

PENNY-WISE



PERFORMANCE

COST-SAVING SUPER-POWER FOR THE DT-1 YAMAHA

By Robert Schleicher

The Enduro Yamaha is the most likely contender yet for the title of the most popular dirt motorcycle. On a performance per dollar basis there are several machines that will equal, though not necessarily exceed, the DT-1 series machines. There are none, though, that can offer such a vast network of dealers, so instant a source of replacement/repair parts, and such a vast array of non-Yamaha-produced speed and handling-improvement parts. We're really not trying to sell you a Yamaha; if you read past the title of this piece, you probably already own one.

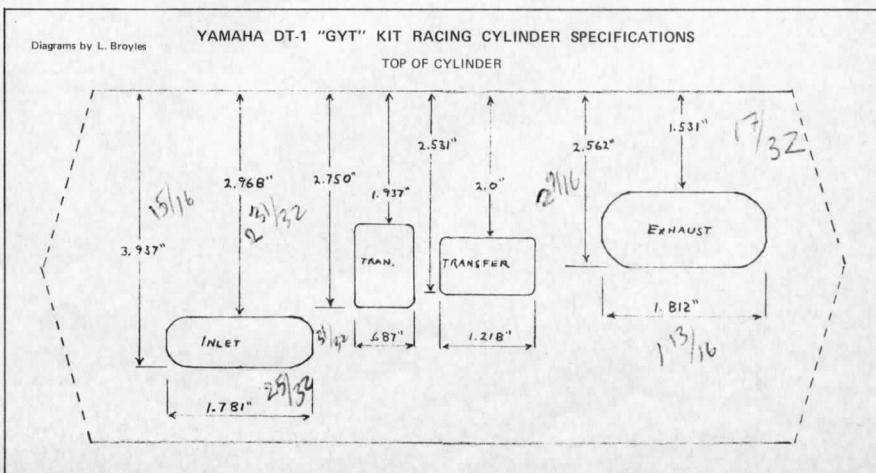
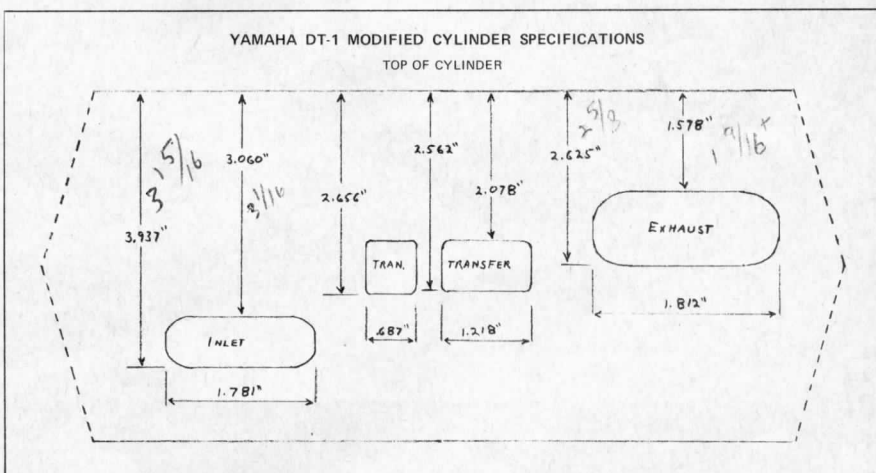
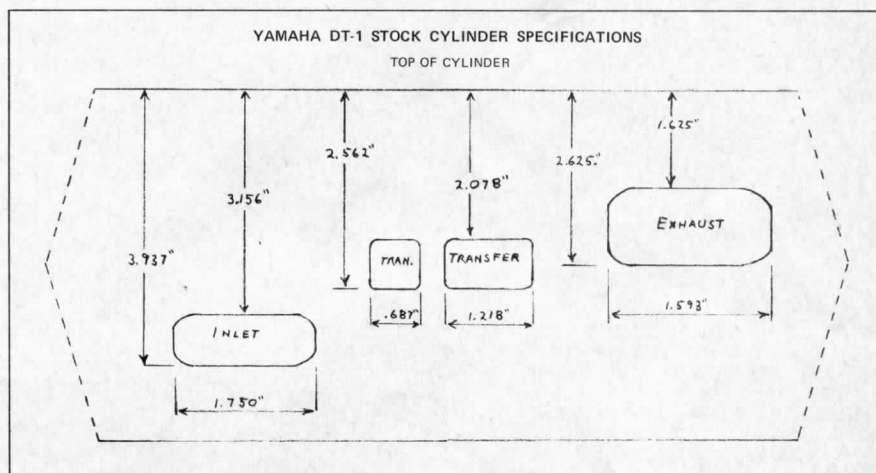
Our object is to offer the race-proven performance package and some alternatives that will continue to give you the same type of performance-per-dollar promise that the original machine offered. Last month's POP CYCLE illustrated the six dollar fork conversion trick that is the next best thing to a full set of Ceriani's or their equal. This time around we'll offer the hot tip for beating the full cost of the famous GYT Kit. You're going to have to exercise a bit more skill and patience in this do-it-yourself substitute for the factory GYT Kit bits, but you can save nearly a hundred dollars and, if you're brave enough to accept our suggested partial GYT Kit instead of going the full route, you'll have a machine that someone other than a superstar can ride to a novice class win — the Expert riders have dealer-prepared machines anyway; don't they?

