



HONDA GL1100

The 1980 GL1100 Gold Wing is similar to its predecessors in concept and appearance, but don't let that fool you. From your first mile on it, you'll know it's really different: lighter, smoother, more comfortable and a lot faster.



● YOU REALLY CAN'T APPRECIATE WHAT THE new Honda Gold Wing is unless you know what the old one was, and was not. One thing is certain: the original GL1000 was not comfortable. It had a narrow, high-crowned, hopelessly hard seat that not even Italians could love. And the shock absorbers, the suspension in general, sent scores of rump-sore, whiplashed GL riders scurrying to accessory shops in search of relief. Some of these riders delayed the inevitable by telling themselves that, "the seat and shocks will break in, I'm sure they will." But the break-in never came, and the first GLs were tolerable tourers only after their owners fitted them with custom seats and special shocks.

Another affliction for 'Wing owners was that the old GL 1000s were cold-blooded ani-



HONDA GL1100 TEST



Touring on the GL 1100 is much like sitting in a hammock chair and watching a conveyor-belt highway rush beneath you. The new Gold Wing is the nearest thing to a two-wheeled automobile that motorcycling has. While gazing at car passengers a realization hits you: you're more comfortable than they are.

mals, reluctant to leave the peace of a dark garage and downright sullen about short trips anywhere. Especially when ambient temperatures were more than a degree lower than that of the human body. Usually, when a rider arrived at his destination the GL1000 was just about ready to run without its choke.

The old GL also had a "legal" load capacity so slight that it could be exceeded by carrying a plump passenger. If you subtracted the bike's weight from the load limit given for its tires, you got a difference of just 360 pounds. That margin could be used up merely by fitting a fairing, saddlebags and dropping your own weight on the saddle.

So why did so many touring riders buy Gold Wings? Because they were straight-

line stable, and had shaft drives and engines good enough to make people overlook their other flaws. The GL1000's flat-four engine didn't have power characteristics especially well suited to touring; it definitely was no John Deere tractor, but it was fairly amiable at low speeds (once warmed), it was stove-reliable, and it would deliver bags of power when its revs were up. This engine and the early Gold Wing's other traits made it a confused package: it was a touring-size motorcycle with a vintage ride and a peaky Superbike-style engine.

Flawed or not, the GL1000 made money for Honda for five years. From 1975 through 1977 the bike remained mostly unchanged. For 1978 and '79 its cosmetics were rearranged, instruments were moved and the powerband was incrementally improved. But the complete, all-tourer package still wasn't there.

Honda bit the proverbial bullet in refurbishing the Gold Wing for 1980 and invested in a complete re-engineering of the big tourer. The '80 version is similar in appearance to older GLs, but has so many new parts that it virtually is an all-new motorcycle. New, and excellent.

An enterprising GL1000 owner probably could fit the earlier Gold Wing's engine with the new 75 millimeter GL1100 pistons. Oversize cylinder sleeves might be necessary, but the piston diameter difference is only 3.0mm and that certainly could be accommodated. However, it would take more than a set of pistons to bring an older 'Wing up to GL1100 specifications. The changes made for 1980 are extensive, and the GL engine has gained more than 86 cubic centimeters of piston displacement.

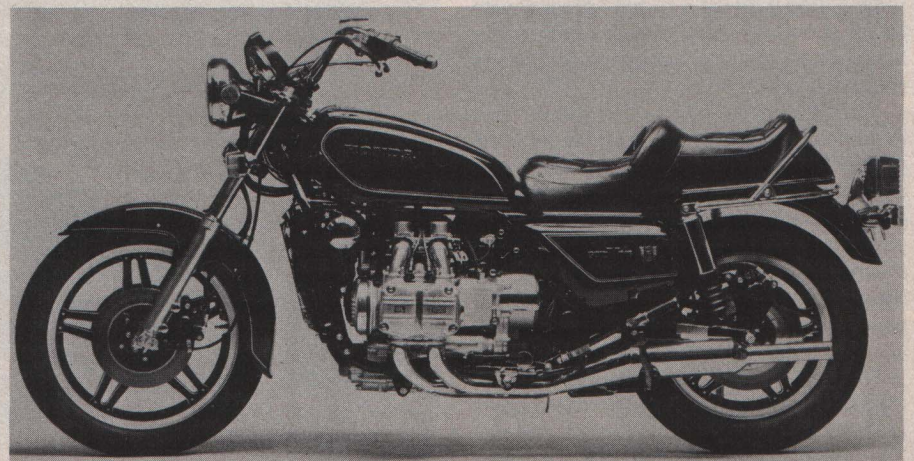
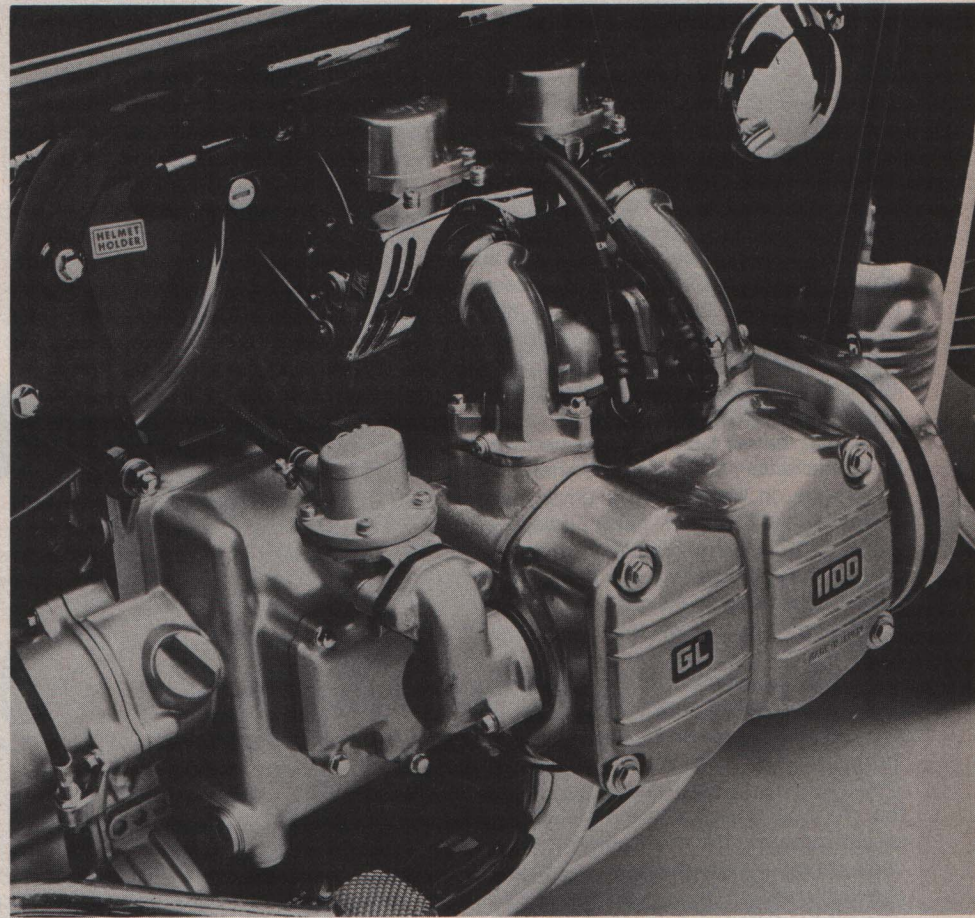
One rather surprising change in the GL engine is its new crankshaft. The older engine's crank never showed any signs of weakness, and most manufacturers would have relied upon its margin of strength to handle a mere 8.6 per cent increase in displacement. But, as usual, Honda chose to strengthen what already was sufficiently strong. The new crank's main bearing and rod journals are 43mm and 46mm in diameter, respectively; both being 3mm larger than a GL1000's crank journals. With this increase in journal diameters the main/rod overlap went from 10.8mm to 13.8mm.

