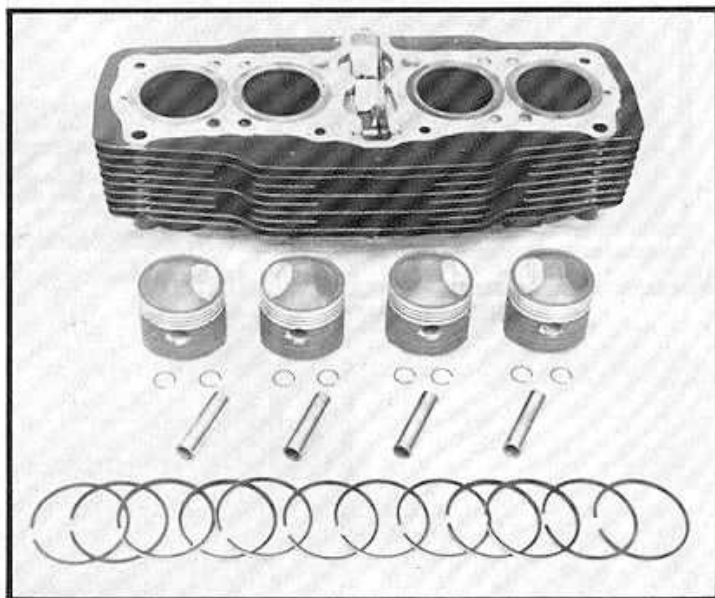


# HONDA 750 to 850 SUPER CUBE HOP-UP

by Carl Caiati

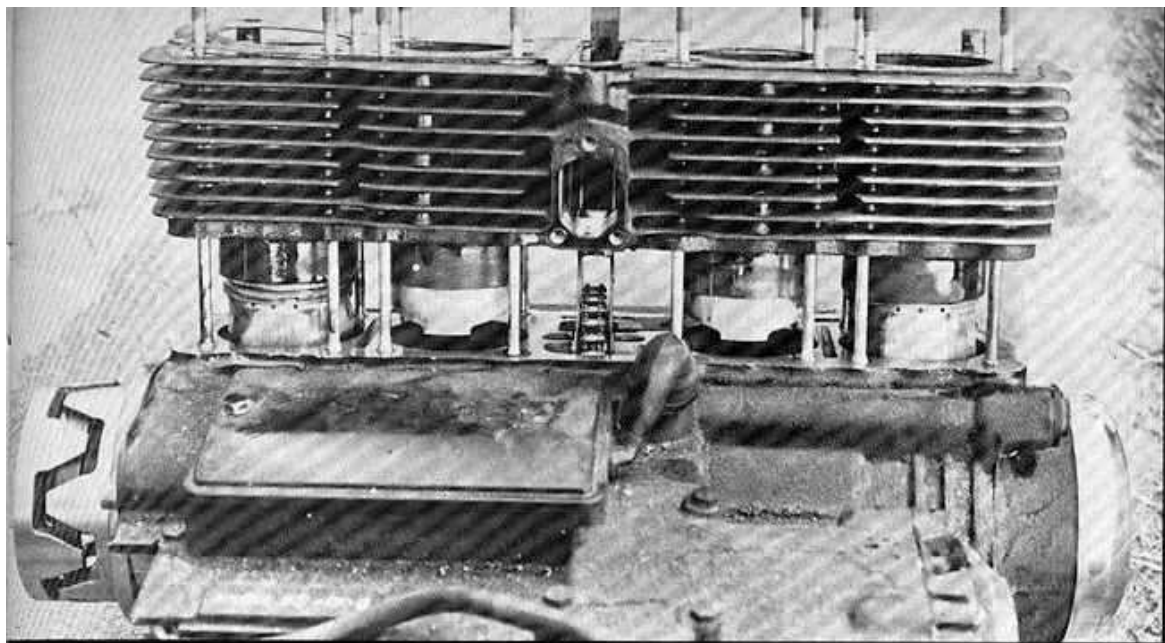
The stock 750 Honda engine is an acknowledged powerhouse; one of the finest motorcycle mills ever conceived. Though very potent out-of-the-crate, the four cylinder's power and horsepower can be easily and noticeably increased by the simplest and soundest approach to additive horsepower — boosting the "cubes."