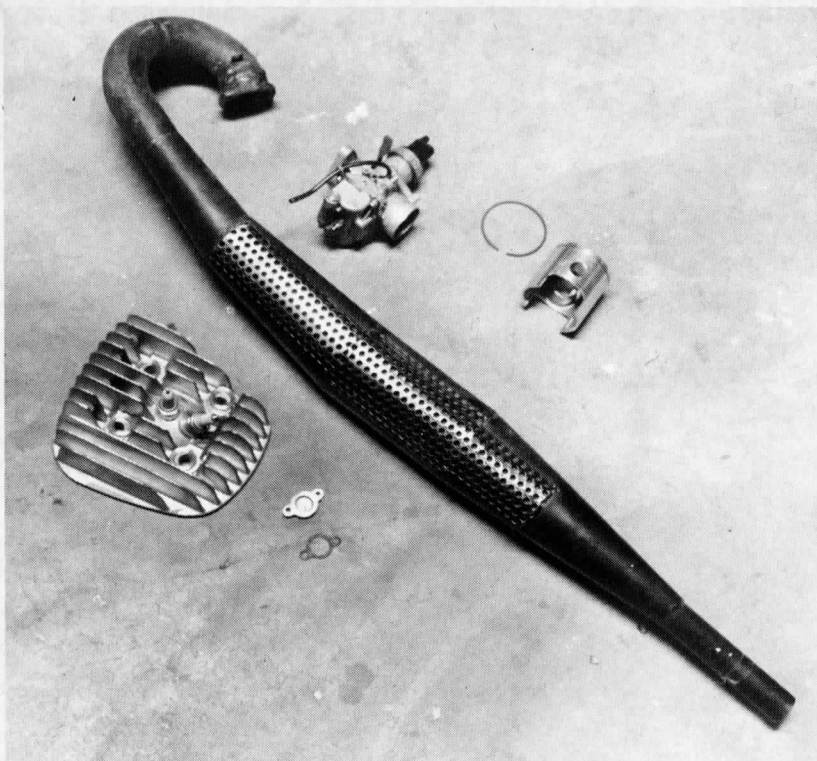
The Yamaha factory experts have succeeded in wringing a whale-size proportion of power from the DT-1's relatively small 250cc. The race-ready DT-1MX, or a full GYT Kitted street DT-1, has almost as much ultimate power as the half-again-as-costly racers from the more northern lands. Same staid engineers have seen to it that your racer is reliable — the only penalty you pay, for all that reliable performance, is the fact that the power comes on so suddenly that it is next to impossible to control front wheel elevation or rear wheel wash-out when the engine hits the crest of its power curve. Almost all of the ready-racers are so tuned, too bad their riders cannot be matched in skill and reflexes to the engine's performance. When you gain that skill and experience, the DT-1MX, the full GYT Kit, or one of the other brands of ready racers may be just the thing. What to do while you gain that experience is what we propose in offering the alternate porting and tuning parts on these pages — an engine with nearly 90 percent of the full GYT Kit's power, but spread more evenly across the engine's rev range. Instead of using the throttle like a trigger, we suggest you try our method of adjusting the engine's performance so

