



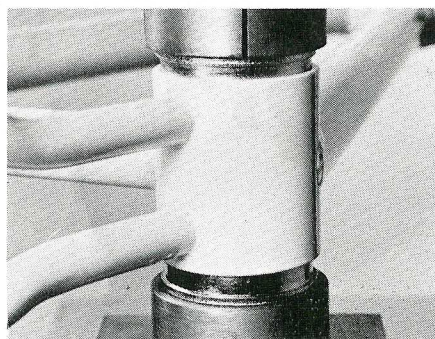
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# FLIGHT CRANKS<sup>™</sup>

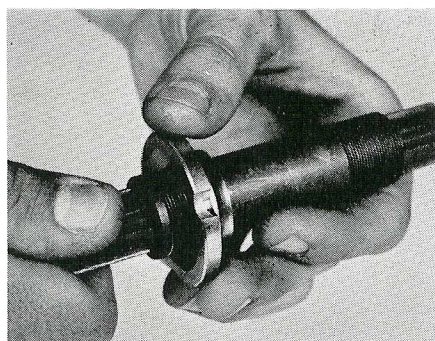
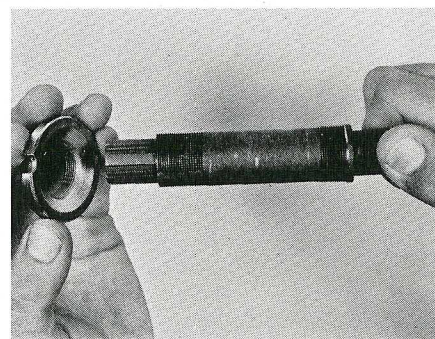
## "FLIGHT CRANK" INSTALLATION INSTRUCTIONS

Congratulations on your purchase of Red Line<sup>®</sup> Flight Cranks<sup>™</sup>. These cranks are made of tubular cro-moly steel, which is then heat treated to ensure maximum durability. However, as in all sophisticated components, proper installation and maintenance is required to ensure a long service life. In order for your Flight Cranks to give you years of trouble free service they must be installed and maintained correctly. **READ ALL INSTRUCTIONS BEFORE BEGINNING INSTALLATION.**



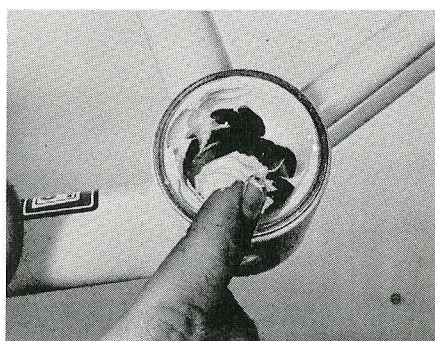
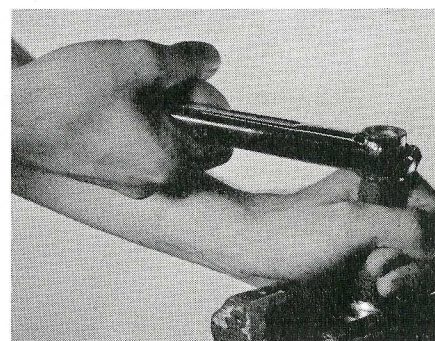
◀ (1) Press B.B. cups in squarely making certain that they are seated firmly against B.B. tube.

(2) Slide the fixed cone over the spindle. ▶



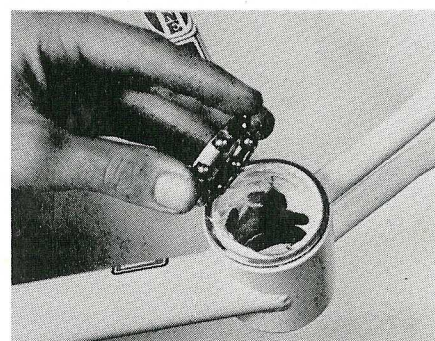
◀ (3) Thread the fixed cone on the spindle until it stops against the shoulder.

