

# U.S. Patent 3,542,146

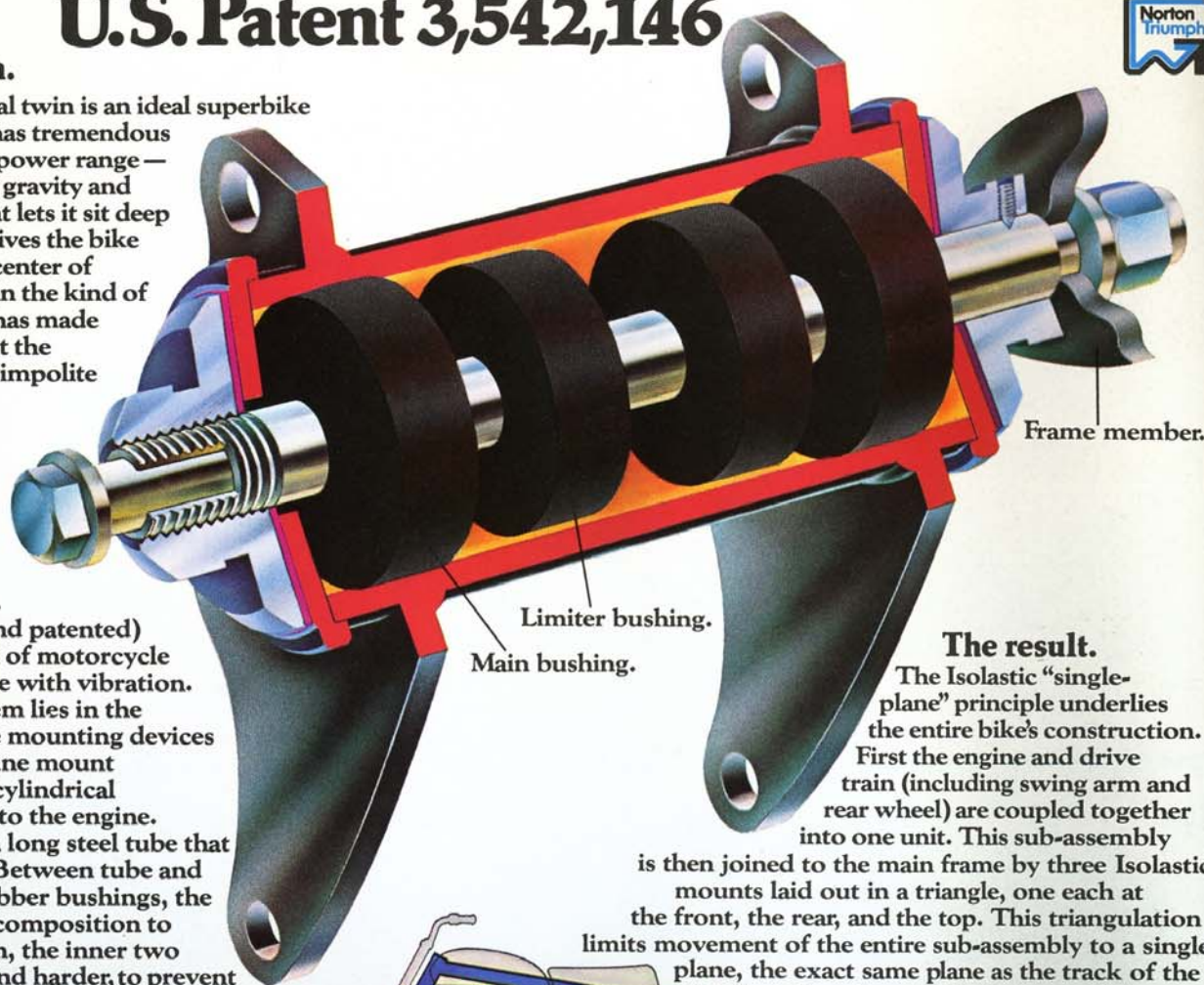


## The problem.

The big-bore vertical twin is an ideal superbike engine. Almost. It has tremendous torque over a wide power range — plus a low center of gravity and a narrow profile that lets it sit deep in the frame. This gives the bike itself a doubly low center of gravity, and results in the kind of road handling that has made Norton famous. But the vertical twin has an impolite habit. Vibration.

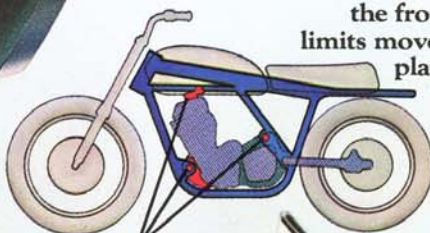
## The solution.

