

MINIATURE AIRCRAFT USA

PART #0552 - ADJUSTABLE DRAG "SLIPPER TYPE" CONSTANT TAIL DRIVE.

READ FULLY PRIOR TO INSTALLATION.

Fits X-CELL .50/.60 helicopters and all X-CELL "solid type" mainshaft (with the "step" at the base).

PURPOSE:

The adjusting drag feature allows limited tail-rotor control during 180° autorotations with less main rotor inertia lost than in direct-drive types. Adjustment is simple and is required after approximately every 30-40 flights, depending on how little drag was pre-adjusted.

This unit works only with original type autorotation hub assemblies #0710 or #0209.

CONTENTS:

- (1) #0552-1 -- O-ring.
- (1) #0552-2 -- Adjusting ring.
- (1) #0552-3 -- Small I.D. (.235") externally threaded collar.
- (1) #0552-4 -- Friction disc.
- (1) #0552-5 -- M 2.5X12 Socket head cap screw.
- (2) #0057 -- M 4X4 Flat tip socket set screw.
- (1) J. B. Weld epoxy packet.

STEP (1):

Remove the autorotation assembly (it is not necessary to disassemble the main gear). On the lower side of this unit, there is a 45° angle surrounding the base. Lightly sand this area with 80 grit paper and clean thoroughly with alcohol or lacquer thinner. Select the #0552-4 aluminum friction disc. Lightly roughen the inside surface with 80 grit paper and clean with alcohol or thinner. Mix equal parts of the J.B. Weld epoxy (provided) and apply a thin layer to the 45° tapered portion of the base of the auto hub. Press the #0552-4 friction disc into place and wipe away any excess epoxy. Normally, this disc will sit flush with the bottom surface of the hub. Looking from all angles, be sure that the disc is centered. Set the unit aside to cure for 24 hours.

STEP (2):

Select the cured auto assembly and reinstall into the helicopter. SUBSTITUTE the externally threaded collar #0552-3 for the original #0215 collar and #0213 washer. Use (2) #0057 M 4X4 flat tip socket set screws and Loctite. Note: When properly installed at this stage, the autorotation assembly will have .5mm up/down free play (with no mainshaft up/down play). Also check to be sure that when the main gear is held upward and rotated that mesh with the #0231 bevel gear is not too tight to allow smooth operation. This is important because when fully adjusted, the constant drive unit will push the main gear upward towards its limit. It is assumed that anyone installing this unit (ie. an FAI type competitor) is sufficiently experienced at setting gear mesh.

STEP (3):

Select the #0552-2 adjusting ring and #0552-1 O-ring. This O-ring will fit into the top recess of the adjusting ring just inside the outer flange. Apply a small layer of Cyano around the inside corner of the adjusting ring and install the O-ring. Loosely install (1) #0552-5 M 2.5X12 socket head cap screw into the adjusting ring. DO NOT USE Loctite or tighten.

STEP (4):

Apply a very small spot of grease (as a thread lubricant) to the external threads of the #0552-3 collar. Install the #0552-2 adjusting ring by hand until the O-ring contacts the friction disc #0552-4, and a small amount of drag is felt, when rotating the main gear in the autorotation direction. The final adjustment will ultimately be made through your flight experience and is difficult to explain in instructions. Generally, you are looking for some position between fully locked and no contact at all. Tests indicate that about 50 percent is right for most tail rotor systems. The #0552-5 M 2.5X12 socket cap screw will serve as a locking device after each adjustment. Merely snug it up until the adjusting ring will not change its position with respect to the #0552-3 collar during load conditions.

CONTACT MINIATURE AIRCRAFT USA at 407-422-1531, if you have any questions.

