Touring: Super Guide for a Super Ride

Tests: Honda CBX, Yamaha IT250, Maico 450 and Triumph Bonneville

CYCLE WORLD®

APRIL 1978
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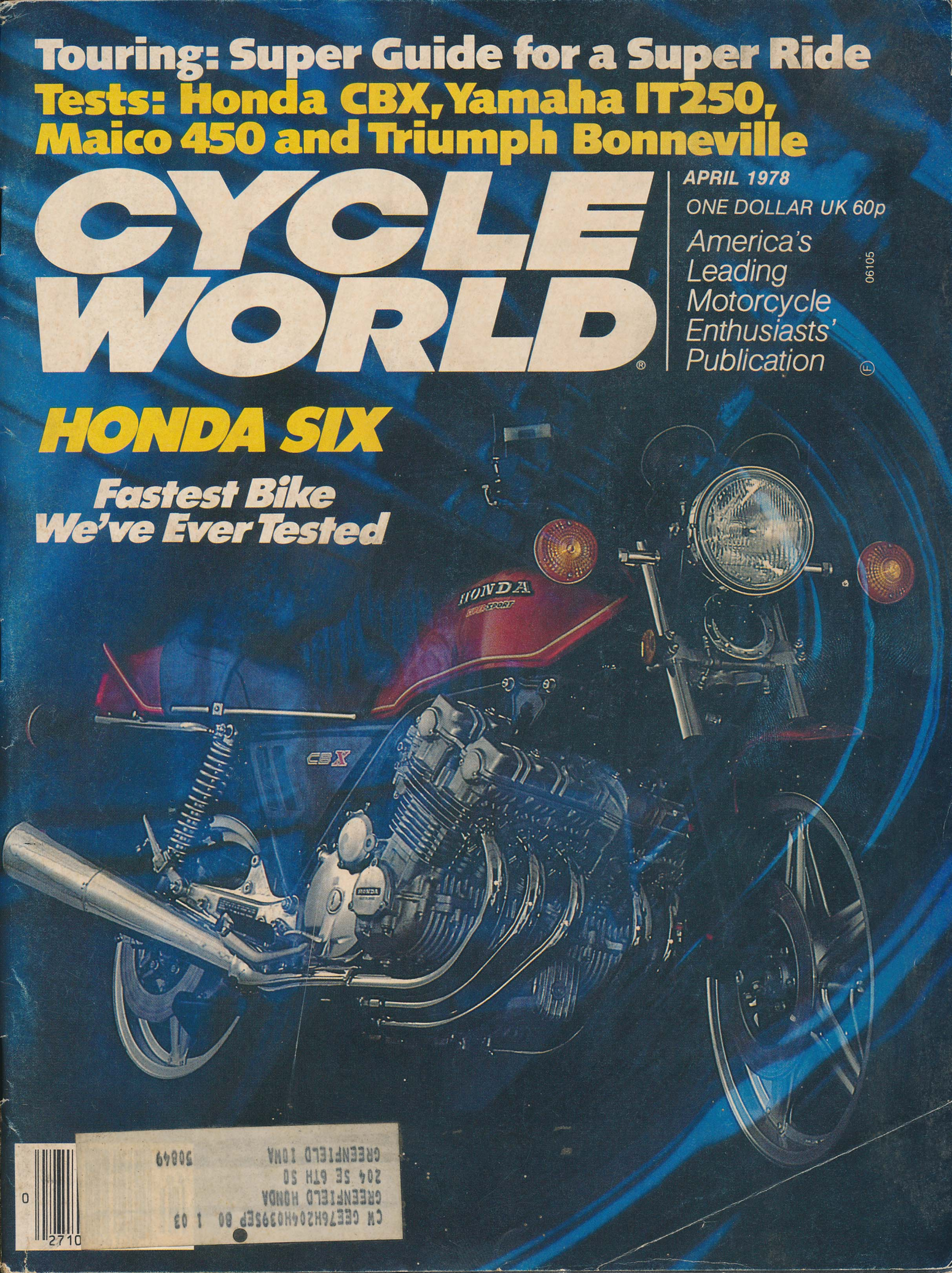
HONDA SIX

