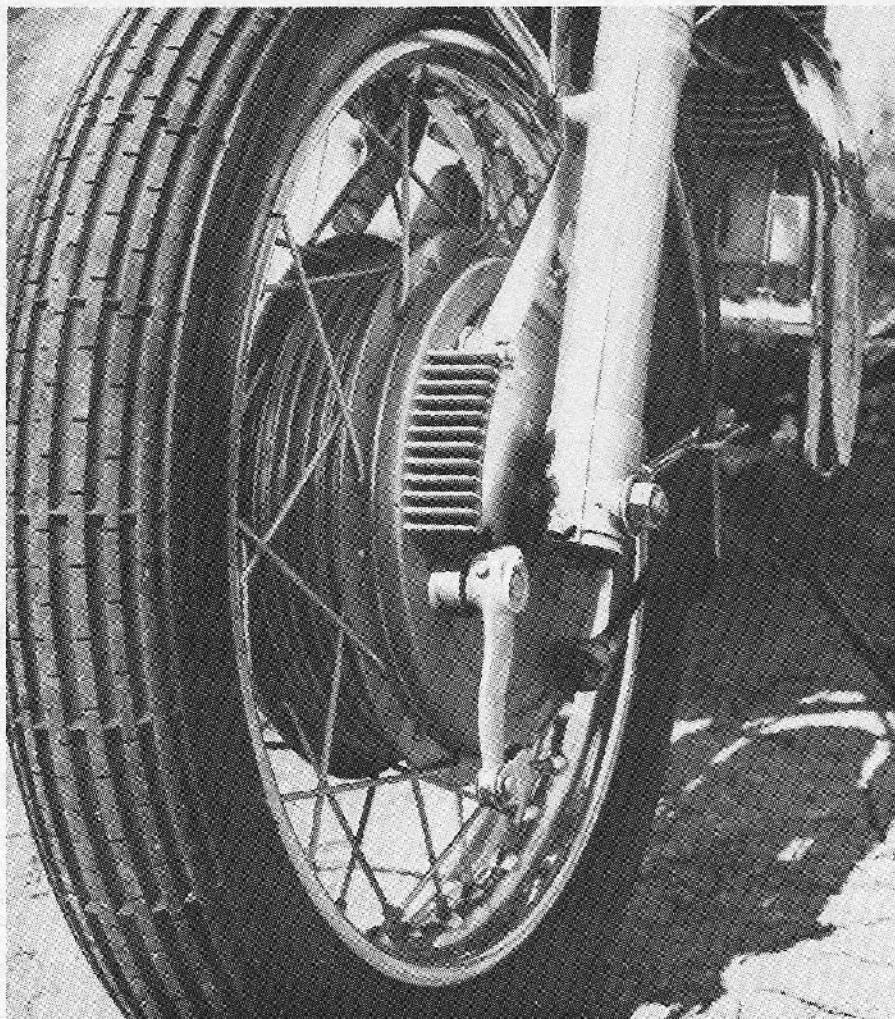


Benelli Tornado 650



IF YOU THINK THE ORIENTAL MULTIS HAVE A
HAMMERLOCK ON BIG-BORE MOTORCYCLING YOU'VE GOT A LOT TO LEARN



Front brake is one of the best binders we've ever tested. Four shoes haul you down from 100 plus with smoothness and authority.

When you ride the Benelli Tornado — and we mean really ride it — you'll surely be astounded. We were. For one thing, it handles magnificently.

Big deal, you say, a lot of bikes handle well.

True.

But how many of them weigh 480 pounds?

Few, dear reader, precious few. It is no small feat to design a motorcycle of such generous proportions that will respond so eagerly to rider inputs. After all, there is a lot of inertia to be dealt with, and, as you know, inertia does not like to change direction. It just wants to plow straight ahead until its energy is depleted. But the Tornado is something of a shock to the unsuspecting rider. For in spite of its heroic heft it does only what its pilot tells it to and no more. Before you hop on the bike, push it off the kickstand and wheel it around briefly. Only then can you feel all that poundage. To a guy of medium build the exertion is at least considerable. To anyone smaller than this it is almost impossible. To put it another way, there are other motorcycles we'd rather push five miles to a gas station on a hot day.

But once you get the bike fired up, however, and underway, the Benelli's clumsiness disappears.

