

# cycle guide

FEBRUARY 1979 \$1.00  
47457

**Yamaha 1100 Special:  
Fly low, go fast,  
look good**

**EXCLUSIVE!  
YAMAHA  
YZ400F**



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146

CY#

**NEW HARDWARE:** Honda's Star-Spangled CB650,  
Yamaha's Woodwise IT175, Honda's CB125 Bookbagger  
and JD Engineering's "Works" YZ400E



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**ON THE COVER:**

Yamaha's YZ400F demonstrating its 20-percent increase in power for Richard George's Nikon.

**QUOTE:**

"The Yamaha YZ400F is so close to the best that only the best will know the difference."  
—Page 37

## STEREO SUPERCROSSERS: FAST & FASTER

- 37** YAMAHA YZ400F *good enough now for the best*—by Paul Dean  
**42** JD "WORKS" YZ400E *aftermarket antidote for obsolescence*—by Paul Dean

## TESTS

- 52** YAMAHA XS ELEVEN SPECIAL *big inches for the boulevard*—by Steve Thompson  
**74** HONDA CB650 *the traditionalist's Four reborn*—by Michael Jordan  
**76** CB650 AS TUNE-KING *Honda's help for home tuners*—by Michael Jordan  
**68** MINITEST: HONDA CB125 *the bookbagger's buddy*—by Michael Jordan  
**81** MINITEST: YAMAHA IT175 *woodswise and enduro-ready*—by Larry Works

## FEATURES

- 46** EVERYBIKE GOES BRACKET RACING *drag strip fun with a KZ400*—by Rich Taylor  
**57** THE FIVE-GRAND DREAM RIDE *eight visions of how to take the money and run for the fun*

## PRODUCT EVALUATIONS

- 51** FULL-BORE WOMEN'S BOOTS *overdue but finally Over Here*—by Merry MacTavish  
**66** BATES HUGGER *expanding the world of the leather jacket*—by Steve Thompson

## GUIDE LINES

- 31** COMING SOON *Visible Kawasaki Six*  
**33** COMING SOON *Maico Magnum Enduros*  
**34** RIDE/REPORT *Dunstall Suzuki GS1000*

## SPORT LINES

- 87** CANNONBALL BREECE *coast-to-coast in 69 hours*  
**89** PITBITS *Honda 500GP rumors*  
**91** WINNERS & LOSERS *Bad Guy Baldwin breaks through*

## COLUMNS & DEPTS

- 6** CYCLE GUIDE's CYCLE GUIDE *fast fax*  
**8** EDITORIAL *true tricks from the real motorcycle guys*  
**9** LETTERS *angry owners & butane bikes*  
**14** TECHSPEAK *passing the gas*  
**22** WEST'S SIDE *heaven-sent revelations*  
**28** MOTOMART *two pages from the wish book*  
**30** SETTING IT RIGHT *for a better ride, dial K<sup>2</sup> over AB*

## ROAD TEST:

# Honda CB650

*A one-size-fits-all  
American motorcycle  
made in Japan*

BY MICHAEL JORDAN

A lot of techno-freaks are going to be confused by Honda's CB650. They're going to want to unbolt it into little bitty pieces and then paw through the rubble in search of some nugget of clever design that will unlock the secret to the motorcycle's identity. But the CB650 has nothing to do with Honda's technological assault on the One True Motorcycle. As a result, a lot of frustrated technoids are going to end up chasing their tails.

The CB650 has little to offer the hardware freak because its roots lie in the past, not the future. It's nearly a remanufactured CB550 with assorted detail improvements to make it both more appealing and more economical. The mystery question, of course, is why Honda would take the trouble to devote an 18-month development period to the construction of what is essentially an old-style motorcycle at a time when its product line is futuristic as never before.

The clue to the CB650's identity lies in its mundane appearance. When you look at this Honda closely, it assumes the shape of that familiar cliché, the Universal Japanese Motorcycle. It might have been stamped out all at once by some huge cookie-cutter. The CB650 doesn't just look conventional, it looks *perfectly* conventional, a Xerox copy of every Japanese four-cylinder motorcycle made since Honda's original CB750 in 1969.

