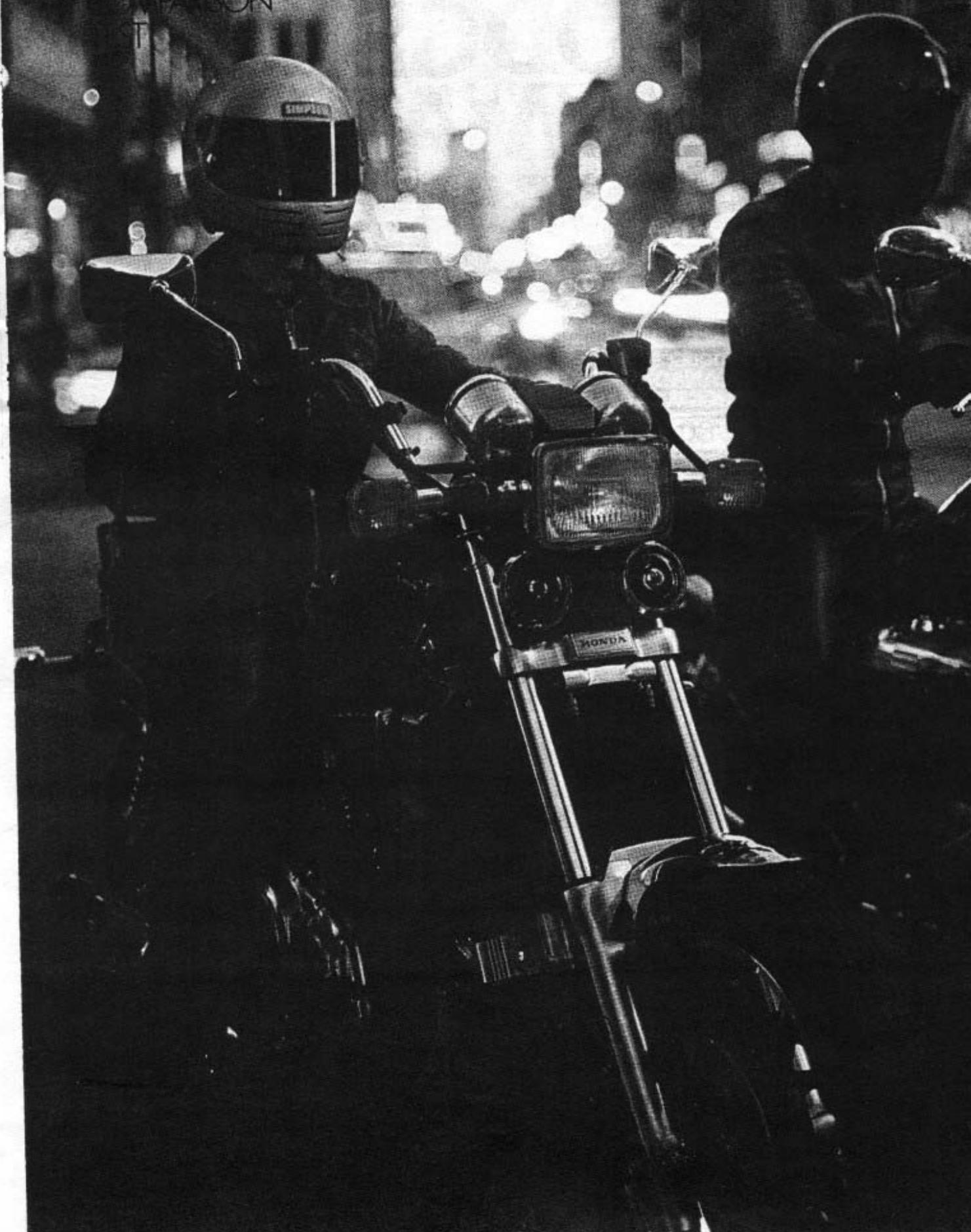


CYCLE  
CANADA  
ON THE  
ROAD





- Honda V45 Magna
- Yamaha Maxim 750X

# BRIGHT LIGHTS

*Pick your own proportion of luxury and performance for the street.*

**H**onda's hold on the 750 custom market in Canada has been overpowering in recent years, and much of that success has been won by the V45 Magna. For '85, the Magna has been given a minor face lift; its popularity doesn't warrant extensive changes.