For this venture, we have chosen the Rand 850 c.c. "Big-Bore" kit; tried, tested and proven to be one of the most reliable cube additive performance packages available. This swap will also provide a simple exercise in top end work within the grasp of all Honda Four buffs. The procedure entailed is relatively easy with all necessary aligned re-bore machine work (the roughest part) thrown in as part of the Rand package. The existing Honda head section (containing the cylinder sleeves) is forwarded to Rand with the Big-Bore kit order, to be returned bored and honed to the proper diameter conforming to the Rand pistons. The price tag on the 850



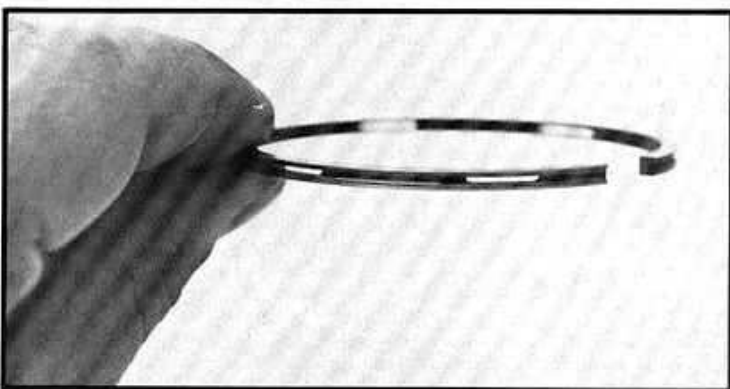
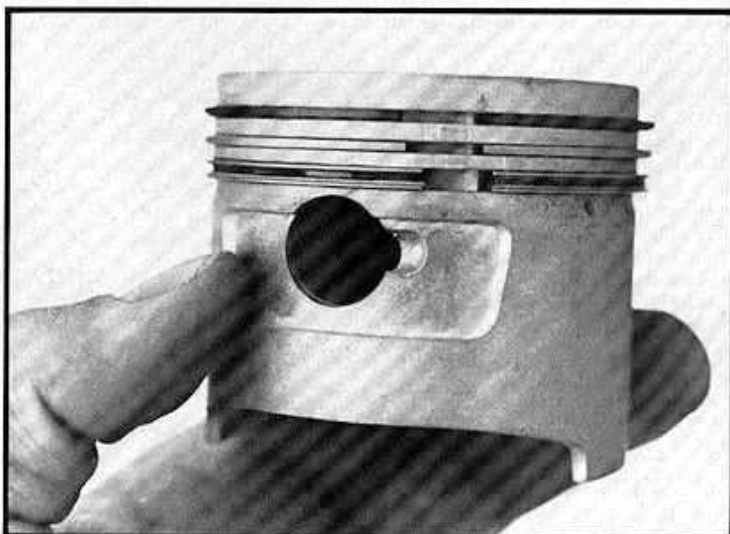
*The Rand 850 hop-up kit includes having your head section bored and honed to the proper diameter conforming to the Rand pistons. For a nominal fee porting and polishing is provided by Rand. Another option are the teflon coated pistons.*