Yet in its very mainstream mediocrity, the CB650 is as shrewdly conceived as the sales chartbusters of 1978, the Yamaha Specials. The 650's resemblance to your basic UJM promises a safe, reliable and substantial motorcycle to buyers unwill-



ing to gamble on anything out of the ordinary. At the same time, the Honda's chrome accents, two-tone paint and reversed black Comstar wheels add a touch of class. The stepped seat and 17-inch rear tire adapted from the street cruiser scene also update the UJM clichés.

The result is a motorcycle perceived as a competitor in terms of prestige for Kawasaki's semi-chopped and semi-tough KZ650SR, but one that isn't radical enough to alienate those who prefer mainstream motorcycles like the old Honda CB550K. In this way, the CB650 attracts buyers who enjoy the profiling potential of the KZ650SR but are more conservative, as well as riders who ordinarily buy strictly conventional motorcycles but demand something a little more distinctive.

Honda's decision to boost the displacement of its middleweight motorcycle indicates that the Kawasaki 650s are the CB650's performance target as well as its marketing template. Not only is the

Honda about as fast as the Kawasaki, its exhaust note certainly competes with the growl that surges from the KZ650SR's special crossover exhaust system. And the Honda is even just as fussy and cold-blooded to start as the Kawasaki, for the dash-mounted choke knob has to come all the way out before the Honda Four can be urged to life. I usually had to ride for five or 10 minutes before the engine would deliver more than a feeble gasp in response to a wring of the throttle without the aid of the choke.

In order to build a motorcycle capable of running with the Kwacker on the boulevard, Honda set out to coax 34 percent more power from its dated, two-valve-per-cylinder CB550 engine. Honda engineers therefore decreed that the 550 motor would be bored 1.3mm and stroked 5.2mm, increasing displacement to 627cc with the same 9.0:1 compression ratio. But high performance had to be earned with more than extra displacement. Honda keeps telling us that more power



of the rpm range is plagued by a hesitation between the twist of your wrist and power delivery. Also, as far as I could tell, the first 2000 rpm were little more than cosmetic. The engine wasn't making much power at these speeds, and like the Kawasaki, a judicious engagement of the clutch was required to get off the line smoothly. With less than skillful mitts, the CB650 bogged or hesitated until the tach climbed past 3000 rpm.

Once engaged in serious business beneath the glare of argon streetlamps, pedestrian crosswalk signs and ever-cycling stoplights, the CB650 loses out fractionally to the KZ650SR in acceleration. In the quarter-mile, the Kawasaki has a .23-second and 0.2-mph advantage. Both bikes are substantially faster than the standard-brand KZ650 because their chubby rear tires give better traction off the line. When there's a patrol car in the vicinity to put the lid on such extra-legal activity, the CB650 rider will appreciate his engine's Cream-of-Wheat smoothness at less than 5000 rpm. Above that mark, the engine tingles somewhat in a high-output frenzy, but the power is delivered progressively, without the cammy feeling of the Kawasaki.

Out on the Interstate, the Honda cruises comfortably at 5000 rpm, which is 60 mph in top gear. Substantial roll-on acceleration is available at that speed, but to get instantaneous power, the CB650

prefers that you dip into the gearbox for a lower gear. The engine cruises happily, but unlike a 750cc or 1000cc motor, the tachometer and gearbox are important in order to get the most out of it.

While you're on the freeway, the CB650's front fork quickly becomes your friend. Soft and stiction-free, it recalls the CX500's fork in the way in which it mirrors even the tiniest ripple in the pavement. Once you're riding on concrete Super Slab, though, the CB650 loses its composure. The CB650's Honda FVQ shocks with their two-stage rebound damping become confused by abrupt bumps like the gap between concrete slabs on freeways and the bike thumps you through the seat.

The CB650 engine's lusty, free-revving personality promises a sizable fun quotient whenever you encounter "Caution: Winding Road" signs. Indeed, the engine's willingness to live at 8000 rpm and the gearbox's low-effort shifting lived up to my expectations. Just a flick of the shifter and a twist of the throttle buried the speedo needle into the nether reaches of the dial. The orchestration of exhaust note, intake noise and engine sounds assured me that this motorcycle relished a long and winding road.

It was the CB650's soft suspension that let me down in the corners, though. While scratching into turns, the bike felt soft and a little unsure. Heavy-handedness on

### **Everyman's easy-living, easy-riding motorcycle**

*Plenty of good clean fun for Saturday morning and Sunday afternoon.*

comes from more fuel flow, so while a four-valve head was out of the question for the 650, the intake valve increased 4mm in diameter, the exhaust valve grew 3mm and the carbs went up 4mm in size.

