

# All About Suspension-Damper Rods & Fork Kits

**POPULAR**

# **CYCLING** IND

## **SUPER TESTS!**

- Bultaco 370 Pursang
- Yamaha IT 400

## **HOW TO:**

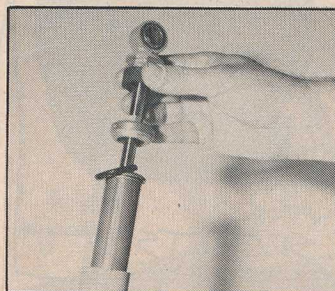
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7-Seconds!**

**June 1976 \$1.00**

34120



JUNE 1976



Cover:  
Marty Tripes puts the new Bultaco 370 Pursang into the outer hemisphere for Steve Reyes' trusty Pentax.

Centerspread:  
Tony D., Roger, and other heroes, under the lights, earning a living.

# POPULAR CYCLING

VOLUME 9, NUMBER 6

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In the past, Bultaco, not unlike Maico, never made any sudden changes in their production from one model year to the next. Each new model, a higher number following the "Mark" insignia, was greeted with gradual refinements, slowly improving on an already good package. This season, with the introduction of the Mark 9, the Spanish-based firm has just about designed a motorcycle entirely new from the ground up.

Starting with the engine, you'll find that a lot of the past problems have disappeared, being replaced with refined components. For instance, the cylinder design has been revamped. Over the 1975 season, the factory Bultaco riders experimented with a new cylinder design,

corporated, Bultaco could then enlarge the intake ports without having to worry about piston hang-up. The port, along with many of the others found in the cylinder, is wider and deeper, allowing a larger quantity of fuel to pass through quickly.

On the 370, our test machine this month, and on the 250, you'll find a new exhaust pipe. Instead of the usual system that hung out the rear of the bike and constricted the rider's leg on the side, the new pipe is streamlined and tucked in under the machine.

The pipe is also totally new, both in dimensions and design. The header section, center cones, and megaphone on the rear are all designed to work in conjunction with the new cylinder design. For owners of previous Bultacos, you can adapt the new pipe to your older model, and depending on the porting work you have performed, you could see an increase in performance.

The 370 Pursang motor, like the other models, still runs off of the primary chain coupled to the crank and clutch. The clutch assembly is now made of aluminum, except for the driving teeth,

which for reasons of strength, have been retained using the heavier alloy. The clutch pressure plate is aluminum, as is the majority of the housing that holds the cork and steel plates.

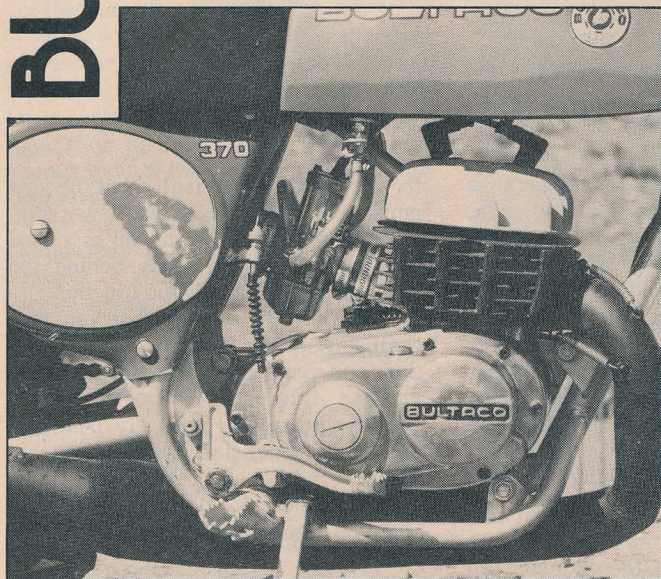
Inside the gearbox, there are a lot of new concepts being used in the Mark 9 models. For instance, you've still got the five-speed unit (although the small displacement bikes have gone to the six-speed) and it's still sturdy. Yes, we said sturdy. Although there have been many complaints about the Bultaco gearbox, you've got to admit that any mechanism that can withstand that many mis-shifts, and that many brutal poundings on the gearshift by unknowing drivers, has got to be bulletproof.