Minor emissions-related modifications have been made in the GL's piston-crown and combustion chamber shapes. These are of less interest to potential buyers than the engine's new cams, which increase the intake valve lift from the previous 8.5mm to 8.8mm. Exhaust valve lift remains at 8.5mm, but both valves' timings have been revised. The intake now opens five degrees before top center and closes 43 degrees after bottom center; the exhaust opens 45 degrees before bottom center and closes five degrees after top center. There is no change in the intake-opening and exhaust-closing points, but intake duration is increased eight degrees and the exhaust valve is open five degrees longer.

Longer valve durations usually are associated with narrowed powerbands, and that is the last thing a Gold Wing owner would want. Fortunately, Honda has included yet another carburetion revision intended to improve the GL's low and mid-range power, and this one seems to have done the trick. The GL1100 has completely new aluminum-bodied Keihin CV carburetors with throats that are, at 30mm, a millimeter smaller than before. These smaller throats and other design changes have helped the engine's low-speed running. Overall responsiveness has been brightened by the addition of an accelerator pump. There's just one pump for the four carburetors; its output is distributed via passages in the airbox to which they are all tightly bolted.

Civility has been further enhanced by the GL's new ignition system. Honda has done away with the mechanical breaker points and substituted magnetic triggering. The ignition still is inductive, but the dual-lead coils' primary current is switched by an amplifier that takes its cues from a pair of sensing coils straddling an engine-driven "reluctor." You won't bang your left shin on the trigger housing. The previous GL models' points were in a round chamber mounted behind the left cylinder head; the new system's trigger components housing is located at the rear of the crankcase in space once occupied by the kick-start shaft. The Gold Wing never really needed a kickstarter, and that anachronistic feature has now been dropped.