So here you are, perched atop a motorcycle that you at first thought to be a trundler but now seems quite nimble indeed. The sensation is doubly strange because the big Benelli has only to glide along at two or three

mph or so to become eminently stable.

In spite of its weight, though, the Benelli is not a particularly large motorcycle physically. Its proportions — wheelbase, width, seat height, etc. — are all in the best tradition of 650cc road burners of the past several years. Nothing radical here. Thusly, riders of conventional dimensions will have no hassle fitting the bike's accommodations. The saddle is large and adequate for two-up touring. It is, however, quite hard in the best Italian tradition. It's a bummer of the first degree. An hour of riding leaves one with a most uncomfortable sensation spreading across the backside.

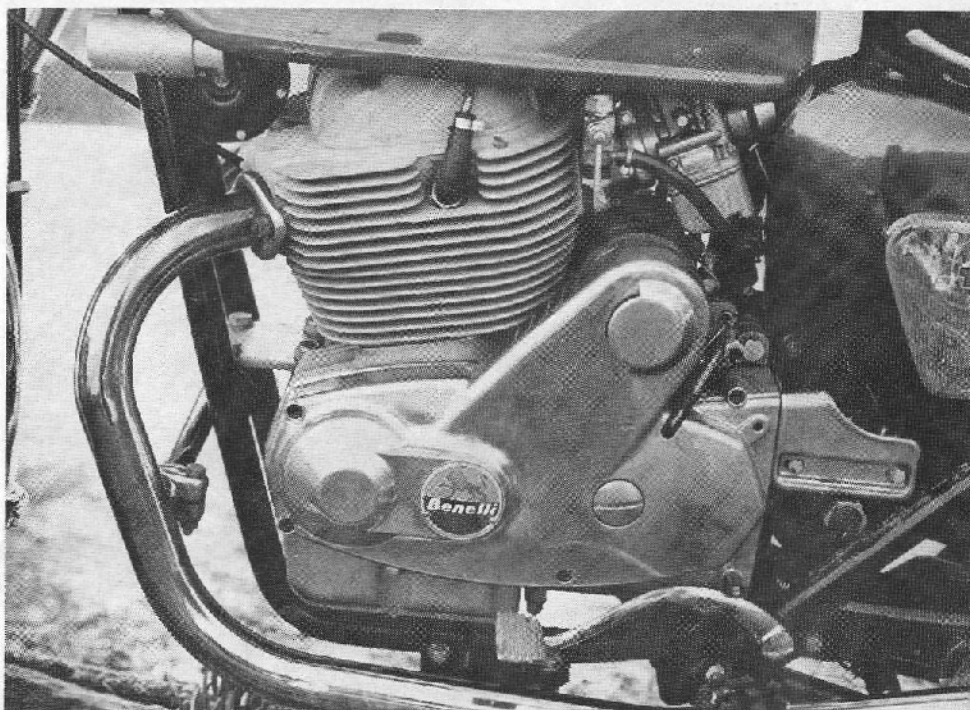
Nor is this all the seat's fault, for a fierce amount of vibration comes out of the engine. You see the way the footpeg rubbers are designed? Notice all those little pillar-type affairs on the peg surface. As your foot rests on the tops of these pillars much of the vibration from the frame is short-circuited. This approach is not 100 percent effective though, and through a wide range of the motorcycle's cruising speeds one's feet will fall victim to the numbing buzz. On the other hand, there is no appreciable vibration at all perceptible through the handlebars.

Incidentally, the handlebars are of an odd variety measuring 27 inches across. Characteristically, most handlebars on big bores like the Tornado are a good two or three inches wider. However, the bars' relative narrowness poses no problems. You don't need the leverage of long handlebars on the Benelli because it isn't needed. Steering is blissfully light. As an added benefit, the narrower bars are much more agreeable for high speed touring. The arm position they afford does not allow your body to be buffeted by the wind so much which is one of the main sources of rider fatigue. You're still out in the breeze, mind you, but it's not like you were blasting straight into it spread-eagled.