The gear clusters have been changed by way of undercutting the new tabs that interlock the units together. The undercutting, both on the tabs and the slots in each gear, helps to eliminate the problems of missing shifts, and also will grab a gear pattern and pull it firmly into place when you don't give it a hearty shift. Instead of slipping back into a neutral, the gears will tug on each other, locking together, allowing the rider to

Lots of New Goodies

**BULTACO 370** Make for a Brand New Machine

# MARK 9 PURSANG



Externally, the engine looks almost the same as last year. The new brake cable-actuated unit is visible—keep an eye on the cable for fatigue.

New leading-axle forks are used, giving you over nine and a half inches of good travel.

Marty Tripes just recently re-signed with Bul for a second year.



and had very satisfactory results.

Bultaco was so happy with the new design that they put the cylinder, identical to the works machinery, right on the production model. There really isn't any need to do any porting work. In stock trim, the cylinder is capable of winning, and competing at a Grand Prix level.

The major change was in the intake port. It's been sliced into two separate sections, with a bridge in between. The ports are so large now that the bridge was necessary, to eliminate the problem of having the piston skirt hanging up on the large opening. Since the bridge was in-

Photos by Steve Reyes



continue instead of having to fish around trying to find the appropriate plateau.

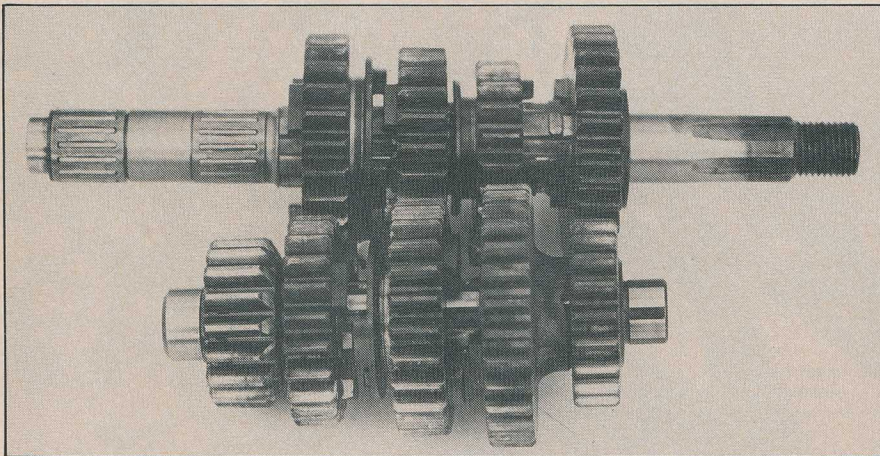
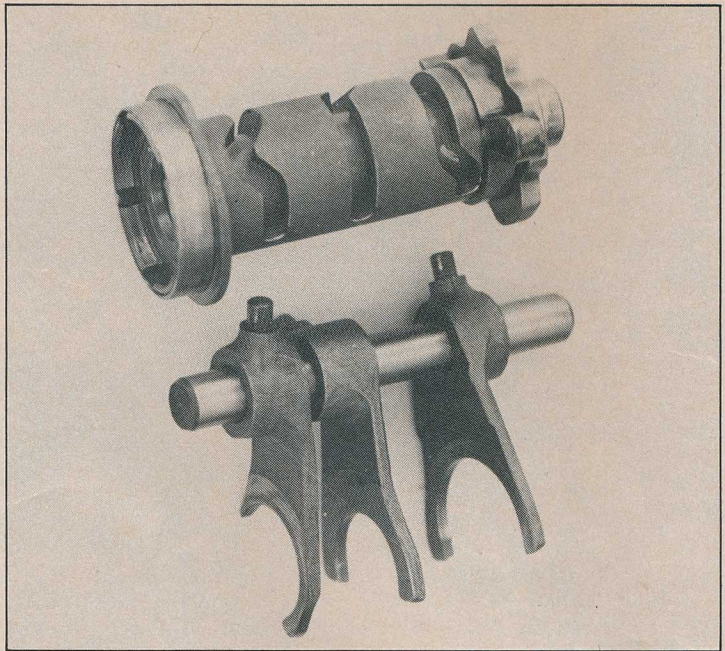
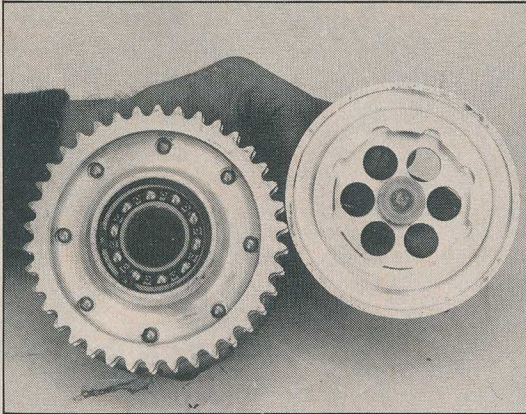
Fortunately, the shifting mechanisms have also been updated, to keep up with the new gear design. The three dogs on the shifting shafts are beveled, to slip in easier, and are no longer internal working units. The shifting cam itself has a new locking tab that, when stressed, will refuse to bypass a gear due to inertial forces. For instance, instead of slipping from first to third and hitting a neutral in between, the new drum tab will grab onto second, not passing that position until the proper message is re-