As before, the GL engine's ignition timing



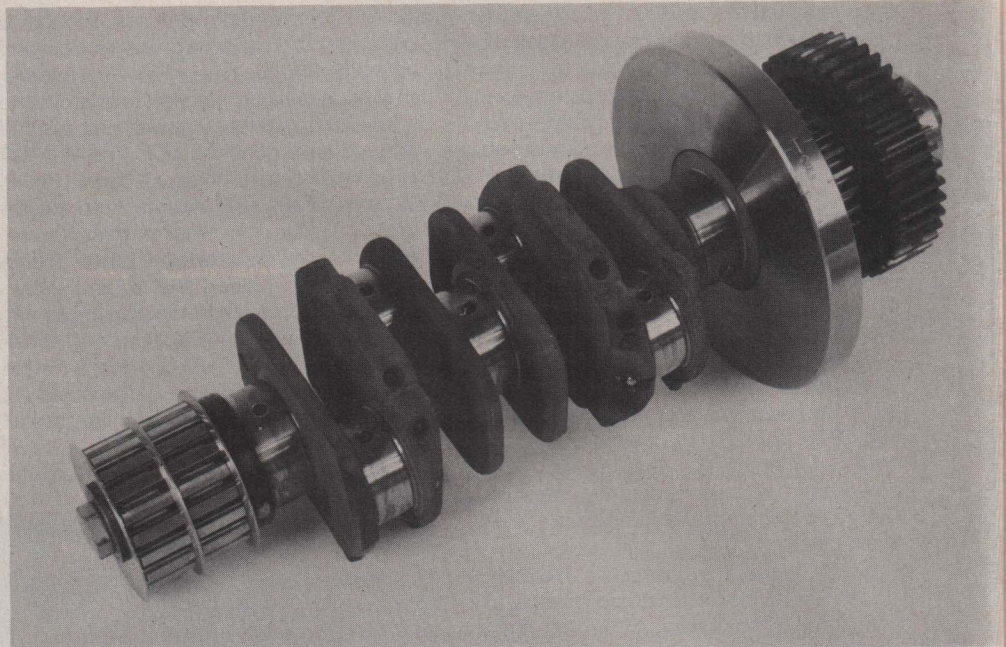
HONDA GL1100 TEST

is varied by a centrifugal advance mechanism, which reduces the spark lead at low speeds for easier starting and a smoother idle and automatically increases it at higher revs. But the 1980 Honda GL also has a vacuum advancer, a device that cranks in more spark lead when the engine is operating on light throttle. The vacuum advancer is wonderfully simple: it's a small chamber with a diaphragm, from which a rod emerges to connect with a plate carrying the ignition's trigger coils. When the engine is running at a light load its manifold vacuum is high, and that pulls at the diaphragm and rod, which moves the trigger coils around to full advance. If the throttle is opened, manifold vacuum is reduced and so is the spark advance. And, as it happens, these adjustments are exactly what an engine needs, because the ignition timing for best economy at part throttle often is 25 to 30 degrees more advanced than the timing that gives best power at wide-open throttle. Centrifugal mechanisms provide what amounts to fixed ignition advance at highway speeds, and require a timing compromised between best power and best economy. Honda's new vacuum advancer, like the one on the Yamaha Eleven (and several million automobiles), does away with the need to compromise. It boosts the new GL1100's performance, improves its mileage, and should even make its spark plugs last longer.

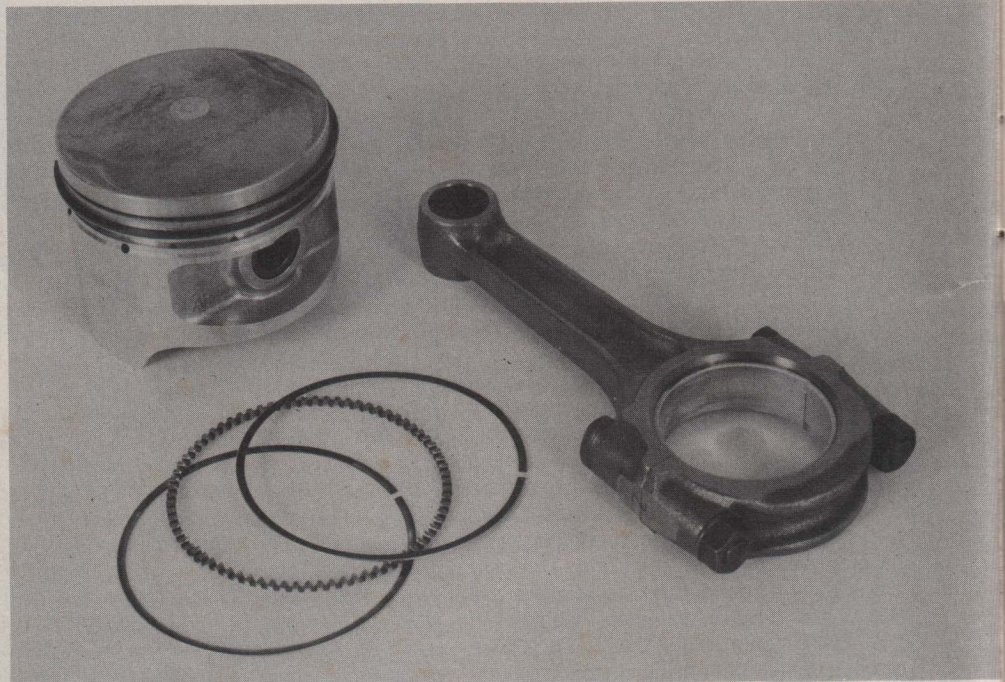
We still haven't created the hardware that's necessary to hook up a shaft-drive motorcycle on Webco's chain-driven dyno, so we can't tell you how much horsepower the GL1100 delivers. Sources at Honda inform us that the new engine is about 10 per cent stronger at its peaks and we saw power curves that indicate an even larger mid-range improvement. But whatever a dyno might say about the GL1100 engine, Honda clearly anticipated a substantial power gain. And we can tell you the GL1100 is quick in the quarter-mile: 12.47 secs @ 107.39 mph. That's very nearly a full second quicker than the old Gold Wing. There's evidence of greater power in the new "Hy-Vo" primary chain, which is a quarter-inch wider than the one-inch original. The widened chain has a new set of tensioner/guides to keep it from rattling, and it drives a clutch sprocket with round shock cushions that are both softer and stronger than the wedge-shaped inserts previously used.

The GL1100's clutch is completely new. Its plates are seven millimeters larger in diameter than before, the clutch basket is an aluminum casting instead of pressed steel, and the clutch release mechanism is now the same as the CBX's. The earlier release mechanism employed a machined, scroll-like device to ease the pressure on the clutch plates; the new one gets the job done with simple, cheap levers.

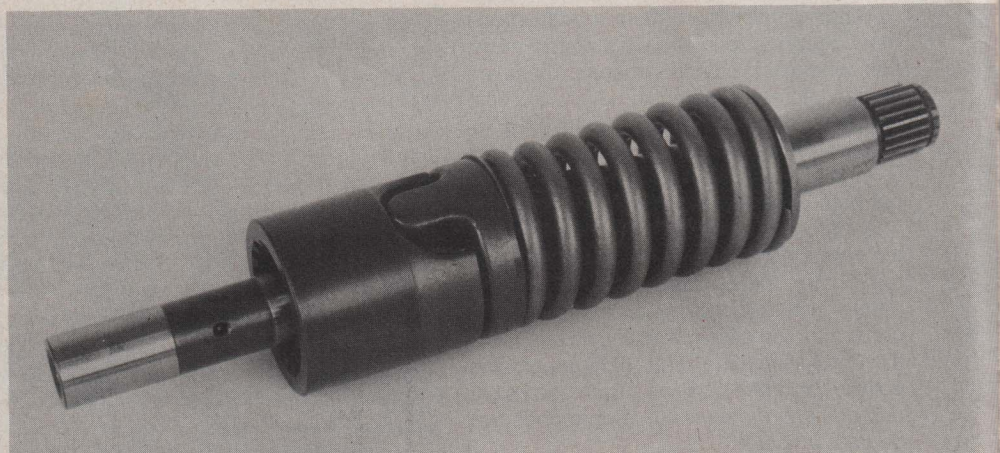
The final internal strengthening is in the transmission output shaft, which has had its diameter increased from 25mm to 28mm. The rest of the engine/transmission pack-



The GL1100's main and rod bearing journals have each grown three millimeters: to 43mm and 46mm respectively.



