

Mid-sized marvel

As compact as a 550, as fast as a 750 and as cheap as chips, Kawasaki's Z650 shows why it's still the best middleweight four of the mid-Seventies

Riding by **Jim Moore** Dossier by **Neil Murray** Pictures **Simon Hipperson**

Honda may have started the Japanese association with the inline four, but it was Kawasaki who transformed that engine layout into a Seventies icon and a symbol of mass-produced performance with its magnificent 903cc Z1 in 1973.

The Z650 is what they did next. The Z1 was bigger, faster, more powerful and purposeful than Honda's CB750 Four and won admirers with its superbike status, but for some riders that was the Kawasaki's problem. Honda's more modest 350, 400 and 550 Fours made multi-cylinder performance accessible to a far wider audience. The Z650 was a timely response.

Typically of the marque it was slightly larger in capacity and more sophisticated than its rivals. And with a top speed of around 120mph it was 10-15mph faster than the 550 sohc Honda.

Not that I'm aiming to test the theory. Rick Brett – who kindly loaned us his immaculate 3700 mile Z650 B1 for this test – is bigger than me, and I know he won't be best pleased if I give it back to him in anything less than mint condition.

That said, the 650 thrives on revs so it's not long before I have the throttle wound back and the tacho needle racing towards the 9000rpm redline (it loved it, honest, Rick...). Below 3000rpm the fuelling is woolly, and the engine demands a fistful of gas to pull cleanly off the line, but once 5000rpm is up on the dial the motor comes on cam, lifts up its skirt and propels the Zed forward with an urgency CB550 owners could only dream of.

Although my seat-of-the-pants dyno accredits this 650 with 10 or so less horsepower than Kawasaki's claimed 64bhp, it's still an engine that can hold its head high against many 750s of the same age – Honda claimed just 67bhp for the CB750 in '76.

Being a four the powerplant is pleasantly smooth. In fact very little in the way of vibration gets through the bars and pegs to the rider. But being a Kawasaki the Z650 was most definitely built with performance in mind, so there's an edge to the power delivery and ride that would perhaps not sit well with a Honda. I rather like that.

Heading south on the A1M, in search of twistier roads, the Zed is happy to cruise at 85-90mph. There's a decent amount of wind protection from the clocks at that speed, but I'm sure my neck muscles would protest if I went much faster. And besides, I can sense the early signs of a weave too.

While the 650 easily assumes the role of tourer (CB contributor Neil Murray rides his Z650 to the continent as often as his morris dancing



Lighter and more compact than a Z1, the 650 rewards with more manageable handling

commitments allow), it's much happier hustling down back roads than gobbling up mile after mile of autoroute. Compared to a Z1 the 650 is compact and far more manageable; quite the opposite of so many Seventies Japanese sports bikes.

The steering is light, responsive and accurate – although a touch of understeer is never far away through 50mph-plus bends. At 465lb (211kg) dry it's hardly a lightweight, but it carries its bulk well. This affords the 650 a balance and neutrality again lacking in many other multis of the era. You can make a mistake on this Zed – brake too late or lean a touch too far – and still come out the other side of the corner sunny side up. Try that on a Kettle or Z1 and see what happens...

Letting the chassis down, however, are the brakes. Rick's Zed has been stood for a while and would really benefit from new front pads and brake fluid. The front brake in particular lacks power. It's a struggle to scrub off speed at times and there's only so much trouble the chassis can get me out of. From '78 the 650 came with twin front discs as standard, so if you don't like to hang about go for one of those.

As an everyday classic Kawasaki's Z650 is one of the best Japanese inline fours from the Seventies and early Eighties. They're robust, well built (although you will need to keep on top of all that chrome if you want to keep it looking good), comfortable and surprisingly capable – and mint examples can be had for less than three grand. So who needs a 750?