# BULTACO 370

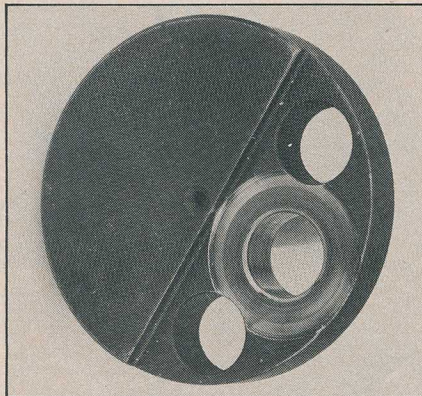
The small tab on the end of the shifting drum is for locking in each gear selection. The dog ends have been beveled to allow them to operate smoothly.

New aluminum clutch pieces help to save weight in critical areas.



The gearbox has been changed and now features undercut tabs and slots for better shifting and more positive gear locking.

The crank pin has almost doubled in size this year, relieving much of the problems found in the past.



ceived through the shift lever.

The actual tooth count, and resulting ratios, have been changed inside the gearbox. First gear is now a bit taller, noticeable when riding. Fifth gear has been brought down some, making it more sensible to use and more applicable out on a track. All the gears in between have been brought closer together by way of tooth count and ratios.

Getting out of the gearbox and into the crank area, many riders will be happy to note that the crank pin has almost doubled in size. Some riders were having problems in this department, losing the lower ends. With the larger crank pin, the problem should diminish drastically.

On the left centercase there are now two crank bearings instead of the usual single unit. With all that extra weight on

the one side of the engine, due to crank pressure and primary drive, the second bearing was needed to keep the engine working in harmony. The old adage of two heads being better than one was applied to the 370 Mark 9.

Bultaco's suspension has gone through a major change also, in conjunction with the Betor people. The first few hundred production motorcycles to come into this country will carry the new suspension, marketed under the Betor label. Towards the middle of the year, Bultaco itself will

take over the manufacturing and production of the suspension components.

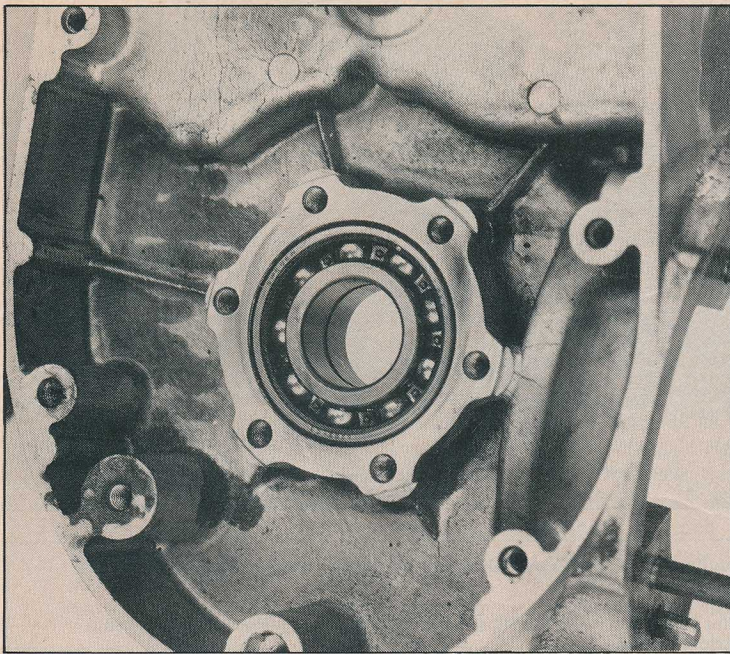
Don't worry though, the units will be identical. Bultaco merely contracted with Betor to build these units exclusively for them until such a time comes that they can take over the process at the factory level. All the parts on the Bultaco-made suspension will be interchangeable with the Betor-made units. You also won't find this suspension on any other motorcycle.

