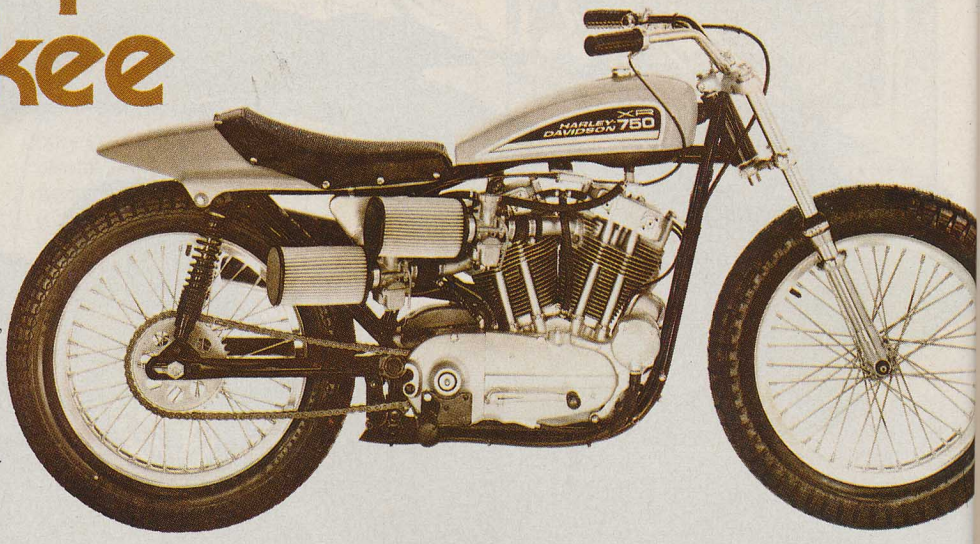
The Marque That Made Milwaukee Famous



HARLEY-Davidson was founded in 1903 by William Harley, a draftsman and later an engineer, and three Davidson brothers — Arthur, Walter and William — who were patternmakers, machinists and toolmakers. It is one of the oldest motorcyle companies still in production.

The first Harley-Davidson was built that year, a 2.2 kW 410 cm³ single-cylinder machine capable of 13 km/h. It used an inlet-over-exhaust valve layout which became the standard head pattern until 1912.

Commercial production commenced in 1904 with a machine featuring an overbored 442 cm³ version of the prototype engine and dual-ply, leather belt-drive direct from the crankshaft pulley to a large hoop on the bicycle-sized rear wheel. A Sager-Cushion Fork provided the first comfort aid to the solo saddle in 1907.

The first real milestone year for Harley-Davidson, in terms of present day models, was 1909. In that year H-D built its first V-twin — a 45-degree engine of 820 cm³, producing 5.3 kW. Indian had adopted the V-twin idea first, but only Harley has kept the idea in continuous production.

In 1910 a belt de-tensioner was added to Harley models, to allow the luxury of having the engine running while the machine was stationary. Two years later, on a new 1000 cm³ 45 degree V-twin, came H-D's first chain drive application.

The last belt-driven Harleys for 66 years were single cylinder machines built in 1914, while in the same year a two-speed rear hub considerably increased the speed of the chain-driven models. The 1000 V-twin was reworked in 1915 to give 8.1 kW, but the really big news of that year was internally expanding rear brakes, a three-speed gearbox and a foot starter.

Nineteen sixteen brought the first transmission-connected "conventional" starter, and on the production front the Great War sparked action on the assembly lines. Other noteworthy developments of the year were Remy generators (and thus electric lights instead of acetylene gas lamps), automatic oiling (though still total loss) and the first training classes for H-D mechanics.

For the next two years most of H-D's output went to the US Army, with little change in models.

Then, in 1919, a 600 cm³ longitudinal flat twin was introduced. But though extremely smooth and quite fast, it was discontinued in 1923 due to rear cylinder overheating problems. The burgeoning popularity of the sidecar as an affordable alternative to the car led to optional low compression versions of the 1000 V-twin, while H-D's first 1200 cm³ powerplant appeared in 1921. As a high performance option, aluminium pistons were available on the V-twins from 1924.

The single cylinder engines underwent a temporary resurgence in 1926 with several designs available. But production of four-stroke singles eventually ceased in 1934, because the lusty V-twins were proving so popular. Also in 1926 came a feature which rapidly became a Harley trademark — the teardrop tank.

Alloy pistons and front brakes!

Two years later, in 1928, the H-series 1000 and 1200 engines had twin cams and alloy pistons. In the cycle-parts department, wonder of wonders, front brakes became available.

The first 750 V-twin equipped with side valve heads arrived in 1929. This 45-incher was sufficiently powerful enough to replace the older 1000 cm³ engine. The following year the old 1200 cm³ engine received detachable cylinder heads; the resulting 21 kW high-compression version was said to be capable of close to 160 km/h.

