

1974 KAWASAKI W3 650

KLONE WITH A K

Words : Alan Cathcart Photo credit: Kel Edge

Hands-on riding impression in Pennsylvania USA of Kawasaki's first big-engined bike, the British-style pushrod W3 of which 26,289 examples were built from 1965 to 1974

It's hugely ironic that Kawasaki, which ever since the 1969 creation of its H1 Mach III two-stroke triple has almost permanently led all other Japanese manufacturers in the pursuit of performance for its streetbike range, should have started out its life on two wheels by trying to build a better British bike. For that's what the OHV parallel-twins it manufactured from 1965 to 1974 unquestionably resembled – and even after it trumped Honda's groundbreaking CB750 four in both capacity and performance terms with the 1972 introduction of the world's first four-stroke hyperbike, the 903cc Z1, it still kept producing the ultimate version of its BSA A10 Super Rocket klone-with-a-K, the Kawasaki W3 650, right alongside it at its Akashi factory. For a couple of years grilled steak and beef stew both coexisted on the two-wheeled K-menu.

Indeed, the Japanese had form from the very start in replicating British two-wheeled technology, with the country's first series production model, the Miyata Asahi 500cc single built and sold from 1913 onwards, a faithful copy of the side-valve Triumph 3D which bicycle manufacturer Eisuke Miyata had imported and replicated for use by the Tokyo Police, amongst others. Bar some 18,000 heavyweight Harley clones which Rikuo built from 1935-42 alongside locally assembled H-D models, rip-offs of British designs dominated the Japanese motorcycle market in the run-up to WW2, epitomised by the Nakagawa company's Osaka-built 500cc OHV single debuting in 1935





FULL HISTORY OF HOW KAWASAKI HEAVY INDUSTRIES, ONE OF THE THREE LARGEST ENGINEERING CONGLOMERATES IN JAPAN, FOUND ITSELF IN THE MOTORCYCLE BUSINESS

1975 Kawasaki W3 650

Overview of the evolution of motorcycling in Japan, which in the earliest days entailed copying British bikes specially imported duty-free for that very purpose!

under the Cabton name - an English acronym standing for - Come And Buy To Osaka Nakagawa! But, just as in China even today, there was no shame then attached to replicating overseas manufacturers' designs, seen as a necessary first step on the path to global leadership. Stage One entailed copying others to redress the disadvantage of being new to the marketplace - but Stage Two entailed improving on those first models, in terms of quality of either design or manufacture, or both. Stage Three was then represented by building on those first two steps to produce something completely fresh, which surpassed the original in both performance and design, and this was exactly the strategy adopted by Kawasaki in developing its range of motorcycles in the postwar era.

Founded by Shozo Kawasaki in 1878 as a shipbuilder, Kawasaki Heavy Industries is today one of Japan's three largest engineering conglomerates, with 2019 revenues of US\$15 billion earned producing a huge range of products from motorcycles, aircraft, bridges, tunnel-boring machines, missiles

Test bike is owned by US '70s Classic touring company Retro Tours, whose owner Joel Samick describes his search for such a model, eventually obtaining this one from the Sales Manager of Kawasaki USA