In the front, the forks have a true travel stroke of just a hair over nine inches. Due to the damper design, the first three inches feel rather quick and plush, as though there wasn't any oil up there. After passing that three-inch mark, the forks gradually get stiffer.

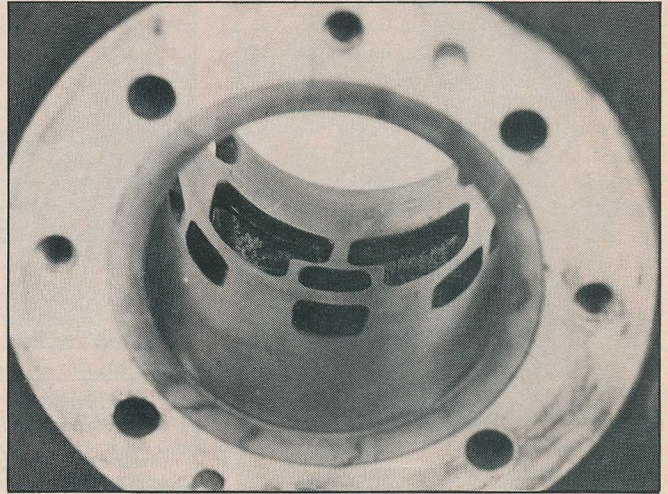
At the lower slider top, you'll find a series of machined oil rings designed to retain and transfer the oil to the top of the forks, eliminating a lot of starvation problems. The oil rings are also rebuildable, giving you the advantage of reworking your forks after a season's worth of competition.

The lower leg has a nice offset axle design, similar to the Maico and RM Suzuki, for the longer travel. More and more manufacturers are discovering that in order to lengthen the travel in the front units, the axle point has to be moved forward of the leg itself to keep things safe. Bultaco wisely followed suit.

The rear is also Betor units, soon to be Bultaco. They are a gas-oil shock, with a rather unique additional feature. There is the usual oil reservoir unit and the conventional spring unit. But in the bottom half of the oil reservoir you'll find an air valve which lets you adjust the spring rate of the motorcycle. For fine tuning, this is outstanding. You can now decide on a spring rate that works well for you, and then fine tune that rate with the air pressure, allowing a rider to go in



Two bearings now reside in the left sidecase to alleviate much of the stress caused by the primary chain, clutch and crank demands.  
The intake port now has a bridge, allowing the opening to be widened.



between the available spring rates and still achieve exactly what he wants.

Since the shocks are moved up in a different position, the frame needed to be altered. Bultaco could have easily just redesigned the frame from the airbox back to accommodate the different suspension. Instead, they revamped the whole system.

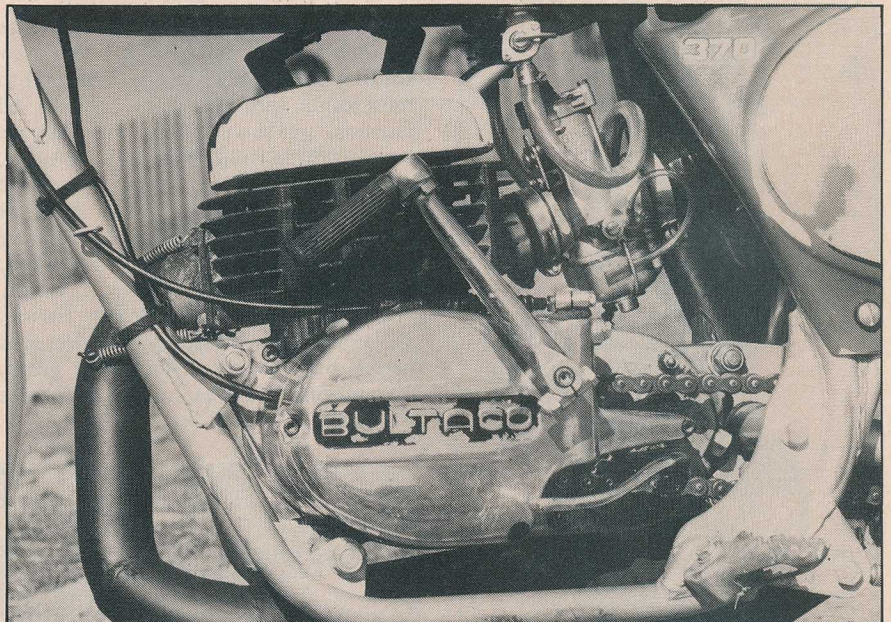
The stock front end rake is retained, but from there on things are beefier, sturdier, and have a better non-flexing property.