Back on the 750 front, alloy pistons became standard issue. Then in 1932 the smallest of the twins was detuned to boost its low rev power. Nineteen thirty-six was a big year for H-D. Not only was dry-sump, recirculating lubrication introduced, the popular 1000 V-twin returned to the fold, now sporting overhead valve gear. This engine was a real revver — H-D claimed a hefty 30 kW at 5000 rpm, virtually present-day Harley peak revs. A four-speed transmission was standard and a low compression variant was built for sidecar hauling. And '36 was also the first year of the mammoth 1300 cm³ side valver.

In 1937 all the side valve V-twins (750, 1200 and 1300) were changed to the recirculating, dry-sump oiling pioneered on the ohv 1000.

So successful was the ohv 1000 model that H-D developed ohv heads for the 1200 twin. This model became available alongside the side valve 1200 in 1941. The flathead 1200 continued in production until 1948, in its later years boasting aluminium heads for better cooling and performance. But the ohv 1200 signalled the beginning of the end for the side-poppet 1300 V-twins.

World War II saw built an estimated 120,000 military versions of its low compression 750 (Model WL). Thirty thousand complete bikes were for spares, hence the uncountable tales of new WLAs still packed in crates decades after the war. (Incidentally, the "A" was for America or Army; there was also a WLC, for Canada.)

Both Harley-Davidson and Indian built singularly unsuccessful copies of shaftdriven BMWs. Only 1000 of each were built, in Harley's case using 750 cm³ side valve flat twins (relatives of the earlier 600 cm³ jobs).

The trusty cast-iron knucklehead ohv cylinder heads were replaced in 1948 by a newer aluminium panhead design for the 1000 and 1200 V-twins, which adopted the adjustment-free hydraulic valve lifters at the same time. Springer front suspension gave way to oil-damped telescopic forks for the Hydra Glide models.

The 750 cm³ Model K — a lightweight model to replace the long running, heavier W series — was introduced in 1952. Side valves continued as the breathing equipment, but the KR proved a successful racing mount nonetheless.

So popular was the new 750 Model K that the ohv 1000 was pensioned off in 1953. Harley looked briefly in the mid-fifties at a 60 degree V-twin with offset cylinders (side-by-side rods) and aluminium heads (still with side valves), but never pursued the model to production because of patent difficulties with the English Vincent motorcycle concern.

Fiftieth birthday special

Harley-Davidson's first 50 years was celebrated in 1954 with the introduction of the very smart looking, gold-finished KH model. Featuring Harley's first unit-construction gearbox and a sprung but undamped rear swinging arm, the KH used a 900 cm³ stroked version of the original side valve K motor. In 1957 the aluminium side valve heads were retired in favour of more efficient iron ohv units, and the XL series (still 900 cm³) began.

Rear suspension damping appeared in 1958, and was highlighted on the aptly named Duo Glide model.

The Sportster received an electric starter in the middle Sixties, and at the same time H-D fitted the device to F series Duo Glides. To ensure the masses learned of the innovation, the Duo Glide was renamed Electra Glide.

Then, in 1969, came a dramatic change — in ownership. Big bike sales were taking off and Harley couldn't meet the demand. Harley-Davidson had already become a public company (in 1965) in an effort to attract capital, but the factory was still producing only half as many bikes as it could have sold. When giant leisure corporation AMF took over in '69, it reorganised production and introduced mass production line methods — up till then the bikes had been near enough to hand made.

Under AMF control H-D introduced disc brakes, the XLR flat-tracker and the most powerful of all street Harleys, the XLCR, which was released in 1978 to commemorate 75 years of Harley-Davidson. This faired, all-black powerhouse developed almost 52 kW and was made in limited numbers for two years. But while XLCR production was limited, overall Harley production was boosted to one machine every two minutes on the new production lines.

The late Seventies saw the 1200 engines upped to 1340 cm³, and a host of detail changes and model variations based on the 1000 (the Sportster engine since 1972), 1200 and 1340 motors. There was a brief liaison with the ailing Italian Aermacchi concern, but it was of no consequence to the V-twin range.

Nineteen eighty was notable for the re-introduction of belt drive (plastic, not leather this time) on the Sturgis model, and rubber-mounted engines.

In 1981 Harley's management executives (including the only descendant of the original partners — Willie G. Davidson) formed a corporate unit to buy H-D from AMF.

And the future for Harley-Davidson Motor Company? The long-rumoured Porsche-designed model showed its face in prototype form last year, as a water-cooled longitudinal V-four (like two H-D V-twins, side by side). There are no hints of full production for this exercise — the firm might well carry on with V-twins, or perhaps a rumoured W-three. A W-three? Just imagine a Harley V-twin with a third cylinder poking out the front, horizontally . . .