

edge tension setting should remain at a constant 10 pounds. **Note:** It will be necessary to slightly exceed the final tension in order to be able to re-install the shims.

11. ☐ Continue to increase the Drive Belt tension until it is slightly greater than the desired final tension, then re-install the shims removed from between the bearing and the airframe. Using a feeler gauge, determine the amount of open clearance remaining between the bearing and airframe and fabricate two (2) sets of additional shims, each of the two sets being equal to the feeler gauge measurement.

Install one, of the two (equal thickness) sets of shims, along with the original shims from that location, between the top bearing and the airframe and insert, but do not tighten the bolts. Release the jack tension on the belt, re-install the original and new shims between the Lower Bearing and the airframe, insert the securing bolts and nuts and tighten

them. Install the nuts and washers at the upper bearing and "snug," but do not tighten them. Now, with the trusty straight-edge in hand, re-check the alignment of the sprockets both longitudinally (that should be OK) and laterally (that may not be), making any adjustments necessary to achieve precise alignment. Tighten the nuts at the bearings and re-check the belt tension. If it is within the prescribed limits, you're just about done here. If not, repeat the procedure, either **adding an equal thickness of shims, top and bottom, to increase the tension, or removing an equal thickness of shims, top and bottom, to decrease it.** ↓ ✓



12. ☐ Very carefully now, re-verify that the straight-edge is contacting the fore and aft rims of both sprockets, move the end of the straight-

edge laterally across the small sprocket to verify that the contact is **continuous**. Repeat this procedure on the opposite side of the Rotorshaft, and if the results are the same, the shafts are in vertical and parallel alignment and the small sprocket is at the proper elevation, so final tightening of the set-screws in the small sprocket hub is in order.

Following the installation instructions at the back of this manual, complete the tightening of the Locking Assembly in the Small Sprocket. It may be helpful to place a hammer handle or that long punch between the spokes of the Large Sprocket to prevent the Main Shaft from rotating as you tighten the set-screws to the required torque. ✓

13. □ Not that we're superstitious or anything like that, but since this is, after all, step 13, let's carefully remove the hammer or the punch from between the spokes of the large sprocket, but don't put them down. Use them to "set" the lock ring on the Lower Main Shaft Bearing (driving it in the direction of rotation of the shaft), and the lock ring on the Main Rotor Thrust Bearing in a similar manner. **Be certain that the lock rings are pressed fully up against the bearings before setting them.** Immediately, (that means right now, Leroy) tighten the set-screws in the

two lock rings. We don't want any of this to come back and **HAUNT** you. ✓✓

14. □ While you're in the neighborhood, clean all your corrosive finger and palm prints, and everything else, off of the Main Shaft between the bottom of the Main Rotor Thrust Bearing and the top of the Sprocket Hub, with an Acetone dampened cloth. **Do not allow Acetone to come in contact with the Drive Belt--ever!** While your **PRO-DRIVE** Belt is highly resistant to a wide variety of chemicals, including some acids, alkalis and petroleum distillates, it simply **does not like Acetone!** So, if you use Acetone to clean your other drive belts, that's all right--just keep it off the **PRO-DRIVE** Belt.

Apply a light coat of grease to the Main Shaft, to prevent surface rust, align the corresponding index marks on the Safety Spacer and re-install it. **It should fit snugly between the Main Rotor Thrust Bearing lock ring and the Sprocket Hub.** Place the Hose clamps around the Spacer, then re-thread the clamps and tighten them securely. Re-install the Rotor Tach Magnet Assembly Clamp, carefully align the magnets with the Rotor Tach Sensor and secure it. ✓

15. ☐ With the Collective in the full down position, place a feeler gauge, set to the previously measured thickness between the bottom of the Sliderball and the top of the Main Rotor Thrust Bearing (If you've forgotten what it was, see Item 1 under "Disconnecting the Critical Stuff" on Page 5, where it should be recorded in the "Enter Clearance" box.) With the Collective still in the full down position, move and hold the Sliderball Adjustment Clamp up against the bottom of the Non-Rotating Swashplate, remove the "stubby" screwdriver and tighten the Clamp bolt. Remove the feeler gauge and "exercise" the Collective a few times (from full down to full up) and then re-verify the clearance between the Sliderball and the Main Bearing with the Collective again in the full down position. With the Collective in the full-up position verify that the lower part of the Sliderball **does not come out of the Sliderball Adjustment Clamp.** ✓