Fastest Bike We've Ever Tested



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CYCLE WORLD TESTS

TOURING BONUS FEATURE

TECHNICAL

FEATURES

COMPETITION

DEPARTMENTS

COVER

HONDA CBX/*Photographed by Robert Monkton*

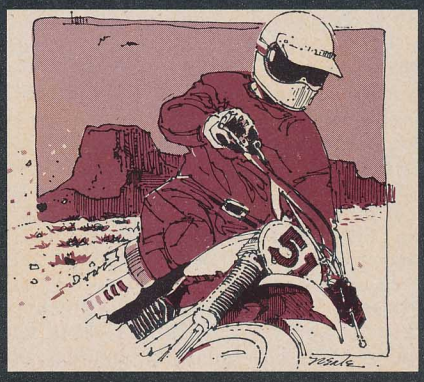

Illustration by Bill Neale

MAICO MAGNUM 450

A Strong New Frame, New Motor and Good Old Maico Steering

CYCLE WORLD TEST

■ Ever ask someone to explain how their motocross bike handles? How does it steer? What about cornering ability? Forks? Nine times out of 10 a Maico will be used as the comparison bike. Corners almost as good as a Maico is a common way to boast about whatever you just bought. Maico's cornering ability and precision are almost legendary. Without a doubt handling and Maico are synonymous in motocross racing. The leading axle forks just discovered by most other makes have been standard equipment on Maico MXers for years.

With a reputation like this going for it, it seemed strange that Maico held on to some old-fashioned ideas like low pipes, point ignitions, small spokes and primary drive by chain.

The 1978 model motocrossers are called Magnums. A fitting name it is. The bikes are mostly new. A Motoplat-Thyristor button flywheel ignition has eliminated the maintenance hassle of the point system and the motor revs quicker because of the decreased flywheel weight. The outdated low pipe is gone. In its place is a dyno-developed high pipe. It is a modern snake design that goes over the top of the head and doesn't interfere with the rider. It is made from die-formed cones and has attaching brackets that are doubled and spread where they weld to the pipe body, effectively spreading the load. Nice rubber blocks isolate vibration from the frame and a removable and rebuildable silencer caps its end. Heavy-duty spokes and nipples front and rear are stock this year and should end all complaints about breakage.

The primary drive is still by chain but the clutch basket and sprocket have been moved forward. This reduces the chain length and should reduce slap, thus increasing chain life.

The clutch looks small (in diameter) but holds six sintel plates and six steel ones. The sintel ones look like some type of high quality bronze composition. Pressure is applied to the plates by a stack of 20 concave spring steel washers that are alternately flipped in pairs. This method applies approximately 700 psi to the plates.

The clutch actuating arm on the case has been relocated for better leverage and makes pulling the hand lever easier. Pull is still heavier than most people like. On the plus side it completely disengages once pulled and doesn't drag or get hot. When released it is smooth, progressive and chatter free. The Maico team bikes used the same clutch at the ISDT in Czechoslovakia in 1977 without failure.

The Magnum engines have restyled narrow side cases. The left (clutch) side is an aluminum casting and looks much trimmer.

The magneto side cover is now a small round plastic gem and less protrusion is required to cover the small Motoplat.

Also restyled and redesigned are the main center cases. The lower end and transmission cavity are unbelievably small. Part of the reason for the new center case design was to move the final drive sprocket rearward as far as possible. This has been nicely accomplished and the sprocket now sits about 4 in. farther rearward. Just enough space is left to gear the bike two teeth higher and still clear the swing arm. With the sprocket so close to the swing arm pivot, the need for a chain tensioner has been eliminated.

Maico also claims handling in whoops is improved because the chain keeps the shocks under less compression which allows the wheel to rebound quicker. Thus the wheel follows irregular surfaces better.

Magnum owners can forget engine bolt problems. The new cases have a four-point mounting configuration. The top rear bolt (the problem bolt on most bikes) has been eliminated. The large swing arm bolt now goes through the extended rear of the case. Another mount is supplied under and toward the rear of the cases. Up front, two mounts secure the case to the front downtubes. Two strong tubular pipes connect the rear part of the head to the frame's backbone. This combination adds up to a strong, rigid mounting.

Inside the cases, the strong transmission gears from last year have been retained. The shifting mechanism has been updated and works flawlessly.