Piston displacement is, at 1085cc, 8.6 per cent greater than in 1979. New rods house the larger bearings.



This simple ramp/spring shock absorber protects the transmission from driveline jolts and harsh shifting.

age is much the same, except where it has been nudged a little to make room for bigger pistons, a new ignition system and so forth.

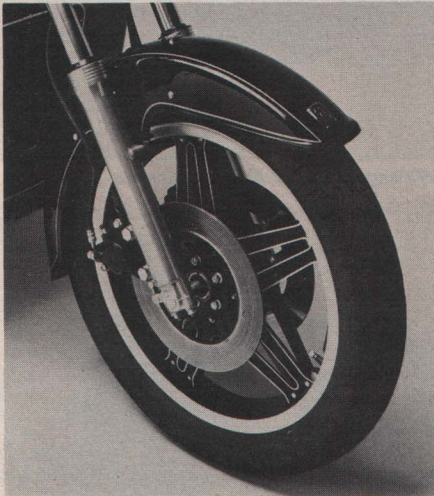
Ultra-long-travel suspensions are presumed to be the hot tip these days; the new GL1100 successfully runs against the trend. Honda has elected to work with relatively short suspension movements and to concentrate on refined damping and progressive spring rates (i.e., "air springs") to get that ride quality so important to touring riders.

The new GL's fork has thicker tubes, up from the 1000's 37 millimeters to 39mm. The travel is 5.6 inches, and most of the support is provided by air pressure—though the fork tubes also contain coil springs,

which seem to be there in case the pressure is lost. Air may be bled off or added from a single valve on top of the right stanchion tube, and pressure may be checked with a gauge supplied by Honda. This fork has also been modified to perform better over both small and large bumps or dips. The primary way this has been accomplished is through the use of two special "anti-stiction" bearing inserts in each fork leg. The bearings are manufactured from a combination of lead, bronze and a teflon-like material Honda simply calls "DU." These bearings separate the fork tubes and sliders and, given good component alignment, allow the fork to be more responsive. The bearing lead provides gen-

eral surface area, and the bronze is used for bearing strength. The DU material is integrated with the other materials and is used as the actual friction-reducing workhorse.

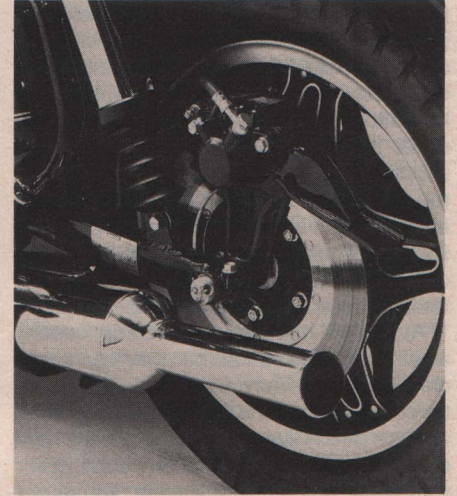
Honda recommends using 14 to 21 pounds-per-square-inch air pressure in the fork; we found any setting between these extremes to provide an admirable ride. With 14 psi in the tubes you can see the fork sliders moving rapidly in response to bumps and road ripples you'd swear weren't present. At 17 psi the fork is at its best; this slightly higher pressure allows the fork to be responsive during slight ripples, yet it's firm enough to keep the bike from pitching fore and aft easily. Twenty-one psi is best left for



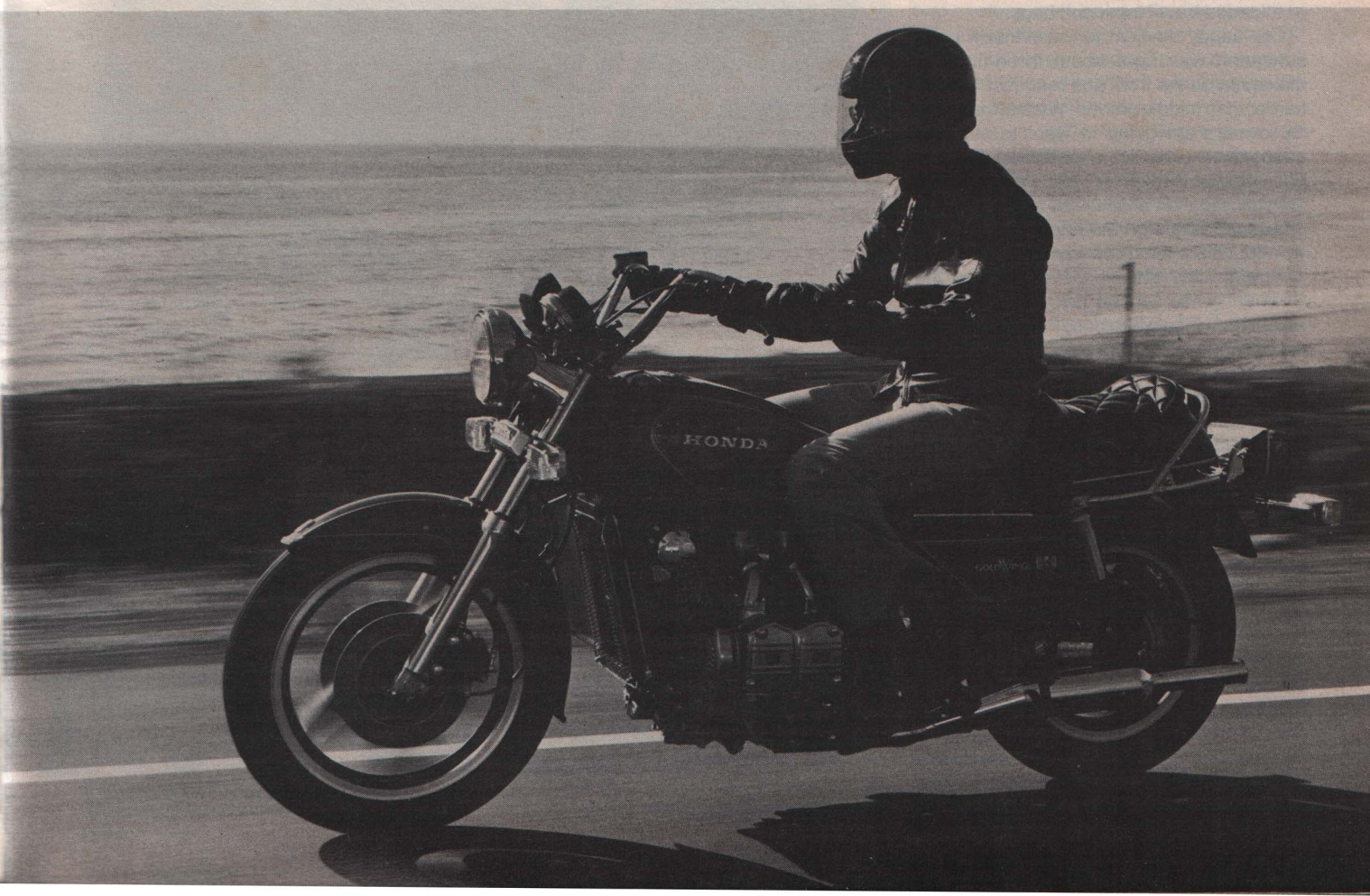
More changes than meet the eye: 1930 Indian-type fender; excellent stiction-free fork; non-pulsing brake.