Norton invented (and patented) the Isolastic System of motorcycle construction to cope with vibration. The key to the system lies in the design of the engine mounting devices — like the front engine mount illustrated. A wide cylindrical housing is attached to the engine. Through this runs a long steel tube that bolts to the frame. Between tube and housing are four rubber bushings, the outer two of a soft composition to absorb the vibration, the inner two somewhat smaller and harder, to prevent extreme movements. The device is capped at both ends to an overall tolerance of .010", thus limiting lateral (side-to-side) movement. As a result, the Isolastic engine mount restricts vibration to a single vertical plane.



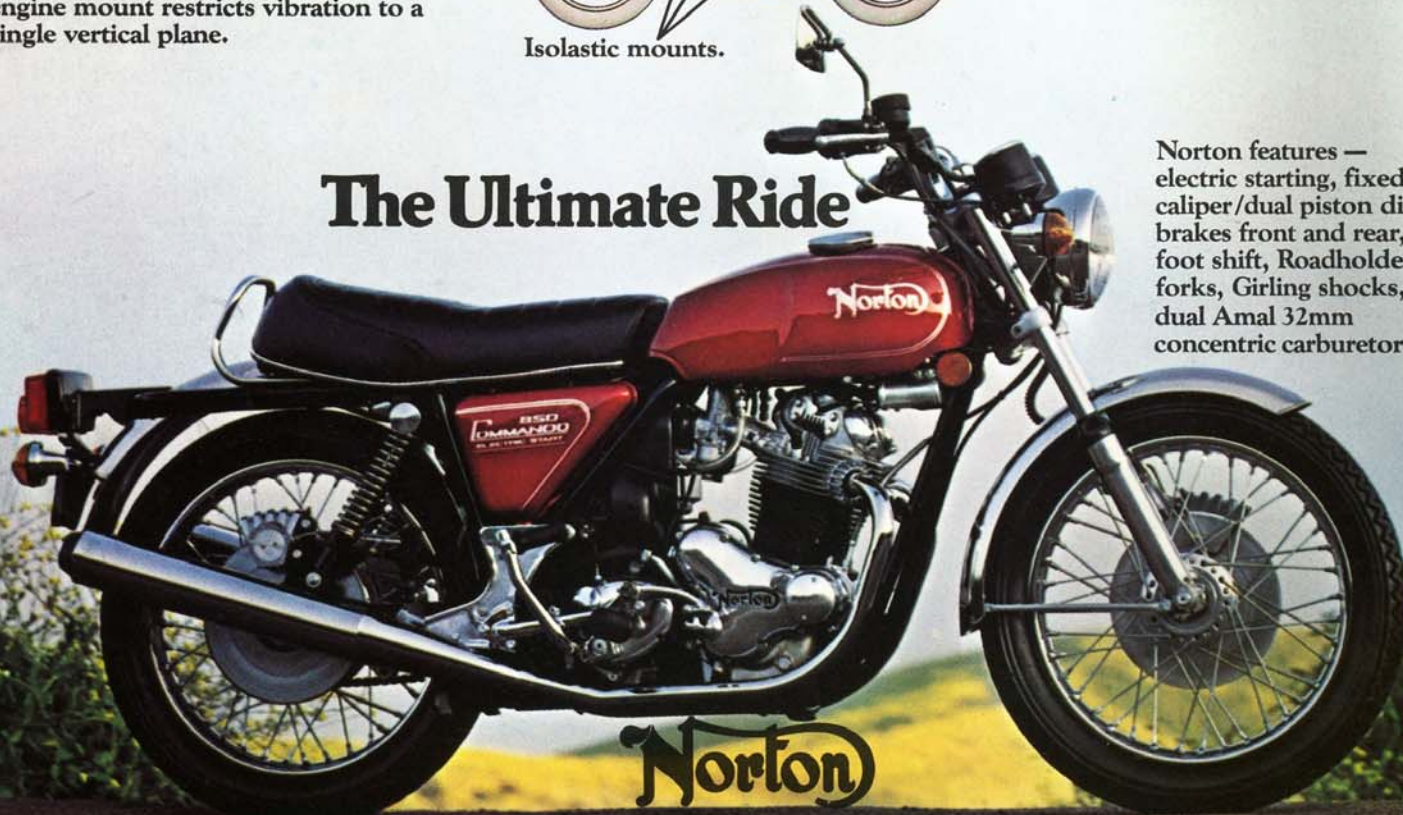
## The result.

The Isolastic "single-plane" principle underlies the entire bike's construction. First the engine and drive train (including swing arm and rear wheel) are coupled together into one unit. This sub-assembly is then joined to the main frame by three Isolastic mounts laid out in a triangle, one each at the front, the rear, and the top. This triangulation limits movement of the entire sub-assembly to a single plane, the exact same plane as the track of the bike. Thus the wheels always track true, so the bike's handling stays true. And Norton alone combines race-bred road handling with a super smooth ride.



Isolastic mounts.

## The Ultimate Ride



Norton features — electric starting, fixed-caliper/dual piston disc brakes front and rear, left foot shift, Roadholder® forks, Girling shocks, dual Amal 32mm concentric carburetors.

# Norton

Commando 850 with vibration-free Isolastic ride

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