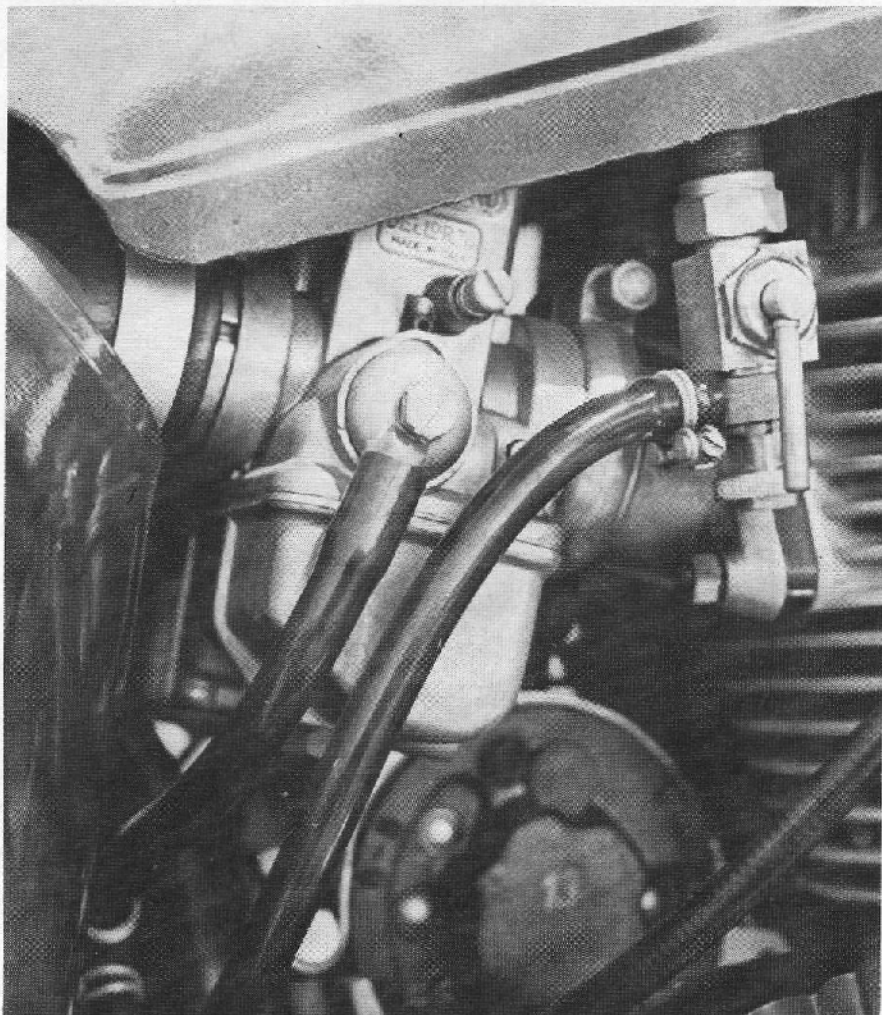
The Benelli's suspension is taut and we like it like that. Strong dampening is mandatory for machines this size. Every pound must be accounted for and kept under strict rein as you rumble through a bend leaning precariously close to oblivion. Some choppiness is evident in the front end, particularly at lower speeds. This is probably due to the considerable unsprung weight of the ponderous four-shoe front brake. Not enough to cause problems but perceptible nonetheless.

The brakes, by the way, are excellent. It's difficult to relate the security they inspire. The front binder, as was mentioned before, is a four-shoe unit with a drum measuring a full