One liter has been added to the Wing's fuel capacity. Beneath the tank is a common shock absorber air valve.



A rain gutter shields the rear disc from rain. Back wheel removal actually requires two people, and patience.



HONDA GL1100 TEST

those with fairings or heavy loads, because the fork is stiffer and less responsive to small surface irregularities with this pressure. Still, at the highest suggested setting, the overall ride is better than that supplied by previous Gold Wings. With standard ATF fork oil, the Gold Wing's damping characteristics are well suited to touring.

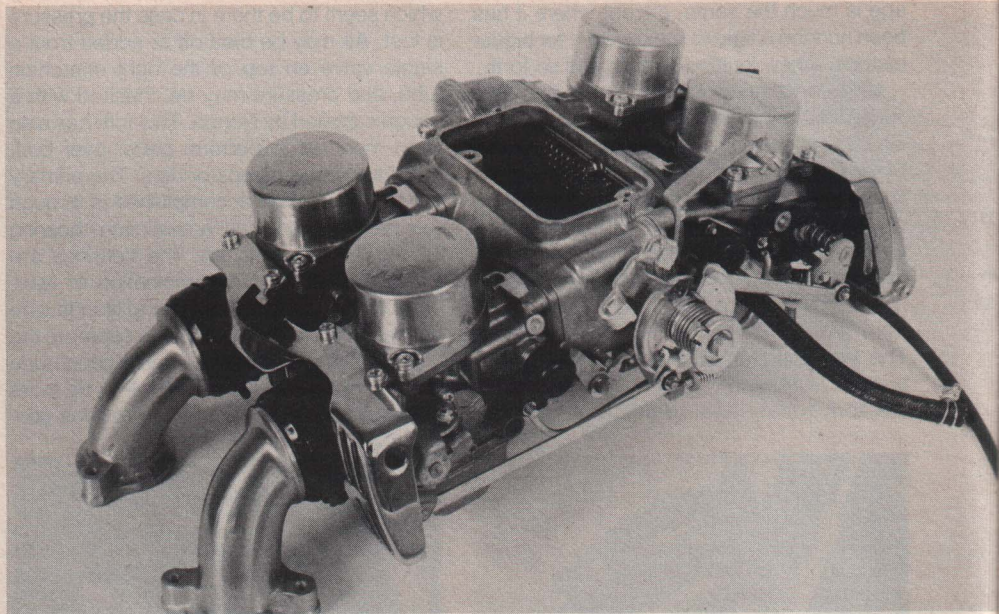
The 1980 GL air shocks allow the rear tire to move 4.4 inches, and the shocks are adjustable over a greater pressure range than is the fork. The shocks are partly filled with oil—to about half-way up their outer chrome covers, which are pressure cylinders. As the shocks are compressed, oil flows through ports in their outer bodies and into the upper clearance volumes. Air pressure, when increased, makes the shocks more difficult to compress. Both shocks' air chambers are linked together, and an air valve is attached under the GL's right-hand side cover. The supplied gauge measures shock pressure too, but you must read it from an awkward angle; once it's removed from the pressure source, its needle springs back to zero. Dual coil springs inside each shock will prevent total collapse if the pressure is lost.

At 28 psi the shocks provide superb small-bump absorption, but they can't handle bigger jolts. They are also subject to extra compression if you're toting a passenger or extra gear. Given 35 psi, the shocks handle intermediate loads well and cope nicely with small and large obstacles. You're not likely to be interested in the 43 psi maximum pressure unless you're carrying a passenger or a loaded travel trunk and bags.