Yamaha, on the other hand, needed something special to crack Honda's sales grip. In a bold move, Yamaha slipped its most potent engine technology into the conservative Maxim styling package, hoping that an explosive amount of horsepower would shatter the Magna's status as reigning high-tech street cruiser. The question remains, however, whether Yamaha has succeeded in upsetting the Magna from its throne or in simply establishing a brand-new category of machine.

Even though these two bikes ostensibly share the same class, they differ radically in design, performance and style. The '85 Magna's updated cosmetics are a closer reworking of the Harley-Davidson look. The seat has been lowered, the wheelbase stretched and a new backrest added. The Maxim X is a typical representative of Japanese inline-four customs. Its wheelbase is shorter, the steering head high and the front fork very long. In contrast with some of the more successful Harley clones, the Maxim's custom styling appears a little dated.

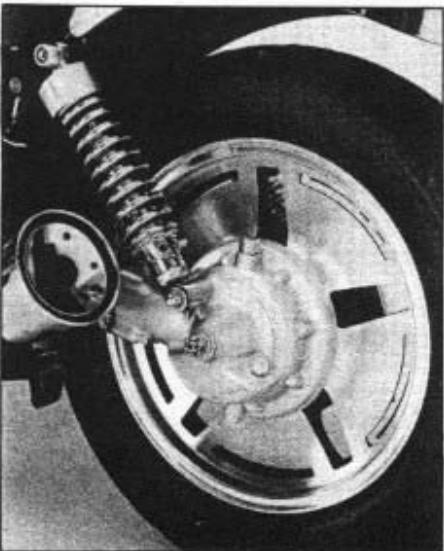
There's certainly nothing dated about the Maxim X's engine design. The cylinder and cylinder head are virtually identical to the FZ750's, but are mounted on crankcases derived from the air-cooled XJ900. The advantages of a five-valve cylinder-head design have been extolled in Cycle Canada in the April and June issues. To recap them, the five valves allow the included valve angle to be narrowed while maintaining sufficient intake area for high rpm breathing without the need for radical camshafts. The low valve angle permits a high compression ratio without the onset of detonation. The theoretical results of this design are a wide powerband and a high peak power output.

# MAGNA vs MAXIM

Except for the changes required by the Maxim's upright cylinder block, the FZ and Maxim powerplants are the same. Both use 33 mm constant velocity carburetors, the Maxim's being the sidedraft variety while the FZ's are downdraft. The three 21 mm intake and two 23 mm exhaust valves are the same on both engines, as are the included valve angles. The resulting shallow combustion chamber allows a high compression ratio of 11.2:1 without requiring the use of premium gas. The camshaft specs also remain identical, with 276 degrees of intake and exhaust duration, and lift of 7.8 mm and 7.4 mm for the intake and exhaust valves, respectively.

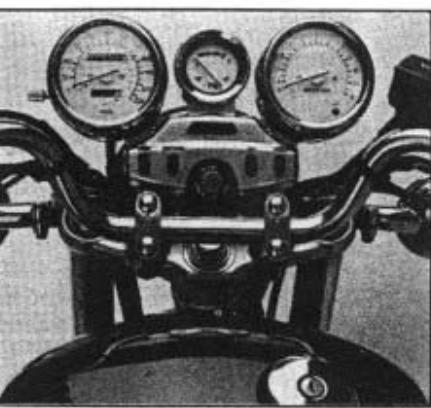
The bottom end of the Maxim X's powerplant is based on the XJ900's crankcases, with the necessary changes to incorporate liquid cooling. The cylinders are canted forward 14 degrees rather than the 45 degrees of the FZ750, requiring a new lower cylinder-head tier to accommodate horizontal intake ports and sidedraft carburetors. The different exhaust system and induction system with its curved ports result in a lower peak power of 90 hp at 9,000 rpm compared with the FZ's peak of 102 hp.

The Honda's 90-degree V4 powerplant, first introduced in '82, has become the cornerstone of Honda's street bike line. Although three years is a long time for a motorcycle engine to remain unchanged in these days of rapid technical advances, a quick review of the V4's engine specs reveals a thoroughly modern powerplant. The bore and stroke are an extremely oversquare 70 x 48.6 mm, allowing the large paired 26 mm intake and twin 23 mm exhaust valves. Liquid cooling and the low included



Maxim's disc-type cast rear wheel looks trick but adds unsprung weight.





White-face instruments on the Yamaha are easily legible day or night.

valve angle of 38 degrees permit the high compression ratio of 10.5:1 without the onset of detonation, and 32 mm constant-velocity carburetors complete the intake system.

The engines are as different in character as they are in design. The V45's mile-wide powerband has endeared it to thousands of riders, sporting and cruiser enthusiasts alike. Good power starts at 2,000 rpm and continues all the way to the 9,800 rpm redline and beyond. There is no discernible step in the powerband, just a linear progression in power as the revs increase. The smooth powerband and the lack of vibration at any engine speed give the Magna an impression of relaxed competence.

A rider error at the drag strip resulted in a burnt clutch on the V45, and we weren't able to record a representative quarter mile time. However, the Magna delivers more than enough power for its intended purpose. Acceleration around town is authoritative, and passing power is readily available if the rider downshifts to fifth gear. Overdrive has the engine spinning at such low revs that there is simply not enough torque to provide quick passing.

The carburetion on our Honda was a little rough when we picked it up and it stalled repeatedly at stop lights. A quick trip to a local Honda dealer corrected the problem. Our only major complaint about the V45 engine also concerns the induction system. A disconcerting amount of noise emanates from the intake tract whenever the throttle is opened, enough to bother even those riders who wear ear plugs when riding on the highway. The drone was worse when the engine was given lots of throttle at low revs under heavy load. It's the loudest intake roar we've heard from a modern Japanese motorcycle, and all of our riders found it annoying.

The Maxim X's powerplant feels as nervous as the Magna's is relaxed, like a frisky quarter horse chomping at the bit compared with a constrained pacer. The exhaust note is raspy and uneven at low revs, reminiscent of a drag machine waiting to take off from the line. As the revs increase, it develops into a throaty

# MAGNA vs MAXIM

roar that encourages the rider to keep on the gas.

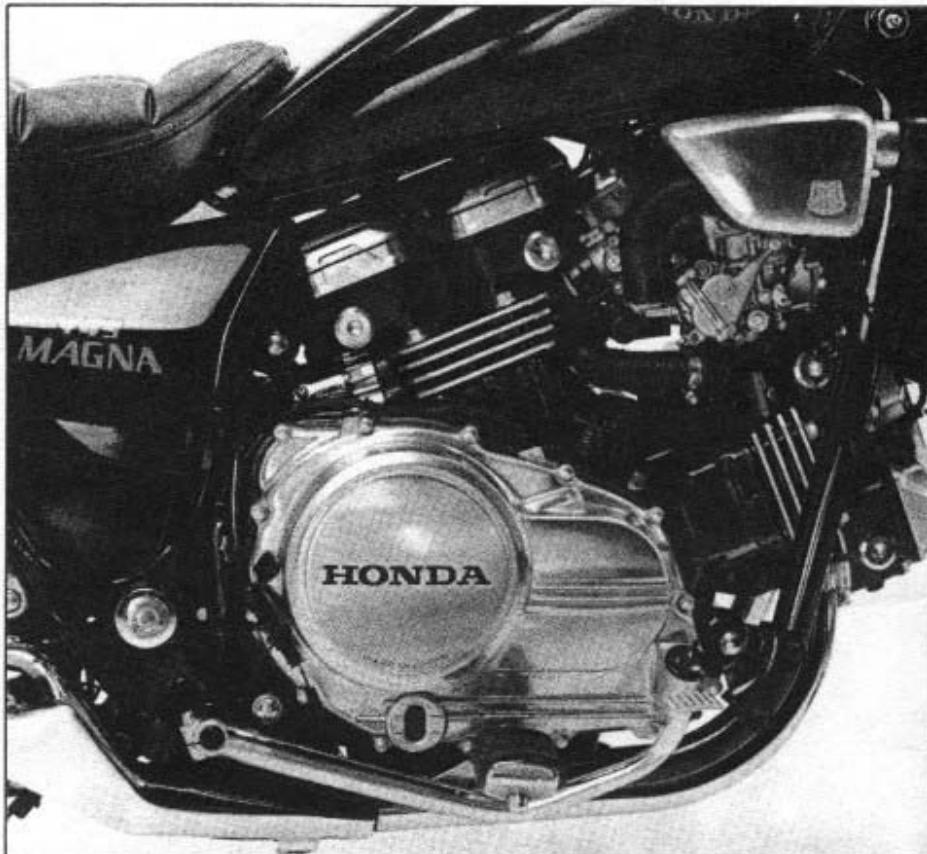
The exhaust note's impression of power is not an illusion. The Maxim X is one of the hardest accelerating 750s we've ever ridden. Its quarter mile time of 11.66 seconds and terminal speed of 186.9 km/h are just a heartbeat behind the FZ's 11.499 seconds at 191.4 km/h. Considering that the Maxim uses a less efficient shaft final drive, these numbers are very impressive. The Maxim X is quicker than any 750 sportbike except the Suzuki GSX-R750 and the FZ750. Comparison of the intake tracts of the Magna and Maxim X reveals the source of the Maxim's superior power output. The Maxim X's effective intake area is more than 20 per cent greater than the Magna's.

However, the Yamaha's power delivery may not appeal to everyone. The powerband starts just past 6,000 rpm and continues well past the 10,000 rpm redline, but below 6,000 rpm the Maxim feels lethargic compared with the V45 Magna. Since the top-end components are the same as the FZ750's, which produces good torque as low as 4,000 rpm, we must conclude that the Maxim's intake and exhaust systems are less efficient. The 33 mm carburetors may be too large for the engine, which feels over-carbureted at low speeds, similar to a hot-rodded engine fitted with large-diameter smoothbores. The engine surged noticeably when we first rode it, and though two subsequent tune-ups eliminated the surging, the low-end torque didn't improve.

The impression of nervousness is increased by the Yamaha's short gearing. Fifth gear keeps the engine revving a little past 5,000 rpm at 100 km/h, and a Maxim rider often searches for a sixth gear. The Yamaha's five-speed transmission performed flawlessly. We didn't miss any shifts and gear changing is smooth and precise. The cable-operated clutch stood up to the abuse of our drag strip session and gave more feedback than the Honda's hydraulically actuated clutch.

The Magna's overdrive reduced the engine speed for highway riding and allowed more relaxed cruising. Downshifting to pass was a minor penalty to pay for the benefits of the overdrive gear. There were no major complaints with the Honda's transmission. Occasional missed shifts can be avoided by more careful gear selection. The Honda's hydraulically actuated clutch has a narrower engagement point than the Maxim's.

The Maxim X's chassis specifications of 31.5 degrees of rake, 120 mm trail and a 1,520 mm wheelbase should dictate a



Smooth powerband and lack of vibration are the strong points of the Honda V4.



The Magna this year has a longer, lower profile with new backrest and cosmetics.

slow-steering motorcycle. At low speeds this is indeed the case, and the bike tends to fall into corners. But at more elevated speeds the Maxim feels decidedly short-coupled, with the immediate steering response of a much smaller bike. At the beginning of our test the Yamaha was stable at high speeds, though a bit twitchy. As the rear tire became worn, the Maxim's stability decreased to the point where it would occasionally wobble as speeds approached 160 km/h. This was particularly noticeable after the drag strip session, when the rear tire was near its legal wear limit.

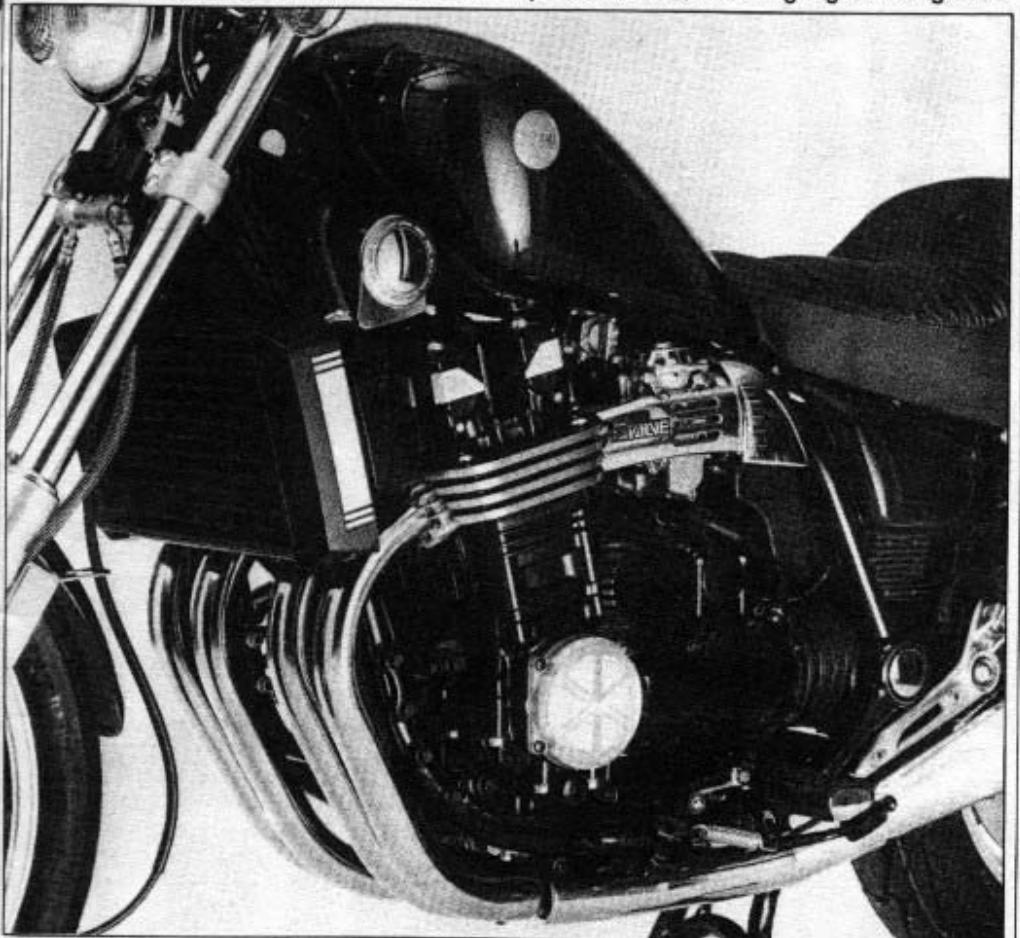
Despite these deficiencies, the

Yamaha was the preferred bike for fast cornering. The quicker steering and shorter wheelbase make cornering transitions easier, and the Yamaha's suspension is firmer, inspiring more confidence when well heeled over.

The Maxim X's fork has sturdier 38 mm fork tubes this year and is air-adjustable. The larger stanchions are a welcome change since the steering head is higher than on previous Maxims, resulting in a longer fork. With the increased power and weight of the Maxim X, last year's 36 mm fork tubes would surely have been overworked. The fork's spring rates are on the soft



Maxim's look is more traditional Japanese custom, including high steering head.



side, but stiffer than the plush Honda's, providing more control at the expense of compliance.

The Yamaha's twin rear shocks adjust for spring preload but not for compression or rebound damping. Adjusting the preload can be awkward, since the collars are close to the ends of the upswept mufflers. The shocks are firm, providing adequate wheel control for cornering, but they do bottom out over large bumps because of the short travel. The new disc-type cast rear wheel may enhance the Maxim's looks, but it's heavier than last year's version and adds to the already considerable unsprung

FZ barrels and top end make the Maxim a fast cruiser. Just keep the revs up.

weight of the shaft drive. The increased unsprung weight taxes the limited travel of the rear shocks even further.

The Magna's steering strongly parallels its engine performance: relaxed and confidence inspiring. The wheelbase is a long 1,565 mm, rake 30 degrees and trail 106 mm. The 701 mm seat height lowers the centre of gravity and contributes to the Magna's good straight-line stability. Even with a handlebar windshield the Magna was more stable at high speeds than the bare Maxim X.

The Magna's suspension is even softer than the Maxim X's. It provides the Magna rider with a plush ride, particularly around town, but does limit the Honda in other areas. The rear shocks bottom easily while carrying a passenger because of the soft springs and limited travel. Also, the softer springing causes the Magna to squirm if it's pushed hard through corners. Even though cruiser riders aren't known for aggressive cornering habits, most owners would benefit from stiffer spring rates. The mushy suspension is a shame, since the Magna steers more neutrally than the Maxim and falls into corners less. Stiffer suspension would allow the Magna to corner better without drastically reducing comfort.

The soft front forks of both bikes result in a significant amount of dive under heavy braking. The Yamaha's dual front disc brakes provide more stopping power than the Magna's, though they're both limited by front tire traction. Both bikes have a large amount of rake and long forks, reducing the weight on the front wheel and limiting the front brakes' usefulness. This places more importance on the rear brakes. Most riders find the Maxim's rear brake more progressive and easier to modulate than the Magna's, but the Maxim's rear wheel locks easily during downshifts. The Magna's front brake is spongy feeling compared with the Maxim's.

The ergonomics of these two bikes differ as much as their engine and chassis performance. The Magna is more typical of recent Japanese cruisers; the footpegs are kicked way out front, the handlebar swoops back to meet the rider's hands and the stepped seat is extremely low to the ground. The Maxim X takes a more conservative approach. Its handlebar resembles a low rise superbike bar but is mounted on a riser to achieve the desired height. The footpegs are not set as far forward as the Magna's.

As soon as we picked up the bikes we mounted a clear, handlebar-mount fairing to the Magna, while the Maxim X was left bare. As a result the Magna was more comfortable than the Maxim for highway use. Its radical riding position was not a hindrance because the fairing deflected the wind blast. The Magna's seat provided more support for the rider, mainly because of its greater width. Equipped with the handlebar-mount windscreens the Magna made a reasonably comfortable mount for medium-length trips on the highway.

When the fairing was removed from the Magna the tables were turned. The Maxim's riding position makes much more sense at highway speeds. Riding long distance at high speeds on the Magna is a sure way to build strong arms.

Both bikes are better suited for urban

# MAGNA vs MAXIM

riding. The Magna's superior seat codles the rider, but the extreme forward placement of the footpegs is awkward. The Maxim's riding position makes more sense even in town and lets the rider feel more comfortable balancing the bike while at a stoplight. The Magna's passenger seating is far better than the Maxim's. The longer wheelbase allows more room and its backrest provides good support for the passenger's spine.

The Maxim's instruments are similar to those of the V-Max, with white faces for the tachometer and speedo. They are easier to read at night than the Honda's red markings. Both bikes have a low fuel warning light, but only the Maxim has a fuel petcock with a reserve position. When the Magna's light goes on, there is 3.5 L of gas remaining in the tank.

The Magna garnered marks for its superior headlight, while the Yamaha's high beam lacked enough penetration to be useful for highway speeds at night. Both bikes' turn lamps double as driving lights, but only the Yamaha's turn signals are self-cancelling. A switch actuated by the sidestand kills the Yamaha's engine should the rider try to engage first gear while the stand is down. The Honda has no switch or warning light, just the usual piece of rubber on the end of the stand designed to touch the road first and push the sidestand up.

It's hard to imagine two more different motorcycles competing in the same class. The Maxim may be dressed in a cruiser's clothes but its engine screams sportbike. It seems to us that the engine would be more at home in an updated version of the XJ750's chassis. Still, the Maxim X is the sportiest 750 cruiser you can buy.

Our initial impression of the Magna was that it paled in comparison with the sportier Maxim. Yet, its relaxed performance slowly gained the respect of our testers. The Magna performed every task demanded of it and can only be considered slow next to the very quick Maxim X. The Magna's power output and handling capabilities will keep most cruiser riders happy.

We preferred the Maxim X for its sporting performance and handling capabilities. Even though these motorcycles appear to be in head-to-head competition for the same market, they appeal to distinctively different riders. The Maxim X suits the rider who wants sporting performance but absolutely has to have it in a custom package, while the Magna appeals to the mainstream cruiser buyer, for whom ferocious acceleration and cornering ability are secondary to styling and relaxed performance.

SPECIFICATIONS		
<b>MODEL</b>	Yamaha Maxim X	Honda V45 Magna
<b>TEST DISTANCE</b>	3,786 km	3,031 km
<b>PRICE</b>	\$4,649	\$4,699
<b>DISPLACEMENT</b>	749 cc	748 cc
<b>BORE x STROKE</b>	68 x 51.6 mm	70 x 48.6 mm
<b>COMPRESSION RATIO</b>	11.2:1	10.5:1
<b>HORSEPOWER</b>	90 at 9,000 rpm	N.A.
<b>TORQUE</b>	72.5 N-m (53.5 lb-ft) at 8,000 rpm	N.A.
<b>CARBURETION</b>	Four BS33 CV Mikuni	Four 32 mm CV Keihin
<b>OIL CAPACITY</b>	3.5 L	2.9 L
<b>GENERATOR OUTPUT</b>	364 watts	300 watts
<b>BATTERY CAPACITY</b>	12V, 14 amp-hours	12V, 14 amp-hours
<b>TRANSMISSION</b>	Five-speed, cable actuated clutch	Six-speed, hydraulic clutch
<b>WEIGHT/POWER</b>	2.64 kg/hp	N.A.
<b>SPECIFIC OUTPUT</b>	120 hp/L	N.A.
<b>PISTON SPEED AT REDLINE</b>	17.2 m/sec at 10,000 rpm	15.9 m/sec at 9,800 rpm
<b>RPM AT 100 KM/H</b>	4,775	4,283
<b>SPEEDS IN GEARS AT REDLINE</b>	(1) 77 (2) 113 (3) 148 (4) 182 (5) 209 km/h	(1) 75 (2) 106 (3) 133 (4) 160 (5) 191 km/h
<b>FUEL CAPACITY</b>	13 L including reserve	13.5 L including reserve
<b>CONSUMPTION</b>	5.9 L/100 km (47.5 mpg)	6.9 L/100 km (40.5 mpg)
<b>RANGE</b>	220 km	196 km
<b>QUARTER MILE</b>	11.66 seconds at 186.87 km/h (116.15 mph)	N.A.
<b>WHEELBASE</b>	1,520 mm	1,565 mm
<b>RAKE/TRAIL</b>	31.5 degrees/120 mm	30 degrees/105.5 mm
<b>SUSPENSION TRAVEL</b>	150 mm front, 99 mm rear	140 mm front, 100 mm rear
<b>TIRES</b>	Dunlop F17 100/90-19 front, K525 130/90-16 rear	Bridgestone Mag Mopus L303 110/90-18 front, G508 140/90-15 rear
<b>WEIGHT</b>	237.6 kg (524 lb) full tank	244.9 kg (540 lb) full tank
<b>HANDLEBAR WIDTH</b>	768 mm (30.3 in.)	780 mm (30.8 in.)
<b>SEAT HEIGHT</b>	717 mm (28.3 in.)	701 mm (27.6 in.)
<b>DISTRIBUTOR</b>	Yamaha Motor Canada Ltd., 480 Gordon Baker Rd., Willowdale, Ont., M2H 3B4 (416) 498-1911	Honda Canada Inc., 715 Milner Ave., Scarborough, Ont., M1B 2K8 (416) 284-8100