The heavily finned barrel has one less cooling fin than before. The bottom one has been left off, making it easier to get to the attaching bolts. The cylinder and radial head are both rough aluminum castings, painted black. Both the roughness and color aid cooling. Internally the cylinder has more radical porting. Combined with the newly designed combustion chamber and pipe, this gives an increase in both torque and horsepower. Horsepower is now a claimed 48 at only 6600 rpm.

The frame is new this year. With the low pipe out of the way, it has been possible to lower the center of gravity and increase ground clearance at the same time. The frame's center downtubes have been bent to clear the high pipe and the rear fender loop has been eliminated. All the frame tubing is large diameter chrome-moly. Two large tubes form a triangle under the tank and a full gusset plate is welded between them. The double front downtubes are flattened and wrap around the steering head, which holds tapered Timkin bearings.

To complement the rest of the new tubing a *shaped* (as Maico likes to call it) swing arm rides in needle bearings and seals out dirt with O-rings. Bending, oops, shaping the swing arm allows the use of longer shocks. The end result is a rear wheel with 10 in. of travel and a seat height of only 35.4 in., moderate for that much travel.

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Photos by Ron Hussey


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The arm is well braced, with gusset plates top and bottom and double cross tubes behind the pivot point. The axle slot is long and the rider can vary the wheelbase between 56 and 58 in. Nice.

Corte and Cosso gas reservoir shocks with progressive double springs are standard on the Magnums. These are Dr. De-Carbon type, which means the oil and gas remain separated. This separation is accomplished by a piston in the remote reservoir. The reservoirs are mounted under the plastic side plates. They sit in depressions cast in the plastic airbox and are held there by two hose clamps. A slot in the front of each side plate allows air to pass over the reservoirs and fading won't be a problem for most riders. Damping rates will be fine for almost everyone and replacement won't be necessary.

The shock placement is near optimum. When measuring from the swing arm pivot to both shock mounts there is only ½ in. difference. On most bikes this difference is closer to 2–3 in.

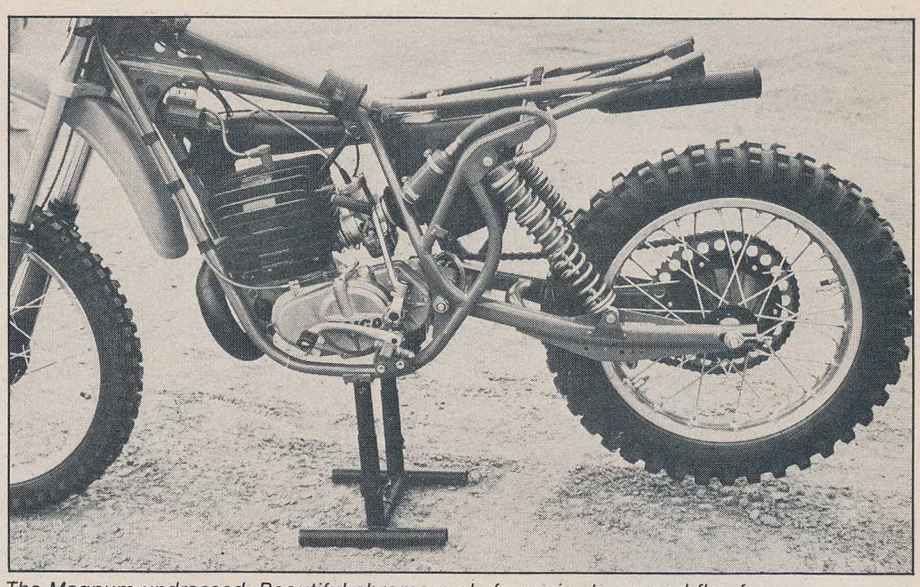
The Maico's geometry allows a constant rising rate. This means it is easier to set up the shocks' damping and spring rates for a variety of terrain.

Maico's fine forks have been redone for '78 and are better than ever. The bottom castings are new, and the bottom nut now threads over the casting. Up higher, a replaceable brass bushing has been added and there's an oil seal held by a circlip. The wiper, which also contains a seal, is friction fit over the casting, like last year's. The stanchion tubes remain 38mm and are topped with air caps. The hydraulic dampener is new. It has two different rate top-out springs and a plastic sealing ring on its piston. The main spring is linear wound and has plastic cups on its ends. Recommended oil is 370cc (12-⅓ oz.) of Bel-Ray LT100 or LT200 (5 or 10 weight). Fourteen psi of air pressure is suggested, but like any air/oil fork, the oil volume and air pressure can be altered to suit riding styles and terrain. One word of caution: Don't use less than 360cc (12 oz.) of oil.