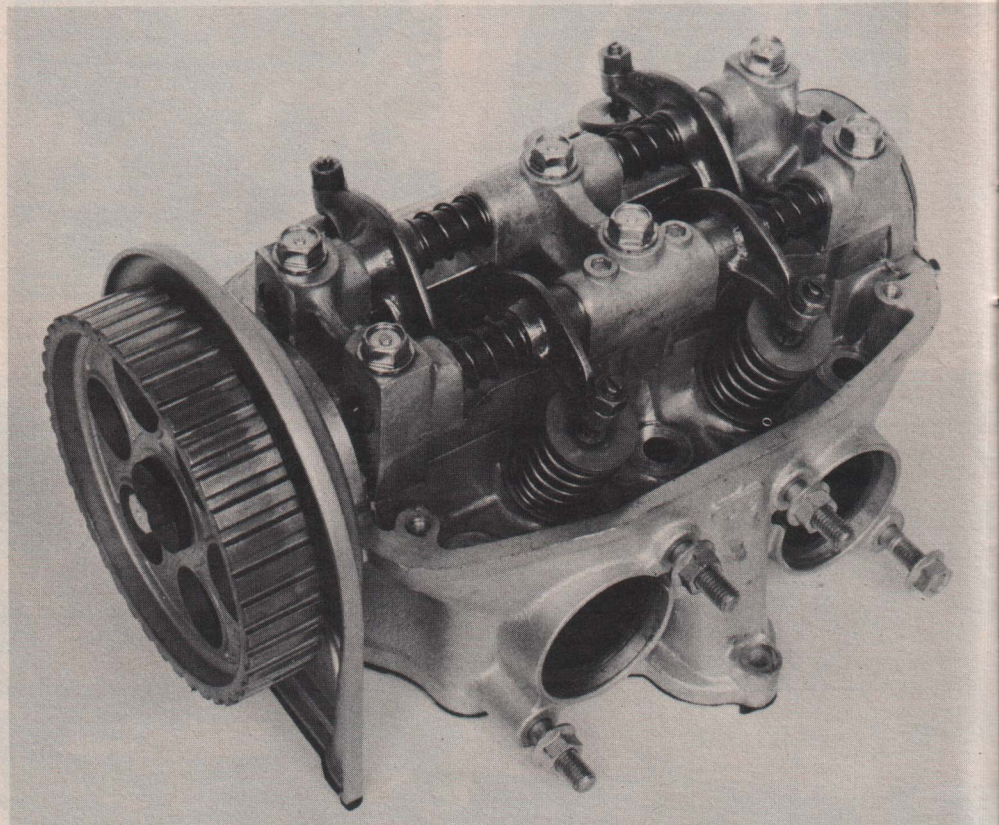
Our happy medium for suspension pressurization was right about three-fifths of maximum on the front and rear; just a touch harder than middle ground. We feel that most GL owners are going to want to set their suspension units for a particular type of ride—and leave them set that way unless an unusual situation arises. The new system is amazingly gentle on the rider; it makes him wonder where the miles went.

Straight-line stability is something the Gold Wing has second only to a Santa Fe freight train. The wheelbase has been lengthened 2.3 inches to 63.2 inches. This extraordinarily long distance between wheel contact patches, coupled with the 1100's steep 29.2-degree rake and longish 5.3-inch steering trail make it one of the best, if not the best, straight-line bikes in production. Although the Gold Wing does twitch some on deep rain groovings, it will not lose its aplomb, so you can relax. Whether relaxing on a motorcycle is good or bad is not the issue; the fact is, the GL1100 is relaxing to ride. And when heavily loaded, the Honda remains stable.

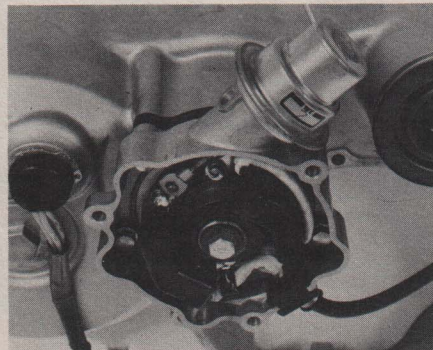
While the Wing has "slow" steering geometry, the bike is willing to be flogged, albeit carefully, through some surprisingly tight canyon roads. There's no point listing everything you'll drag through should you decide to hustle the GL up a snaky coastal route; suffice it to say lots of pieces grind. An



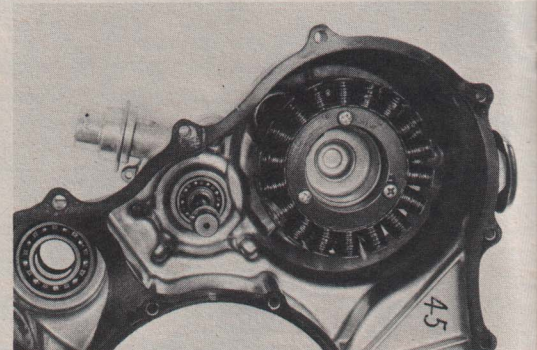
Thirty millimeter Keihins bolt to a two-piece airbox that carries linkages and a pair of backfire screens.



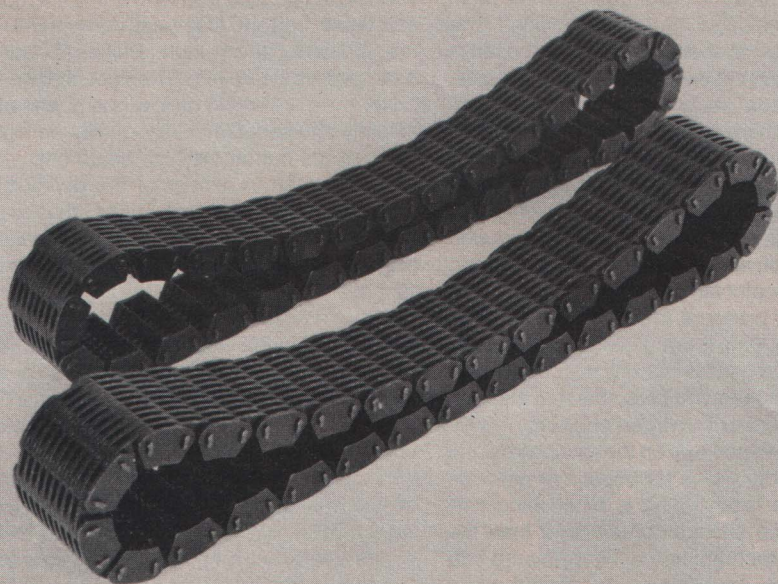
Auto-type rocker arms are worked by belt-driven camshafts; valve lash should be checked every 7000 miles.