SPECIFICATION

1976 KAWASAKI Z650

ENGINE/TRANSMISSION

Type	air-cooled, dohc, 8v inline four
Capacity	652cc
Bore x stroke	62 x 54mm
Compression ratio	9.5:1
Carburation	4 x VM24SS Mikuni
Primary/final drive	chain/chain
Clutch/gearbox	wet multiplate/five-speed
Electrics	12v, points ignition

CHASSIS

Frame	tubular steel double cradle
Front suspension	telescopic forks
Rear suspension	swinging arm, twin shock
Brakes front/rear	245mm disc/180 x 40mm drum
Wheels	14-spoke alloy (optional extras)
Tyres front/rear	3.25H-19 4.00H-18

DIMENSIONS

Dry weight	465lb/211kg
Wheelbase	55.9in/1420mm
Seat height	31.5in/800mm
Fuel capacity	3.7gal/16.8 litres

PERFORMANCE

Top speed	123mph*
Max power	64hp @ 8500rpm
Fuel consumption	45mpg
Price new	£1075

*Motorcycling Monthly, 1977. Bike tested it at 110mph in 1977, with a still-tight engine

1976-1983 • 652cc • Air-cooled • Inline Four • £200-£2750
RIDING >> DEVELOPMENT >> NOSTALGIA >> BUYING >> OWNING

*“It’s not long before
I have the throttle
wound back and
the tacho needle
racing round to
the 9000rpm
redline”*



*The distinctive, 14-spoke, HA
Industry, alloy wheels were an
optional extra on this early model*

Kwak on the attack

The Z650 was Kawasaki's first plain bearing four. It was designed by Ben Inamura, the engineer who penned the Z1. At 64bhp the 650 was right on the money for the era: fractionally short of 100bhp/litre. Kawasaki actually designed and built the engine in a very mild state of tune, but with the potential for massive development, as history was to prove.

Right from the start it was obvious that Kawasaki's second inline four was as groundbreaking as its first. For a start, the Z650's motor used a plain bearing layout *and* twin cams. Honda already made plain bearing fours; and while twin cams weren't new, they were still unusual. But nobody had ever married the two. Kawasaki also put the adjusting shims for the valves under the buckets, to eliminate the chance of shims becoming displaced at high revs, even if it meant pulling the cams out when the clearances needed to be adjusted.

What was most impressive was the size of the Z650. It was small, lean and – for a multi of the era – relatively light. It was compact, and gave the impression of everything being put together in as modest a space as possible, a trick emulated later by the GPz900R.

It was as fast as the Honda CB750 and Suzuki GT750 of the era too, although Suzuki's GS750 that followed hard on its heels had a distinct performance advantage. Together, the Z650 and the GS750 made the CB750 look dated, heavy, ugly, unwieldy and slow.

The difference between the Z650 and the Jap 750s that came before it was that it handled and stopped. The reputation of big Kawasakis (and quite a few smaller ones) as being evil-handling trolleys was finally laid to rest with the 650. Anyone who has tried to hustle a H2 will understand exactly what bad handling is.

The Z650, however, easily out cornered everything in its class, with the exception, again, of the three-quarter litre GS Suzuki.

Changes to the Zed's engine over its seven year run were few. It gained a Hy-Vo camchain (with inverted teeth for better sprocket grip and therefore quieter running) and an automatic camchain tensioner from 1980, and the leak-prone rev counter cable exit from the cambox was blanked off when the Z650F's gained electronic tachos. Other than that Kawasaki left the lump unchanged.

What nobody could have foreseen was just what a versatile design the Z650 motor would become. It was bored out to 738cc for the Z750, and then tuned up for the first Z750GP. At the same time, Kawasaki slapped a shaft drive on it and made the GT750, one of the best budget tourers ever made. It also gained more power and bigger valves for the Uni-Trak GPz750

As if that wasn't enough they turbocharged it for the Z750 Turbo, and incredibly used exactly the same cylinder head as the original Z650. At 112bhp the Z-Turbo produced nearly 50bhp more than the original Z650 and was still reliable. If proof of the original design's strength were ever needed, then this was it.

The engine survived for more than 25 years, powering the 750 Zephyr retro and ZR750 into the 21st century. No other Japanese engine has the same kind of pedigree. Not one.

Not only has the 650 and its spin-offs proved to be astonishingly reliable, their components can be mixed and matched almost at will. Plenty of people, for example, bore Z650s out to 750, or simply swap entire engines.

The Z650 has a purity of line and sense of proportion that very few Jap bikes have ever achieved. Honda's 400 Four managed the same trick. So did the original 350LC. Buy now before they become too expensive.