The back tubing sections are larger, beefier and better gusseted, eliminating much of the frame breaking and cracking problems that former Bultaco riders have experienced. With the new frame design, Bul was able to play around a little with engine mounting, and incorporated many of the mounting brackets for the engine into the sturdier design of the frame.

For instance, the top head stay is different, mounting to the top of the frame and the branch of the rear downtubes by the airbox. The front lower engine mount also connects in two points. It mounts to the downtube as in the past, but is also connected to the lower cradle and houses the engine, and is sturdier and better.

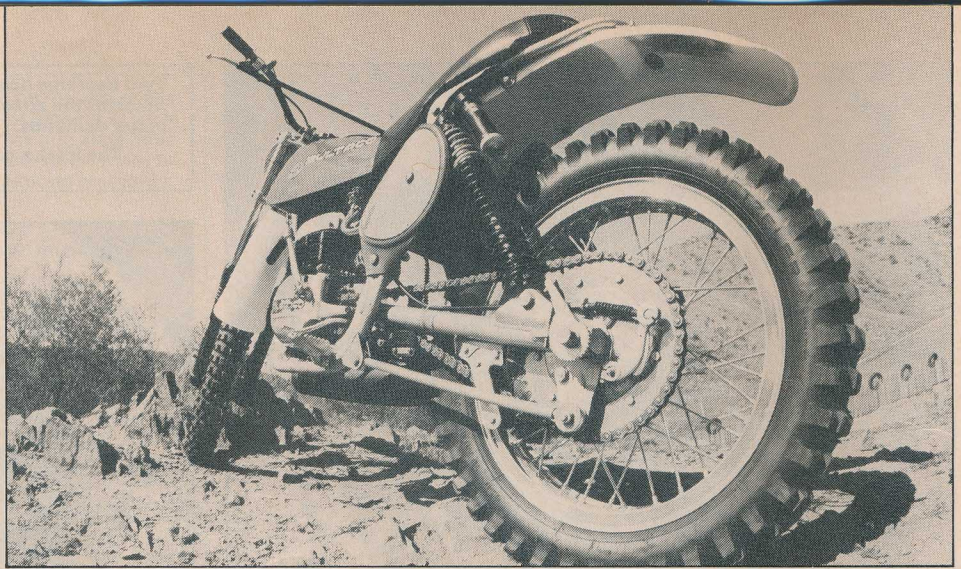
Once again Bultaco has changed their brakes. The rear is about 12 ounces lighter and is a full-floating unit, actuated by a cable now instead of the usual rod. The front brake is larger in diameter, giving you a larger braking surface.

Cosmetically, you're also greeted with a few differences. The gas tank, although it is still fiberglass, is redesigned to accept more gasoline. It will now take 2.5 gallons to top it off. The seat is longer, lower and wider. The bars are shorter. And miracle of miracles, both fenders are now plastic!



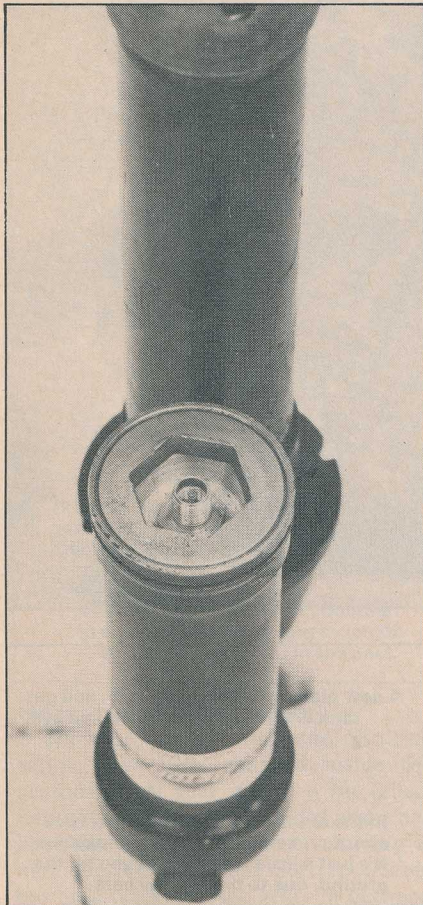
A new pipe, cylinder, Bing carb, and gas tank are all visible to the naked eye.  
  