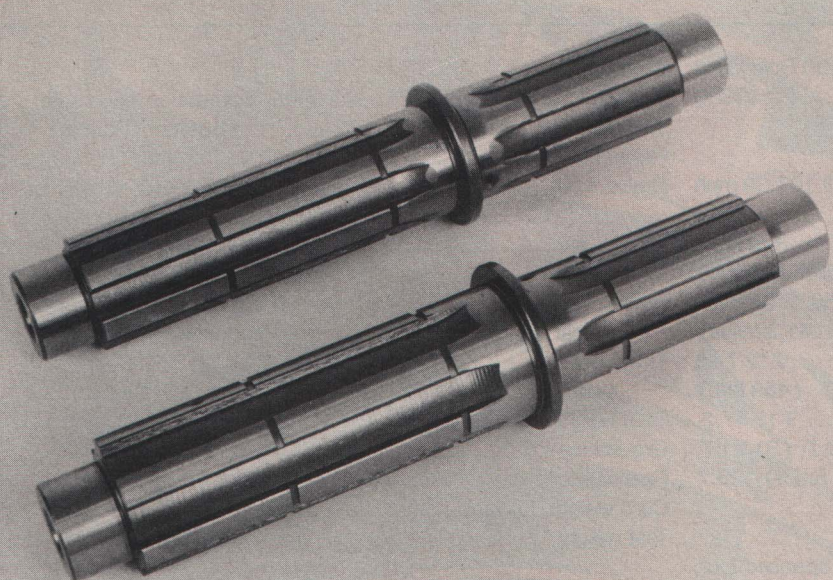
The GL 1100 has a state-of-the-art spring- and vacuum-advanced, magnetically triggered inductive ignition.



Inside the rear engine cover: stator windings for the GL's 300-watt AC generator; and ignition drive spindle.



This year's primary chain is 0.25-inch broader and better-tensioned to reduce closed-throttle rattling.



Output shaft diameter has been increased from 25mm to 28mm in the interest of prolonged transmission life.

important fact to remember is the Honda has "curb feelers" on its outboard footrest ends, and when these are touched down they send out cries louder than a flock of geese at the chopping block. The Honda's overall cornering personality is friendly, but you have to remember it's a touring bike.

You've got a choice of one Gold Wing seat; a luxurious plastic-bottomed giant that looks—and feels—like a king's drawing-room chair. The pilot and passenger's sections are partitioned off by a foam-and-vinyl bulkhead, and have a two-inch height difference. Too, the saddle is adjustable fore and aft 1.6 inches—0.8-inch either side of a central position. These small shifts make a noticeable difference; tall (six-two and up) riders will prefer the far-back position, while riders between six-two and about five-nine will like the middle position best. Riders shorter than five-nine seem to prefer the saddle in its forward position. To simplify mat-

ters, though, Honda could build a comfortably padded seat with no bulkhead: that way one seat position would fit all.

American Honda records show that about 80 per cent of the Gold Wings ever manufactured have wound up with fairings attached, so the GL1100 comes with an upright, eight-inch-high handlebar for using behind a wind-break. The eight-inch-rise bar is perfect for fairing-protected touring; it is too high for dealing with undeflected headwinds. Its grips can't be faulted though; they're soft and completely agreeable. They even have 4.5-ounce steel weights protecting them. The handlebar's end-caps actually do triple duty: they protect the grips, levers and mirrors should the bike fall over; quell some mirror-vibration; and keep the throttle from sticking open if the bike falls on its right side.

Honda has had a long association with both Bridgestone and Dunlop for their street-bike tires, but our '80 Gold Wing wore Dun-

lop skins: 110/90-19 62H front; 130/90-17 68H rear. Both tires are tubeless, hence more blowout-proof than tube-types. The tires are capable of gripping far past the point the Gold Wing is able to lean, so you don't have to worry about slippage if you crank the GL into an ideal corner.

The subject of this motorcycle's brakes should not be treated casually. Not when you consider that a Gold Wing with rider, passenger and luggage may weigh in excess of 1100 pounds. Honda has seen fit to give the GL1100 discs all around: twin 5mm x 276mm rotors in front and a single 7mm x 296mm rotor at the rear. Each disc gets clamped by a single-piston caliper, and each caliper has a brake-pad wear indicator so you can keep tabs on the GL's remaining pad material, and change pads before the backing plates eat up the rotors.

Both the front and rear brakes require a firm pull or push to get each working at its best. In turn, they provide the rider with accurate feedback on what the tires are doing. Every system must have a weak link; the braking ability of the Gold Wing is limited by its front tire. The Dunlop grips nicely, yet there is a great deal of motorcycle and comparatively little tire/pavement contact area. When the combined weight of the bike and its load get transferred toward the front tire during a hard stop, the tire becomes the limiting factor in how fast the bike will stop. Happily, the GL's fairly moderate suspension travel keeps it from pitching forward too greatly during hard braking. The brakes on our test bike exhibited no surging or pulsing, a characteristic of poorly machined or bent brake rotors, or of inaccurate disc mounting. When wet, the brakes lost some of their initial bite, but once a second or so of application had dried the rotors and pucks, the brakes worked effectively.

Starting in 1978, Gold Wings have had Honda's multi-piece ComStar wheels—with steel spokes until 1979. This year the all-aluminum construction of '79 is retained, but the new spokes have turned-out edges and are, like the rims, painted black. Also, the rim widths have been increased. The '79 model's front wheel had a 1.85-inch rim; its rear was a 2.15 incher. For 1980 the front rim width is 2.15 inches and the rear rim is up to 2.50 inches.

Honda wanted a low seat height for the GL1100, and they wanted a smooth-riding, stable tourer. A natural way to meet both requirements was to lengthen the Gold Wing's wheelbase, and here's how Honda did this: a 1.2-inch gain comes from the frame itself being slightly longer, and the balance is gained by making the swing arm slightly longer. Mild strengthening measures have been applied throughout the Gold Wing: larger gussets were added at the steering head, and while being lengthened the swing arm was redesigned. It now has a square-section left arm instead of stamped-steel arm, and it has been regusseted too. One pair of extra bolts has been added to the steering stem, as well. While not exactly part of the Honda's structural frame, the rear

HONDA GL1100 TEST

grab bar has an extra steel loop.