Z650 FAMILY TREE

Inspiration for a middleweight gem

1960 MEGURO K1

Between 1960-63 Meguro, a Japanese bike manufacturer, merged with Kawasaki. Its K1, a 496cc ohv twin, became the basis for Kawasaki's 1966 W1

1962 KAWASAKI B8

This 125cc two-stroke single was Kawasaki's first complete bike after the Meguro take over. It featured a four-speed box and made a claimed 11bhp @ 6000rpm

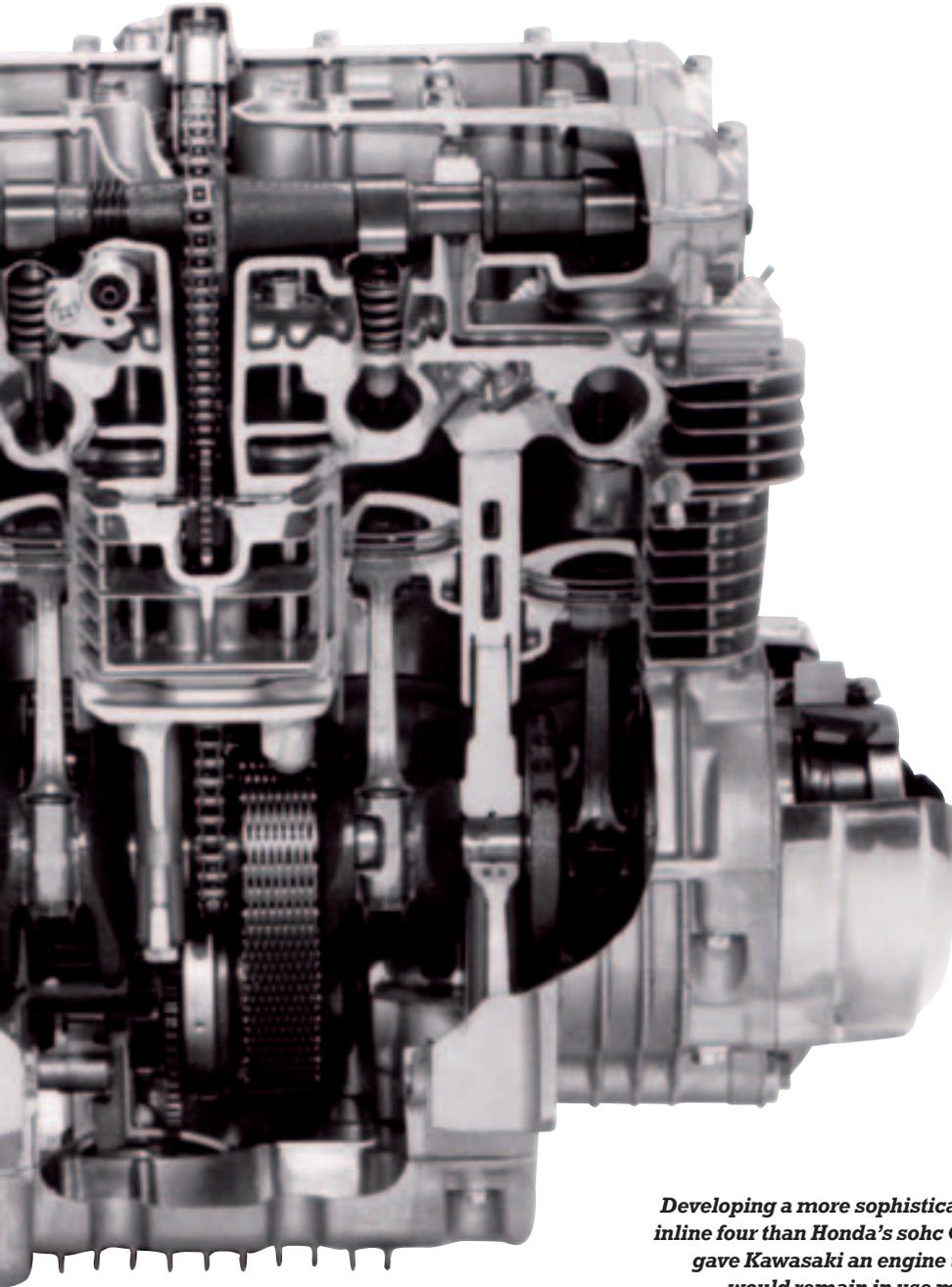
1964 KAWASAKI SG

Kawasaki's first four-stroke. An electric start 248cc ohv single with a double cradle frame, it was based on an earlier Meguro design

