Marvel

Manufacturing Company

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Tail Rotor Balance
Eurocopter Models BO 105, BK 117, EC 145 Typical

Balance Equipment

1 ea 7HEL078N1 Kit – Tail Rotor Balance

Note: The 7HEL078N1 Kit-Tail Rotor Balance supplies all balance equipment items required for this rotor and includes Part Number 3165 Arbor Assembly-Balance Indicating.

The 7HEL077N1 Kit-Tail Rotor Balance Adapter is recommended for use by those already in possession of Part Number 3165 Arbor Assembly.

Description

The subject Tail Rotor is balanced as a hub and blade assembly, excluding the pitch control linkage and teeter bolt.

The 3165 Balance Indicator Arbor is used with accessory adaptering to mount the rotor in a fixed position below its lower end. A backbalance weight and supporting anchor ring are used to raise the center of gravity of the total suspended load to a position on the arbor that will provide the desired balance indication sensitivity.

The rotor hub is secured to the fork section of the adapter with pins inserted through each fork, engaging the hub and blade interconnecting fitting bores. Linkage attachment bolts of the pitch arms contact the outer end of the pins for blade pitch positioning. A threaded pressure ring, located central in the adapter fork removes rotor teeter and positions its span axis square with the normal axis of rotation.

Balance Procedure

1. **Depress indicator Collar of 3165 Balance Indicator Arbor, releasing oil seal, and reposition to provide minimum free clearance with arbor end. Lightly secure with set screw. Suspend from hoist or other support.**

2. **Install 3262 Weight on arbor from lower end and position top surface at the 9 7/8" inch Arbor Scale location. Secure by moderately tightening the two set screws evenly.**
3. **Install 3260 Ring on Arbor and position against underside of weight. Moderately tighten its set screws evenly.**
4. **Position Rotor Assembly with static stop sections of hub downward on suitable support and visually align bores of blade interconnecting fitting and hub.**
5. **Screw threaded ring of 3255 Adapter to stop against the yoke body and install Adapter to Rotor with 3172 Pins (2) inserted through bores of yoke fork into rotor hub. Install pins full depth to set on top of pin. Position blade pitch as necessary during operation to provide clearance and position linkage bolt of pitch arm above extension section of 3172 Pins. A length of .187" diameter rod approximately 4" long inserted in the outboard bore of the 3172 Pin will assist installation and removal.**
6. **Screw threaded ring section of 3255 Adapter downward to press against rotor hub to remove teeter action.**
7. **Install the assembled group on lower end of arbor, seating on internal stop ring. Secure by moderately tightening the two adapter set screws evenly.**
8. **Loosen threaded ring of 3255 Adapter from contact with rotor hub and centralize rotor to obtain equal space between bushings in rotor hub and adapter fork. Use feeler gage or dial indicator. Maintain seated position of 3172 Pins.**
9. **Retighten threaded ring of 3255 Adapter to contact rotor hub. Check to insure linkage bolts of pitch arms are seated against 3172 Pin extensions.**
10. **Stabilize movements of the suspended assembly and observe balance condition as indicated by exposure of black disc in top surface of arbor shaft. Check to insure indications are not affected by interferences, air drafts, or movements of nearby personnel.**
11. **Refer to applicable Helicopter Maintenance Manual for balance tolerance, method of correction or other assembly requirements.**

Balancer Installation - Tail Rotor
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