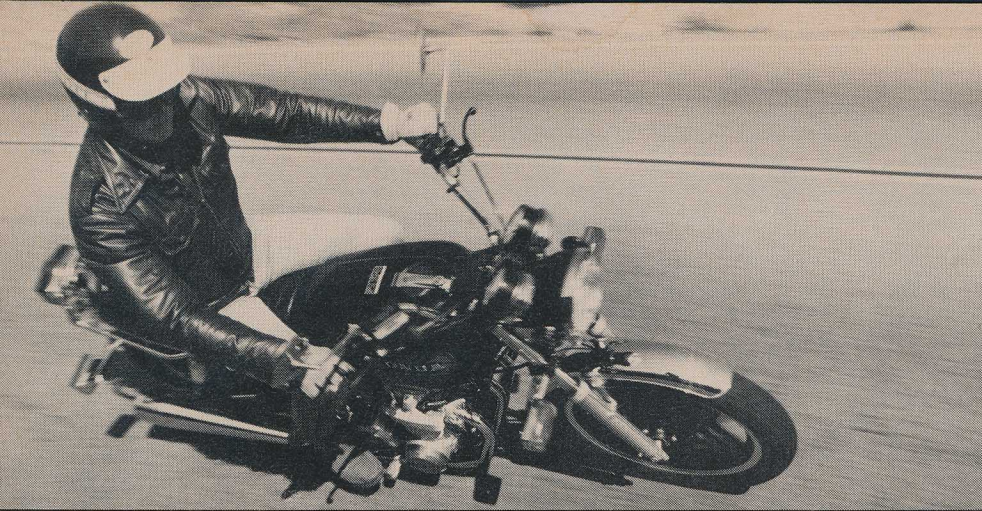
To cope with the stress of added horsepower, the engine's oil capacity has increased 0.4 quarts over the 550's and the oil pump was upgraded. To further aid cooling, the new oil sump is finned internally as well as externally, and the oil filter case is enlarged to act as a cooler. Other refinements include a beefier transmission, 260-watt alternator and a transistorized, breakerless ignition.

But as the CB650 engine's cold-bloodedness indicates, it now shares more than performance with the Kawasaki 650. The CB650's off-idle response is poor, just like the Kawasaki Four's, despite having an accelerator pump to aid the throttle response. Unlike the Kawasaki, the Honda doesn't stumble and lurch like a drunken sailor when full-throttle is applied at low rpm, but even so, the first half



PHOTOGRAPHY: DAVID CLARK

*Continued*



**HONDA CB650** *Continued*

The CB650 measures up to the middleweight market, however, despite its flaws. The Suzuki GS550 rides a little better and likes corner-storming, but it suffers in fuel mileage and lags behind the CB650 in the quarter-mile by .62 of a second. The Kawasaki KZ650SR is 35 pounds heavier than the Honda, but prevails in the quarter-mile. And though it's geared taller than the Honda and has smaller carbs, however, the Kawasaki gets poorer gas mileage.

Actually, I liked riding this motorcycle. I liked it better than the Kawasaki, as a matter of fact. Its macho image wasn't so transparent that I was ashamed to be seen washing it in my driveway. And it had the capability to do everything that I asked from it—carting two-up for long distances or fooling around on freeway off-ramps. For casual riding, the CB650 was all right.

This Honda's problem lies in the fact that it's a combination plate, a hero sandwich of two-wheeled themes. And I can see the seams between its disparate personalities just as clearly as on any Universal Japanese Motorcycle from the past. It makes all the right moves and performs capably in every situation. But it does all things capably instead of doing one thing perfectly. Or even a bunch of different things brilliantly, like a Suzuki GS1000EC.