1965 KAWASAKI K2

Basically a reworked Meguro K1, with a Kawasaki badge. Was poorly received in the US and rapidly replaced by the more refined W1





Developing a more sophisticated inline four than Honda's sohc CBs gave Kawasaki an engine that would remain in use more than two decades

1966 KAWASAKI W1

At 624cc the W1 was the largest capacity Japanese bike of its time. Owes much of its design to earlier Meguro K1 and BSA A7/10



1973 KAWASAKI Z1

Development on Kawasaki's first four started in 1968. Bike was launched in '72. Home market 750cc Z2 was also launched



1976 KAWASAKI Z650

As nimble as a 550, and almost as quick as a 750, the Z650 redefined what an inline four could do



SPOTTER'S GUIDE



● **1976/1977 Z650-B1**

The original Z650, offered in two colours, red or emerald green. Single front disc – caliper mounted forward of the fork leg, wire wheels, a claimed 64bhp @ 8500rpm.



● **1978 Z650-B2**

Front caliper moved to the back of the fork leg; mastercylinder changed from round to triangular. Three-phase charging system replaced with two-phase; regulator and rectifier now a combined unit. Rubber mounted front footpegs.



● **1978 Z650-C2**

Aka the Z650 Custom (KZ in US). Metallic silver. Seven-spoke alloys, triple discs. '79 C3: speedo with kph as well as mph markings, luminous dark blue only.



● **1980 Z650-F1**

Cross between a C and a B model. Alloy wheels; drum rear brake in place of disc. Blue, red or green.



● **1981 Z650-F2**

Major revision, using many parts from new Z750. Electronic ignition, black motor, new clocks, no kickstart. '82 F3 as F2 but with carbs and air box from the Z750E/L models.

What made Jerry Borton stop pickin' last night at the Lone Star Cafe?
The 650SR.



Kawasaki

◀ **1978** Kawasaki's US ad campaigns sank to an all-time low in '78. Broken G-Strings indeed. The sheep weren't impressed either

What made the law firm of Dicker and Dicker bail out on the accused?
The KZ650s.



Kawasaki

► **1978** Just when you thought Z650 publicity couldn't get any worse Kawasaki unleash a Leo Sayer-a-like and milk the livestock theme for all it's worth. Time to mooove on...

PERIOD ROAD TESTS

“On the dyno we wound it down to 1700rpm pulling full throttle”

MCM, Nov 1977



“Probably the first and most lasting impressions of the Kawasaki are of its comfort and the relaxing way in which the handling blends with the willing motor.

It goes easily and it goes fast. It also has quite an amazing spread of power, on the dyno we wound it down to 1700rpm pulling full throttle. From there it pulled on up to its peak and carried on to 9600rpm and the power still didn't fall off.

“Rapid performance and a smooth pick-up, particularly when switching from overrun to power, make the engine unit as impressive on the road as it was in the test house. And when you need to be careful on wet and greasy roads the same characteristics make the Z650 easy to handle.”

John Robinson

“Through the quarter it's about a second slower than claimed”

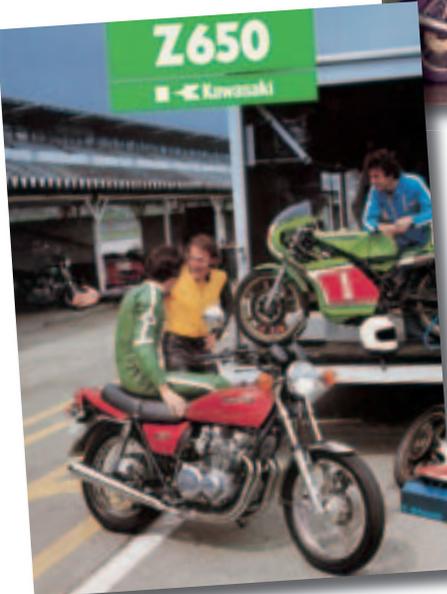
Bike, March 1977



“Right out of the crate it will out-perform any 750 in the world,” gushed the American ads. Well, we should have known all along that even dream weavers Kawasaki cannot attain the unattainable.

