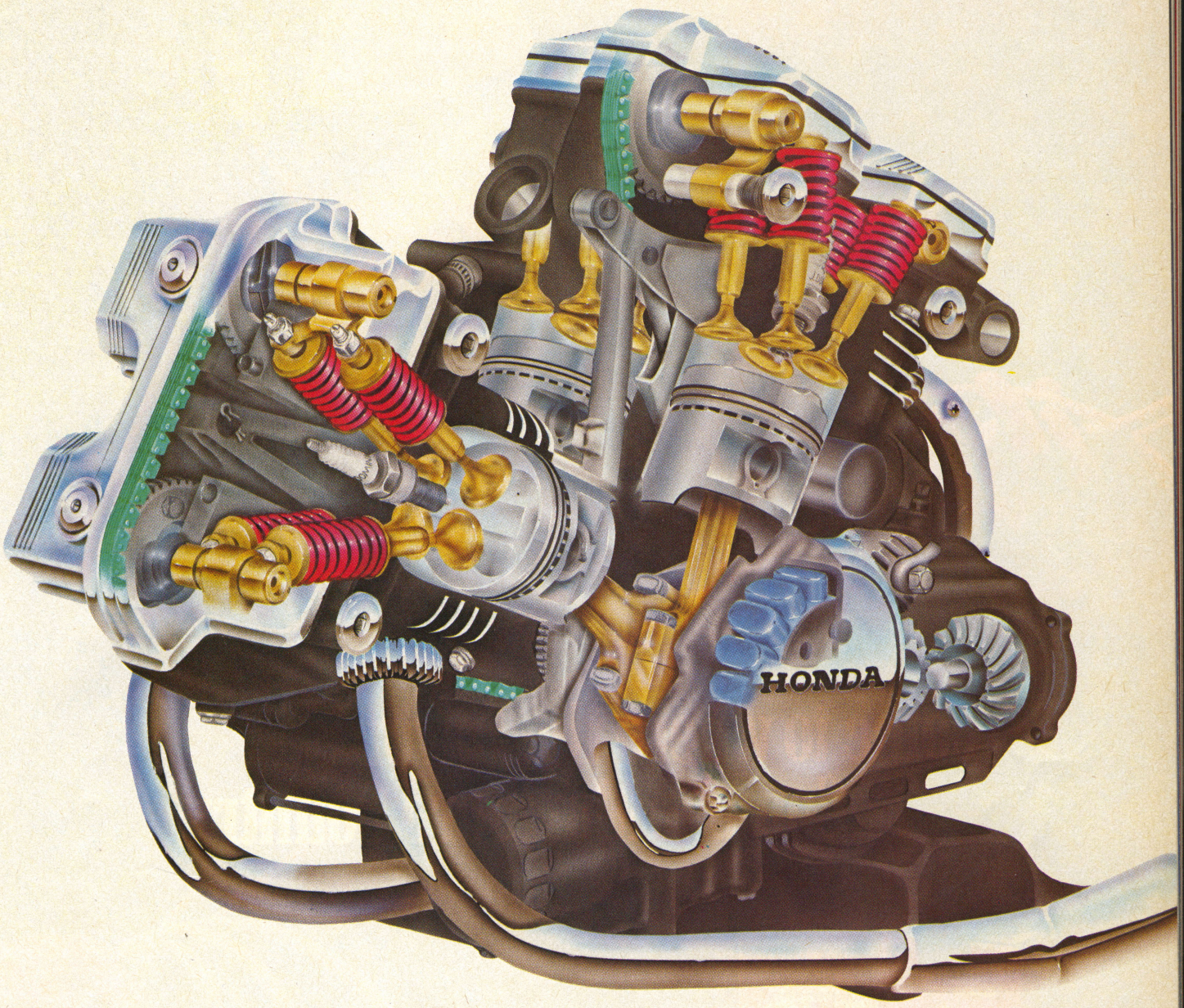

ILLUSTRATION: JOSEPH DOMINIC

The subject of a thorough tech analysis last month, Honda's V-four engine is a technically superior design, which happens to be a functionally superior one too.

tion, maintenance chores are diminished. In the V45, the inverted-bucket/tappet valve system, with its selective shim valve-adjustment method common to the 750 and 900F series, has been replaced by the more practical finger-type rocker-arm cam-follower with its screw-and-locknut adjustment method. The electronic ignition has its timing preset and built-in; no moving parts there. The oil filter is now an external spin-on automotive type, and the silent-type camchains are self-adjusting. Service-free camchains need no external access, so the tensioner hardware can be located *inside* the perimeter of the chain formed by the crankshaft, intake and exhaust cam sprockets. Clutch adjustment is constant with the new hydraulically actuated clutch. This also allows engine designers to use heavy clutch springs without increasing lever-pull pressure. All that's left of periodic servicing is to clean the foam air filters, change the oil and oil filter and adjust the valves. Any of these service procedures can be handled at home by someone with a few hand tools and a basic understanding of the internal-combustion engine.

Honda engineers brought new technology to bear on the V-fours to keep them light. While overall lightness was a major design criterion, it was equally important to make the bikes strong and dependable. Here's an example. Although high-tensile, thin-wall tubing has been around for quite some time, the special welding techniques it requires have prevented its use in mass-produced motorcycle frames. Honda's recent developments in production technology, however, have