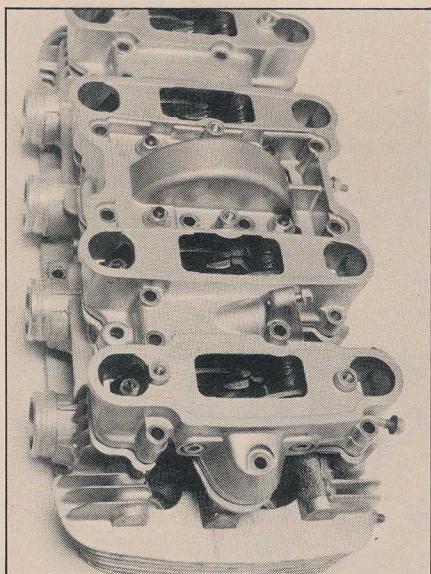
In this respect, the Honda CB650 confirms its status as an old-style motorcycle. This one-size-fits-all concept should prove highly marketable, but it doesn't invite evaluation by the same hard-hitting standards as a Honda CB750K. The engine revs freely and makes good power, but its low-rpm performance is flawed. The bike has a soothing ride on fresh asphalt, but sharp bumps confuse the rear shocks. Cornering should be fun, but the soft front suspension interferes.

Ironically, the only thing that really matters about the CB650 is its market position. The 650 buyer, wary of his wallet, will be attracted to the CB650 because it sells for about \$250 less than a Kawasaki KZ650SR, has lower maintenance costs than the Kawasaki and qualifies for about \$50 lower liability insurance rates than a CB750K. In addition, it combines the appearance of a comfortable and reliable Universal Japanese Motorcycle with the prestige of a boulevard bomber. It's a perfectly American combination. And in living up to that formula, the Honda CB650 indicates that there are more ways of making an American motorcycle than even Harley-Davidson may suspect.

my part while leaning the bike over, or a bump or ripple in my line, produced a slight twitch, as if the front and rear suspension rates were not in harmony.

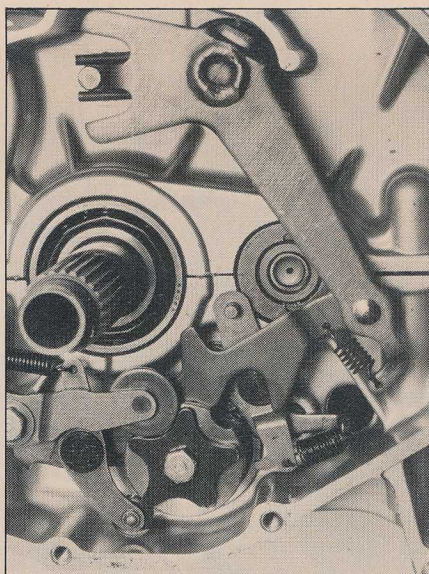
The CB650 has trouble with corner-storming because its suspension is calibrated for a soft ride which also affects the CB650's performance while braking. Naturally, nosedive was noticeable, but our test bike also had a front disc brake

that pulsed under light applications. Amplified by the soft suspension, the shuddering caused by the erratic braking made my head bob back and forth while rolling up to stopsigns. A number of early production Honda street bikes have been flawed in this way—as if a portion of the brake disc had glazed—and Honda engineers are presently engaged in tracking down the source of the problem.



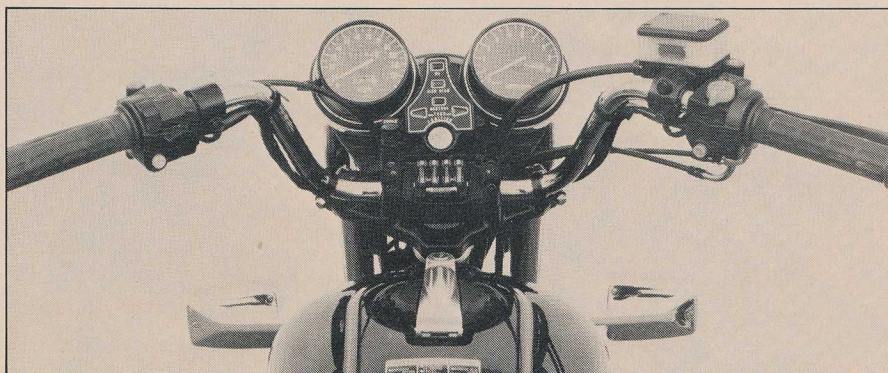
**Screw-type valve adjusters**

*Maintenance made easy.*



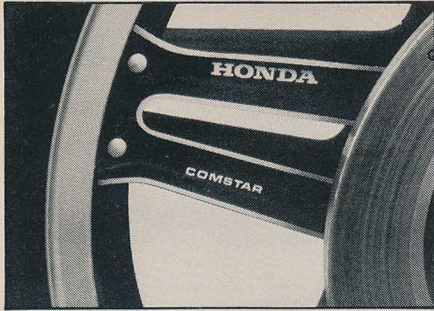
**Levers, pins, detent wheel and springs**