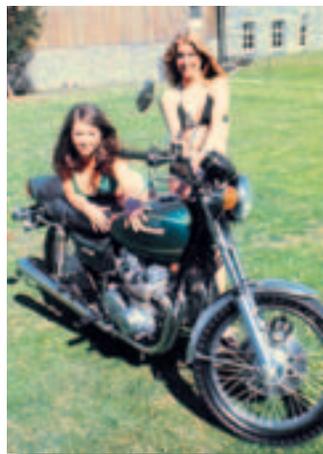
They've oversold the 650, burdened it with claims that it cannot possibly fulfil. For the truth is that the bike is nothing like 121mph fast, nor is it a 12-second quarter-miler. Our speed trap session revealed a top end of around 110mph, with the dohc motor red-lining at nine grand in top. And through the quarter the Z650 is about a second slower than Kawasaki claim.”

Mike Nicks



▲ **1976** “Yes I know I look a complete buffoon holding my arm out like this, but at least I'm not having to play guitar to a flock of sheep...”

► **1976** Kawasaki's Z650 development engineers Mabel and Constance enjoy a (or perhaps the) moment in the sun on the world launch – in Scotland...



I BOUGHT ONE...

Neal Champion

Cheltenham

“I came across a cheap Z650 in my first year at university in 1981. It was a 1976 bike, VGJ 86R, one of the first B1s with wire wheels and a single disc, in dark metalflake green. I thought it was the best looking bike ever, and it was so capable – 95mph was now a reasonable cruising speed, instead of flat out as on my previous Z400 twin. I visited friends across the country, just to ride it long distances. It would indicate 125mph, and kept up with a mate's brand new Z750 too. I killed it despatch riding, and still regret it.”



Neal Champion with his Z650 B1 that would do 125mph and keep up with brand new Z750s

PRICES

KAWASAKI Z650 B1/2/3

CONCOURS £2250-£2750

GOOD £1000-£1500

RATTY £300-£600

BASKET CASE £200-£300

ENGINE/FRAME

Numbers run from...

1976/77 Z650 B1

frame KZ650B-000001

engine KZ650B-000001

1978 Z650 B2

frame KZ650B-027501

engine KZ650B-027501

1978 Z650 C2

frame KZ650C-010001

engine KZ650C-010001

1979 Z650 B3

frame KZ650B-046201

engine KZ650B-046201

1979 Z650 C3

frame KZ650C-022801

engine KZ650C-022801

1979 Z650 D2 (SR)

frame KZ650D-010601

engine KZ650D-010601

1980 Z650 D3

frame KZ650D-026001

engine KZ650D-026001

1980 Z650 F1

frame KZ650F-000001

engine KZ650BE114501

1981 Z650 F2

frame KZ650F-007201

engine KZ650F-007201

1982 Z650 F3

frame KZ650F-012401

engine KZ650F-012401

1983 Z650 F4

frame KZ650F-014301

engine KZ650F-014301

NB: the B2 was also built for a while at Kawasaki's factory in Lincoln, USA. Frame number KZ650BE027501 and engine number KZ650B508016 denote a US-made bike.

IS IT DODGY?

Walk away when

- It's got a 16in rear wheel. The cruiser models are horrendous. A large part of the Z's appeal is its handling so it's pointless buying one that goes around bends little better than a combine with flat tyres. Don't be put off by bikes badged as KZs though; they're simply US spec.
- All the chrome work is shot. It'll cost a fortune to repair as most of it is now irreplaceable. Another strong reason to buy a Z650 is the fact that they're relatively cheap, so why spend a fortune doing something up that's simply not worth it.



B1-B3s have the same clocks as the Z900. The outer cases have been known to rot



Battery lives under the seat, which is handily supported open by its own stay



● BRAKES

Original B1 to B3 Z650s came with a single front disc; twin discs were an option. Cs, Ds and Fs got twin discs as standard, but they're not interchangeable with B series discs because they're smaller.