(4) Clamp the fixed cone gently in a vise and tighten down using one of the crank arms. Caution: Do not overtighten as damage to the cone will result. ▶



◀ (5) Put a liberal amount of white lithium grease in the bearing cups.

(6) Install the bearings into the cups as shown. ▶

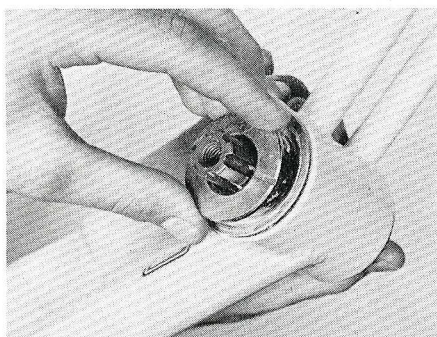
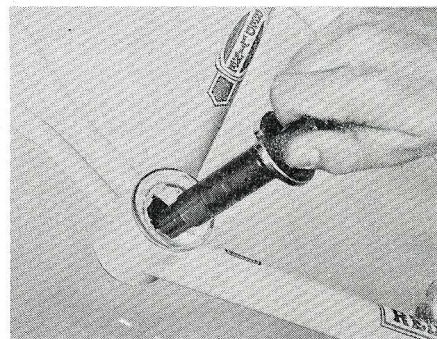






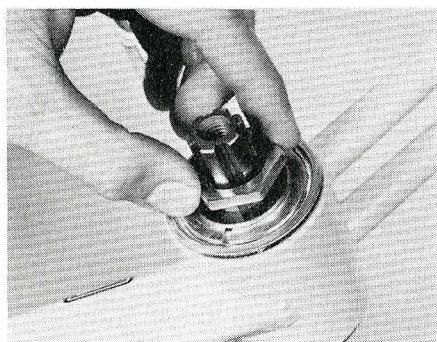
◀ (7) Pack the bearings with grease as shown.

(8) Slide the spindle through ▶ from the right side as shown.



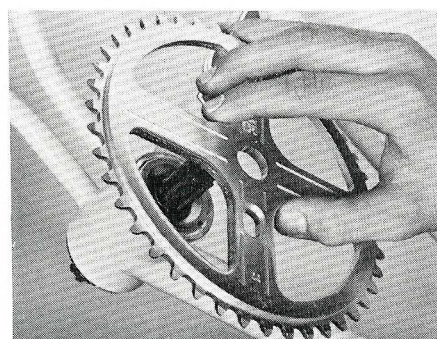
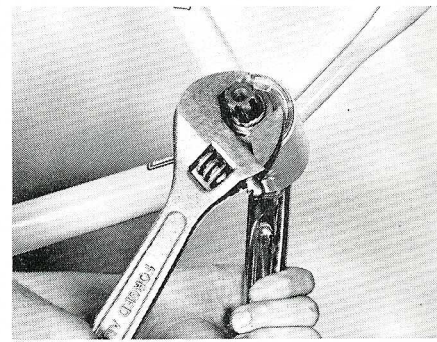
◀ (9) Install the left bearing race shown and adjust the bearings so that the spindle rotates freely and there is no noticeable free play.

(10) Install the locking washer. ▶



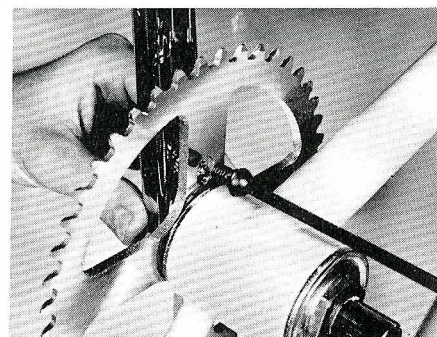
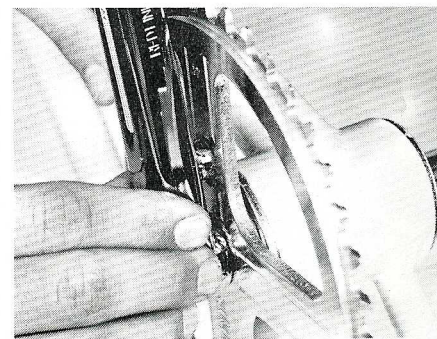
◀ (11) Install the locking nut.

