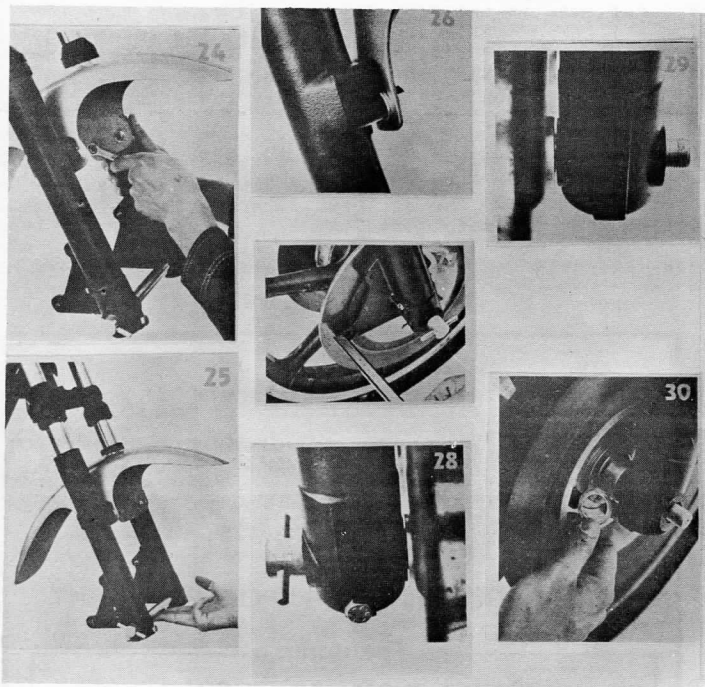


TECHNICAL - - Forks - Cont'd.

of the tubes to line up easily through the bottom and top triple clamps, it may be difficult to get the tubes tight. Assuming your tubes are straight, an alignment problem means bent triple clamps; and if your motorcycle suffers from that, then you need brand new pieces or an expert straightening job. No amount of jiggy-pokery will make it right or even nearly right. If you make such an unhappy discovery at this point, you just have to grin and buy.

(24) A fender, even a fiberglass one, can twist or load the sliders enough so that they bind on the tubes. The trick is shimming the fender carefully and not overtightening it.

(25) How tight is too tight? When you raise the sliders by lifting on the axle, there should be no binding. The moment you release the pressure, the sliders should drop down the tubes without hesitation. You can get the fender on so tight and cockeyed that the sliders will just tie up the tubes. Of course, spring pressure will force the sliders down, but the binding will fight the springs all the way. Fenders with built-in fender braces often require some bending and reshaping as well as shimming. Incidentally while testing for binding, don't pull the rubber dust covers on the sliders. Tight dust covers drag slightly, and consequently they make it a bit more



difficult to feel any binding.

(26) Here you see the shims. There's nothing fancy. Hardware-store flat washers have been stacked one deep on the left side and two deep on the right. The fender is secured firmly enough so that it will not move. Loctite should be applied to the nuts which can be safety-wired for additional insurance.

(27) Install the wheel with appropriate spacers on both sides. A front wheel speedometer drive usually doubles as a spacer, but in this particular set-up, there is no speedometer drive. Generally stock spacers do an adequate job of centering the wheel in the fork. Worry warts - or those preparing a race bike - will want to check the centering of the wheel. Pick some convenient reference points and measure away. Here the distances between the brake discs and the caliper bosses on the sliders are being made equal on both sides. Understand that this centering method is approximate. To do a very precise job you must measure every component that goes on the axles both front and back, and then establish an accurate centerline running down the center of the chassis. However, that kind of to-the-

thousandth precision just isn't necessary for setting up play bikes and street machines.

(28) The axle shoulder will take up any distance between the right slider and the wheel. The whole axle is just pushed through until the shoulder butts up against the wheel bearing. With the wheel centered, be sure that the shoulder only takes up the distance on the right.

(29) On the left side things are a bit more difficult. There's a gap. Without shimming, there's no way to have the wheel centered in the fork, and (far more important) have the sliders run up and down freely on the fork tubes. Suppose that you tightened the axle pinch bolt (in the right side fork leg) and then tightened down the axle nut. The open gap on the left would close up, but the fork legs would bind, because the axle would pull the ends of the fork sliders toward each other and bow them. On the other hand, if you tightened the axle first, and then torqued on the pinch bolt, the axle shoulder would push the wheel over, taking up all the distance on both the right and left sides of the wheel. The fork would not be put in a bind, but the wheel would not be centered in the forks either.

Those not starting from scratch won't have a problem. Don't fret should the wheel be a millimeter or so out of the center. Unless your measurement system for centering is more precise than the one suggested above, normal error could easily be a millimeter.

(30) If you insist upon shimming and need extra shims, try a retail outlet for bearings. Take a shim with you or determine the ID/OD and probable thickness. Stay away from hardware-store flat washers. Usually the perfect shim will slip in with a slight interference fit. And how do you know it's absolutely right? We hesitate to even suggest this, but here it goes: When the axle is shimmed perfectly, it's possible to tighten the pinch bolt first and then the axle. Do not, repeat do not use this sequence in the final assembly. It is a checking procedure only.

(31) Whether you have shimmed or adjusted yourself to satisfaction, tighten the pinch bolt after the axle nut.

(32) Now with the wheel in place, the sliders should move up on the tubes just as freely as be-

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