

# RAPIDO MOTO

BY DAVE EKINS



# CROSS SPECIAL

## Harley Davidson's hot 125cc street bike will convert beautifully to a true big-boy motocross mount.

• Jack Krizman has invented a spark-arrestor that is incorporated as a standard fitting in the exhaust systems of numerous "trail" bikes. The Krizman spark-arrestor is a little swirl chamber that traps any carbon particles that might be coming down the flue, and the U.S. Forestry service requires that this, or some other device carrying their approval, be on the exhaust system of any motorcycle operated in their territory. They don't care much if you use their land to break your fool neck, but they don't want you to set the woods on fire—which seems reasonable.

Anyway, Krizman's little goodie meets with their approval, and is standard in all trail-going Yamahas, Suzukis and Kawasakis. Harley-Davidson has joined the list with the trail version of their 125cc Rapido—one of which was delivered to Krizman's company, Products Testing, for development work. The procedure is to try combinations of pipes and arrestors until optimum results are obtained.

During these tests, Krizman (who is a demon desert-rat rider) was very impressed with the Rapido's reliability and engine-muscle; and also became aware of some very real shortcomings when the machine was ridden hard out in the rough. So, he decided to correct these shortcomings and make the Rapido a true big-boy, real-racer motocross bike.

In Product Testing's shop, the Rapido was stripped right down to the bare frame, after which a lot of measuring, planning and outright bull-sessions preceded the drawing of a modified frame layout. This included a 6-inch increase in wheelbase and such other changes as were required to accommodate a 21-inch front wheel, and an 18-inch wheel at the back.

Some of the increase in wheelbase came from lengthening the swing-arm 3½ inches—an operation that was followed by bracing the swingarm with box-section gussets at the cross-tube, and then welding a stiffening rib all around its perimeter. More wheelbase was provided by sawing through the frame backbone tube and adding a 2-inch section. This opera-

tion was repeated in the smaller-diameter tank-mounting tube, with the section being inserted behind the tank-mount bracket so that no relocation of said bracket was necessary. At the same time, the entire frame rear section was cut away, and a longer, stronger section fabricated from ¾-inch tubes was welded-on complete with mountings for new shocks and seat.

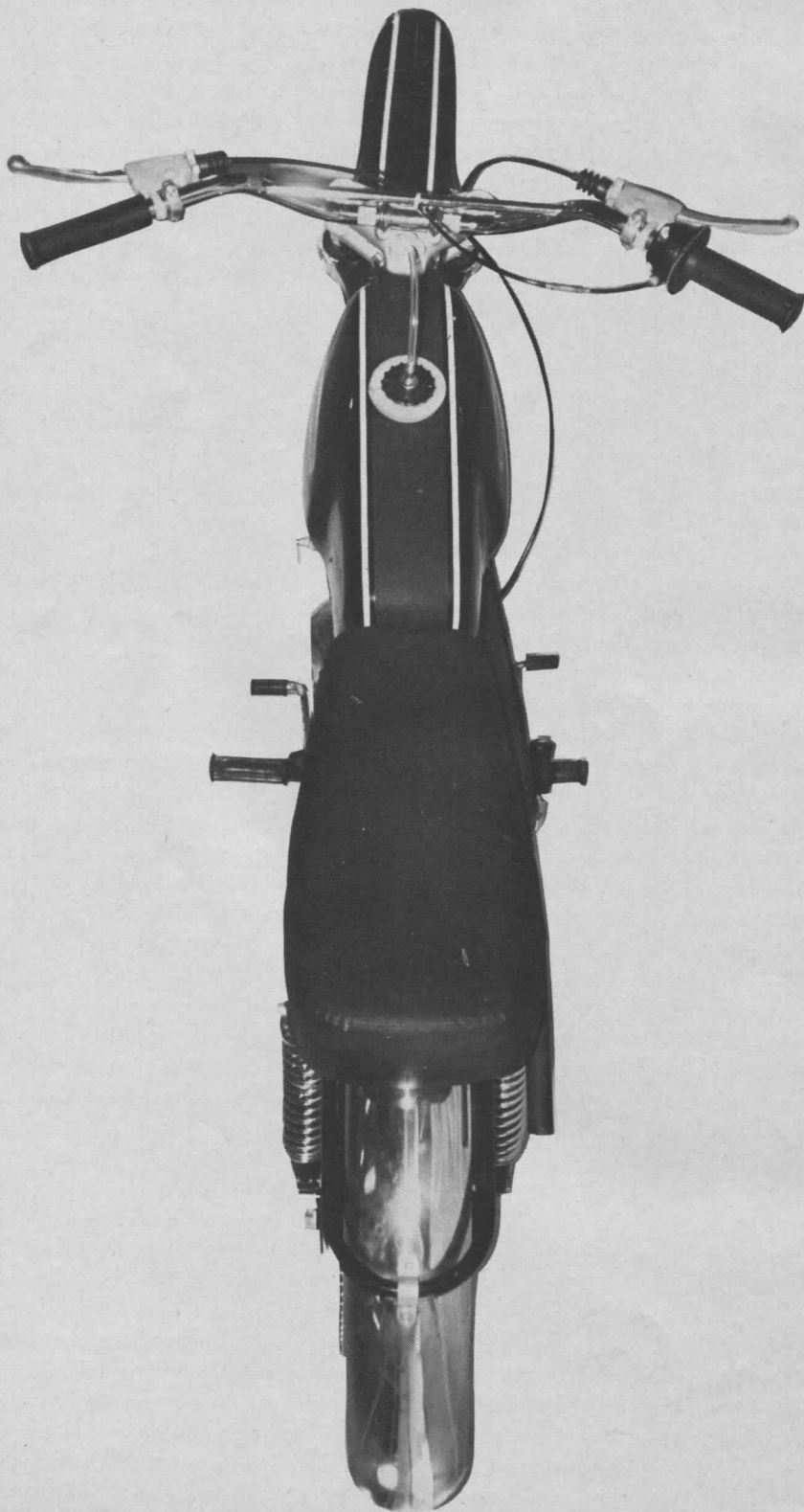
A set of Ceriani lightweight Motocross forks (part no. 1448) was used to replace the stock Rapido component, which has neither the stiffness nor the travel for serious dirt riding. Fitting these required that a collar be machined to hold the H-D bottom bearing race, and also add .125" to the spacing. Apart from that, the Ceriani fork stem fits the standard bearings and frame head very nicely.