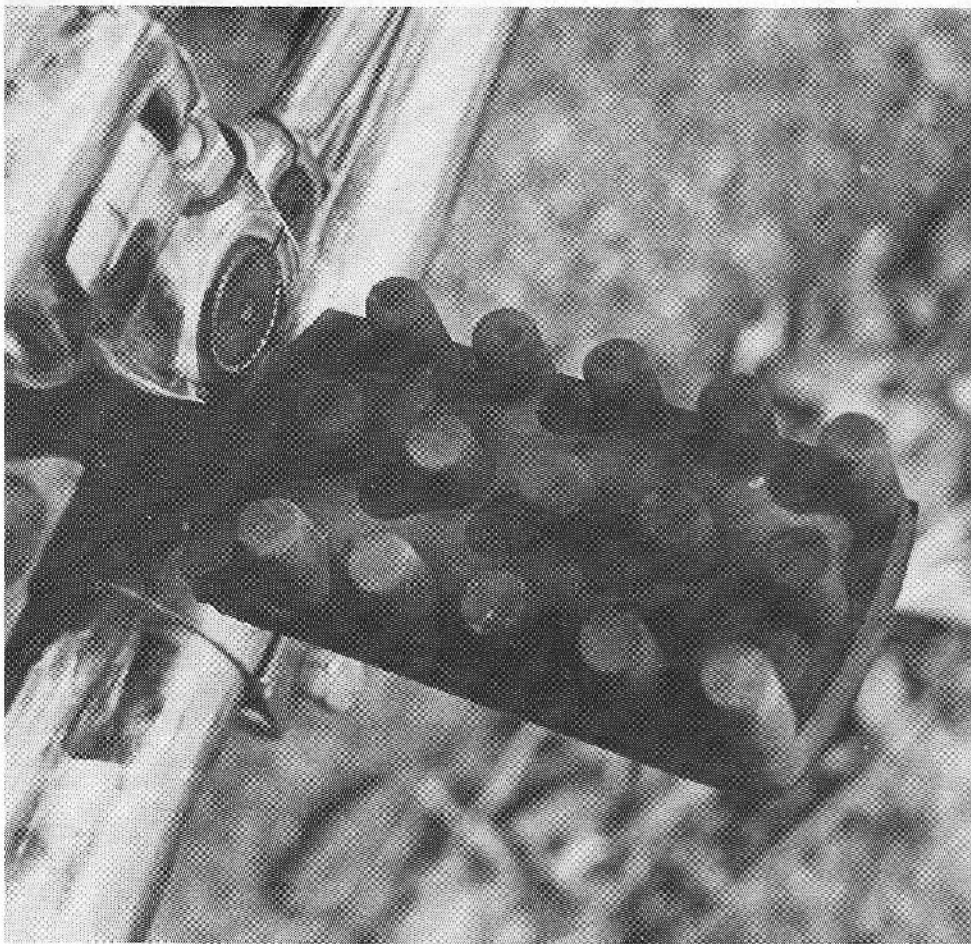
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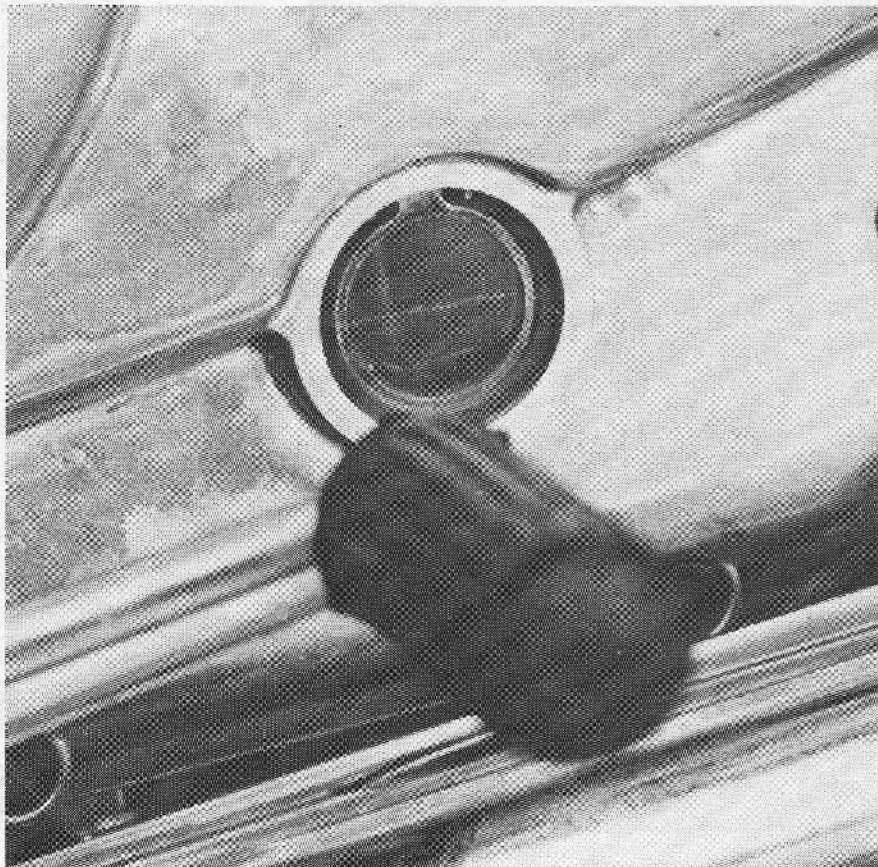
The engine is a masterpiece of power and integrity. Bore and stroke dimensions are well oversquare at 84mm by 58mm. Torque is everywhere in the rev range.