*Upshifting without overshifting.*



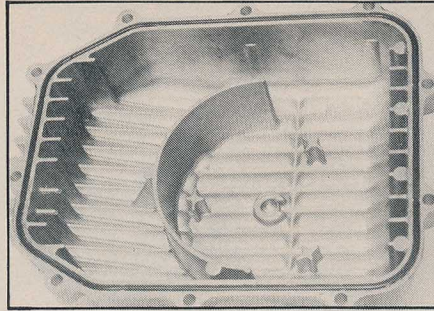
**Familiar dash layout combined with the latest levers and switches**

*Blending comfortable clichés for an image of impassive reliability.*



**Reversed spokes for Comstar wheels**

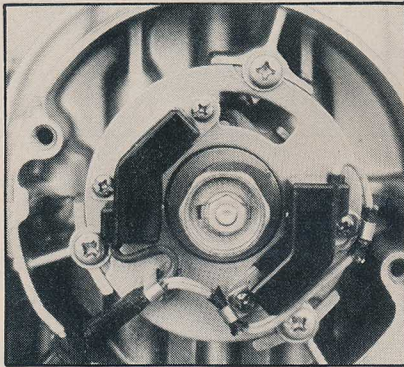
*Details designed in hot-rod heaven.*



**Oil sump features internal finning**

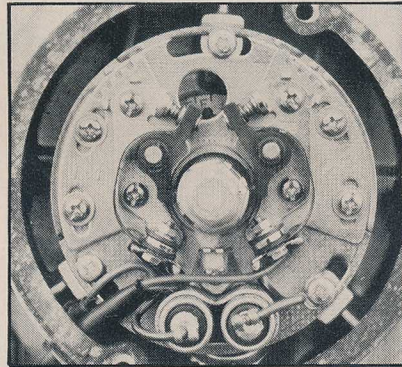
*More ponies need better cooling.*

## When the Clock Strikes Tune-up Time



**CB650's set-it-forget-it ignition**

*The 650 that's cheap to buy and inexpensive to maintain is pointless.*



**Kawasaki's conventional ignition**

• As far as a lot of 650cc motorcycle owners are concerned, maintenance is something you perform with a wash bucket and a garden hose. Their wallets are too thin to grapple with much else. Any wrench-twisting their bikes do receive is apt to be conducted in the privacy of their own garage rather than the local bike shop.

It's no wonder then, that Honda's CB650 is designed to be a low-maintenance item. And the service that it requires can be performed with your basic kitchen-drawer toolbox.

First, the Honda has transistorized breakerless ignition. Basically, it never needs attention. The engine features 8mm hex-head bolts that forestall the possibility of stripped Phillips-head case screws. Six rocker-cover screws grant access to the valves. The valve cover and primary cover both use a rubber gasket that can be reused time and again, unlike the \$4-to-\$6 paper or fiber gasket set for other motorcycles. Valve maintenance is performed by inserting a feeler gauge between the cam lobe and rocker, then using the screw-type adjusters to set valve lash. There's no need to keep a stack of shims in your tool box.

The significance of the Honda's tune-up procedure is clarified by the complicated tasks required to get a KZ650 tuned. First, the Kawasaki's dual points must be replaced and the timing set every 5000 miles.

The Kawasaki also has a peculiar valve adjustment that makes it harder to live with than other motorcycles, not to mention the Honda.

The shims that adjust the Kawasaki's valve lash are, contrary to standard practice, housed beneath the tappet cup that sits on top of each valve stem. To change valve lash, the cams must be removed in order to get at the shims. And so when you're done mucking around with the valves, you have to reinstall the cams and time them. This system insures that valve adjustment won't be required more often than every 10,000 miles—rather than the 5000- to 6000-mile valve adjustment interval for the Honda—but considering the difficulty involved, it's just as well.

The bottom line in this service shootout between the CB650 and the KZ650 is tuneup costs. If the Honda owner takes his bike to a shop, a tune-up will cost him \$13. A Kawasaki KZ650 owner will almost certainly be compelled to bring his bike to a shop for a tune-up and it will cost him \$54, or \$19 just to have the points replaced.