TECHNICAL SPECS

74' KAWASAKI W3 650

| | |
|-----------------------------|---|
| Engine: | Air-cooled pushrod OHV dry sump parallel-twin four-stroke with vertical cylinders, two valves per cylinder (38 mm inlet/32 mm exhaust set at 60° included angle) and 360° crank in vertically-split crankcase |
| Dimensions: | 74 x 72.6 mm |
| Capacity: | 624 cc |
| Output: | 50 bhp at 7,000 rpm |
| Max torque: | 5.7 kgm / Nm 55.90 / 41.23 ft-lb at 5,000 rpm |
| Compression ratio: | 9:1 |
| Carburation: | 2 x 28 mm Mikuni VM |
| Ignition: | Coil ignition with 12v battery |
| Transmission: | 4-speed with duplex chain primary drive |
| Clutch: | Multiplate oil-bath |
| Chassis: | Tubular steel duplex cradle |
| | frame with single top tube |
| Suspension: | |
| Front: | 35mm telescopic fork |
| Rear: | Tubular steel swingarm with 2 x Hagon shocks adjustable for preload |
| Fuel tank: | 15 litres |
| Wheelbase: | 1420 mm |
| Weight/distribution: | 212 kg dry split 45/55 % |
| Brakes: | |
| Front: | 2 x 245 mm steel discs with single-piston callipers |
| Rear: | 178mm single leading-shoe drum |
| Wheels/tyres: | |
| Front: | 3.25 x 19 Avon RoadRider on WM2/1.85in wire-laced steel rim |
| Rear: | 4.00 x 18 Avon RoadRider on WM3/2.15in wire-laced steel rim |
| Seat height: | 810 mm |
| Top speed: | 169 kmh/105 mph |
| Year: | 1974 |
| Owner: | Joel Samick, Kennett Square, Pa., USA |

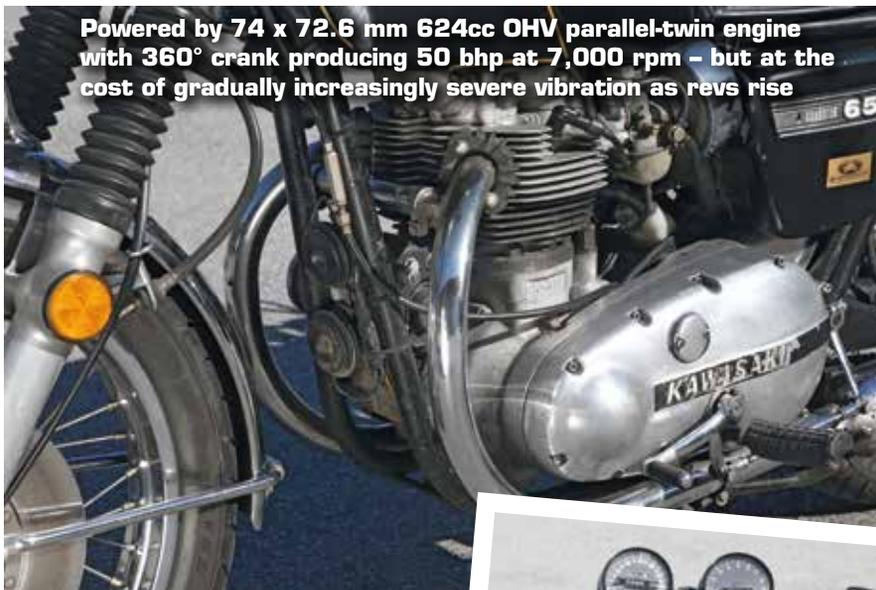
Powered by 74 x 72.6 mm 624cc OHV parallel-twin engine with 360° crank producing 50 bhp at 7,000 rpm – but at the cost of gradually increasingly severe vibration as revs rise

and ships to railway rolling stock, including the ultra high-speed Japanese Shinkansen, and even the rails they run on. Banned like Piaggio and MV Agusta in Italy from producing aircraft after WW2, in 1949 Kawasaki instead began building motorcycle engines in its former aircraft factory in Kobe, for sale to many of the 100 or so small manufacturers who'd sprouted up to address the lack of personal transportation in postwar Japan. In 1953 it made its first complete bike under the Meihatsu name, which being built to aircraft standards was better engineered than its rivals, albeit made in relatively small numbers. The rapid expansion of the two-wheeled sector prompted KHI to establish its own purpose-built motorcycle factory in its Akashi base which opened in October 1960, the same year it teamed up with Japan's oldest motorcycle manufacturer, Meguro.