*The pictures have been arranged to give you a guide to follow in reassembly of your engine with the Rand hop-up kit. Before lowering cylinder head into place make sure piston rings don't have their gaps in line as photo depicts. The gaps should be staggered around the piston in such a way that there are 3 equal distances between them. The ring with the notches is the oil ring which is placed in the lower groove when assembling new pistons. An engraved letter "T" denotes the face of the ring that should face up.*

kit is \$119.95. For an additional \$25.00 you can have the new Rand Ni-Tuff pistons in place of the conventional Rand oversize issues. These new, miracle, Teflon coated pistons are the ultimate way to go, far surpassing the standard plain surfaced piston skirt type. Here is why. Teflon coated pistons incorporate a new piston make-up concept differing in respect to stock issues in that their skirts are coated with a resilient, super-hard, wear-proof Teflon top-coat. The tough Teflon is impregnated into the metal skirt surface, adding a coating of .001 in thickness. Since in application, the Teflon firmly adheres to the skirt surface, it cannot chip, crack or peel as it fuses with the metal. This coating, impervious to heat and wear, also has the lowest coefficient of friction of any known solid surface (equal to the action of wet-ice on wet-ice). This inherent factor enables Teflon to reduce friction by about 75 per cent. Hard as carbonized steel, yet friction free, Teflon coated pistons go far toward reducing and inhibiting piston seizure problems. These additive features serve to make the Ni-Tuff piston a logical



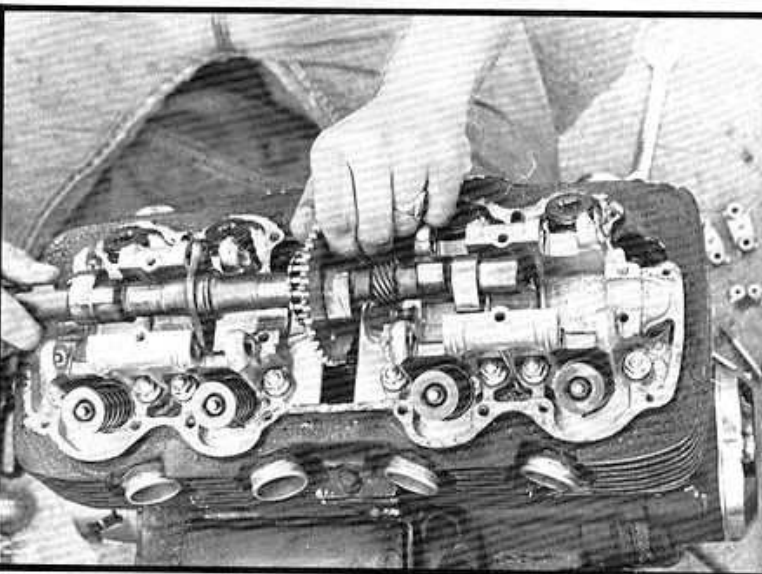
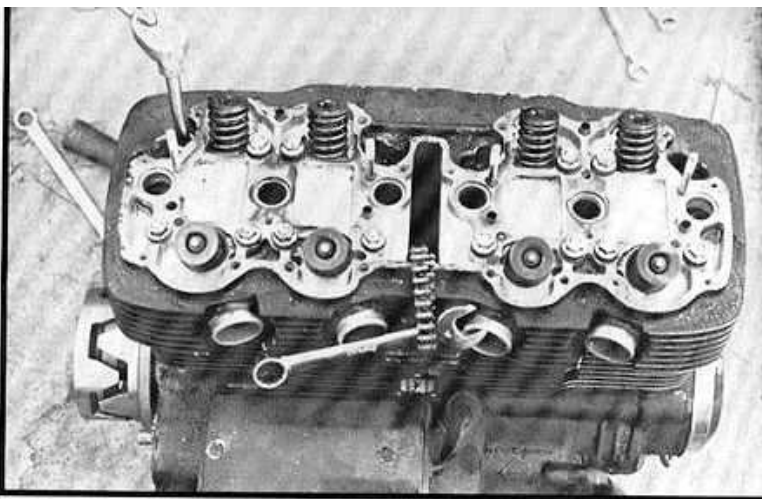
choice for trouble free operation. An added boon realized with coated pistons; a five to ten per cent horsepower gain with the engine properly tuned, since the Teflon lined pistons run cooler enabling the use of leaner carburetor mixtures and advanced engine timing.

In addition to the aforementioned goodies, Rand offers full porting and polishing services as added options if requested. Further information on the Rand kits may be obtained from: Rand Co., 26679 W. Hills Drive, Inkster, Michigan.