The kind of riders who inhabit the 650cc motorcycle class are far more interested in riding motorcycles than fixing motorcycles. Tune-up costs could be the difference in buying a new bike. Especially if you're affiliated with the wash-bucket school of motorcycle maintenance. —Michael Jordan

## Ride Review

• The CB650 confuses me. I can't understand where it fits or why it even exists. It costs a mere \$100 less than the faster, better-handling, better-stopping, better-looking and more sophisticated CB750K four, and it is only about \$150 more expensive than the smoother, more comfortable, technologically superior CX500 vee-twin.

Kawasaki built a 650 four to be different, to offer 750-level performance at a reduced price with a motorcycle 100cc smaller than the class norm. That "giant-killer" image was the bike's biggest sales feature. But Kawasaki had no 750 four or no 500-class four-stroke at all, so the 650 made perfect sense. For my money, that logic isn't transferrable to a ho-hum motorcycle sandwiched between the world's finest 500 vee-twin and one of the world's niftiest 750 fours. —Paul Dean

• The CB650 is a pretty clear indication that Honda knows the value of the four-cylinder four-stroke "traditionalist" market that it invented back in 1969. At what probably was bargain-basement retooling cost, they turned the CB550 into the new 650, and added enough incentives to lure anyone even vaguely interested in what's usually sneered at as the "UJM". And if the resulting device confuses price- and technology-conscious riders, I think it's a good bet that people who simply want a four-cylinder bike will love the new CB650. Especially since so much low-effort maintenance has been built in.

Lack of techno-tricks aside, I didn't much care for the way the bike acted. Wiggles, surging brakes and uncomfortable ergonomics capped a lack of low-end grunt and, in the end, just made the bike irritating to me. None of which convinces me that the bike won't sell; there is a reason, after all, why so many people think "Honda" means "motorcycle." —Steve Thompson

• Once you get over the feeling that the Honda CB650 is a 750 that got sand kicked in its face at the beach, its true personality pokes through. This bike exists as a public monument to the Universal Japanese Motorcycle. It's not easy to pinpoint where the individual components fit together, but the overall effect is like a pair of sensible shoes. It's so much like so many other motorcycles that have gone by that it registers simply as "motorcycle." That transparent personality might serve some purpose if Honda's 650 were a closet performer, but it's hindered by braking and handling woes and there's no Q-ship lurking inside. Even as a street profiler something is missing. No one's looking at you, they're looking through you. It seems that all the personality has been engineered out of the 650 and only the quirks are left. —Larry Works

# Honda CB650

## SPECIFICATIONS:

**IMPORTER:** American Honda Motor Co.  
100 W. Alondra Boulevard  
Gardena, California 90247

**CATEGORY:** street

**SUGGESTED RETAIL PRICE:** \$2498

### ENGINE

Type ..... four-stroke transverse vertical four  
Valve arrangement ..... single overhead camshaft  
Bore and stroke ..... 59.8mm x 55.8mm  
Displacement ..... 626.9cc  
Compression ratio ..... 9.0:1  
Carburetion ..... four 26mm Keihin slide/needle,  
one accelerator pump  
Air filter ..... disposable paper element  
Lubrication ..... wet sump  
Starting system ..... electric only  
Ignition ..... battery/dual electronic pick-ups/dual coils  
Charging system ..... 12-volt, AC generator, solid-state  
voltage regulator/rectifier

### DRIVETRAIN

Primary drive ..... Hy-vo chain  
Primary drive ratio ..... 1.166:1  
Secondary drive ..... straight-cut gears  
Secondary drive ratio ..... 2.346:1  
Clutch ..... wet, multi-plate  
Final drive type ..... # 530 chain (3/8-in. pitch, 3/4-in. width)  
Final drive ..... 16/40 :2.50:1  
Gear Internal Overall MPH per  
gear ratio gear ratio 1000 RPM  
I 2.50 17.09 4.4  
II 1.72 11.78 6.4  
III 1.33 9.12 8.3  
IV 1.07 7.34 10.3  
V 0.88 6.05 12.5

### SUSPENSION / WHEEL TRAVEL, IN.

Front ..... 35mm-diameter stanchion  
tubes/5.4 in. (140mm)  
Rear ..... 5-way adjustable spring preload/4.2 in. (107mm)

