



REVOLUTION

HELICOPTER CORP., INC.



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March 10, 1998

Revolution Helicopter Airworthiness Directive (AD) #03101998

Affected Aircraft: All Mini-500 helicopters

AD Type: Urgent (Must be complied with before further flight)

Subject: Control Yoke tolerance check

In August 1997, AD# 08211997 was sent to all Mini-500 owners to address a problem that some Mini-500s experienced as to where the control transfer plate tended to wobble during use. To suffice those that demanded an immediate fix, RHCI sent that AD with directions on how to check control wobble tolerance, and specified the tolerance of each part within the control system. We knew that if each part was within tolerance, that the system should work properly.

Now that proper time has been given towards thorough research into this problem, we have discovered that only one part is causing the problem. Once this part is fixed, the tolerances in the other parts are of no concern.

It is necessary that the base of part #0024 Control Yoke is machined parallel to the two 15/32" reamed holes. This allows for part #0024 to mount flat onto part #0025 Control Yoke Center Hub. If this does not occur, as part #0024 rotates with the part #0577 Bearing, one reamed 15/32" hole will have more control input than the other throughout every revolution.

AD ##03101998 now replaces the AD #08211997 sent on August 1997, effective immediately.

CORRECTIVE ACTION:

1. Disassemble part #0024 from the control transfer plate. Obtain a 3/8" diameter precision pin long enough to pass through the ends of both Teflon bushings part #0562, still in part #0024. Using a horizontal milling machine, invert part #0024 and secure it in a precision vise while the 3/8" pin is supported by parallels as seen in Fig. 1. Indicate across the base of part #0024, and if necessary machine only enough material off to ensure that the base is parallel within 0.0005" of the 3/8" diameter precision pin. If you do not have access to a milling machine, fill out a Work order Request Form and send part #0024 to RHCI, and we will machine it at no charge. You will only be responsible for shipping charges to and from RHCI. When shipping the part, please make sure you protect it adequately, because RHCI will not be responsible for shipping damages. You will receive back the same part you sent us.

2. It has also been noticed that there could be some variations on the wall thickness of the mast part #0030. This is possible, because the mast is centerless ground, not point to point ground. If so, it is permissible to sand off one side of part #0029 Teeter Block Lower Yoke Mount, one half of the difference between the wall thickness of the mast. A shim can then be added to make up the difference, and will center part #0029. You are permitted 0.015" of overall horizontal travel. This travel can be checked with an indicator attached to a stationary part of the frame, and indicating against the side of part #0023 Control Transfer Plate, as seen in Fig. 2.

3. Reassemble the control unit and retest for wobble limitations.

Once the control transfer plate wobble is within tolerance, a complete track and balance of the main rotor system must be completed before further operation can occur. When setting initial blade pitch, we found it more precise to clamp the degree finder to the bottom of part #0023 Control Transfer Plate and then level. With the degree finder in place and on a level setting, set the blade pitch at 1/2 degrees negative for initial settings. Do this instead of putting the level on top of part #0016 Upper Control Block and you will find that blade tracking will be much more precise.

Please date and sign this AD and fax or mail it back to RHCI:

Revolution Helicopter Corp. Inc.
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If you have any questions, please do not hesitate to contact us.

Print Name: _____ Serial # _____

Signature: _____ Date: _____