● BORES

Despite their robust design, high mileage Z650s can burn oil due to worn rings and barrels. Camchain rattle at tickover is normal – clatter is not. Early bikes have a single row chain, later a Hy-Vo type.

● PRIMARY CHAIN

Rapid acceleration, especially from cold, can wear the untensioned primary chain. Listen for clattering from the bottom end, particularly on bikes showing 60K plus.

● CARBS

Don't leave B1 models to tick over whilst resting on their side stands because the carburetors can flood. Z650s naturally lean over a long way on their stands, so don't assume the stand mount is worn.



● **CLUTCH**

If the gearbox gives out a grimacing clunk when selecting first gear it's likely the rubber cush drive blocks inside the rivetted-together ring gear are worn or that the clutch is poorly adjusted.

● **REGULATOR /RECTIFIER**

Dimming of the lights and a gradual loss of first electrical and then mechanical power are the usual signs. Superdream combined reg/recs are cheap and fit.

● **EXHAUST**

Original 4-2 Z650 exhausts are getting very rare these days, but if you can find and fit one they make a huge difference to the overall value of the bike. Motad and BSM make quality four-into-one systems.

● **MUDGUARDS**

Look for rot on the rear guards around the mounts, under the seat. If they're rotten it may be worth walking away because new guards are almost impossible to get, and used ones often go for daft money.

I SPECIALISE IN THEM



Dave Marsden

*Z-Power, Lancashire
 (01942 262864)*

● **The starter motor clutch is the weak point. In theory you have to split the crankcases to replace it, but it can be done in situ if you remove the whole clutch and the sump.**

● Cams from F models won't fit into earlier Bs or Cs because they use a different type of camchain. For the same reason you can't swap the top ends, unless you change the crank as well. Even then the mechanical rev counter won't work off the F cams, so you have to change the instruments too.

● **You can easily bore out the 650 to take 750 pistons, though, or just swap entire engines over. Quite a few people run Z650s with 750cc kits.**

● Camchain tensioners on the later Zeds stick and the engine rattles, but it's an easy fix. A set of wedges and springs is £30.

● **If the clutch has been abused the rivets holding on the basket wear and it can scream on a fast take-off. You need a whole new clutch basket to cure it.**

● Z650s undervalued at the moment. You can get a nice example for a grand and a really, really good one for under two grand. I'm absolutely certain that they're going to increase in value soon, though.

● **Service items, like oil filters, air filters and brake overhaul kits are still readily available. We sell loads.**

● The vacuum tap can give trouble with age. The diaphragm either hardens and sticks or just splits. Repair kits are available.

● **The top end is fairly maintenance free. Once the valves have been properly shimmed, they stay in clearance for a very long time.**

● In the early days, we used to get a lot of bottom end problems because people just weren't used to plain bearing cranks which needed regular oil changes and good oil. Now, though, we hardly ever sell main bearings and big ends.

Owners' tips

NEIL MURRAY

London

Owens: 1977 Z650 B2

Top tip: "If you're fitting an OE exhaust system, header pipes one and four are separate items. They look identical, but they're not. If you muddle them up, they'll never fit properly. Kawasaki actually stamps a 4 and a 1 on the underside, close to the manifold."



JIM EVANS

Kettering

Owens: 1979 Z650 C1

Top tip: "Don't be held to ransom for shiny parts. They are rare, but if you wait bits do turn up. A decent used exhaust is £150, but add plating and polishing and you're close to the cost of a new one. Spend money on the mechanicals first before fixing the cosmetics."



IAN PHILLIPS

Kent

Owens: 1977 Z650 B1

Top tip: "The rear mudguards tend to rot where the flange ends, under the seat. I've seen loads that have gone there. Starter clutches – listen for a squeal on start-up. Prod the button quickly and it seems to engage properly. I've found aftermarket horns blow the main fuse."



STEVE THOMAS

Chalfont St Giles

Owens: 1979 Z650 C1

Top tip: "It's difficult to get the carbs back on if you've had them off the bike. Make sure that the inlet rubbers are as soft as they can be. They need to be either new or pliable. You can soften them in boiling water. But if they're rock hard, just throw them away – they'll crack."