#### Installation Procedure:

As stated before, top end work is fairly simple, and the operations delineated here can be undertaken with the tools in the Honda tool kit provided. For visual presentation we have chosen to work on an engine that has been removed from the frame. One recommendation here: By all means buy and utilize a 750 Honda shop manual. It's a good investment; no 750 owner should be without one. You will find it a useful aid to complement this article and it will assist you in re-timing and setting up your engine after re-assembly; a phase we don't cover in this article.

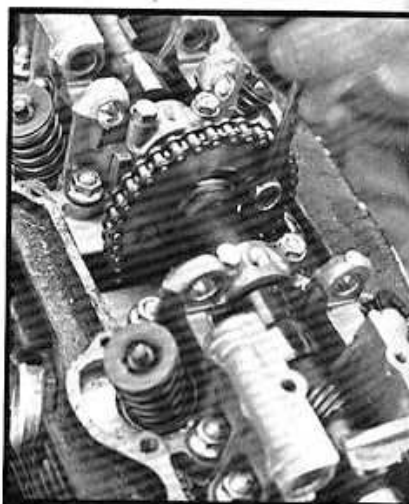
Now, we'll proceed to commence with the teardown. The breather cover is first removed by screwing out its retaining 6mm Phillips head screws. Eyeballing the top head cover will reveal a total of 16 more Phillips heads which when extricated, will free the cover for removal. If the cover should not part easily, light tapping with a rubber tipped hammer should dislodge it. The point cover is then removed allowing the camshaft to be revolved manually by its center nut with a wrench. The camshaft should be rotated so as to align the timing marks on the cam end in line with the holder cap and holder base joint. The square groove should sit at the 12 o'clock position. The camshaft holder cap retaining screws are removed and the cam chain tensioner is loosened all the way to allow maximum cam chain slack. To facilitate cam removal, the valve tappet adjusting screws are loosened. The two cam sprocket mounting bolts are then unscrewed. Unscrewing the four rocker arm shaft securing bolts will enable the rocker shafts to be released. The shafts may be then tapped out using a #07050-30001 tool or a small diameter rod to simplify matters. Care must be exercised here so as not to damage the holders. (Note: Rocker arms #1 and #3 and rocker arms #2 and #4 are identical. Therefore, the respective rocker arms should be tagged