In the air, the Bul is very cooperative about cross-ups and other acrobatics. It's just a little weird when you hit the ground, due to the narrow bars.

With all these changes, you'd suspect that the Bultaco 370 Mark 9 would run better. It definitely does. The new cylinder port design is a big difference in performance, adding about four horsepower to an already potential monstrous powerplant. Carburetion and consequential fuel feeding is improved, thanks to the redesign of the Bing carb circuitry. The closer ratio gearbox works much



Long-travel Bator shocks with air pressure valves and oil reservoirs give a good 8.2 inches of rear wheel travel.

Inside the fork legs you'll find the oil retaining grooves designed to alleviate the problem of starvation and restricted flow.



The air valve allows you to adjust the shocks to the most specific spring rate possible.

One other method of getting around the course quickly is to utilize the majority of the berm, while applying generous amounts of throttle.

better, and is well matched to the powerband. Even with all the new shifting parts inside, we still managed to miss shifts with regularity. But in all fairness, we should point out that we have always missed shifts with Bultacos, and probably will continue to do so. One of our test riders, a Bultaco freak at heart, ranted and raved about the new difference, saying it shifted smoother, faster and worked 100 percent better. We noticed that the shift throw, although it was the same distance, was better, but we still missed a few gears, over-revving the bike in neutral at the wrong time.

The new suspension is obviously working well for us. The front forks are nice and soft at the initial travel stroke, allowing the bike to absorb the little bumps and skitters on a course without transmitting too much feedback through the handlebars. Once a large obstacle was reached, the forks got down to serious business, soaking up much of the problems. Although the forks are very comfortable up towards the top of the travel point, we still had problems getting them to bottom when they were really taxed. They're good for just about any type of track, and there isn't too much dialing-in needed to get them



just right.

In the rear you could tell that the Betor shocks were working. Even the shock springs were left alone, with the only fiddling performed on the air pressure. After two adjustments, we had the suspension to our liking—simple, efficient, and not hard at all to figure out.

Handling on the new Pursang is just like the other Pursangs. It's confident, and once you adjust to the front end feeling of having that wheel "way out there," you can start setting some good lap times. The bike seems to prefer either drastic squaring on the berms, or easy, smooth, wide corners with the gas on.

If you're going to square a corner, you'd better do it fast. The Pursang is a very precise machine, and if you're not on your toes, you'll find that the bike won't head in the direction you'd like to go. It's not the bike's fault—it just goes where it's pointed. It's up to you to point

going to do anything nasty to you; it handles well enough to pull it off gracefully. It's just that you can't make any sudden moves while the front end is wandering about.

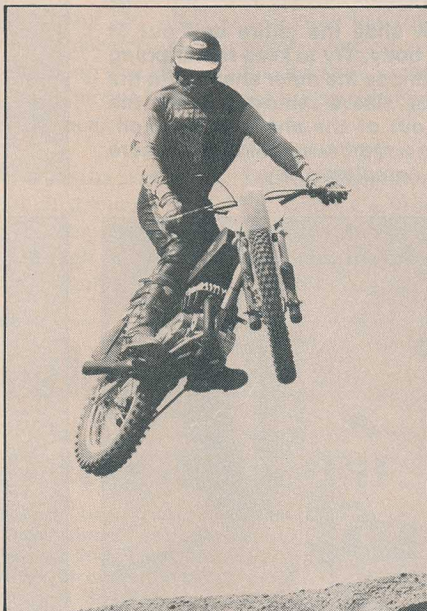
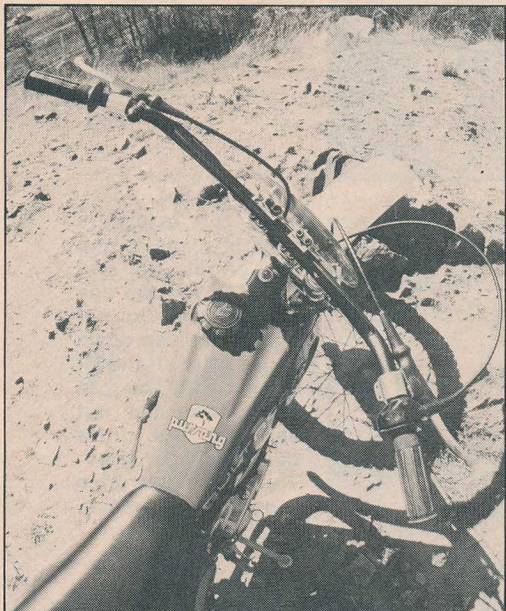
We never could get the rear brake to work the way we wanted it to. It requires a rather strong application of your foot. It's a full-floating unit, and followed the bumps well, but it just didn't have the stopping power of some other machines we've tested.

