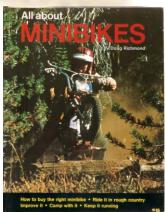


The first book I ever read on mini bikes back in 1973. I got it at the Library. I bought the kids a mini bike for Christmas several years ago, <u>Sarah loved riding</u> and I got back into mini bikes. Hence, the name of our FaceBook page and Website... "All About Mini Bikes" thought you might get the connection. Thanks for your patronage in our hobby and feel free to write us anytime at Przyojski@Yahoo.Com

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COVER: Our colorful cover, different from the usual treatment, features the three test machines in this issue - the tiny Indian Bambino (on the left); the HPE Slingshot (bottom right); and the Clark Manufacturing Cyclops (top right). We would appreciate hearing whether you prefer this cover in relationship to previous issues.

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EDITORIAL CONTRIBUTIONS are welcome and should be addressed to the Editor, MINI BIKE GUIDE, P. O. Box 1880, Huntington Beach, California 92647, accompanied by return postage. All material will be handled with reasonable care, however, the Publisher assumes no responsibility for return or safety of artwork, photographs or manuscripts. All editorial material received at the Publisher's office will be acknowledged.

TECH EDITOR'S COMMENTS: Kent Retzlaff, in this Reader's Tips submission, has answered a question bothering many owners of mini-bikes - how to install a front suspension. Older and less-expensive machines are often found with rigid front and rear ends and after a few hours of bumping over rough ground, the owners come to appreciate the benefits of suspension - at least on the front end. This is a good place to start learning about front suspension as instructions for one type of mini-bike usually fit another. If there is any standardization on mini-bikes it is in the method of front fork manufacture usually using two simple lengths of 7/8" tubing.

Although installing front suspension will not solve all handling problems - it will go a long way towards making things more comfortable.

In the following article we have presented Kent's suggestions exactly as we received them and we have followed with our comments about other ways to proceed - the reader can pick which one he wishes to follow.

INTRODUCTION: I would like to submit the following suggestions for the installation of a simple front suspension in your Readers' Tips Contest. I am 14-years-old and did the drawings and design (and typing) without help. The design is intended for my mini-bike but it should do equally as well for most mini-bikes. In the instructions for the Contest you said to send photographs and a bill of materials but I thought that my drawings might be more explanatory and the materials cost so little that they are not worth listing. Last year I had a go-kart with a West Bend 580 with a Max-Torque clutch - but I finally got smart and decided to go the mini-bike route.

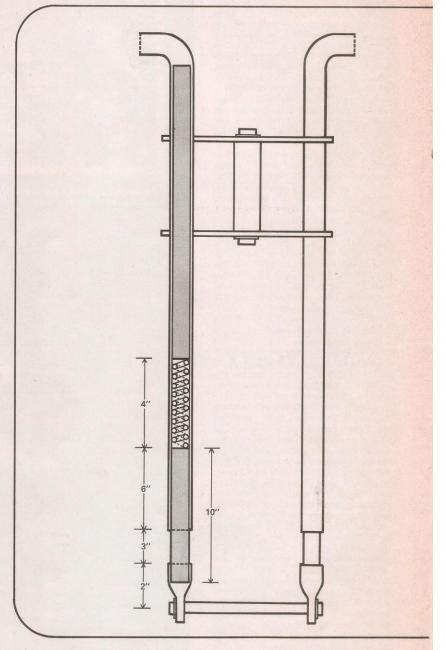
STEP No. 1

Remove the front forks from the frame of your mini-bike and clamp it down, firmly, in a vice. Measure up two-inches from the center of the axle bolt holes. Make a square, straight, cut through the tubing with a hacksaw. File off any rough edges but keep both sides at an equal length.

STEP No. 2

Measure 10-inches up from the cut on both forks. Carefully measure the inside diameter of the tubing. Measure the distance from the first bend (this might be where the handlebars are formed in fixed-handlebar type front ends such as the Taco), or from the upper crown plate (in removeable-handlebar types), or from the first obstruction in the tube, to the 10-inch mark. This can best be done by inserting a stick or straightedge up inside the tube, noting the cut-off point, and deducting 10-inches from that measurement. Go

HOW TO BUILD A SIMP



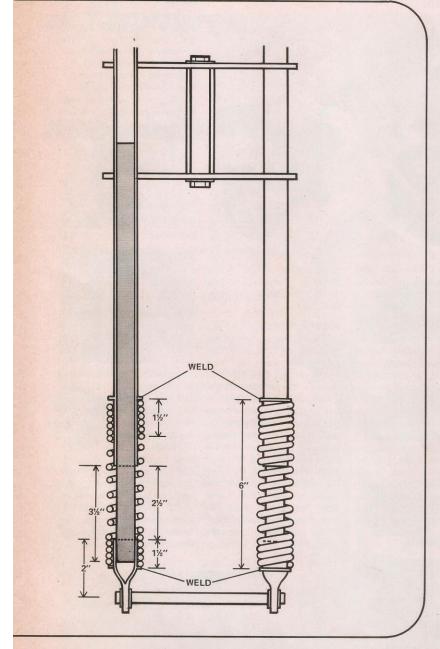
to the nearest machine shop and buy solid rod or tubing to fit snugly inside the tubing but not so snug as to cause binding. The length of the rod should fit into the upper section of the front forks and terminate at the 10-inch mark (two lengths) and another two lengths of the

same rod 10-inches in length. At the same time buy two 4-inch springs the same diameter as the rod.

STEP No. 3

Have the two small sections of the previously cut front forks (the 2-inch

LE FRONT SUSPENSION



axle-bearing sections) welded to the end of the 10-inch rod sections after first inserting the rods into the tubes about 1-inch. After welding, make sure the distance from the center of the axle holes to the top of the rods are equal. Insert the other lengths of rod into the

upper fork sections so that the bottom end of the rods reach the ten-inch mark on the forks equally. The other end of the upper fork rod should sit firmly against the handlebar bend in the forks or the upper crown plate (detachable handlebars)

STEP No. 4

Insert the springs inside the upper fork members so that they stop against the bottom of the rod previously inserted. Re-assemble the front axle unit including the short ends of the fork with the axle bearers. Re-assemble the front forks on the steering column. Insert the ends of the plunger rods (attached to the front wheel assembly) into the upper forks. And the job is completed.

TECH EDITOR'S COMMENTS: While Kent's front suspension system is fine, as far as it goes, there are some serious deficiencies. First of all, the whole unit could drop out the first time a bump is taken. Secondly, we are not convinced that it is the strongest arrangement that could be worked out. Our suggestion for an equally simple job, following Kent's basic premise, would be:

STEP No. 1

Same as Kent's.

STEP No. 2

Same as Kent's except: on the upper forks, measure from the cut end to the upper crown plate on machines with non-detactable handlebars or to a point three-inches below the upper crown plate on machines with detachable handlebars. Now, select a spring with an inside diameter that will allow it to fit snugly over the fork tubes (usually this will be an inside diameter of 7/8". This spring should be about 6-inches in length and with not too close a coil (the intent is to give the fork about two inches of travel, so it shouldn't be too stiff - place one end of the spring on the dealer's floor, put both hands on the other end, and when you put the weight of your shoulders on it, it should give at least two inches). When you find a spring that you think is right, buy three. The rod, like Kent's suggestion, should fit easily but not sloppily, into the fork tubing. Buy two lengths as long as the measurement you made on the upper forks previously, plus 3½-inches.

STEP No. 3

Have the rods welded to the lower axle-bearing members, after inserting them into the lower tubes as far as they will go, as in Kent's suggestion. Next, cut one of the three springs into four equal lengths and weld (or have welded) one of these lengths on each of the lower fork sections, placing the springs so that they seat on the outside of the tubes far enough down to clear the cut ends. Make sure the weld area is confined to the lower loops of the spring, closest to the axle bearing holes. Now weld the two remaining parts of the cut spring to the upper fork members, again confining the welding to the top of the Continued on page 55

SIMPLE FRONT SUSPENSION Continued from page 43

cut spring. To find the approximate correct position measure the distance from the bottom of the cut spring welded to the lower fork members to the cut in the fork tube (should be about 11/4- to 13/4-inches). Add 21/2-inches to this measurement and deduct the sum from the total length of the uncut spring - if 6-inch springs are used the cut springs should be welded to the upper fork members with the top of the cut spring about two-inches away from the cut in the upper fork tube.

STEP No. 4

Turn one of the uncut springs onto each of the cut springs welded to the upper fork members (a little grease may help this job). Turn each of the springs on as far as they will go so that they lock into place. Now, slide the rods attached to the lower fork members up inside the upper fork members and turn the lower fork member so that the cut spring welded to the bottom engages with the uncut spring attached to the upper fork member. Continue turning the lower fork members until the upper and lower members are locked together - then adjust the turns so that the axle holes are facing one another. When this work has been done the two cut sections of the tube should be separated by about 21/2-inches with the spring, locked top and bottom, preventing the two sections from falling apart. Re-assemble the front wheel and adjust the axle bolts allowing the wheel to turn freely without too much "slop".

NOTES: The springs may have their ends pinched together and, if so, it will be necessary to cut about half the first turn off so that the ends of the spring will feed together. Spring steel is sometimes very tough and it may be necessary to have a machine shop do the cutting. The above method will raise the front end of the machine about two inches and usually this will aid in handling and ground clearance but if the appearance of the raised front end is bothersome, it can be corrected by cutting out two inches of the fork length and proceeding as above.

When the job is complete, provisional testing can be done by placing the front wheel against a wall and bouncing on the front end. Final testing should be done, however, on the trail as sometimes a suspension will appear too stiff when the machine is not running but will work out fine in practice, Minor adjustments can be made to the amount of travel (if the machine is bottoming out) or to equal the amount of travel on either side by turning the uncut springs in or out of the fixed cut springs. However, once these adjustments are made, it will be necessary to make sure that the springs do not move in use.

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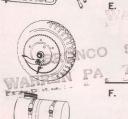
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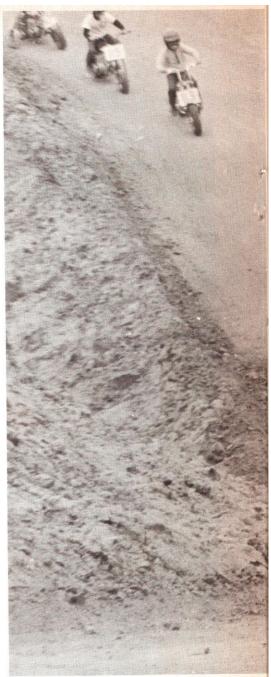
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UPS AND DOWNS - Some of the most exciting racing took

irst "national" mini-bike anything was held recently at Saddleback Park, California. The event was the National Championship Mini-Bike Scrambles organized by the Southern California Mini-Bike and Kart Association as the climax to their year of racing activity at Saddleback. Although the event was more "national" in ambition and future potential than it was in out-of-state entries, certainly it was well attended by Western mini-bikers. Despite the closeness to the Christmas season (December 21) there were no less than



place in the 6 to 8 years old, 1 - 3 hp class as this shot shows. Dave Lamb is in the lead with class winner Bobbie Tryon pushing hard

106 entries. These entries included a large contingent from the Hi-Jackers mini-bike club of Concord,
California, nearly 500 miles from Saddleback, and a lot of guys (should we dare to call them a factory team?)

wearing Bonanza colors from almost as far. We did see one Volkswagen with Missouri license plates supporting some Mavericks, but we don't know if they came for the Championships or whether they moved to
California permanently to be near Saddleback.

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You might have to explain to a young person what this is. But if you grew up in the 1950s, '60s, or 70s – you saw this exact Mini Bike all over America. It was frequently constructed by kids working with their Dad. It usually had a lawnmower motor on the Mini Bike and made a lot of noise as it screamed down the block. But it was COOL!

I did some research back in the 1990s and actually found the guy who created these plans. These exact plans were the ones sold in Boy's Life Magazine for 40 years. Yes, THIS is the Mini Bike you remember seeing and loving as a kid.

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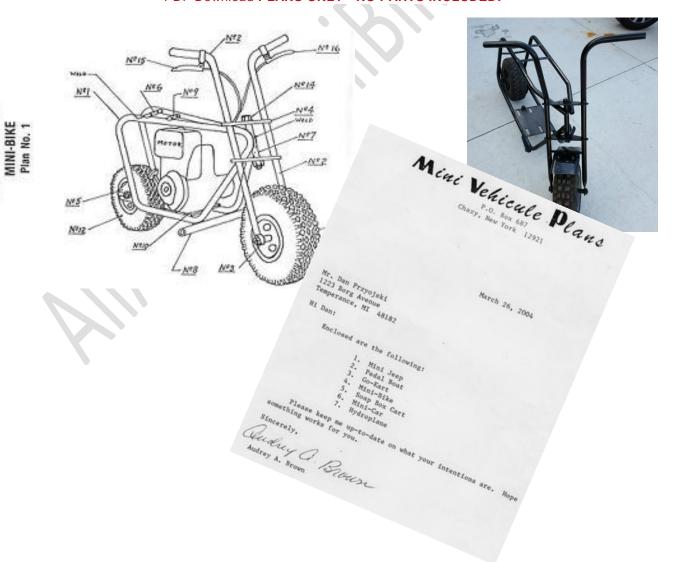
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