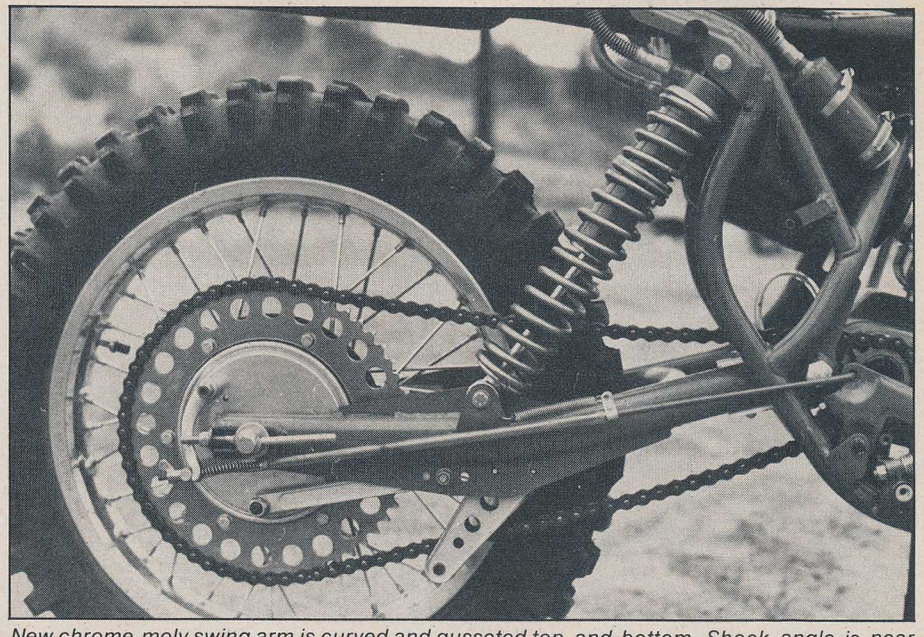
The distinctive handmade coffin tank, almost a Maico trademark, is gone. In its place is a short rounded tank, nicely built from aluminum. The filler cap is offset and is large enough to show gas level when filling. With its smooth rounded lines it looks almost un-Maico but once accustomed to the change, everyone liked it.

The seat front is curved to blend into the tank and is longer, so sitting on the seat in tight corners instead of the tank becomes possible. The seat foam on our test bike was very firm but once broken in was perfect. The seat cover appears durable and the seat base is now plastic. The large rear fender is attached to the rear part of the seat and is removed as a unit with the seat.

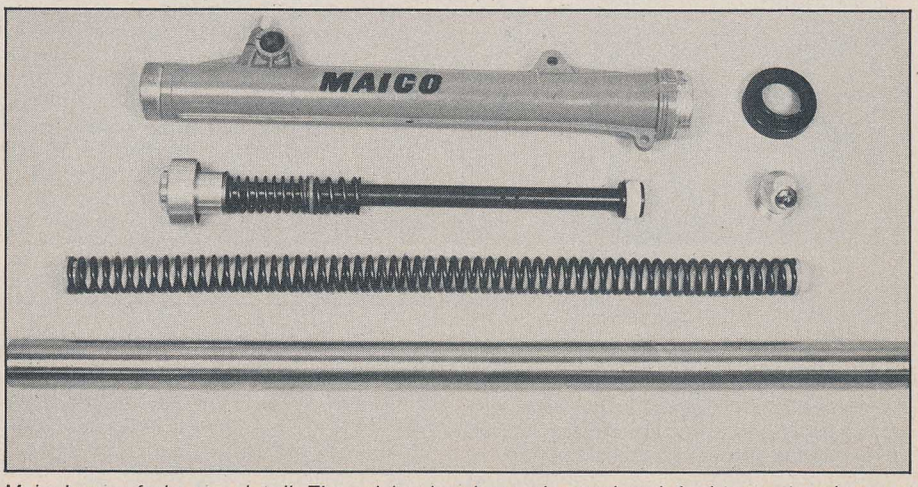
The Falk front fender is the same as last >



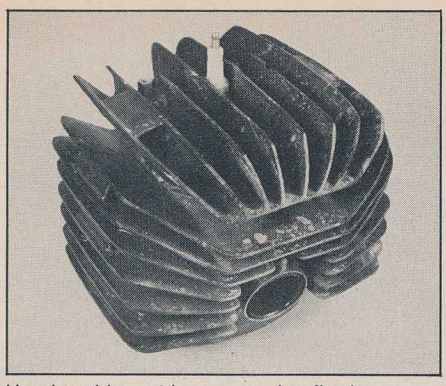
The Magnum undressed. Beautiful chrome-moly frame is strong and flex free.



