between the front two lifters; from 1971 on it is on the right side of the crankcase between the cylinders. The 1980 VIN uses a J0 suffix (example: 3A26782J0). Cam-cover castings: 25202-71 (1971-1976), 76-25202F (1977-1978), 79-25202 (1979-1980). Crankcase castings: 24534-72 / 24558-72 (1972); 24534-72 / 24558-73A (1973-1976); 24534-75 / 24558-75 (1977-1980).

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4.2 Engine specifications (1978)

Item	Specification
Configuration	45-degree air-cooled OHV V-twin; four gear-driven camshafts; cast-iron heads
Displacement	997.5 cc (60.9 cu in) — advertised as 1000
Bore x stroke	3.188 x 3.8125 in
Compression ratio	9.0:1
Carburetor	Keihin butterfly-type (new for 1977)
Ignition	12-volt battery and coil; breaker points (electronic ignition phased in late 1978); point gap 0.018 in
Starting	Electric (XLH, XLT); kick (XLCH)
Clutch	Wet multi-disc
Lubrication	Dry sump; gerotor oil pump (new for 1977)

4.3 Carburetion and electrical

- Keihin butterfly-type carburetor
- Breaker points through most of 1978 (point gap 0.018 in); electronic ignition phased in late 1978 — verify which system the bike has
- Solid-state charging-system electronics (new for 1978); generator retained
- XLH/XLT: electric start. XLCH: kick starter only. XLCR: electric
- Spark-plug gap 0.025-0.030 in

4.4 Transmission and final drive

- Four-speed constant-mesh gearbox in unit with the engine
- Left-foot shift, right-foot rear brake (1975 on, DOT mandate) — worked through a crossover linkage behind the engine
- Chain final drive; wet multi-disc clutch

4.5 Chassis, suspension, and brakes (1978)

- 35 mm telescopic front fork; dual rear shock absorbers
- Dual front disc brakes (new for 1978 on standard models); rear drum (standard models); XLCR triple discs
- Siamese 2-into-1-into-2 exhaust standard across the line (new for 1978)
- Wire-spoked or cast wheels; 75th-anniversary editions with gold cast wheels

4.6 Paint and finish (1978)

- Full 1978 palette: verify against the 1978 parts catalog and survivor bikes
- **75th-anniversary editions:** black paint with gold cast wheels and gold trim

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