

# MAGNUM FORCE

## 1978 Maico MX

By Ned Owens

During the Trans-AMA season, Maico tested/previewed their latest efforts. With only minor changes from Gaylon Moiser's mount, the 1978 Maico motocross line, dubbed "Magnum" exhibits the first major engine redesign in years for the German manufacturer.

Starting with all new cases, the engine features are numerous and important. The transmission layout, gears and shifting mechanism are all redesigned. The three-shaft tranny places the countershaft sprocket as close as is physically possible to the swingarm

pivot. This eliminates the need for a chain tensioner and enables the rear wheel to travel through a flatter arc.

Also, the pivot bolt is the rear motor mount bolt and increases the rigidity of the chassis by using the engine as an integral part of the design. A total of four mounting points are built into the engine/chassis combination.

A new clutch is incorporated, but retains the washer type clutch springs. Still used in the engine primary drive is the old chain. Longevity of this link is improved with changes in the di-

ameter of the clutch (driven) and crank (driving) sprockets. Hopefully this will help eliminate much of the primary chain wear that has plagued Maicos in the past.

Barrels on the Magnums feature revised porting and a redesigned combustion chamber areas in the head. The 250 received the long expected lightweight GP crankshaft. It features Hans Maisch cylinder porting and a new one-plug cylinder head.

Also gone (to much applause) is the points ignition. A Motoplat-Thyristor

*Mosier's Trans-AMA mount varies only slightly from the production units. His was equipped with Ohlin reservoir shocks; welded-mount, saw-tooth pegs; fork boots; and different plastic fenders and side panels. Ignition side cover on all Magnums is plastic. Clearance between countershaft sprocket and swingarm is at a bare minimum.*

*Gaylon Mosier campaigned the Magnum throughout the Trans-AMA series.■*

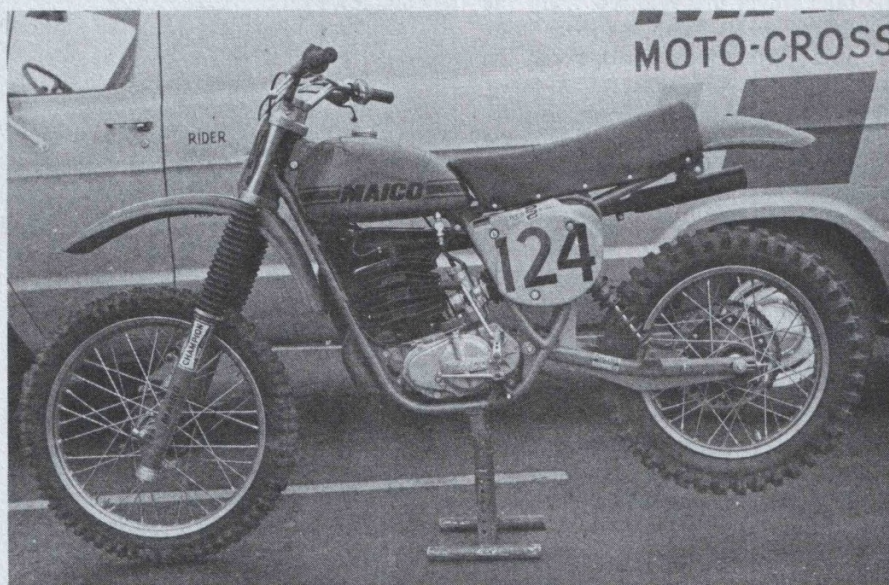


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internal rotor ignition finally eliminates the electrical hassles involved with the points/condenser situation. This puts the electricals in the same class as the Japanese and most of the other European machines. Too long in coming, many say.

A new right side high pipe is also part of the new engine package. Smoothly tapered hydro-formed sections highlight this necessary change. Gone are the battered down pipes of previous models. The silencer is removable. The chamber seems to be well designed, constructed and well tucked in behind the right side number plate.

Besides the obvious changes to accommodate the new engine and mounting points, the chassis features a new rear section. The rear loop has been removed and the fender now is attached to a redesigned seat base.

A banana-shaped swingarm with plenty of guessting sports a pair of the Corte-Cosso gas reservoir shocks with a split rate springs. Ten full inches of rear travel are realized from the Corte-Cosso units—popular for some time now throughout Europe on the motocross and ISDT mounts.

Hubs, brakes and rims remain unchanged, but a stronger spoke nipple with a different shoulder design is utilized. (Some of the past wheel disintegration has been traced to those under-strengthened nipples.)

Fork internals have been revamped. An all new air/spring fork uses different dampers. Mosier used the new units throughout the T-A series so they must have performed flawlessly. He used fork boots to help protect the seals, which are new double seals. A bronze bushing is now inserted into the aluminum slider providing a smoother sliding surface with less sticking.

A rounded aluminum tank sets off the new package. At first it looks kind of homely, but it grows on you. Also, it will be safer for the lower extremities of the rider as he won't be growing on the square edges of the old tank.

All in all, the new Maico Magnums appear to be a solid, intelligent step forward. Many of the weaknesses of the past Maicos have been resolved or at least improved.