(12) Tighten the locking nut and ▶ recheck the bearing adjustment. Make another bearing adjustment if necessary.



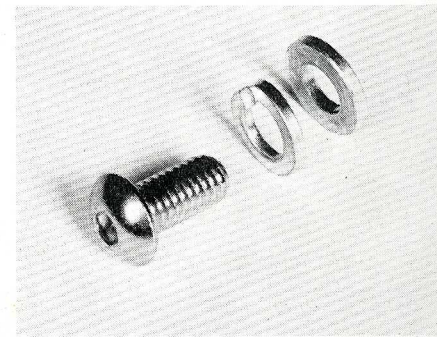
◀ (13) Slide sprocket over spindle on right side as shown making sure that the Red Line mark is facing out.

(14) Slide the right side crank arm ▶ on the spindle as shown, making sure that the threaded boss on the arm fits into the slot in the sprocket.

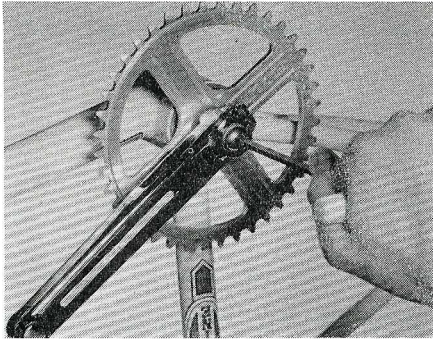


◀ (15) Install the small shoulder bolt as shown. Be sure to put a small amount of grease or light oil on the threads before tightening. DO NOT OVERTIGHTEN.

(16) Assemble the crank arm ▶ retaining bolts with the lock and flat washers as shown.

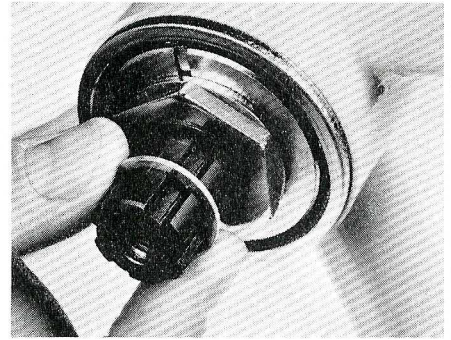




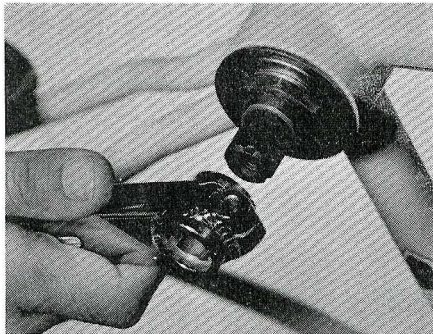


◀(17) Apply a small amount of grease or oil on the threads and install the retaining bolts with both washers. Do not tighten at this time. Lightly snug the bolt down making certain it goes all the way down.

(18) Install the small spacer on the left side of the spindle before installing the left crank arm. ▶



(19) Install the left arm opposite the right and install the retaining bolt as per step 17. ▶