Named after the Tokyo district that housed the Meguro Manufacturing Works, Meguro was founded in 1937, and for many years was Japan's largest motorcycle company, until overtaken by Honda. Its various models were strongly influenced by existing British designs, aided by the fact that these could be imported free of the otherwise very stiff import duty specifically for local manufacturers to copy! Meguro's Z97, introduced in 1937 and utilising 500cc single

cylinder engine heavily influenced by the Swiss Motosacoche motor, was the first Japanese motorcycle to be built entirely in-house, not assembled from components sourced from other factories, and was immediately a volume seller. In 1954 the Meguro Senior T was launched at the Tokyo Show, whose 650cc pre-unit parallel-twin engine was closely based on the BSA A10 Golden Flash's. In 1960 this was joined by the 497cc Model K1, a close outright copy of the BSA A7 which Meguro had imported three years earlier. Its quality and engineering was superior to the BSA's, leading it to be described by BSA/Triumph technical guru Edward Turner as "too good to be true"! But industrial troubles culminating in a year-long strike by its workforce pushed the near-bankrupt Meguro into the arms of Kawasaki, which in September 1962 completed its acquisition of the firm, with the first motorcycles to carry the Kawasaki name appearing the following month.

The new Kawasaki Aircraft-owned company was assigned the task of providing motorcycles for police and



escort duties at the 1964 Tokyo Olympics, and to save time the BSA-clone Meguro K1 was the basis of this new machine. The 500cc Kawasaki K2 customer version launched in March 1965 had detail technical mods aimed at enhancing reliability, but it lacked power while still sharing many of the BSA A7's mechanical weaknesses. So in order to enter the booming American market, Kawasaki launched the W1 650 in October that year with revised 624cc engine dimensions

K-model's bore size from 66mm to 74mm, to create another OHV pre-unit parallel-twin which was then, three years before the debut of Honda's CB750 four, Japan's largest capacity motorcycle.

While closely based on the BSA A7 and before that the Meguro Senior T launched a decade earlier, the W1 represented Stage Two in Kawasaki's path along the R&D trail, for while the K2 had been a direct copy of the BSA A7, faults and all, the W1

featured several improvements over its BSA-based ancestors. While still a dry sump parallel-twin with vertically-split crankcases, 360° (so, two-up) crankshaft, identical OHV pushrod valve gear and a separate four-speed gearbox with duplex chain primary drive, the 624cc motor measured an oversquare 74 x 72.6 mm against the longstroke 650 BSA's 70 x 84mm dimensions, and had a much stronger bottom end. Unlike the BSA and Meguro K1/Kawasaki K2's solid crank with split conrods and plain big end bearings, the W1's three-piece built-up crankshaft assembly used one-piece conrods running on caged roller bearings, with a roller main bearing on the drive-side, and timing-side ball bearing.

The single gear-driven camshaft was mounted at the rear of the crankcase, operating the overhead valves



Kawasaki's model R&D strategy explained, resulting in its H1 & H2 500/750cc two-stroke triples appearing halfway through W1-W3 650 range's run - and from 1972 on the Z1 four, all super high-performance models greatly contrasting with this model from yesteryear

via cam followers and pushrods carried within the cast iron cylinder block. The aluminium cylinder head featured two valves per cylinder, a 36mm inlet and 32mm exhaust set at a 60° included angle, with the inlet manifold cast integrally with the cylinder head and carrying a single 31mm Mikuni VM carburettor. Running an 8.7:1 compression ratio, the W1 engine produced 50 bhp at 6,500 rpm, good for a top speed in US magazine tests of 101mph/163kmh. Coil ignition was sparked via a chain-

driven DC generator mounted in front of the cylinders, while despite the growing popularity of an electric leg, only a kickstart was available, plus the gear lever was on the right and rear brake on the left, all UK-style. This engine was carried in a BSA-like tubular steel duplex cradle frame with twin rear shocks and gaitered 35mm telescopic fork. 18-inch wheels front and rear

were fitted with drum brakes, a 200mm twin leading-shoe front, and 178mm SLS rear. Dry weight was a porky 214kg/471lb, though - a huge increase on the 187kg/413lb BSA A10.