you can use that throttle to dial in just the power you need, when you need it.

The full Yamaha GYT Kit for the DT-1 series engine includes a new cylinder, piston and ring, cylinder head, expansion chamber, and a 30mm carburetor. The installation of the cylinder, with its much-altered timing is akin to dropping a full-race cam in a four stroke powerplant. The piston

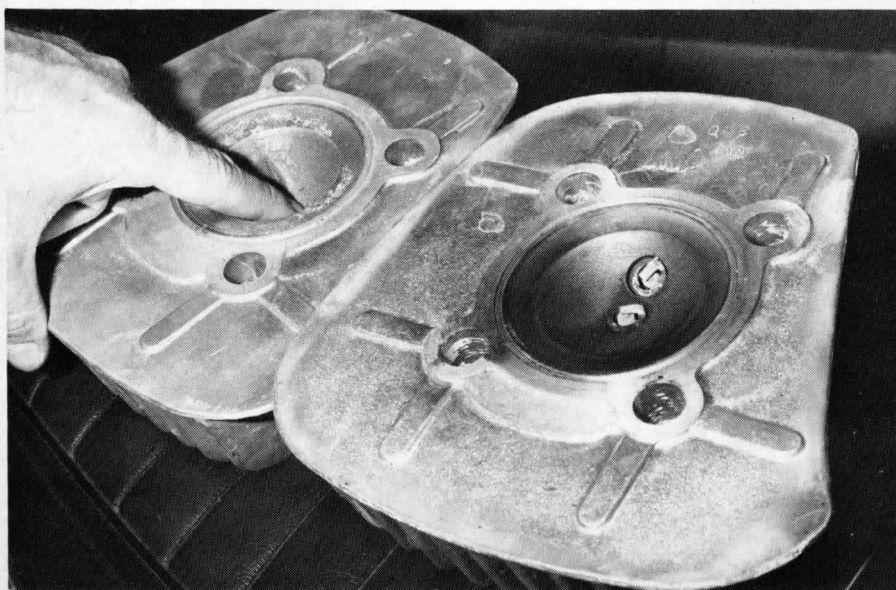
and ring compliment the more radical porting while the cylinder head increases the compression ratio and alters the chamber shape to take full advantage of the increased fuel/air charge the new ports can provide. The expansion chamber adds its own set of horses over the higher rpm ranges, and the 4mm larger-than-stock carburetor sees to it that there is enough fuel on hand to yield the extra power. For the



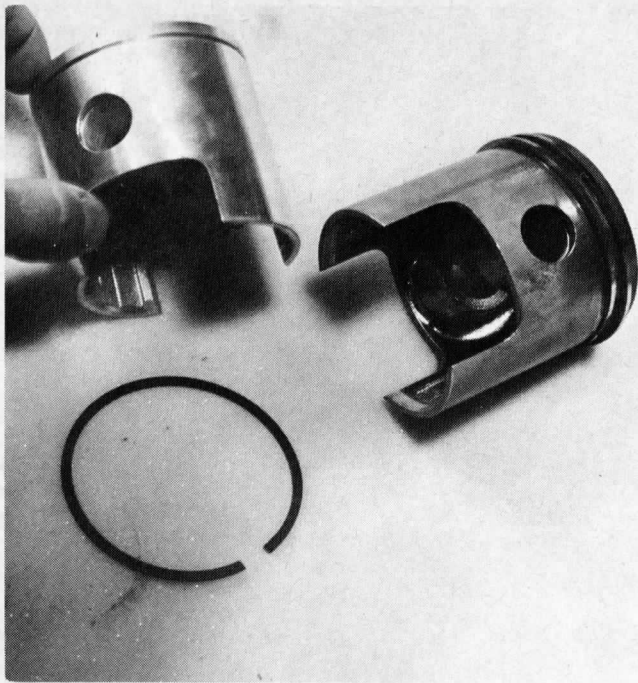


1. Call it a "Novice GYT Kit" if you wish, but we guarantee you less chances to scratch up your crash helmet with these parts: 30mm Mikuni carburetor; GYT Kit piston, ring, and cylinder head cover to blank off Autolube inside cases, and Webco's expansion chamber.

2. Stock (top), Webco (center), and Yamaha GYT Kit expansion chambers can be likened in performance to stock, quarter, and full-race camshafts in a four-stroke engine.



3. GYT Kit head (right) has shallower and more hemispherical combustion chamber, with resulting higher compression ratio compared to stock.

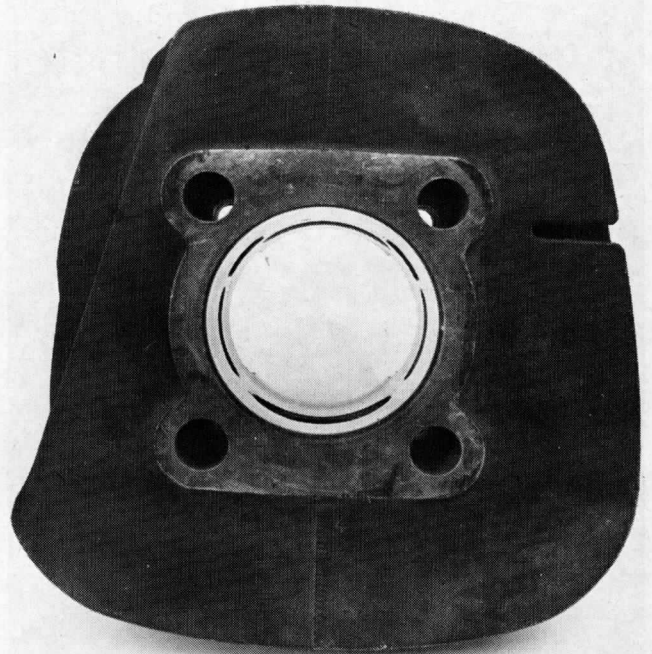


4. Single ring ("Dykes") piston from GYT Kit provides better sealing on cylinder walls, slightly altered inlet timing via shorter skirt.

5. Full GYT Kit cylinder barrel (with cut-away top finning) has just a bit too much intake and exhaust porting for smooth power flow.



6. A high-speed grinder (20,000 to 30,000 rpm) with a milling bit is best for the initial trimming-to-shape inside the ports.

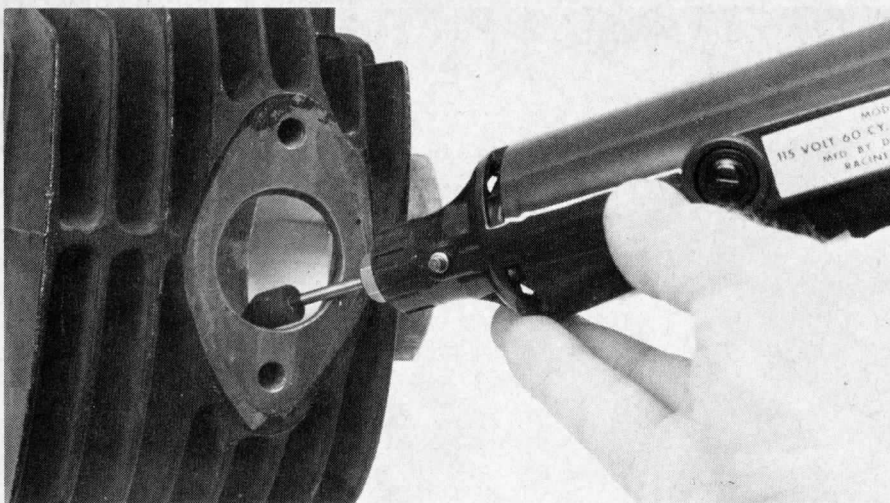


novice racer or any trail rider, we must humbly recommend the purchase of only the cylinder head, piston, and ring from either the Yamaha parts book for the GYT-Kitted DT-1 or Webco's replacement items. The 30mm Mikuni must come from your local Yamaha dealer. We'd recommend (or rather the half-dozen local novice racers we've ran against recommend) the Webco expansion chamber in place

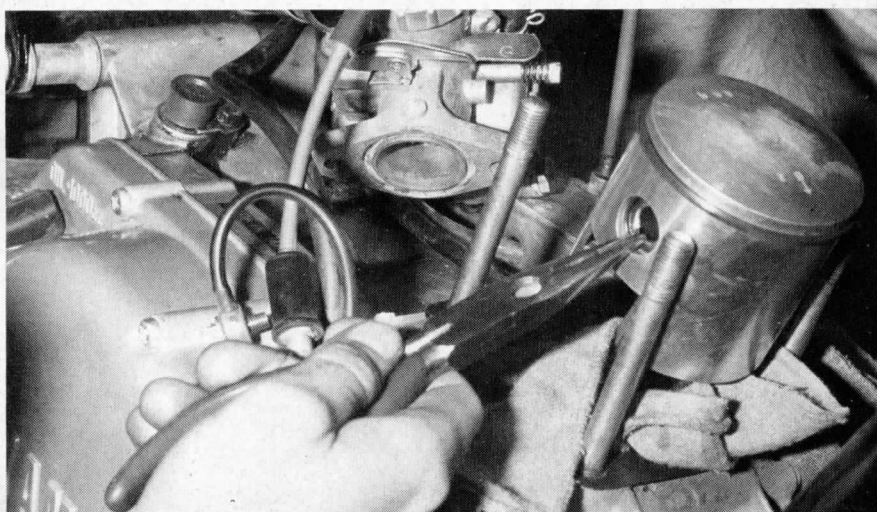
of the GYT Kit item. Webco's pipe is much smaller in diameter than the Yamaha GYT Kit chamber which apparently accounts for its ability to spread slightly less power over a much wider engine speed range. You can port your own barrel and gain all but that last high-revving horse or two that the full GYT Kitting porting offers.

You can decide whether or not to remove the machine's oil-injection

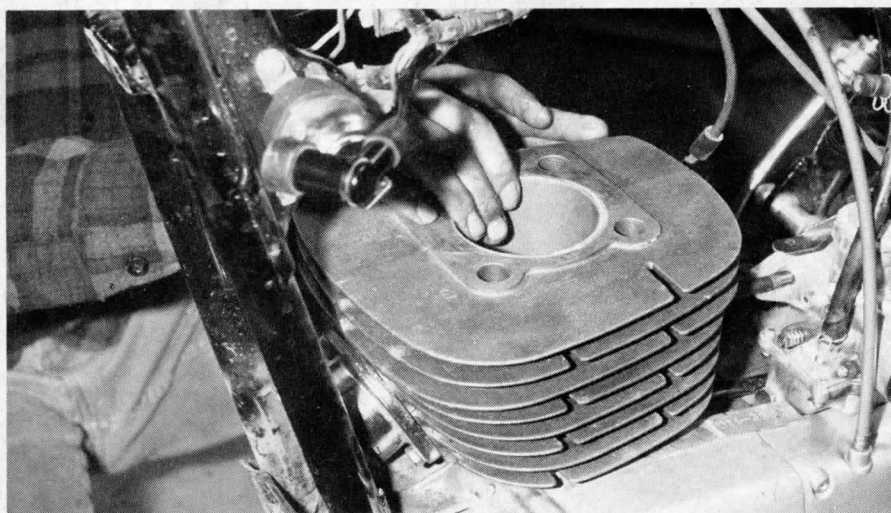
lubrication system in favor of the old oil-in-the-gas trick mix. The Autolube allows you to forget the mess of mixing oil with your gas with only a slight weight penalty (about like forgetting to eat breakfast before the race). Most racer-types we know are a worrisome lot, however, and they fear for all those churning gears and breakable (what isn't) oil lines. They also claim they can never really



7. Dremel's 270 motor tool, with an abrasive drum, is used to polish the grinder-smoothed ports to a high luster.



8. Fit the single ring to the GYT Kit piston, checking ring gap to be sure it's no more than .010 of an inch. Fit pin clip with tang vertical.



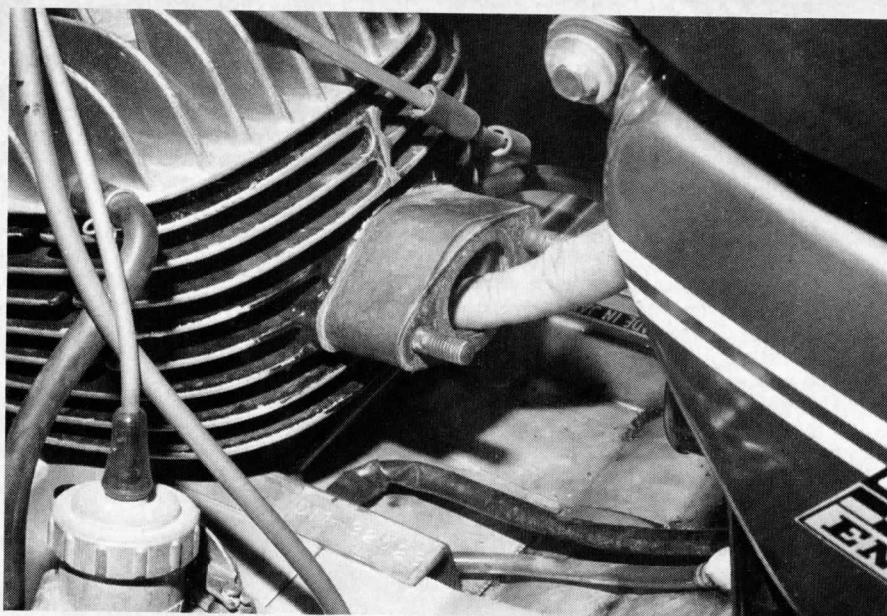
9. The edges of all of the modified ports should be chamfered 45 degrees for about 1/16 inch around all bore edges so piston ring cannot hang up.

(really?) be sure that the pump is pumping. These worriers remove the self-lubricating pumps and lines, blocking off the exit fitting from the interior and from the exterior of the engine cases per the Yamaha factory manual directions. Most also remove the tachometer drive (and, of course) the tachometer and cable; plugging the tach drive hole with a plastic cap or Yamaha's No. 214-17819-00 tach

drive cap.