Carburetion is through a pair of square-slide, 29mm Dell'Orto mixers. No aircleaners are used. Pity.



Footpeg rubbers are designed to insulate rider's feet from vibration.



Small window in crankcase allows quick visual inspection of oil capacity within.

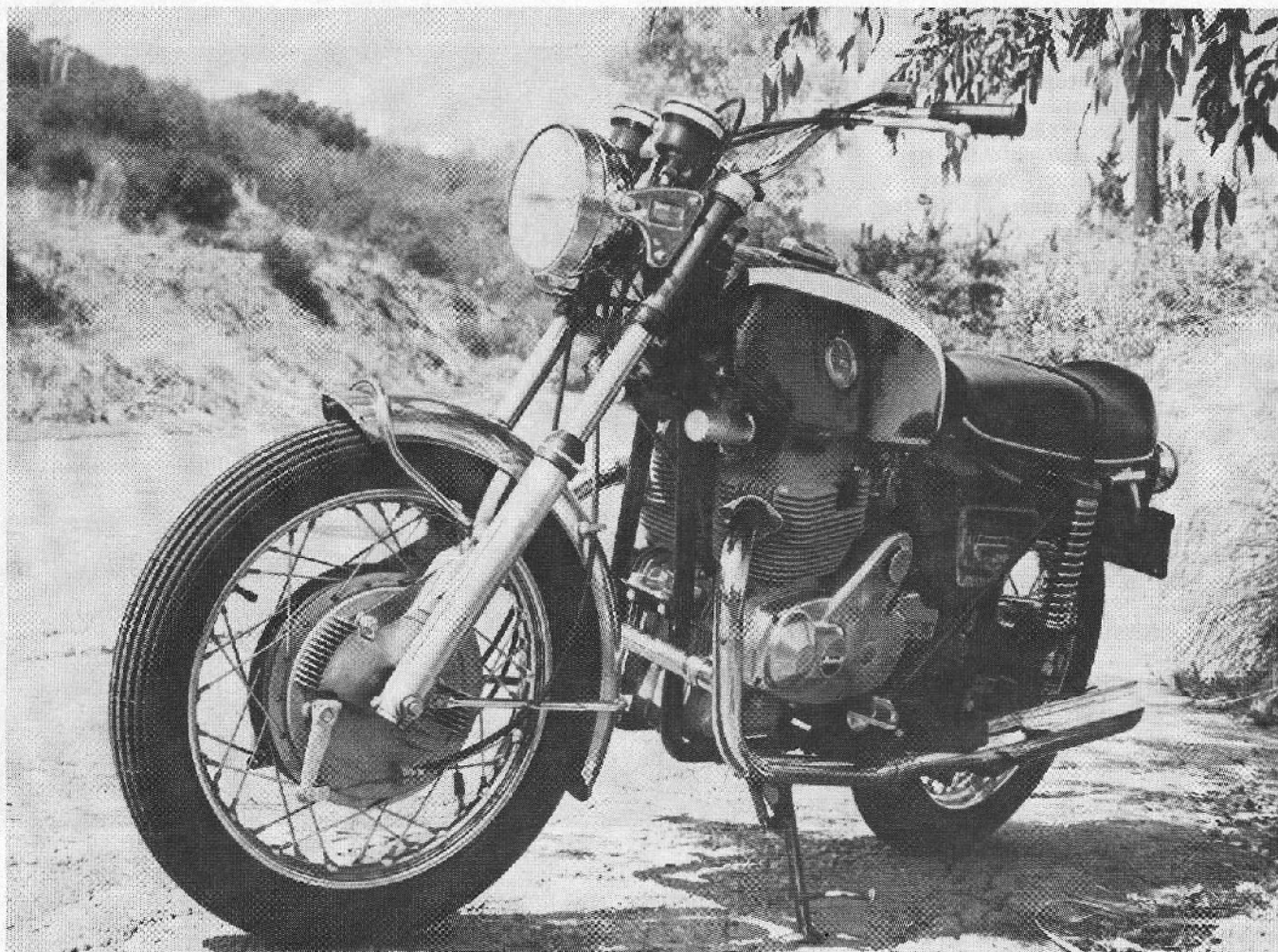
nine inches in diameter. It is not a twin-cam, four-leading shoe unit either. And for this we are grateful. It has a pair of single-leading shoes instead. Such brakes can be more than a little grabby and require a lot of practice to fully master their very sensitive response. Rather, the Benelli anchor is a pleasant treat indeed because it is very progressive yet powerful. When you grab a handful of it, lever effort is light and the motorcycle slows **RIGHT NOW**. You don't have to sweat about all-or-nothing stopping power; there's a lot of leeway in between.

