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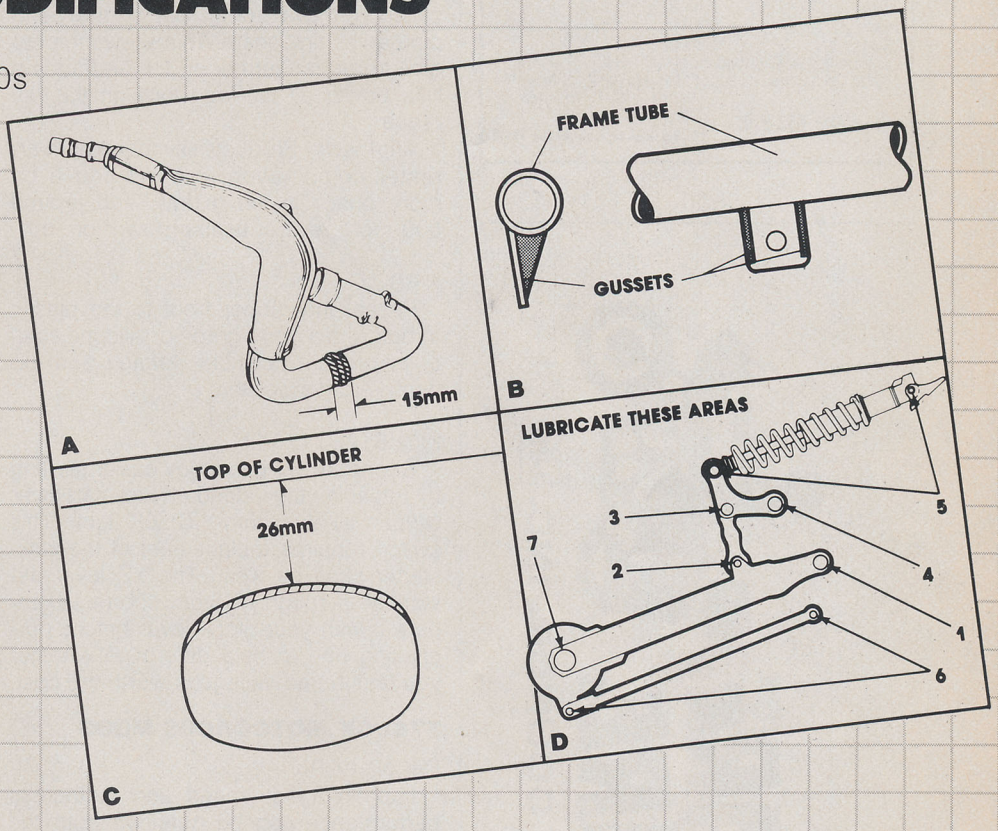
YAMAHA'S COMPETITION SUPPORT MODIFICATIONS

Increased performance for late model IT175s, IT250s and TT600s

BY GEORGE WEGNER



Yamaha's Competition Support Program was developed to enable Yamaha riders to achieve maximum performance from their machines. In effect, Yamaha provides detailed information which helps owners change their bikes into a sort of evolutionary link between one year's production model and the next. This is accomplished through the publication of Team Yamaha Center Competition Support Wrench Reports which are available at Yamaha dealers. These reports are compiled after extensive research by Yamaha testers and engineers on typical production bikes, and are released as each project is completed. Updates are made available if any new information is uncovered. Reports containing modifications begin with a disclaimer which states that optional modifications will affect the warranty and ask the owner to check with the Owner's Warranty Guide for details.

Information published here on both the TT600 and IT250 had not been officially released by Yamaha when we went to press, so we had to do a bit of digging for these sorting suggestions on July's and this month's test bikes.

This Wrench Report service has been in existence since early 1980. Check with your local Yamaha dealer to see if any modification information has been made available for your particular year and model machine.

IT175J & K

EXHAUST PIPE

Higher revving without appreciably decreasing bottom-end power can be accomplished by shortening the exhaust head pipe approximately 15mm. This involves cutting out the material as shown in illustration A; take care to make the cuts parallel to one another. To align all items properly, tack weld the head pipe while it is in place on the motorcycle, remove the entire exhaust system, then complete the welding on a bench. This modification helps reduce bogging by taking you further into the rev range for the next shift.

WARNING: Remove the fuel tank and the carburetor before doing any welding. Welding can produce sparks that could cause a fire. Use a TIG welder when performing this modification—do not use a gas welder. A TIG welder is the least hazardous welder for this application.

PIPE MOUNT

To prevent the rear exhaust pipe mount from breaking off the frame under some extreme conditions, Yamaha suggests welding gussets where shown in illustration B to provide reinforcement.

CARBURETION

Better performance can be obtained by installing a 320 main jet (No. 137-14143-64-00) and setting the jet needle clip to the fifth (top) clip position. A 310 main jet and fourth clip position are the standard specifications. These recommendations are starting points; changes may be required to suit local conditions and individual riding skills.

(Although it is not an official Yamaha modification, it has been noted that a Boyesen reed will provide added mid-range strength.)

REAR SUSPENSION

Installing an optional spring (No. 4V5-22212-00-00) provides smoother spring action throughout the entire stroke of the shock. This spring is suitable for riders weighing up to 175 pounds. Set the spring length (preload adjustment) at 315mm to 325mm, with the suspension at its full extension.

AIRBOX

Remove the airbox cover when riding in dry or no-mud conditions. This gives the engine a bit more air and, therefore, slightly increased power. Replace the cover when running in muddy conditions.

FRONT FORK

An increase in stability while riding in sand can be achieved through lowering the fork tubes 10mm in the clamps.

CYLINDER

This modification is recommended for expert riders only.

Improved midrange and top-end power can be obtained by raising the exhaust port to 26mm from the top of the cylinder. Using a hand grinder, remove the material in the shaded area of illustration C.

When you run an engine with this modification, install a 330 main jet (No. 137-14143-66-00) and a P-6 needle jet (No.

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239-14141-46-00) with the clip in the third position.

IT250K—WOODS/TRAIL

EXHAUST SYSTEM (ALSO IT490K)

In a manner similar to the IT175 modification, remove 10mm out of the head pipe at the first seam. This allows the engine to run out further on top and adds a little power all the way through the rev range.

An Answer Products silencer/spark arrester combination unit will add a bit more punch in the middle, and around 500 more revs of usable power on top.

AIRBOX

Reseal the rubber boot to the plastic airbox with a good grade of silicone sealer to prevent possible leakage and expensive dirt ingestion.

KICKSTART LEVER

Shorter riders can enjoy easier starting by replacing their standard kickstart lever with an all-aluminum YZ250K item. (This switch requires replacement of the kickstarter shaft as well.) The YZ lever assembly is roughly 15mm shorter. Compare it with your stock lever before purchasing one to help determine whether you feel the advantage is worth the cost.

TT600K MOTOCROSS MODS

FRONT FORK

Improved high-speed and motocross performance can be obtained from the fork by installing stiffer YZ springs (No. 23X-23141-20) and using an 80mm preload collar (No. 5X6-23118-10). They suggest sticking to the stock oil level unless you feel the fork is bottoming—then raise it slightly.

REAR SUSPENSION

There should soon be a stiffer 4.9-kg/mm rear spring available from Yamaha, similar to the YZ's unit, which can replace the stock 4.5-kg/mm spring. The YZ unit is too short for this application. (Pro-Tec should also have one available by the time you read this.)

GENERAL MONOCROSS SUSPENSION

MAINTENANCE

To ensure proper and consistent performance from the Monocross suspension system, it is essential that the maintenance procedures outlined here be strictly followed.

REAR AXLE TORQUE

When tightening the rear axle nut, *always torque the nut to specification.* YZ100 and 125J—61.5 ft/lb, YZ250 and 490J—72.3 ft/lb. CAUTION: Overtightening the axle may distort the bushing in the brake backing plate, causing the bushing to seize.

LUBRICATION

The following areas must be lubricated during setup, after break-in, and after every race; use a high-temperature, water-resistant grease: 1) swingarm pivot; 2) lower rod pivot; 3) upper rod pivot; 4) L-arm pivot; 5) lower and upper shock mounting points; 6) both brake torque arm pivots; and 7) brake backing plate bushing. CAUTION: Wipe off any excess grease, and avoid getting grease on the brake shoes.

SHOCK ASSEMBLY

CAUTION: Never aim a high-pressure spray wash at a Monocross shock assembly. Such spray washes can force water and dirt into the rebound damping adjuster assembly, eventually rendering it inoperable.

The rebound damping adjuster assembly should be inspected, cleaned, and lubricated regularly to ensure proper operation. If the threads on the adjuster nut or the mounting bracket are damaged, they must be replaced with new components. Follow this procedure to clean and lube the adjuster assembly: 1) peel back the rubber dust covers; 2) clean the threads thoroughly with contact cleaner; 3) lubricate the threads with a light oil; and 4) reinstall the rubber dust covers. Note: If there is any oil leakage from the shock, the entire shock sub-assembly must be replaced.

Check the nitrogen gas pressure every three months or when the rebound-damping adjuster fails to click when adjusted. To check for gas leakage, make sure the shock is charged with gas and submerge the reservoir in water. Bubbles indicate that there is a leak. Note: When charging a monoshock with nitrogen, use the charging system available from Kent-Moore (no. YU-91062).

DAMPING ADJUSTMENT

Both damping adjusters should be checked regularly to verify their settings. Turn each adjuster in, or clockwise, until it bottoms lightly. Then turn it back out to the standard or preferred setting. Note: Always record the optimum damping adjustment settings when the shock is cold. Also, the pushrod in the rebound damping adjuster may seize within the shock rod if it is not lubricated regularly.

Further information on general Monocross maintenance is available through Yamaha dealers in Competition Support Wrench Report No. 28 (published April 8, 1982). DR