Many of the improvements constitute a three or four year jump into the midst of the stiff competition. Power is reported to be up on each of the displacements. Weight is down six pounds. Hassles are down a bunch (consequently reliability is up.) If the handling is on a par with previous Maicos—and everything points to better handling—these new models will put the teutonic red monsters back in the front of the pack.

(It's all conjecture though, until we get one [soon] and wring it out. Stay with us.—ED.)

## MAICO 1978 MAGNUM MOTOCROSS SERIES TECHNICAL DATA

	250 MAGNUM	400 MAGNUM	440 MAGNUM
	Type 336	Type 337	Type 338
Max. length	2130-2170mm (83.8-85.4 inches)		
Max. height	1200mm (47.2 inches)		
Max. width	850mm (33.5 inches)		
Wheelbase	1430-1470mm (56-58 inches)		
Seat height	920mm (36 inches)		
Ground clearance	300mm (11.8 inches)		
Dry weight	96 kg (211 lbs.)	98 kg (215 lbs.)	99 kg (217 lbs.)
Engine	Air cooled two stroke, with loop scavenging		
Bore and stroke	67 x 70mm	77 x 83mm	82 x 83mm
Displacement	247ccm	386ccm	438ccm
Compression ratio	12:1	12:1	12:1
Carburetor	Bing type V54/II, 36mm		
Horsepower	38 hp/7600 rpm	44 hp/6600 rpm	48 hp/6600 rpm
Fuel	High octane (92+), oil mix		
Oil mixture	20:1 Bel-Ray MC3, 40:1—50:1 Bel-Ray MC1		
Intake system	Large volume foam filter		
Exhaust system	High pipe with removable silencer		
Ignition	Pointless Thyristor—Ignition (MHKZ), Motoplat		
Ignition timing (B.T.D.C.)	1.5-1.7mm	2.3-2.5mm	2.3-2.5mm
Spark plug	Champion N2 or N84G, NGK B9ES		
Clutch	Multiplate, oil bath clutch with 6 (sintel) clutch plates and 6 (steel) plates		
Primary ratio	41/18—2.28	39/21—1.86	39/21—1.86
Final drive ratio	56/13—4.3	56/13—4.3	56/13—4.3
Optional sprockets 12T, 14T, 15T. Optional rear wheel sprocket 52T.			
Transmission	Dog shifting. 5 speed gear box with mainshaft, layshaft and driven countershaft		
Shifting	With 3 shift forks, shifting plate operated through shifting cam with engaged hooked ratchet, left foot operated		
<b>GEAR RATIOS:</b>			
Type of gear:	250 MAGNUM MT Internal (overall)	400 MAGNUM RT	450 MAGNUM RT
1st gear	2.25 (22.1)	2.71 (21.67)	2.71 (21.67)
2nd gear	1.80 (17.7)	1.97 (15.75)	1.97 (15.75)
3rd gear	1.44 (14.15)	1.50 (11.99)	1.50 (11.99)
4th gear	1.20 (11.8)	1.20 (9.61)	1.20 (9.61)
5th gear	1.00 (9.82)	1.00 (8.02)	1.00 (8.02)
(Overall ratios with 56/13 sprockets)			
	250 MAGNUM	400 MAGNUM	440 MAGNUM
Gear lube	600ccm	SAE 20W-50W	
Primary chain	3/8 x 7/32" 52 links	3/8 x 7/32" 52 links	ditto
Drive chain	5/8 x 1/4" 108 links	5/8 x 1/4" 108 links including master link	ditto
<b>CHASSIS</b>			
Front suspension	Double loop chromoly tubing Hydraulic telescoping forks with 38mm fork tubes. Aluminum fork sliders, progressive operating dampeners, linear wound spring, and compressed air.		
Front wheel travel	254mm (10.0 inches)		
Spring, dampening	Linear wound spring—additional air pressurized with 14 psi. Spring thickness 4.0mm, marked green. Hydraulic dampener with rebound spring.		
Oil capacity forks	370ccm hydraulic oil per leg. HL 25 or ATF (SAE 10) Bel-Ray LT 100 or LT 200		
Steering head	Covered tapered roller bearings. Play free. Adjust without tension.		
Rear suspension	Swingarm with needle bearings sealed by O-rings		
Rear shocks	Pressurized reservoir gas shocks with separating piston in reservoir. Length 360mm (14.17 inches)		
Spring	Progressive dual rate spring, two springs		
Rear wheel travel	254mm (10.0 inches)		
Front brake	Drum brake—136mm. Brake shoes 30mm wide. Operated by right hand.		
Rear brake	Drum brake—160mm. Brake shoes 30mm wide. Operated by right foot.		
Front tire	3.00 x 21—4 ply (10-14 psi)		
Rear tire	4.50 x 18—4 ply (8-13 psi)		
Tank capacity	9.3 l (2.46 gal.)	9.3 l (2.46 gal.)	9.3 l (2.46 gal.)
Color	MAGNUM Red (frame, tank, fenders, side panels)		
Price	\$1872	\$1987	\$2035
Technical specifications are subject to change without notice.			