The front brake worked well, but it too was a little below par in the stopping department. Possibly a little checking of the shoes to be sure they haven't glazed over will help. You might want to rough up the surfaces a little also.

With the new seat and gas tank, the machine is much more comfortable to ride. The bar placing and footpeg points are very good for both sitting and standing. The only complaint that our

riders had about the actual riding was the fact that you can't see the front wheel because the fender is so large. It also sticks up rather high, giving you the impression that the front of the bike is racked out, or is much higher than the rear. This mental problem can be solved by adding a couple of washers to the two front fender mounting bolts, between the fender and the bottom of the lower triple clamp. This will bring the angle down some. You can also shorten the fender with a hacksaw or other tool capable of cutting the plastic material, but you're running the risk of having dirt flung up in your face by your own bike. It's bad enough when the other guys do it.

Obviously, Bultaco has made a lot of changes in their motorcycle this year, and from what we could gather from our test, most of the changes have been for the better. For former Bultaco owners, and those who have a mount in their garage now, you might want to stroll on down to the friendly dealer and give the new Pursang the eyeball. It's a new machine, and works much better than the previous models.



The bars are way too short, the fender a little weird, and the new tank is welcomed by many.

it in the right direction.

We do have a few complaints about the new bike. The first is the handlebars. Remember when Bultacos came with such wide handlebars that you couldn't even get the bike out of the dealer's showroom because the machine wouldn't fit through the door? Now the problem is just the opposite. The bars are too skinny and short.

There isn't enough leverage available to muscle the machine around. It's also a little spooky coming off of a jump and hitting the ground; because the bars like to move, the front end skitters, and you really aren't under full control of directional steering. You can steer with body English, but those first couple of feet on the ground after a jump are a little scary, and hard to adjust to. The bike isn't

Max. Pts.	NUMERICAL EVALUATION	
10	Power	10
10	Powerband	10
10	Acceleration	10
10	Transmission	
	(5) Ratios	5
	(5) Operation	4
10	Suspension	
	(5) Front	5
	(5) Rear	5
10	Brakes	
	(5) Front	4
	(5) Rear	4
10	General Handling	10
30	Miscellanea	
	(5) Starting	4
	(5) Rider comfort	5
	(5) Quality of craftsmanship	5
	(5) Riding maneuverability	5
	(5) Tires	4
	(5) Noise level	5
100 pts.	Overall Rating	95 pts.

## BULTACO 370

Suggested Retail Price: \$1698  
West Coast P.O.E.

### ENGINE

Engine type ..... 2-stroke, single  
Bore and stroke, mm ..... 85 x 64  
Displacement, cc ..... 363  
Horsepower/rpm (claimed) ..... 40/7500  
Torque/rpm (claimed) ..... n.a.  
Compression ratio ..... 10:1  
Air filtration ..... foam element  
Carburetion ..... 36mm Bing  
Lubrication ..... in fuel  
Ignition ..... motoplatt

### DRIVE TRAIN

Transmission ..... 5-speed  
Clutch type ..... multi-disc  
Primary drive ..... chain, double row  
Final drive ratio ..... 13/46

### CHASSIS

Chassis type ..... single downtube  
Overall length, in. .... 82  
Seat height, in. .... 35.8  
Peg height, in. .... 15  
Ground clearance, in. .... 11  
Wheelbase, in. .... 55.5  
Weight as tested, lbs. .... 224  
FR/RR wt. bias, lbs. .... n.a.  
Tires, front ..... 3.00 x 21  
rear ..... 4.50 x 18