JOHN NOBLE

Kettering

Owens: 1976 Z650 B1

Top tip: "I still find it very pleasant to ride. I had Z900 twin discs fitted from new – the single disc isn't powerful enough. When my calipers kept seizing I went to a local engineer who made up some stainless steel pistons, and since then I've never had a sticking piston."



FAST FACTS

SERVICE DATA Kawasaki Z650 B1/2

Spark plug type	NGK B8ES
Plug gap	0.7-0.8mm
Ignition timing	10° BTDC @ 1500rpm 35° BTDC @ 3200rpm
Valve clearance (cold)	0.08-0.18mm
Main jet size	102.5
Pilot jet	16
Fuel level in float bowl	29-31mm
Idle speed	950-1050rpm
Throttle cable play	2-3mm
Engine oil type	10W/40
Oil change schedule	3000m
Oil filter life	6000m
Fork oil type	10W/40
Fork oil capacity	165cc each leg
Headlamp bulb	45/40W
Brake fluid type	DOT3, DOT4
Minimum brake disc thickness	6mm
Recommended clutch plate thickness	3.7-3.9mm
Drive chain length	102 links
Recommended chain tension	20-30mm

SPARE PARTS

Z-POWER

01942 262864

Prices include VAT (all genuine unless indicated)

Air filter	£13
Caliper repair kit	£22
Clutch cable (pattern)	£12.50
Clutch friction plate	£7.50
Clutch steel plate	£4
Contact breaker points (two sets)	£35
Front wheel bearing	£6
Fuel tap (B1)	£58
Headlamp rim	£28
Ignition coil (pattern)	£35
Oil filter	£4
Side panel	£40
Spark plugs NGK B8ES (set of four)	£10
Starter clutch assembly	£68
Swinging arm bearing	£9
Valve shim	£3.70
Valve spring set	£95

FURTHER INFO

CONTACTS

● **Kawasaki UK** 01628 856660

Official Kawasaki importer. Bourne End, Bucks. www.kawasaki.co.uk

● **Z Power** 01942 262864

The David Silver of the Kawasaki world. Experts and parts specialists for most Zs, including the 650. www.z-power.co.uk

● **RB's** 0115 913 1333

Classic Kawasaki specialists: restorations, bikes for sale and even a museum. Also on web: www.classickawasaki.com

CLUBS

● **Kawasaki Owners' Club**

Web based owners' club and forum. www.kawasakiowners.co.uk

● **Vintage Japanese Owners' Club**

PO Box 21671, Falkirk FK1 9AL.

0870 0138562, www.vjmc.com

● **Z1 Owners' Club (also Z650s)**

PO Box 11817, Birmingham, B43 6WZ.

jerryhumpage@aol.com

USEFUL BOOKS

● **Kawasaki Z650 Manual**

Published by Haynes. ISBN: 0-8569-373-9

WEBSITES

● http://jarle.eltelevest.no/Kawasaki/Kawasaki_1.htm

Extraordinary detailed site with lots of high quality pictures and specifications

● www.z650b.com/z650/z650

Japanese site, but a good source of 650 info

● www.motorpalace.nl

Dutch Z650 appreciation site. Loads of pics and information and Z650 specials

MISSED A DOSSIER?

PREVIOUSLY FEATURED:

● AMC twins ● BSA A65 ● BSA Bantam ● BSA singles ● BSA Road Rocket ● Ducati 900SS ● Ducati 750GT/Sport ● Ducati singles ● Hesketh V1000 ● Honda CB400/Four ● Honda CB750 ● Indian Enfield Bullet ● Kawasaki GPZ900R ● Kawasaki Z1 ● Laverda 750 ● Laverda Jota ● Morini 3½ Sport ● Moto Guzzi V7 ● Norton Commando ● Norton Dominator ● Silk 700S ● Suzuki GSX-R750 ● Suzuki GT750 ● Suzuki Katana ● Triumph Daytona ● Triumph 650 twins ● Triumph T140 ● Yamaha RD350LC ● Yamaha RD400 ● Yamaha XT500

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