But while swiftly accounting for 10% of Kawasaki's home market sales, the W1 failed to make its mark in America, retailing at the same price as the far more alluring Triumph Bonneville, which also outperformed it radically. So in 1967

Four-speed pre-unit gearbox with duplex chain primary is closely derived from BSA A10 Golden Flash's, which also provided the format for the engine design

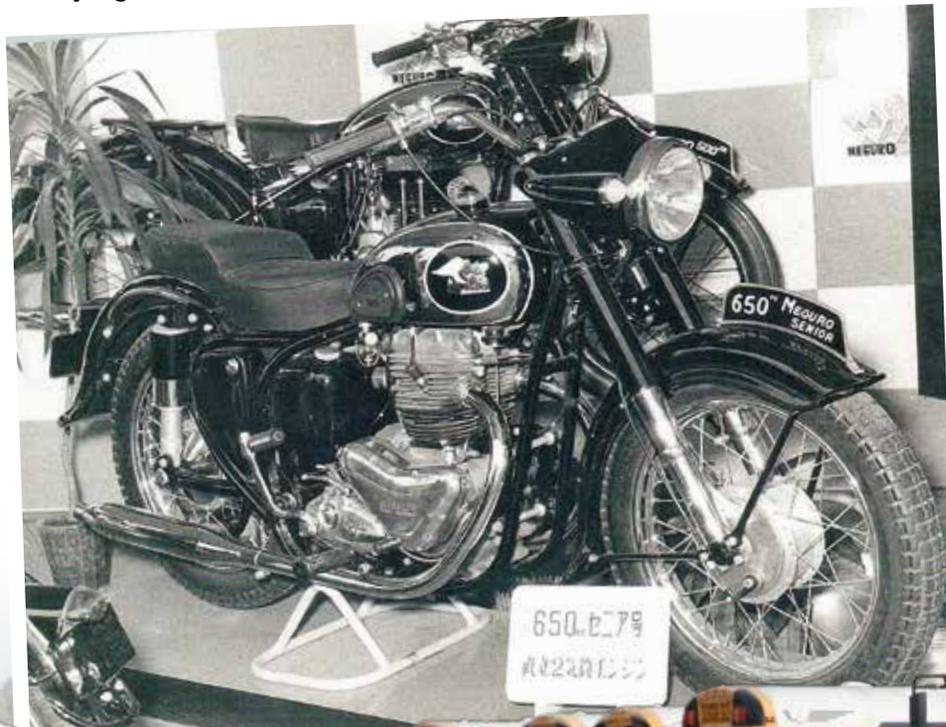


Kawasaki produced the revamped W2 SS Commander, with a new twin-port cylinder head to accept a pair of 28mm Mikuni VM carbs, and 2mm bigger 38mm inlet valves. With compression raised to 9:1 power was increased to 53 bhp at 7,000 rpm, while sleeker styling with a 19-inch front

wheel saw weight reduced slightly to 208kg/458lb. This resulted in much improved sub-15secs quarter-mile times in US magazine tests, and a more respectable top speed of 112mph/180kmh - but while customer interest sparked up briefly in the USA, Kawasaki's hopes for

the new model weren't matched by sales, and a lighter W1-SS version of the single-carb model didn't make its mark Stateside, either. A short-lived W2-TT (as in US TT flat-track) Commander high-pipe tracker version with twin stacked exhausts and an ugly silencer on the left side was produced in 1968 exclusively for US sale, but it was too heavy to be considered a true dual purpose model, and very few were sold in its single year of production.

For that same year Kawasaki's W-models (as well as the British bikes which spawned it) faced a stern new competitor in a state-of-the-art twin from Yamaha, the XS650. Additionally, in 1968 the postwar domination of the parallel-twin OHV engine for high-performance street bikes came to an end with the debut of the BSA Rocket-3/Triumph Trident triples. Meantime, Kawasaki engineers had been hard at work on Stage 3 of the company's evolution, and the result duly appeared in 1969 to widespread global acclaim.