However, the large front wheel included in the planning needed more room than was provided by the Ceriani forks. A 22-inch reach was needed between the axle and the bottom of the head, and the fork legs were too short. So, a pair of distance pieces were made that threaded onto the tops of the fork tubes and clamped into the upper fork bridge.

Ceriani forks are narrower than those that come with the Rapido, and that required a reworking of the front hub and backing-plate. A ⅝-inch clearance groove was milled in the backing-plate, and then a fill was made with heli-arc inside the plate to make up for material lost in the matching operation. A boss was also welded-on to provide an anchor-point for the brake stay. Then the left-side distance-piece was shortened to ¼-inch, and the speedo-drive assembly discarded. The front axle was cut back to a 7¼-inch length and re-threaded, and the left Ceriani fork slider was drilled and reamed to the Rapido front axle's .710-inch diameter.

Light-alloy Akront rims were laced to the stock hubs. Honda CL72 spokes made the connection between the rear hub and its new rim, but the front spokes had to be custom made to an 8-inch length. The 21-inch front rim was fitted with a 3.00-size knobby, and another 3.30-18 knobby was

**Slender styling is an accidental bonus from weight reduction and performance goals.**



mounted on the back wheel. Of course, both wheels have security lugs to keep the tires from slipping around and shearing off the valve stems.

The Rapido's standard 42-tooth rear sprocket was retained, but for this project a 72-tooth overlay sprocket was added. This is a very large cog-wheel; and there was some concern with the possibility of the chain coming adrift. To prevent that from happening, a chain-guide was made from 1-inch aluminum strap and bolted to the swing-arm.

At this point, with the wheels, forks and a pair of Ceriani rear shocks secured to the modified frame, the Rapido began to look like a machine for the serious racer, which made Krizman eager and the work to proceed faster. Behind the stock tank, a Hodaka seat was added—mounted in the same manner as it was on the motorcycle from whence it came: the front slipped onto a rod, and was secured at the rear by a pair of 8mm bolts. And in the interest of name-brand purity, a dab of lacquer-thinner was used to remove the "Hodaka" printed on the seat. A completely standard tank can be used, but in this case the forward mounting flanges had reinforcing plates added, and the bungee-cord seen in the accompanying photographs is a more convenient hold-down than the original spring.

Cutting and rewelding the footrests a couple of inches, and a piece was left on the brake side to serve as a return-stop for the brake lever—which had to be bent around into a passable imitation of a scarlet flamingo's beak. The rear brake cable is one that is standard on a Yamaha trail bike, and as the non-folding H-D kick-starter lever proved to be squarely in the way after the engine was bolted into place, it was replaced with one from a Triumph Tiger Cub.

Several people bolted their favorite handle-bars to this Rapido motocross-machine-in-the-making, but the one that got the nod after a lot of sitting, standing and



## Simple modifications require some metalwork: 'stretching' the frame, machining brake plate.

twisting was the Rickman "cross-country" handlebar. It seemed to have the best combination of height and sweepback for most riders. Those marvelous Magura control levers were installed on the Rickman bars, and as all the shifting of bar lengths and wheelbase had changed control/mechanism distances drastically, new cables had to be made up. The nylon throttle has become almost standard equipment on all the bikes set up for dirt racing, as has the Rickman fiberglass front fender, so mouting these items on the bike definitely seemed a good thing to do.

No engine changes were made, but Krizman is the man behind Filtron air-cleaners and one of these was made and installed. It is big enough to feed a 500, but tucks away neatly under the expansion chamber. The expansion chamber itself is tucked away under the tank and seat. This last, incidentally, was designed using the "Jennings" formula and it gives great low-speed torque with plenty of revs available, too. The exhaust header-pipe is secured to the cylinder by the standard ring-nut, but held at the far end of the system by a shock bushing. The engine is rubber-mounted in the frame, and the frame is a bit flexible, so it was absolutely necessary to flex-mount the exhaust system to keep it from breaking.

As was stated, no engine changes were made, unless you count the exhaust system as a change, but even with the 72-tooth rear sprocket it will hit 60 mph. Having 10-inches of ground clearance, and such a narrow engine, no skid-plate is necessary. The bike weighs in at 170-lb, dry, and has 4-inches of travel at the rear wheel; 5½-inches at the front. Everyone who has ridden the device loves the way it handles, and the Harley-Davidson types (and a lot of others) think it is neat to see that beloved old American name on a good-looking bike built for fast travel out in the boondocks. Maybe (who knows?) Harley-Davidson will take the hint and build replicas for everyone. ©



*Six-inch wheelbase increase results from sections added to top tubes and longer swingarm.*



*Because Ceriani forks are narrower, some work on hub was necessary. Fender by Rickman.*