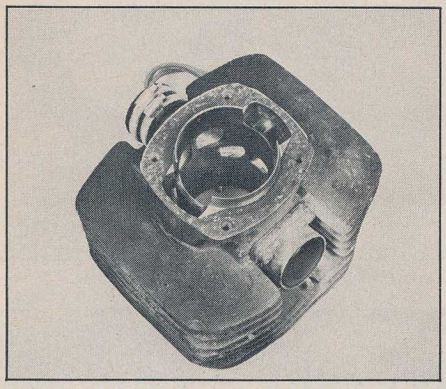
New chrome-moly swing arm is curved and gusseted top and bottom. Shock angle is near ideal. Measurement from swing arm pivot to shock mounts differs by only one-half inch.



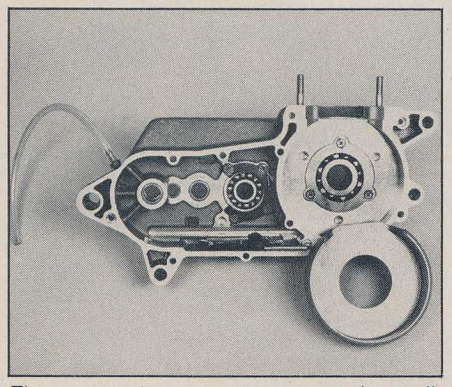
Maico's new forks are air/oil. The valving has been changed and dual top-out springs are used. The fork legs now contain an oil seal, snap ring and bronze friction bearing. The scraper boot also has an oil seal in it.



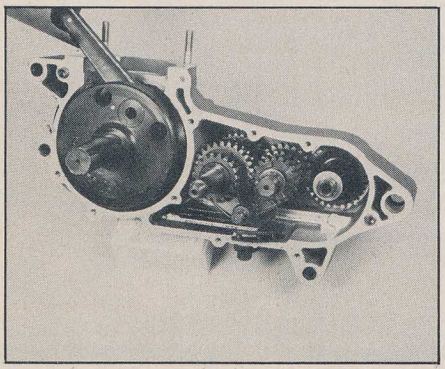
Head and barrel have massive finning.



Cylinder has conventional porting and doesn't use or need reed valves, etc. to produce its four-stroke-like torque and horsepower.



The new center cases are extremely small. The 250, 400 and 450 use identical cases. A metal insert is used to reduce lower-end volume and maintain proper crank pressure on the 250.



Gears are small in diameter but have adequate width and are solid. Shifting is controlled by the grooved plate and shift forks at the bottom of the case. The drive sprocket has been moved back by utilizing a third transmission shaft.

MAICO

SPECIFICATIONS

List price	$2035
Suspension, front	telescopic fork
Suspension, rear	swing arm
Tire, front	3.00-21
Tire, rear	4.50-18
Engine	two-stroke Single
Bore x stroke	82 x 83mm
Piston displacement	438cc
Compression ratio	12:1
Claimed power	48 bhp @ 6600 rpm
Claimed torque	na
Carburetion	38mm Bing
Ignition	Motoplat CDI
Lubrication system	premix
Oil capacity (transmission)	1.1 pt.
Fuel capacity	2.46 gal.
Recommended fuel	premium
Starting system	kick, folding crank
Air filtration	oiled foam

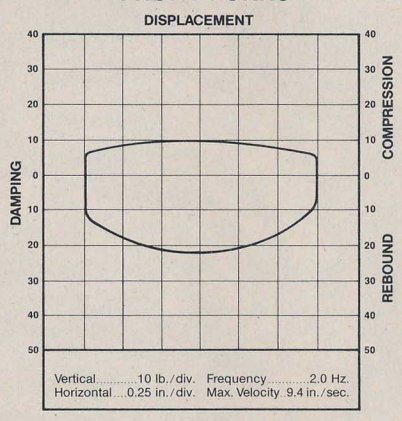
POWER TRANSMISSION

Clutch	multi-disc, wet
Primary drive	triple-row chain
Final drive	# 520 chain
Gear ratios, overall:1	
5th	8.02
4th	9.61
3rd	11.99
2nd	15.75
1st	21.67