16. ☐ Install the wire-tie ("Tyrap") on the top of the Dust Boot. ✓

17. ☐ Moving up to the Counterbalance, very precisely align the horizontal and vertical index marks, then remove the "stubby" screwdriver and verify that the index marks are still precisely aligned. Install a new Counterbalance Clamp Bolt and locknut. After tightening the clamp bolt, **re-verify** that the index marks are still in precise alignment. If not, loosen the clamp bolt and repeat the procedure. ✓

18. ☐ All the way up top now, re-install the Master Pitch Link (M) being certain that it is on the side of the Rotor Hub Plate that bears the Serial Number, and that the upper end mark (▲) is up. Use new bolts and nuts. Following the same procedure, re-install the Slave Pitch Link (S) on the opposite side, again being sure to place the upper end mark (▲) adjacent to the upper Pitch Horn Clevis, and hang up the ladder. ✓

CONGRATULATIONS!

You have just completed the installation of your new **PRO-DRIVE** Conversion Kit.

What's left to do now is so simple that even Leroy can do it, provided you watch him. Ahh--maybe not. This is your **flying** machine, so you'll want it done right. Anyway!

Re-install the Coolant Surge Tank on its tabs, and re-fasten the hoses to the airframe in the approximate locations from which they were removed with appropriate "Tyrap's."

Adjust the tail-rotor belt tension, and that of **all the other accessory drive V-Belts**, to the value recommended by **ROTORWAY**, in their Construction and Maintenance Manuals, and lock 'em down.

Now, lets roll this sucker out into the fresh air and sunshine and give it some exercise!

OPERATIONAL TESTS AND CHECKS

Climb in the "driver's" seat and fire it up, just the way you always have, and let it idle for fifteen minutes. Feel the difference? After fifteen minutes at idle, shut it down and carefully check the following: ✓

- ☐ Bearing Temperatures (All) ✓
- ☐ Anti-Excursion Flange Temperatures:

Lower Flange on Large Sprocket ✓

Upper Flange on Small Sprocket ✓

- ☐ Check Torque on set-screws in Small Sprocket Hub. **Do not over-torque.** ✓

- ☐ Tail Rotor and Accessory Drive Belt Tension. ✓

Note: As the **PRO-DRIVE** System takes on "running-heat," the sprockets expand, slightly increasing the tension on the Main Rotor Drive Belt. It is for this reason that tension adjustments on this belt are made with the system "**cold.**" (Refer to Item 10 on Pages 17 and 18 of this manual for tension specifications.)

- ☐ Perform your regular pre-flight inspection. Use a Check list!

- ☐ Leaving the Cowling off, check your own pressure (blood, that is), get back in the machine, fire it up again, and when everything's "in the green," spin it up and go practice your 6" **hover for 30 minutes.** (C'mon, the practice won't hurt you!)

Back on the ground, after that 30 minute hover, again re-check everything in the preceding list. The temperatures of the various components should not be too uncomfortable to the bare hand. Oh yeah, almost forgot (didn't use my

check-list), install those two new 170° heat dots on the Secondary Shaft Bearings.

While performing this "post-flight" inspection, you may notice some black "Fuzz" around the Drive Train. That is perfectly normal. It's the result of the protective coating on the drive belt, and it will all come off in the first five or six hours of operation.

Put the cowl and "dog-house" back on and go fly your **"PRO."**

FOLLOW-UP ADJUSTMENTS

After eight or ten hours of operation again check the Main Rotor Drive Belt tension. It may need a slight adjustment after "run-in," and this again is normal. Normally, not more than .010" of shims will need to be inserted at the upper and lower secondary shaft bearings to restore the original tension. Remember that the belt adjustment checks must be made "cold" and that an equal thickness of shims must be installed at both locations, if and when, adjustment is necessary.

MAINTENANCE

As no lubrication is required there is no scheduled maintenance on your **PRO-DRIVE** other than an occasional inspection and a re-check of the items in the preceding "OPERATIONAL TESTS AND CHECKS" on Page 21 of this manual. We suggest that you place those items in your regular 25 hour maintenance check-list.

BE IN TOUCH

We are certain that you are going to be very happy with your new **PRO-DRIVE** and encourage you to let us know how you feel about it. Please address your comments, pro or con, or any questions that you might have to:

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Cleveland, OK 74020

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YOU FLY THE BEST--YOU FLY A

"PRO"

OH, BY THE WAY, THANKS LEROY.