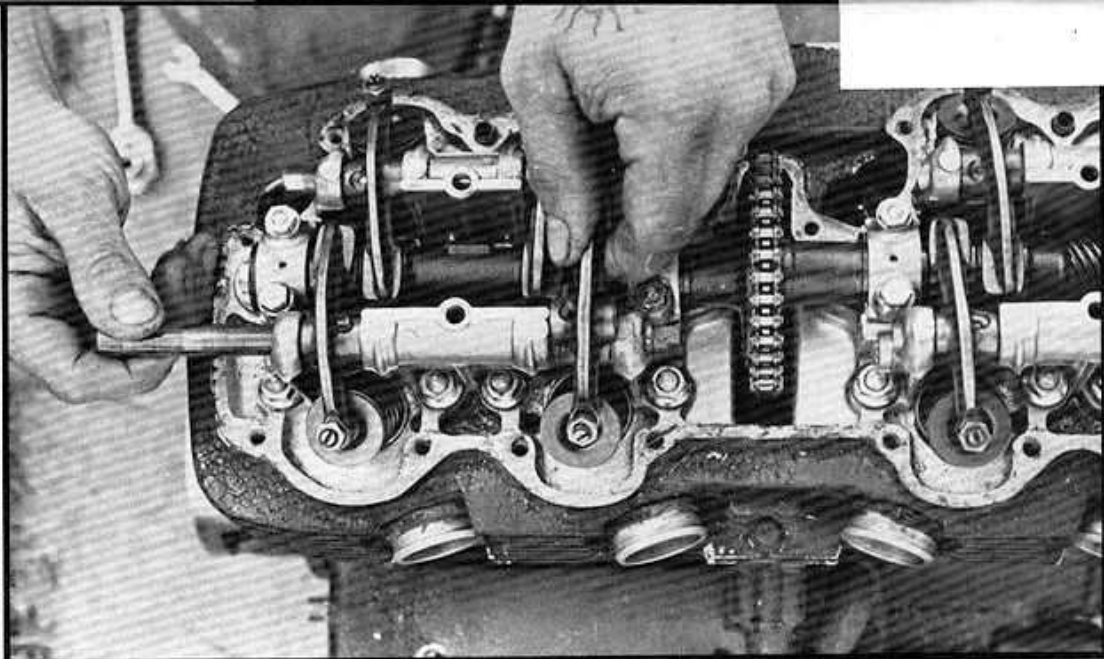


*Before bolting down the valve head section it's advisable to pull the cam chain into place. With it in place proceed to tighten down the valve head retaining bolts. Next put the cam carriage units back into position followed by the cam. While sliding the cam into position place the chain so that it doesn't slip into crankcase. Mount the cam mounting block clamps and blocks then proceed to bolt the cam sprocket to cam shaft.*

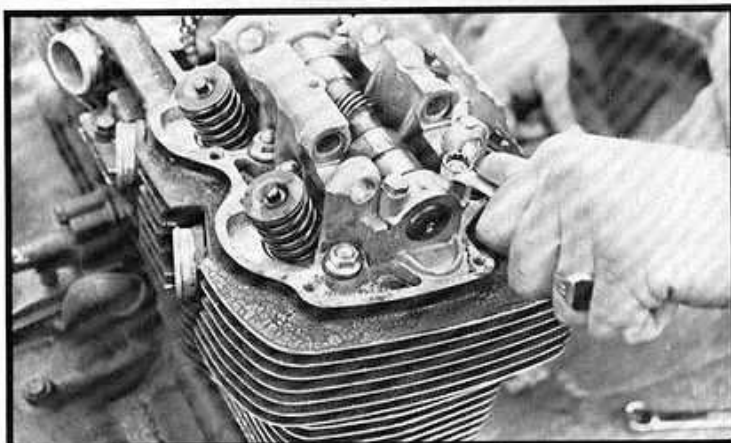
or marked for proper identification and re-installation.)

The next step involves the removal of the camshaft sprocket by separating cam and sprocket (by removing the two securing bolts) and removing cam holder base from the head. To remove the cylinder head, the sixteen mounting nuts paralleling the cam cradling section are withdrawn and the entire piece with the valves and springs mounted can be pulled off. Prior to removing the





*The rocker arm shafts will slide into place a lot easier if you jiggle the rockers. Next tighten down all the rocker shaft retaining bolts. (When doing this type of work it's a good idea to screw all the bolts in by hand first, then tighten with a wrench.) Tighten the valve spring nuts to the required tension. Check all bolts and nuts for tightness. You should replace any gaskets that appear damaged when assembling the engine. This hop-up kit will add some spicy cubes to your bike for some all-out jammin'.*



cylinder block section, the two tensioner roller mounting rubbers (found on each side of the chain tensioner) are removed and the chain also. (If the chain is not removed, each end should be strung and the strings tied to the vertical head mounting bolts so that the cam chain does not fall into the crankcase.) The guide roller tensioner and associated parts may then all be removed from the cylinder block as it is pulled off. The cylinder head is then cleaned and prepared for shipping to Rand for its re-boring. Upon your receipt of the re-ramped head and "Big-Bore" kit, (Rand promises one to two weeks delivery) you may commence re-assembly of the top end in reverse of the tear down procedure (which is illustrated) substituting the newly acquired "goodies" in their respective places.

Top end piston hop-up for the 750 Honda is a simple operation within the means of any bike buff who can handle tools. It's a job that you could successfully tackle with a minimum of fear, providing care and caution is exercised throughout the entire procedure.