DIMENSIONS

Wheelbase	56–58 in.
Seat height	36.0 in.
Seat width	7.0 in.
Handlebar width	33.0 in.
Footpeg height	15.3 in.
Ground clearance	11.8 in.
Front fork rake angle	30 deg.
Trail	na
Curb weight (w/half-tank fuel)	238 lb.
Weight bias, front/rear, percent	47/53

FRONT FORKS

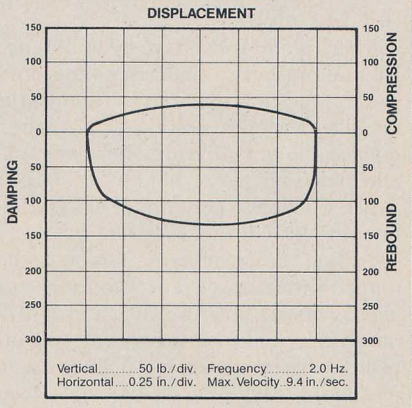


Maico leading-axle fork

Fork travel	10.0 in.
Engagement	4.1 in.
Spring rate	15 lb./in.
Compression damping force	10 lb.
Rebound damping force	22 lb.
Static seal friction	37 lb.

Outrageously high seal friction, partly because of the external slider seal/scraper, makes an otherwise excellent fork far too stiff. The problem is compounded as air pressure, necessary to assist the 15 lb. coil springs, is increased. A seal and scraper swap is a necessity if proper suspension action is to be realized.

REAR SHOCKS



Corte & Cosso remote-reservoir gas shock

Shock travel	4.6 in.
Wheel travel	10.0 in.
Spring rate	110/175 lb./in.
Compression damping force	35 lb.
Rebound damping force	138 lb.

Damping rates of these Italian-made gas shocks are fine. Excessively high initial spring rate makes the Maico's rear end action harsh for most riders, however. Middleweight/ability riders should use 90-lb. coils, heavier or expert riders 100 pounders.

Tests performed at Number One Products

year: A good fender but a tad short in front. Footpegs also remain the same. Some like them, some don't. Peg-to-seat relationship is excellent but seat-to-bar position is somewhat hampered by bars that feel about an inch too high for a motocross weapon. A nice shape, but too high. Used as an off-road trail bike or desert racer, height and bend are perfect.

Magura dog-leg bend levers and plastic throttle are stock. High-grade cables (red of course) and new-style Magura grips are furnished.

Both front and rear brake hubs are the same as last year, as is the lining. The Maico 400WR we tested last year had >

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brakes that required heavy pedal and lever pressure. The linings weren't arced correctly and only a small portion of the available lining was used. The test Magnum had *excellent* brakes. The linings were correctly arced and the leverage required was just right. Stopping power was great, being very progressive and strong.

Like the rest of the components the tires are first cabin. Metzelers. What else can one say?

We tested the Magnum on Indian Dunes' well maintained sand courses and on De Anza's hilly granite. Because of the 450's phenomenal four-stroke-like torque, we also spent a couple of days in the Mojave Desert.

The Indian Dunes courses were well prepped, smooth and damp. The big 450 started on the first kick that turned the engine over fast enough to cause the Motoplat to fire. A quick stab proved to be the best way. A compression release lever is furnished and the lever must be kept pulled until the motor is running. The release valve is located in the back side of the cylinder, so the engine will run when the release is activated.

Once started, very little vibration is noticed. In fact it vibrates less than any big bore we've tested lately. The transmission shifts down smoothly into first from neutral. It's so smooth that every test rider had a tendency to depress the lever several times just to make sure. When you push down on the lever, nothing is felt. No clunk. No lurch. No gear grab. Nothing.