### BRAKES

Front ..... single-acting hydraulic caliper,  
10.9-in. (276mm) disc  
Rear ..... drum, single-leading shoe, rod-operated

### TIRES

Front ..... 3.50H19 Dunlop F11  
Rear ..... 4.50H17 Dunlop K87

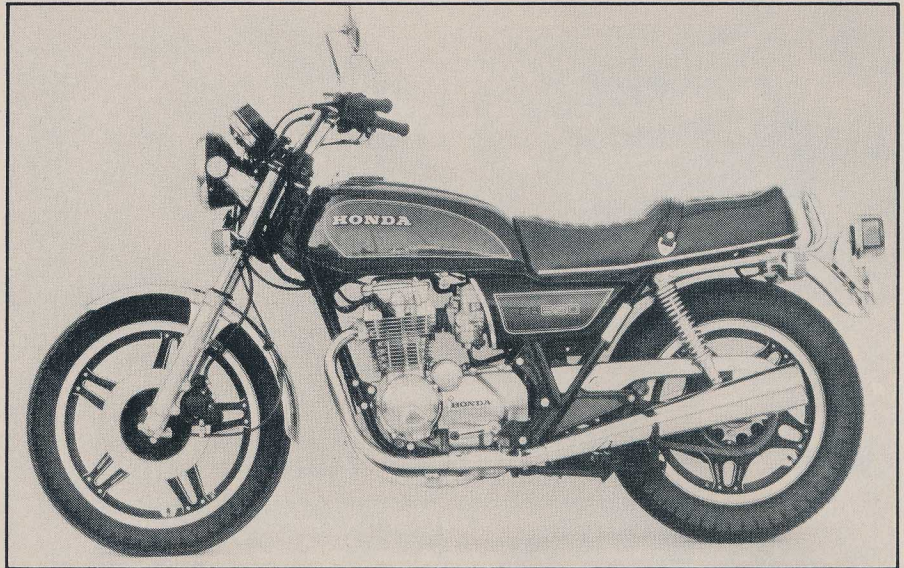
### DIMENSIONS AND CAPACITIES

Weight ..... 447 lbs. (202.7 kg)  
Weight distribution ..... 45.1% front, 54.9% rear  
Gross vehicle weight rating ..... 835 lbs. (378.7kg)  
Wheelbase ..... 55.6 to 57.0 in. (141.2 to 144.8cm)  
Seat height ..... 31.7 in. (805mm)  
Handlebar width ..... 30.0 in. (762mm)  
Footpeg height ..... 13.3 in. (338mm)  
Ground clearance ..... 6.2 in. (157 mm), at exhaust collector  
Steering head angle ..... 27.5 degrees from vertical  
Front wheel trail ..... 4.1 in. (105mm)  
Frame ..... tubular mild steel, double front downtubes  
Oil capacity ..... 3.8 qt. (3.5 l)  
Fuel tank ..... steel, 4.6 gal. (17.4l),  
including .79 gal. (3.0l) reserve  
Instrumentation ..... tachometer, speedometer,  
odometer, tripmeter resettable to zero

### PERFORMANCE

Fuel consumption ..... 37.5 to 51.2 mpg (15.9 to 21.8 km/l)  
Range, maximum ..... 173 to 230 miles (278 to 370km)  
Range, reserve only ..... 30 to 40 miles (48 to 64km)  
Speedometer error, 30 mph indicated ..... 29 mph actual  
Speedometer error, 60 mph indicated ..... 59 mph actual  
Best 1/4-mile acceleration ..... 13.29 sec., 99.9 mph (160 kph)  
Top speed (calculated) ..... 113 mph (182 kph)  
Stopping distance from 30 mph ..... 28 ft. (8.5m)  
Stopping distance from 60 mph ..... 131 ft. (39.9m)

All weights and measurements are taken with machine  
unladen and fuel tank empty.



## COMPARATIVE TEST DATA:

Make	Quarter-Mile, sec/mph	Top Speed, mph	Weight, lbs	Stopping Distance From 60mph, ft.
Honda CB650	13.29/99.9	113	447	131
Kawasaki KZ650SR	13.06/100.1	115	482	135
Suzuki GS550B	13.91/93.70	106	443	137
Yamaha XS650D	14.29/91.90	104	469	141
Honda CX500	13.86/93.40	106	449	134
Triumph Bonneville	14.20/92.40	98	414	145

## PERFORMANCE:

