

## CYCLE ROAD TEST

# MONTESA 250 KING SCORPION

Montesa has tried to blend European performance and handling with the convenience features of Japanese enduro machines. The blending concept was a brilliant notion. But the bike is just mediocre.

• Montesa's new 250 King Scorpion rears up, arches its stinger threateningly and charges into direct competition with the Japanese by being the first European enduro with *convenience features*. The other European manufacturers rely on performance and handling alone to attract sales—which at one time gave them a sizeable chunk of the market, but won't continue to do so as Japanese bikes develop better performance and riders become more unwilling to forego the features they find on any Yamaha, Suzuki, Kawasaki or Honda. Realizing this, Montesa has incorporated a slew of Japanese-influenced additions on the '74 King Scorpion: a neutral light, tachometer, luggage rack, steering lock, color-coded electrical junction box, center key location and *automatic oil injection*. A closer look reveals further Oriental influences: die-cast crankcases, Japanese-style tank and headlight mounting, liberal use of plastic, lots of rubber O-ring gaskets and an oil tank with a level window just like a Yamaha. It's obvious that the Spanish spent a lot of time with Japanese enduros and borrowed liberally from what they saw.

Montesa's own influence on the Scorpion comes from the highly successful Kalevi Vehkonen motocrosser. During last year's

development of the Vehkonen Replica (VR), the factory finalized several new designs which have also been incorporated in the 1974 King Scorpion. Thus the machine that emerges is a blend of Montesa's own VR motocrosser and the features of a Japanese enduro. Such a bike ought to be spectacular, but unfortunately the Scorpion does not include enough from either source to be revolutionary in anything but concept.

For instance, the factory failed to include three of the most important Japanese features: starting in any gear, a two-way trip mileage indicator for enduro riders and, inexcusably, a built-in spark arrester. Their inclusion, at a time when other changes were amounting to a virtual redesign of the whole bike, would not have been impossible; why the factory overlooked them is baffling.

Secondly, the King Scorpion needs a greater share of the VR's power. Many of the racer's components are interchangeable with the Scorpion's, including the cylinder itself, but power drops from nearly 28 dyno-tested rear-wheel horsepower on the MX bike to 16.4 on the enduro, a 40 per cent decrease. Steeper hills stop the Scorpion simply because there isn't enough horsepower. A 22.4-horsepower 175 Can-Am tested along with the Scorpion could easily climb

hills that bogged the Montesa badly. Drag strip performance of 17.862 ET, 72.46 mph is just barely on a par with most other 250 enduros and considerably less than the faster ones, such as the 250 CZ's 16.405 seconds at 75.82 mph.

Thus without a full complement of Japanese goodies or the superior performance traditionally accorded to European dirt bikes, Montesa's perceptive and pace-setting attempt to incorporate both results in a mediocre trail bike.

Mediocre is a drastic word, but applicable; the Scorpion vibrates, costs a lot, smokes too much and confounds itself with inconsistencies—besides being down on power. These faults became evident in the course of our test, along with many strong points which almost, but not quite, dispel the reigning confusion.

Technically many of the King Scorpion's components have a flair and quality which is ironic amidst the bike's lackluster performance and incomplete execution of its concept. The frame is an example. Light, tough 4130 alloy in the swingarm joins mild steel in a frame having the same geometry as the VR. Rake and trail of 29½ degrees and 5.63 inches give spot-on tracking and slow, predictable steering. Hurl the bike into a turn



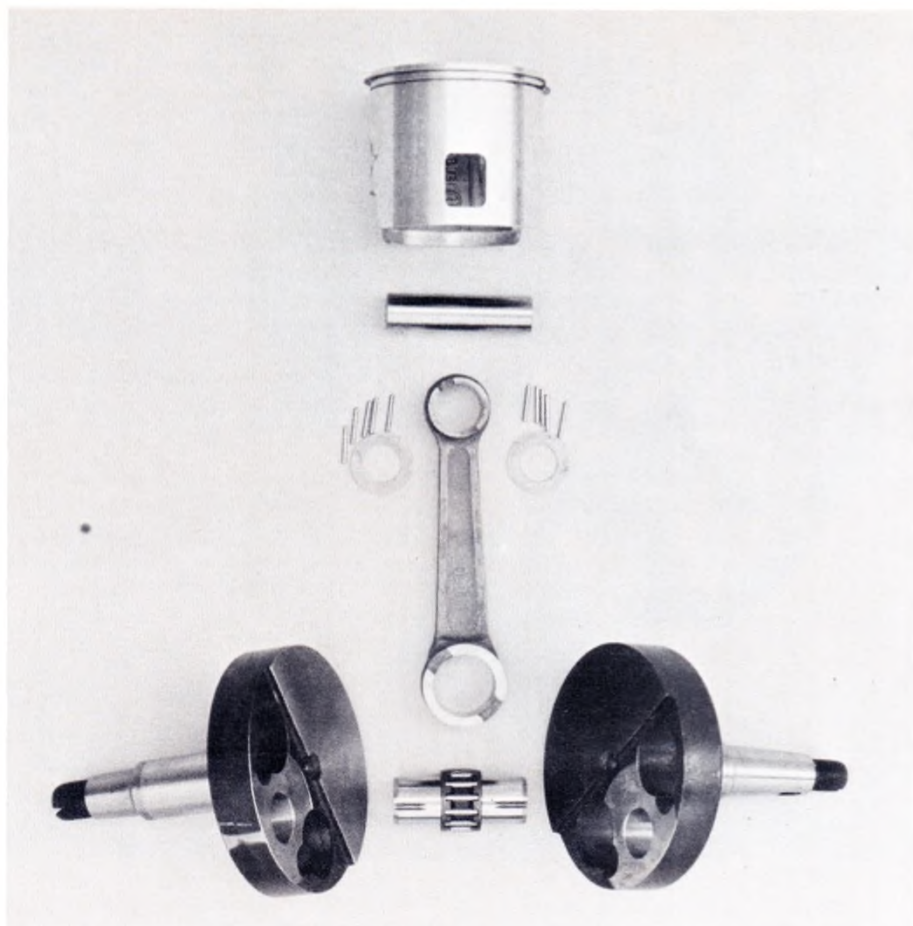
*The bike feels lighter than its 279 pounds. Footpegs really need serrations to prevent wet boots from slipping.*



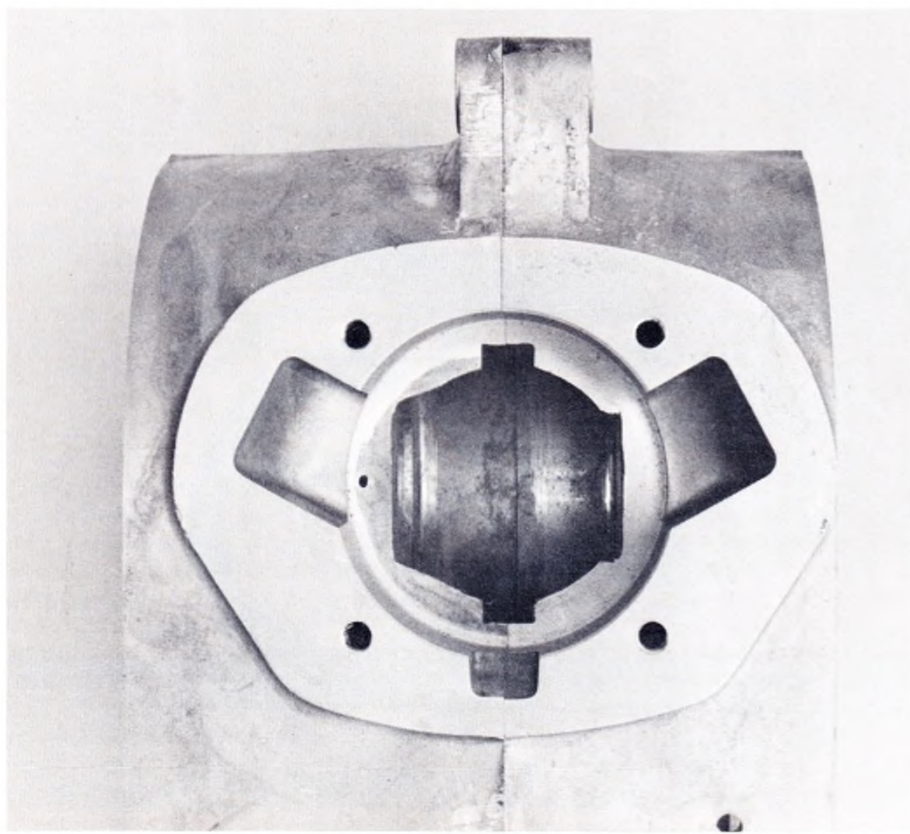
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*The blister on the engine's outer case contains the oil pump. A hard left-side encounter could wipe the pump off.*





Rectangular hole in the piston skirt serves a third transfer port on the inlet side of the cylinder. Montesa says it flows more charge than the larger lateral transfers. Split intake straddles this port.

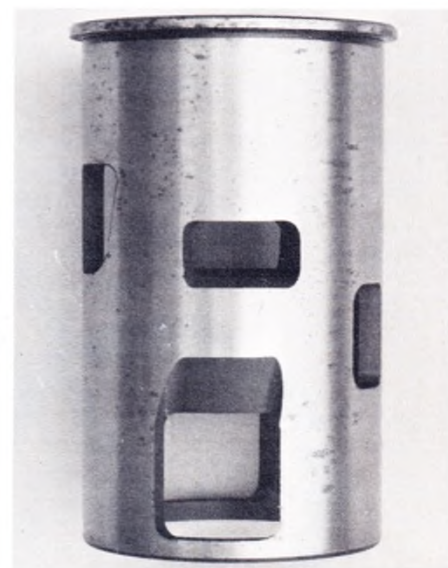


Die-cast crankcase halves split vertically. Transfer pockets are huge to match VR cylinder on Scorpion.

and it stays at the exact lean angle you put it without diving in further or trying to lift back up and go straight. Sustaining a long slide, or even quickly squaring off a tight corner, takes high revs and full throttle; the Scorpion prefers to turn by leaning rather than sliding. Either method, however, gets the bike around a smooth turn as well as any other 250 enduro on the market.

VR forks, built entirely by Montesa, complement good geometry with six inches of travel and soft but effective damping. Regrettably all six inches of travel can't be used because bigger bumps graunch the tire against the fender bolts. Reversing the bolts would gain more space, but it's likely the tire would still scrape the fender itself before the forks actually bottomed at their maximum travel. Most owners may want to substitute unbreakable plastic fenders for the stock metal ones anyway, and then modify the mounting to allow complete travel. Nevertheless, the stock fender-bolt/tire problem can't be excused.

Montesa avoids a common front-end problem—action becoming increasingly stiffer as heat expands trapped air inside the forks—by fitting a tiny spring-loaded ball-bearing check valve at the top of each leg so expanding air can escape. The system obviously works because fork action is consistent, and good, regardless of terrain or ambient air temperature. Rubber gaiters protect the seals and stanchion/slider bearing sur-



Steel liner press-fits into bore. Match-up between its port windows and ports in cylinder is excellent.

face from dirt. Large diameter socket-head pinch-bolts with huge 17mm nuts clamp the forks in a forged aluminum triple crown made by Montesa, but tightening these bolts without a special tool requires tedious removal of both the tach/speedo assembly and finned Motoplat magic box.





Betor shocks with five preload positions and softish chrome springs do a creditable job of controlling the rear end at moderate-to-brisk speeds, but a fast blow causes noticeable damping on the compression stroke and thus a stiff, bouncy ride. One odd feature about the shocks is that they are not mounted parallel with a plane passing through the wheel's diameter. Instead, they angle inward four degrees from the swing-

arm to their mounts on the frame. This allows the use of an extremely wide, and therefore more rigid, hub and spoke system—supposedly without causing binding or any other adverse shock conditions. Huge 4.60 rear tires also have plenty of clearance with the wider swingarm/hub arrangement.

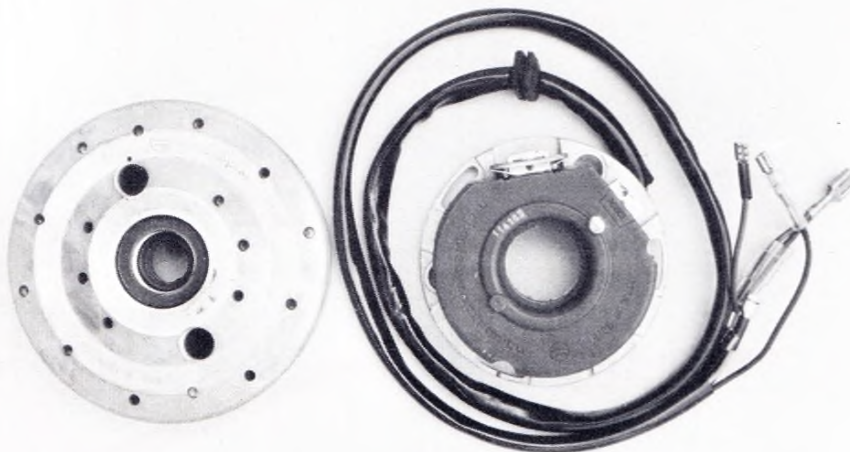
Both wheels help handling because they are designed for extreme strength and light weight. Up front a small-diameter, full-

width alloy hub laces to a 21-inch Akront rim with 36 nine-gauge stainless-steel spokes secured by Akront aluminum nipples. On the left spokes radiate in a cross-3 pattern from the conventional flange, but on the right a showerhead of holes anchor different length spokes to eliminate the weight of the flange and spread stress throughout the hub. In back a conical casting has extra width to steepen spoke angles for greater resistance to side-thrust. An Akront rim laces to the polished hub with 36 eight-gauge spokes arranged cross-3 from a flange on the right and cross-4 from a tiny indented cone on the left. Nine bolts secure an aluminum sprocket to the hub. These superb wheels come directly from the VR motocrosser.

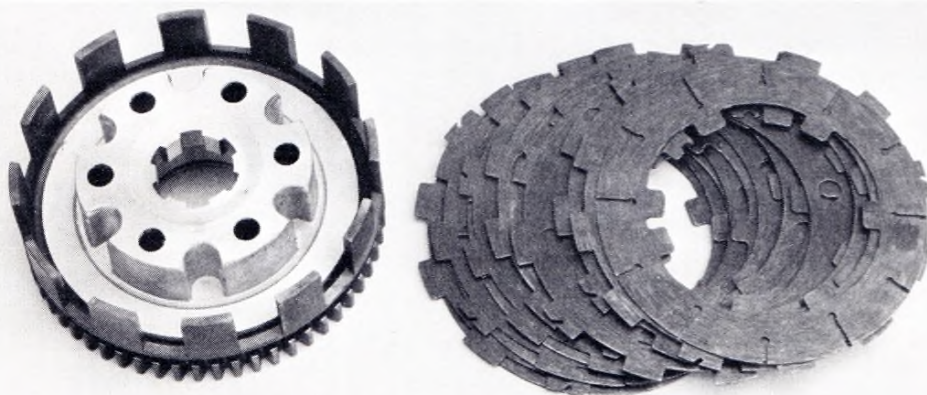
Standard single shoe brakes do a fantastic job on pavement, giving strong, progressive and fade-resistant stopping. The same applies to the front brake off-road along with effective resistance to water (short of complete submersion). Rear brake action in dirt becomes grabby without dainty bootwork on the steel pedal, while clatter and hop prevent controllable slowing on rough downhills. Less sensitive linings and a fully floating backing plate would solve both problems.

Spanish Pirelli tires, measuring 3.00 x 21 in front and 4.00 x 18 in back, work best in dirt with air pressures as low as 8 to 10 pounds. Even then braking traction in back isn't as sticky as with certain other knobbies. Also the rear Pirelli began chunking its tread after about 100 miles in the dirt. Two rear security bolts and one up front prevent the tires from slipping on the rims.

More good intentions, this time with the instruments, merely become embarrassments as they appear on the Scorpion. Aside from not including a two-way trip mileage indicator resettable by tenths, the speedometer is rendered almost useless by constant needle-waver over a 10-mph range. Is it 35 or 45 mph? A similar drunken needle on the tachometer flutters at 500-rpm increments.

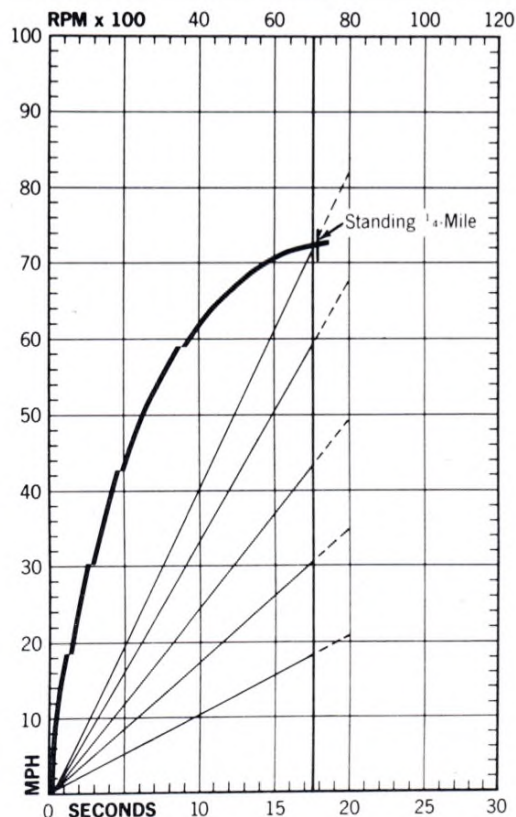


*Motoplat electronic ignition resists plug-fouling with a hot spark. Flywheel is heavier than VR unit.*

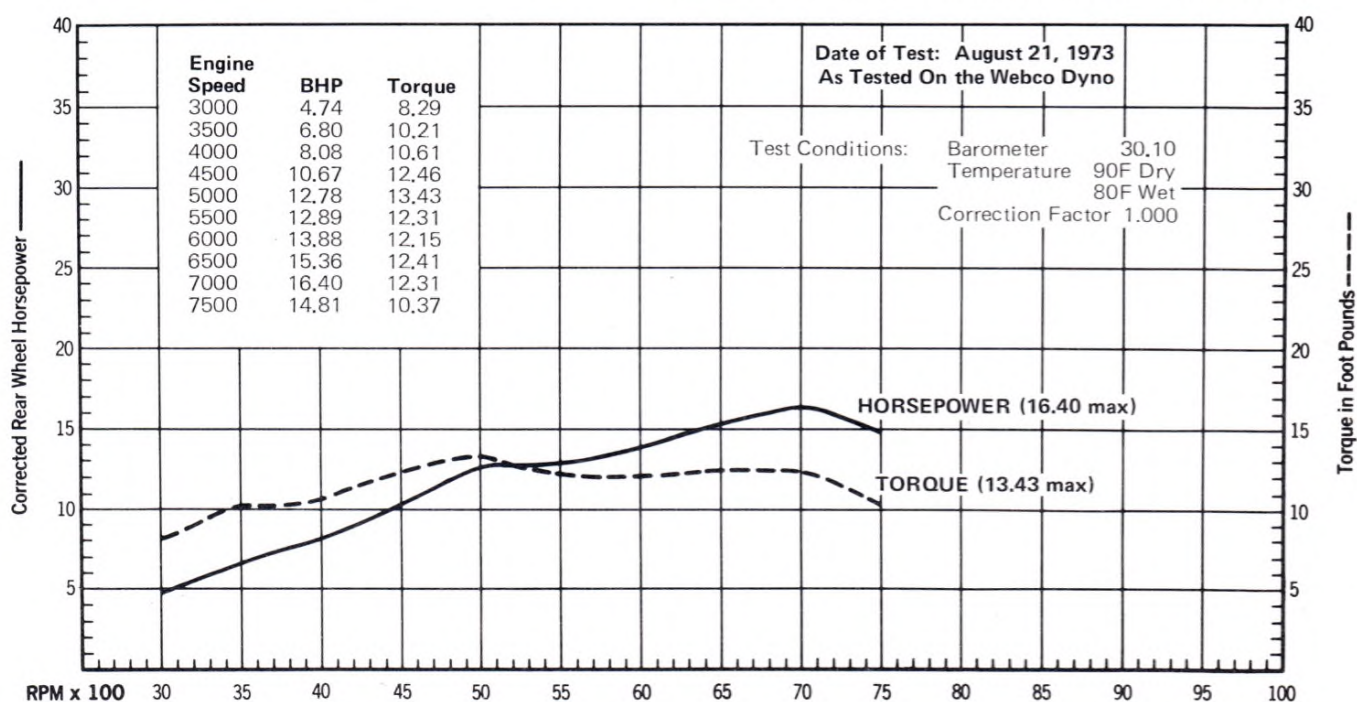


*All steel wet clutch has fifteen plates, six springs and spins on the layshaft in a caged ball bearing.*





Price, suggested retail	.....	\$1,238
Tire, front	..... 3.00 in. x 21 in. Pirelli Knobby	
rear	..... 4.00 in. x 18 in. Pirelli Knobby	
Brake, front	.....	1.14 in. x 5.12 in.
rear	.....	1.02 in. x 5.91 in.
Brake swept area	.....	37.25 sq. in.
Specific brake loading	... 11.79 lb/sq. in., at test weight	
Engine type	.....	Piston-port two-stroke single
Bore and stroke	.... 2.76 in. x 2.52 in., 70mm x 64mm	
Piston displacement	.....	15.0 cu. in., 246cc
Compression ratio	.....	10:1
Carburetion	.....	.1; 32mm; Bing
Air filtration	.....	Filtron foam element
Ignition	.....	Motoplat electronic
Bhp @ rpm	.....	16.40 @ 7,000 rpm
Rake/Trail	.....	.29.5°/5.63 in.
Mph/1000 rpm, top gear	.....	10.65
Fuel capacity	.....	2.5 gal.
Oil capacity	.....	2 pints
Lighting	.....	6v, 35 watts
Battery	.....	6v, 8 ah
Gear ratios, overall	..... (1) 27.56 (2) 17.12 (3) 11.84	
		(4) 8.83 (5) 7.22
Wheelbase	.....	.55.5 in.
Seat height	.....	30 in., with rider
Ground clearance	.....	6.25 in., with rider
Curb weight	.....	.279 lbs., with full tank of gas
Test weight	.....	.439 lbs., with rider
Instruments	.....	Speedometer, Tachometer, Odometer
Sound level (California Standard)	.....	87 dB(A)
Standing start ¼ mile	.....	.17.862 seconds 72.46 mph
Top speed	.....	72.46 mph





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## MONTESA *Continued from page 103*

the wave fronts which scavenge the cylinder are broken up by the Scorpion's silencing baffles. A heavier flywheel, smaller carburetor, reduced compression and different piston skirt length also contribute to the loss, but maximum blame falls on the fight for silence. Even with muffling and rubber buttons stuffed between the fins, the Scorpion registered 87 dB(A) on Cycle's decibel meter—equal to the OSSA and CZ enduros but light-years away from the MT-250 Honda's 81 dB(A).

Almost all designs in the engine follow standard two-stroke procedures. A pressed-together crank spins in three main bearings—two on the drive side and one on the rotor side. There are needles on both ends of the rod, and ball bearings on each end of the two transmission shafts. Moto-plat supplies a pointless electronic ignition which combines with a 32mm Bing carburetor and a low kickstarter gear ratio to provide one-kick starting every time.

Air enters under the seat, travels through a Filtron wet-foam cleaner, past the carb and rubber-coupled manifold and enters the crankcase through two ports branching laterally from the manifold. The split intake leaves space in the center for a small transfer port to augment the two larger transfers in the usual position on either side of the flywheels. A single bridged exhaust port angles to the left so the expansion chamber pipe clears the frame's single downtube. Four socket-head bolts hold the cylinder and its pressed-in steel liner to the crankcases, and four studs in the cylinder anchor the head. The zig-zag finning provides perfect, channeled holders for the rubber silencing buttons and this peculiar pattern allegedly generates more cooling turbulence.

An oil injection pump driven by the crank mounts outboard of the engine gear and feeds oil to the intake manifold only, not the main bearings. It also serves as a tachometer drive. Assorted plumbing enters and exits the oil pump cavity in a wild tangle on top of the left sidecover—right where branches can rip it away. Junctions are the slip-the-tube-over-the-nozzle type instead of leak-proof banjo fittings as employed by the Japanese. Our particular oil pump leaked profusely. It also pumped profusely, based on the amount of smoke pouring from the stinger.

Spur gears transmit power to a fantastically durable all-metal clutch. It has a wide, smooth friction point, light touch and complete release, thus making neutral a snap to find even when stopped. An equally efficient transmission uses shifting forks to engage five well-spaced gears—positively—with or without the clutch. Montesa clings to its traditional practice of isolating primary and gearbox oil so the correct lubricant can be used for each system. The clutch and primary gears operate best in 10W-30 while the transmission needs 90 weight gear oil. Bikes with a com-

mon sump must compromise with 20W-40 or some similar multi-grade lube. But Montesa's good intentions become maintenance headaches since the primary and gearbox filler-hole caps don't have built-in dipsticks. So you either devise your own dipstick or check the levels by draining the oil and adding the proper amounts—a job aggravated by the necessary removal of the skid plate and exhaust system.

Final drive to the non-rubber-damped rear wheel is by a  $\frac{5}{8}$  to  $\frac{1}{4}$  Joresa chain which runs in a spring-loaded chain guide borrowed from the Cota Trials bikes. With or without this guide, the particular chain on our test bike would not rotate at certain speeds without excessive whipping along the top run. It flailed so badly at low revs on the dyno that Webco could not get a stable reading below 3,000 rpm. The problem was not isolated on this particular bike either, for Cycle double-checked all findings on the King Scorpion with a second machine. One possible cause of this chain whipping is the too-small 12-tooth countershaft sprocket which greatly accelerates the chain around its small circumference compared to the chain's average linear speed. Physicists tell us the small compatible countershaft sprocket size is 15 teeth or larger for proper tracking and longest chain life. Out-of-round sprockets or sprockets not in the same vertical plane could also cause problems with chain tracking. Vibration plagued Cycle's test bike more than any other malady. At slow engine speeds vibes are nil, but as the tach needle flutters higher and higher on the rev scale, pegs, bars, the tank, seat—everything—starts shaking. Our bike went from Los Angeles to San Diego and back in two days (425 miles), but it wasn't much fun. Cruising at 55 mph means shaking at 55 mph. Off-road, where the engine's considerable bottom-end pull enables most riding to be done at slow rpm, there is no problem. But it's not a bike you want to ride fast. If you do, vibration intrudes on your concentration, the front tire rubs on the fender, the back end stiffens up, the skid plate bangs rocks and the rear brake won't slow you down without grabbing and clattering. Who wants high speeds under these circumstances?

It's much better to slow down, rely on low-end torque and enjoy the scenery. As a bike for this kind of riding the Montesa is satisfactory. But so are many others—most of which can also deliver more climbing ability, faster top end, greater acceleration, more horsepower and equal handling for less money. How much does the Scorpion cost? \$1,238. The dollar dies again.

Montesa made much more sensible motorcycles before trying to get fancy. The old King Scorpion offered only the bare essentials and that's all you expected to get. When the new one screams of gizmos, gadgets and motocross breeding, you expect it all to be very real. When it isn't, you are confused and full of disappointment. Just like the Montesa. ©