The engine has got to be the best big-bore twin we have ever experienced. It's that simple. Torque is everywhere but not to the exclusion of top end punch; the Tornado has plenty of that too. You can cluff about comfortably at 3000 rpm in fifth gear, which is more than you could say for a few other twin-carbed, big-bore tourers we can think of.

Just a brief spin around the block on the Tornado will demonstrate the bike's gear spacing — it's odd. First gear is a lowish 17 to 1 which is fine and dandy; you need a lot of torque multiplication for a machine this size. But when you snick it toward second, prepare yourself first for a huge gap at the other end of which is the ratio you want. This cog works out to 9.41 to 1. In other words, 7400 rpm (red line) in first gear corresponds to about 4100 rpm in second. Because the engine is so generously endowed with torque this great ratio gap is not so noticeable during acceleration. During deceleration, though, it's a different story. When approaching an intersection you naturally downshift. And as you toe the lever from second to first the rear tire will often as not chirp in protest of the sizeable ratio difference. Besides being embarrassing this is also a potentially dangerous condition, particularly on wet pavement and curves. The only way to avoid this is to blip the throttle between shifts and try to match engine speed with vehicle speed.

The top three ratios are significant in that they are very closely arrayed, much like a road racing gearbox. Third is 6.8 to one, fourth is 5.85 to one and fifth turns at 5.1 to one. At freeway speeds third gear provides excellent acceleration up to the mid-80-mph range, fourth is good to the high 90's and top speed is an even 112 at 7000 rpm in fifth.

In all honesty, though, there are a few areas due for criticism. For one, the speedo is woefully inaccurate. Its figures are so optimistic that the dial had little value at all. In keeping, the odometer is way off base too. We were particularly curious about the bike's



fuel consumption; it seemed we had to top off the 3.75-gallon tank every other day. But because the mileage meter wasn't even in the ballpark a consumption check was not feasible.

Another bugaboo is the ignition switch. It is located on the right side of the machine behind the rider's thigh. Besides being somewhat inaccessible in a pinch, the switch itself can pose problems, for there are two positions from which the ignition can be withdrawn. One is off, naturally, and the other is a parking light position. Unless you're hip to this quirk of the bike you may quite easily come out in the morning and discover your

Tornado has a dead battery — a bummer. Benelli bump starts are not a breeze.

Our third gripe concerns air filtration — there is none. The pair of 29mm Dell'Orto carburetors draw directly from the atmosphere. Consequently, the Tornado's diet includes not only gasoline and air, but dust particles, fung and small creatures as well. What gives anyway? For a bike that costs \$1475 and embodies some pretty spectacular engineering and quality in its own right this is inconsistent. The saying "you are what you eat" applies to the Benelli as well. Perhaps the Filtron people have air

cleaners to remedy this.

But in the final analysis there is not one big-bore twin on the market today that performs all its functions as well as the Benelli. There are faster bikes around but do they handle as well?

We doubt it. Further, there are many motorcycles that handle as nimbly — notably English machines — but then they've had their mechanical problems, haven't they? The Benelli Tornado is a very impressive motorcycle. And if you're looking around for a big-bore tourer with hairline handling and top-notch engineering, you'll be hard put to find a better bike. ■

BENELLI TORNADO

PRICE
\$1475

ENGINE

Engine type OHV vertical twin
Horsepower @ rpm 57 @ 7400
Torque n.a.
Bore and stroke 3.30 in. x 2.28 (84mm x 58mm)
Displacement 39.3 cu. in. (643cc)
Compression ratio 9:1
Carburetion (2) 29mm Dell'Orto
Ignition Battery-coil

TRANSMISSIONS

Speeds four, constant mesh
Clutch Multi-disc, wet

CHASSIS

Length overall 83-3/4 in.
Wheelbase 56 in.
Ground clearance 7 in.
Weight 480 lb.
Frame type double-downtube
Tire size, front 4.00-18
 rear 3.50-18
Brakes, front four-shoe, single-leading shoe
 rear single-leading shoe