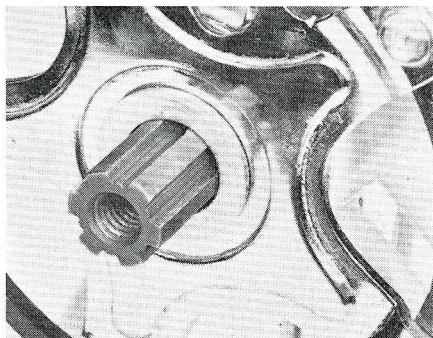


### "INSTRUCTIONS FOR USE OF A SPYDER"

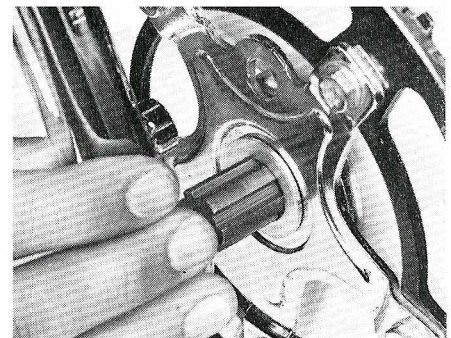
(20) Install the adapter bushing into the spyder as shown. As the size of the center hole varies with the different brands of spyders, you may have to press the bushing in. ▶



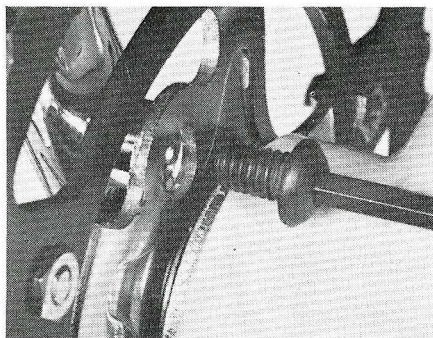
◀(21) Slide the spyder on the spindle as shown making certain that the large flange of the bushing faces out.



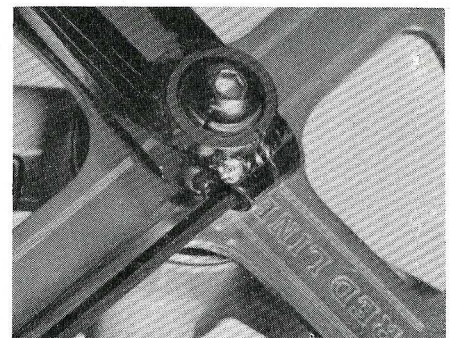
(22) Install the right crank arm on the spindle as shown. As the size and location of the slot in the spyder will vary from brand to brand, some filing on the hole may be necessary. If you must file the hole out, take as little material as possible out as the bolt should fit the hole snugly. ▶



◀(23) Install the shoulder bolt and both crank arms per steps 15, 16, 17, 18, and 19.



(24) Install both pinch bolts as shown and tighten using the T-wrench supplied. Then retighten the retaining bolts. Do not over-tighten as damage will result. ▶



### FINAL CHECK LIST

(1) Be sure that both the washer and lock washer are on the crank retaining bolts. (2) Use Allen Wrenches supplied and do not overtighten any bolts. This is not necessary and damage will result! (3) Always use a small amount of grease or light oil on all threads as thread seizure may result if they are installed dry. (4) Check the crank retaining bolts and the sprocket bolt often for tightness... especially when new. (5) If you have difficulty in installing the crank arms on the spindle, check both pieces for burrs. If you find a burr, file it clean. **DO NOT FORCE OR POUND ON ANYTHING.** (6) Use only the B.B. set supplied or a replacement set supplied directly from Red Line.



## FINAL COMMENTS

The Red Line factory has been testing and evaluating Flight Cranks for nearly three years. Flight Cranks are without question the most refined product ever designed<sup>T.M.</sup> for BMX. If you follow the directions, you can expect a long and reliable service life. If you abuse or do not maintain your Flight Cranks as suggested, problems will occur.

## SUGGESTED PERIODIC MAINTENANCE

(1) Check all securing bolts often and tighten with the Allen Wrenches supplied. (2) Disassemble and clean the bearings often. (3) Never force the crank arms on the spindle, they should slide on easily. If you encounter a problem, find the burr and file it clean. (4) If you must replace the bearing set, use only the B.B. set supplied or a Red Line approved substitute. There are vast dimensional differences in different brands of B.B. sets. Flight Cranks<sup>T.M.</sup> were designed to be used with this bearing set only. Damage may result if an incompatible set is used.

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