Established but troubled Meguro brand's parallel-twin BSA clones provided the basis for Kawasaki W-series model, after it absorbed Meguro in 196



119mph/192kmh device catapulted the Akashi factory to the top of the performance charts, leaving its 650 OHV twin very much as yesterday's papers, without the electric starter now deemed necessary even by Benelli in creating their late-to-the-party Italian version of the Kawasaki, the contemporary 650 Tornado. But although it was removed from Kawasaki's US lineup, there was still a loyal following for the W-bike at home in Japan, as well as in Australia/NZ. So after producing the W1-SA in 1971, with the gear lever and brake pedal swapped over to suit the new Honda-imposed normality, Kawasaki therefore introduced the W3 in 1972, now fitted with twin 245mm stainless steel disc brakes up front, while retaining the drum rear brake and 19-inch front wheel. With the same 9:1 compression and twin 28mm Mikuni carbs, power was reduced to 50 bhp at 7,000 rpm, with peak torque of 5.7 kgm/Nm 55.90/41.23 ft-lb at 5,000 rpm. But production lasted only a couple more years before ending for good in 1974, by which time 26,289 examples of Kawasaki's 650 twin had been

built and sold from 1965 to 1974, including the 3,300 Police variants supplied to forces in Japan and Australia.

Kawasaki's W-series engines were oil-tight and reliable, but by comparison with their British forebears they had low levels of performance with a high degree

of vibration, and were ultimately unsuccessful on the sales floor. The W3 650 wasn't imported to the USA, so it was a surprise to find one which today earns its keep in southern Pennsylvania as one of the fleet of street Classics available for hire from Retro Tours www.retro-tours.com for group or solo rides of up to seven days in length



through the northeast USA and the Atlantic seaboard, in company with Retro Tours founder, Joel Samick. We'll let Joel explain how he came to acquire the 1974 W3 on which I spent an enjoyable 120-mile day riding round Pennsylvania with him.

"Looking over the Retro Tours fleet during the winter of 2004, I realised that Kawasaki, certainly one of the mover and shakers in 1970s motorcycling, was not represented!" he says. "Researching its 1970's product line revealed two likely prospects, but the KZ-750, a very Universal-Japanese sort of motorcycle from 1977-78, seemed too bland and modern. At the opposite extreme was the W1 series from the start of the decade, which seemed much more interesting, and classical. But I spent months waiting for a W1 to come up for sale - there just aren't very many around. Eventually, I found a very tatty 90% complete '67 trade-in out back in a Pennsylvania dealership, and was able to get it running to put a few tentative miles on it before listing the parts and labor operations needed to make it roadworthy. But based on my test ride, I was already having second thoughts. I

felt I'd made a mistake - besides a motor design from the 1950's, the suspension, brakes and electrical system all seemed too primitive to cope comfortably with modern traffic conditions."

"Then, quite by accident, in the January '05 issue of Walneck's Cycle Trader, I spotted two 650 W3's being sold by a gentleman in California who turned out to be the sales manager for Kawasaki of America - one whole, and one in pieces. The W3 was never imported to the US, but Kawasaki sold lots of their big twins in Japan and Down Under, and the model line was upgraded there until 1974. These later models featured improved forks and electrics, and a twin disc front brake, so all my concerns were addressed. The near running bike had been imported to the US from New Zealand, and the basket case was brought back from Japan by a US sailor. Suddenly, I had three Kawasaki 650's! I sold the oldest one off at once to defray the cost, and I put one together and kept some

parts. It was just what I'd hoped it would be - a bike that was way more comfortable than the W1, and very suitable for Retro Tours use."

"So our 1974 W3 has been upgraded with Hagon shocks, quartz lighting, loud horns, and modern tires and brakes, plus the final drive ratio has been raised to give more relaxed high speed running. But it's become obvious during several extended outings that the resemblance to old British iron is merely superficial. All the castings exude quality, and the fit and finish is more Japanese than British, i.e. better. Minor oil leakage and vibration are overshadowed by the pleasant power curve and stable handling. The exhaust note is aural nirvana. You should experience it!" So I did....