The clutch release is progressive and positive, a treat after bikes with *in* or *out* action. Acceleration is quick and shifting is velvet. The clutch isn't needed once moving and shifts can be made under full throttle. Full throttle shifts aren't the recommended way to use the gearbox, but it is nice to know the option is there if needed. Maico's lengendary steering and handling is noticed immediately. Lines through the corners become the choice of the rider, not the bike. Crossing up over jumps and high sky shots instill complete confidence and the bike becomes an extension of the rider. Frame twist and flex are non-existent. Brakes are superb but the Magura dog-leg levers seem like a long reach. Evidently the pivots for them are different than those used on Husky and some other bikes. A minor thing, though; we bent them back slightly and made them easier to reach.

The new air/oil forks and Corte and Cosso reservoir shocks furnish a lot of travel. Both feel a little stiff but on the smooth course aren't offensive.

After about 10 break-in laps we stopped to check the red beauty over. All engine bolts were tight and not one spoke had loosened. Everything checked OK and the jetting was perfect. The testing continued

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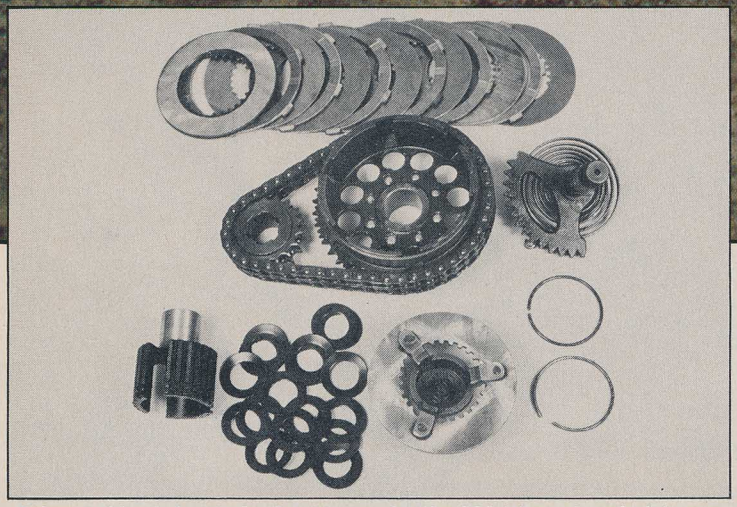

Primary drive is by chain: Double row for the 250 (shown) and triple row for the 400 and 450. Twenty concave washers are stacked alternately in pairs and apply approximately 700 lb. to the bronze clutch plates.

Sky shots may be done with complete confidence on the big Maico.

for several more hours until we got rained out.

Next time out we went to De Anza Park, about eight miles east of Riverside International Raceway. De Anza is located in an area known as the Bad Lands, a barren mountainous section that resembles the moon. A big motocross event had been held on wet ground the day before and the track contained deep grooves and rock-hard whoops. Suspension stiffness was much more noticeable here. We dropped the fork air pressure from the recommended 14 psi to 10 psi and the front felt better. The rear has dual springs but we didn't have softer ones along. Unless the rider is a 200-lb. pro, the primary rear spring will be too stiff on rough tracks. Even with the rear end stiff on smaller bumps, straight lines were normal through the larger rollers and big bumps. Most riders will like the Corte and Cosso shocks after the springing is dialed in to their weight and style. As we mentioned, the forks can be adjusted by changing oil weight, oil volume and air pressure.

We next took two different trips to the desert. The machine is designed as a motocrosser but the fantastic torque and smooth power caused us to overlook that.

The stiffness of the shock springs was ever more apparent in the desert where a softly sprung bike seems to work best. We dropped the fork air pressure to 8 lb. and they worked much better. Steering precision is incredible and rocks, bushes and the like are missed without effort. The gearing, as suspected, needs to be raised two teeth on the front sprocket. But, the engine's broad power feels like it was designed to be used for desert and off-road use. Power and torque start from idle. The closest description of the motor's behavior was when someone noted that the bike felt like riding a 230-lb. four-stroke!

The engine is thirsty and the 2.4-gal. tank is a little small for trail use. By fitting a larger tank, a skid plate and adding taller gearing one can have one of the finest desert, trail and playbikes imaginable. For motocross use, as designed, it is one of the few open-class bikes that can be ridden hard without rapidly tiring the pilot.

Forget all the terror stories about how you have to have hair growing from your palms to ride a Maico 450. Not true. Fast, yes. Very fast. Certainly not a wise choice for a beginner. But the horsepower is delivered in such a smooth, broad band that any one used to an open-class bike should be delighted.