Finally, the old Gold Wing "gas tank" doors are gone. Honda is introducing a Honda-dalaine fairing for the GL, and the company felt that it wouldn't be gracious to have their own fairing prevent the wings from folding down. Instead, serviceable components are now reached through the top: fuses, coolant reservoir, air filter, tools and the gas cap. Tank bags and other touring sundries traditionally attaching to the gas tank or "shelter" were always required to flip up with the tank lid for service-station fill-ups. Not any more. There's now a two-piece lid, and the pieces are made to flip up independently. The lower flip-up covers the gas cap only—it can be lifted without disturbing a tank bag or CB radio mounted atop the forward hatch. While there is some room under the nine-pound shelter, you won't get much more than some cleaning cloths or a notebook and a small can of tomato juice inside.

What self-respecting stylist could resist

the opportunity to fabricate a new dash panel? None could, and Honda's didn't. The top hatch of the shelter is free from the familiar voltmeter, temperature and fuel gauges. The voltmeter has been done away with altogether (there isn't even an indicator light to replace it), and the temperature and fuel gauges have been moved atop the instrument panel. All other hand controls remain standard, and are easy to operate. Included is a 40 mph-and-above turn signal beeper, and an indicator lamp that lights if there's not enough air pressure in the shocks. A timer delays the lamp from glowing for five seconds, to compensate for any sudden "false" low pressure reading (e.g., the rear end getting "light" over a railroad crossing). Additionally when you turn on the ignition key, the warning lamp glows for about five seconds to indicate the warning is functioning correctly. If the shocks contain less than the minimum recommended air pressure the light comes—and stays—on, except when you're moving less than 10 mph.

No matter how much you like beepers and

warning lamps, you'll have to admit the most enjoyable upfront electrical component is the brilliant seven-inch Philips/Stanley quartz-glass headlight. The light thrown is crisp, wide and white on low beam, and absolutely diffused-searchlight-quality on high. You will not outrun the high beam until you are moving far in excess of our dearly beloved national speed limit. And at that pace the police will be able to see you, because the Gold Wing has an ample two-bulb tail-light at the rear.

A motorcycle as big, complex and expensive as the Honda Gold Wing had better ride smoothly, offer comforts rivaling those of an Airstream trailer, and be as tractable as a St. Bernard. Anything else would be inexcusable. For 1980 Honda has pulled the Gold Wing up by the bootstraps with the reworked engine, suspension system and accompanying comfort not before associated with Wings. Overwhelmingly, our impressions are favorable—the Gold Wing is, after five years, close to dead-center perfect for its intended purpose. ©

Make and model Honda GL1100 Gold Wing
Price, suggested retail (as of 11/8/79) \$3800

PERFORMANCE

Standing start ¼-mile 12.47 sec @ 107.39 mph
Engine rpm @ 60 mph, top gear 3700
Average fuel consumption rate 16.0 km/1
(37.5 miles/US gal.)
Cruising range, main/reserve 256.0/64.0 km
(157.5/41.3 miles)
Load capacity (GVWR less curb weight) 212.7 kg
(469 lbs.)
Maximum speed in gears @ engine redline (1) 47.2,
(2) 70.7, (3) 91.7,
(4) 110.8, (5) 129.7

ENGINE

Type Four-stroke horizontally opposed four,
liquid-cooled with (2) belt-driven
single overhead camshaft
Bore and stroke 75.0 x 61.4mm (2.96 x 2.42 in.)
Piston displacement 1085cc (66.2 cu. in.)
Compression ratio 9.2:1
Carburetion (4) 30mm Keihin constant-vacuum
Exhaust system (2) two-into-one with connecting
crossover pipe
Ignition Magnetically triggered, battery-powered inductive
Air filtration Disposable paper
Oil filtration Disposable paper
Oil capacity (engine) 4.0 liters (4.2 US qts.)
Oil capacity (final drive) 0.2 liters (0.2 US qts.)

TRANSMISSION

Type Five-speed, constant-mesh, wet-plate clutch
Primary drive Hy-Vo-type chain, 24/41 sprockets, 1.71:1
Secondary drive Straight-cut gear, 37/36, 0.98:1
Final drive Shaft and helical-bevel gear, 11/34, 3.09:1
Gear ratios, overall (1) 12.84, (2) 8.56, (3) 6.61,
(4) 5.47, (5) 4.67

CHASSIS

Type Dual front and rear downtubes, full cradle
Wheelbase 1605mm (63.2 in.)
Rake/trail 29.2° / 134mm (5.3 in.)
Brake, front Hydraulic, (2) 276mm (10.9 in.)
disc with single-piston caliper
rear Hydraulic, (1) 296mm (11.7 in.)
disc with single-piston caliper
Wheel, front Composite, 2.15 x 19 in.
rear Composite, 2.50 x 17 in.
Tire, front 110/90-19 62H Dunlop Gold Seal F11
rear 130/90-17 68H Dunlop Gold Seal K127
Seat height 795mm (31.3 in.)
Ground clearance 146mm (5.8 in.)
Fuel capacity, main/reserve .. 16.0/4.0 liter (4.2/1.1 US gal.)
Curb weight, full tank 288.4 kg (636 lbs.)
Test weight 363.3 kg (801 lbs.)

ELECTRICAL

Power source Three-phase A.C.
generator, 300 watts
Charge control Solid state voltage regulator
Headlight beams, high/low 60/55 watts
Tail/stop lights (2) 3/32 cp
Battery 12V 20AH

INSTRUMENTS

Includes Speedometer, tachometer, odometer and
resettable tripmeter, temperature and fuel gauges.
Indicators for turn signals, low oil pressure, high
beam, neutral, low shock absorber air pressure.
Speedometer error, 30 mph indicated, actual 29.87
60 mph indicated, actual 59.68

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