But only after getting Joel to start it for me, after discovering for myself the hard way that even with careful use of the choke lever on the left 'bar, his 1974 Kawasaki twin is not an easy starter from cold on a 70°F/21°C autumn day. "It usually takes me exactly 13 kicks to get it started," admitted Joel, "which may be because I haven't tuned it properly, or it could just be the

Twin-loop tubular steel frame has twin rear shocks and 35mm telescopic fork, all non-adjustable, with twin 245mm disc brakes fitted for the final version of the W-series models



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length of the inlet tracks, I'm not sure." But after dreading a rerun after our coffee stop fifty miles down the road, I found to my relief I could start it third kick every time once it was warm. Phew!

The W3's riding stance is very '60s trans-Pacific, with neo-cowhorn hi-rise handlebars tailored to the American customer back then, matched to an 810mm high but quite long seat with good passenger space which, combined with a fairly short 15-litre [3.3 gallon] fuel tank, results in a very upright posture which isn't remotely sporty, but is quite comfy on a 120-mile day, especially with the footrests right beneath you. It idles at just 900 rpm once warm, and very smoothly, at that. Select first gear (of four) via the left-side one-down lever which Kawasaki introduced in 1971, and the W3 pulls cleanly, even eagerly away from as low as 1200 rpm, with the light-action clutch paying out effortlessly. Acceleration is brisk rather than exciting, though – the OHV Benelli or OHC Laverda 650 twins it competed against for the non-Britbike customer Back Then are both way more satisfying performance wise.

Accelerating hard wide open there's little vibration until the needle of the right-side tacho in the pair of instruments shared with the Z1 reaches the 4,000 rpm mark, when the W3 starts to shake rather than vibrate – the seat and footrests are where you feel it worst, and it intensifies as revs mount en route to the 7,500 rpm redline, which it pays not to approach as the parallel-twin motor really doesn't like going there. Instead, shift up at 5,500 rpm to ride the torque curve, and that will deliver crisp if not particularly exciting acceleration – that engine speed gives you 80 mph, a nice cruising speed with acceptable vibes, though 70 mph with 4,800 revs on the clock still feels quite quick, but is definitely more relaxing. Plus the mirrors shake less at that speed or lower, too...

The upright riding stance initially had me oversteering into turns, until I learned the right way to cope with the leverage available from the high-rise handlebar, matched to the

lazy-steering 19-inch front wheel. But then as I started riding the W3 harder I found it liked to understeer under power, forcing me to tug on the 'bars to keep it on line without backing off the throttle. Curiously, there are two steering dampers fitted as stock – a friction one in the steering stem, and another hydraulic one on the right of the fork. While I can't say the Kawasaki has pinpoint handling, there was no trace of misbehaviour even under enthusiastic cornering. But TWO dampers?? Braking might be a different matter in the wet, though – as you're reminded of by Joel's plastic Dymo label on the front brake master cylinder: 'Useless in wet"! In the dry weather for my ride the twin stainless steel front discs stopped the Kawasaki OK provided I squeezed the lever pretty hard – using the SLS rear drum in concert with them was a must-do from any sort of speed. But the smooth clutch action means you can use engine braking, too – though with all that inertia in the engine you must

avoid overdoing this, else you'll get the rear wheel chattering on the overrun, and will have to fan the clutch lever to stop it.

By the standards of the era it was created in the Kawasaki W3 is a reasonably capable ride, without really excelling in any one area. But as the curtain-raiser to Kawasaki's madcap mixture of performance two-stroke triples, and more especially its ground-breaking Z1, it deserves to be remembered as the model which taught Kawasaki how to build bigger-engined bikes. And now more recently its big twin concept appeared again in Kawasaki form back in 2000 when the company released its retro-styled W650 overhead-camshaft twin, which is still going strongly today as the W800. Moreover, in a Japan-only version for the time being at least, the recently launched Meguro K3 retro-roadster using the same W800 motor has also revived the name of the company which gave rise to all of this. Nice one, Kawasaki.

Heavy 212 kg dry weight split 45/55% results in less exciting performance than the much lighter British and Italian parallel-twins it was competing against in its key US market.