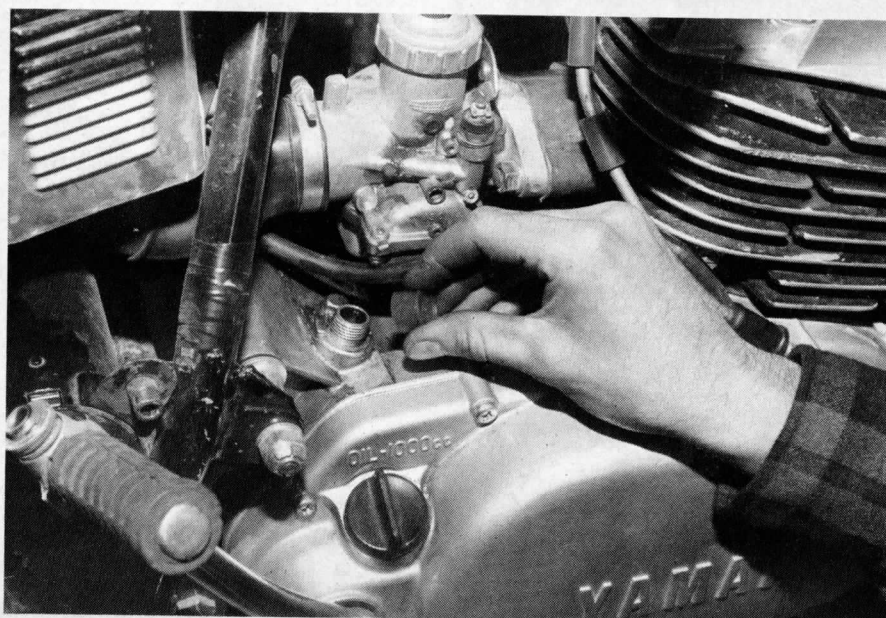
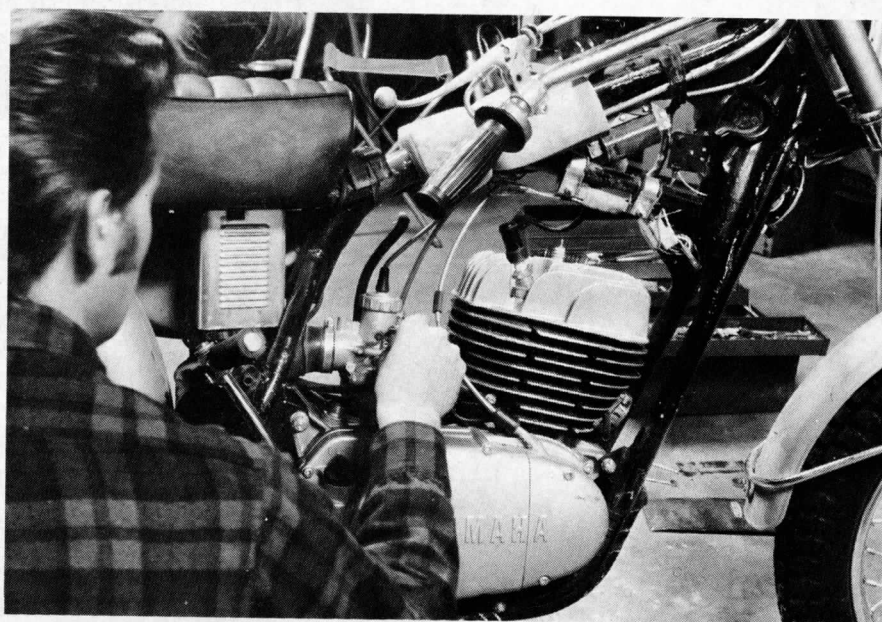
Your machine may not be quite as fast as the one that won the Barstow-Vegas cross country bash, but we'd bet you'll stand a lot better chance of winning any novice class races with this semi-GYT Kit conversion. All the power that almost anyone less than a Mike Patrick or Phil Bowers-caliber cross-country star can handle can be dialed in through that right twist grip

if you do it our way. We'll go a step further and wager that most of you novice class racers will spend more time polishing off "rash" from your crash helmet than you will in the saddle of the fully GYT-Kitted DT-1. Try it our way and see for yourself — you can always go a bit further with the ports and add on the GYT Kit expansion chamber.



10. Check the fit of the Yamaha fiber gasket/heat barrier block to be sure its bore matches carb's and cylinder's — motor-tool-fit to match.

11. The 30mm Mikuni (Yamaha No. 214-14101-70) will bolt right on to the stock manifold. Adjust per manual's DT-1MX specifications.



12. Cap tachometer drive hole with 3M "Trim Cement" in plastic plug. Ignition is timed at .090 of an inch BTDC with GYT Kit parts in place.