

FAN PROPELLOR REMOVAL AND INSTALLATION

All fan propellers installed onto the larger models of Farm Fans drying equipment are secured to the motor shafts by the use of a taper-lock bushing, motor shaft key and capscrews. The size and quantity of capscrews required will depend upon the model of the Fan. Figure 1 shows a typical cutaway sketch of the propeller and bushing installation.



CAUTION: Although the taper-lock method of retaining the propeller onto the motor shaft is very simple and obvious, IT IS ESSENTIAL THAT THE FOLLOWING POINTS BE READ CAREFULLY AND FULLY UNDERSTOOD, AS IMPROPER INSTALLATION CAN RESULT IN SERIOUS OR FATAL INJURY CAUSED BY A LOOSE, FLYING PROPELLOR.

THREADED BUSHING HOLES - THE THREADED HOLES WITHIN THE BUSHING ARE PROVIDED FOR DISASSEMBLY PURPOSES ONLY. See Figure 2. DO NOT ATTEMPT TO USE THESE HOLES FOR REASSEMBLY, AS THEY WILL NOT ALLOW THE PARTS TO BECOME LOCKED ONTO THE SHAFT, THEREBY CAUSING A HAZARDOUS OPERATING CONDITION.

CLEARANCE HOLES - When reassembling parts, the capscrews must be installed through the UNTAPPED CLEARANCE HOLES, as shown in Fig. 3, to cause the propeller to be pulled forward onto the tapered bushing, thus locking the parts securely onto the motor shaft. Refer to text for assembly details.

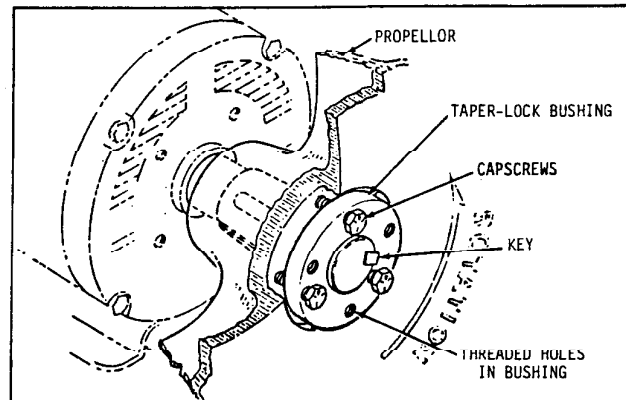


FIG. 1 - CUTAWAY DRAWING OF TYPICAL PROPELLOR INSTALLATION

Whenever any drying fan servicing is to be performed which requires removal and installation of the propeller, make certain the propeller is removed and installed properly. The recommended procedure is as follows:

REMOVAL

1. LOCK-OUT THE MAIN POWER SUPPLY and remove the fan guard, also the venturi, as required on some models of equipment.
2. During manufacture, the propeller and bushing are balanced together and parts are marked with a small dot to identify their original alignment position. Observe the bushing and propeller to make sure they have alignment marks. Mark the alignment of the propeller and bushing, if required.
3. Remove the three capscrews (only two on some small fan models) from the clearance holes in taper-lock bushing.
4. Install a GRADE 5 CAPSCREW into each of the THREADED HOLES in the bushing and turn capscrews in by hand until they bottom against the front surface of the propeller.

NOTE: Some early type 3-hole bushings have only two threaded holes, whereas the current type have three holes to provide a more uniform pushing force. DO NOT ATTEMPT TO USE LOW STRENGTH (UNMARKED) BOLTS TO REMOVE THE BUSHING, AS THE BOLTS MAY BREAK OFF. This is especially important for the early two-hole type bushing which provides off-center forcing action.

- Block propellor to prevent it from turning, and GRADUALLY TURN IN THE CAPSCREWS (up to 1/4 turn at a time), as shown in Figure 2, until the propellor breaks loose from the bushing and motor shaft. Carefully remove bushing and propellor. With the propellor free from the bushing, a wheel puller can be used to pull the bushing off of motor shaft, if required. Reattach bushing onto propellor to prevent the loss of parts.

INSTALLATION

- Carefully clean the motor shaft, key, bushing and bore of propellor. MAKE SURE MAIN POWER IS LOCKED OUT, and that shaft and key are completely free of rust and burrs. Do NOT lubricate the bushing or capscrews. CHECK AND MAKE SURE ALL MOTOR MOUNT BOLTS ARE PROPERLY TIGHTENED.
- Before installing the propellor, check the following; (1) If any balance weights are installed, they must be tightly secured. (2) All foreign material should be removed from the propellor, especially inside the hub area. (3) Carefully inspect the propellor casting for damage, cracks or other defects. Contact the factory if there is any question regarding the structural integrity of the propellor casting.
- Slide propellor over motor shaft and locate it against the motor.
- Align the keyway in the bushing with the key and SLIDE bushing onto motor shaft. Do not attempt to drive the bushing onto the shaft, as it may damage the motor bearings.
- Rotate the bushing and propellor so their alignment marks are in line and loosely attach the propellor to the bushing. MAKE SURE THE CAPSCREWS ARE INSERTED INTO THE UNTHREADED CLEARANCE HOLES IN THE BUSHING. Refer to previous CAUTION note. Locate the bushing so it is approximately flush with end of motor shaft.

NOTE: The bushing must be located far enough forward so the inside web portion of the propellor will not contact the motor. If motor make has a short shaft, it may be necessary to position bushing slightly beyond end of shaft.

- Slide the propellor forward onto the taper-lock bushing and turn the capscrews in by hand as far as possible.
- Use an INCH-POUNDS torque wrench and GRADUALLY TIGHTEN the capscrews (1/4 turn at a time) until the taper bushing becomes fully seated. Refer to the following chart for the recommended capscrew tightening torques. DO NOT EXCESSIVELY OVERTIGHTEN THE BUSHING. See Figure 3.

BROWNING TAPER-LOCK BUSHING BOLT TIGHTENING TORQUES

Bushing Size	Bolt Dia.	Torque (Inch-Lbs.)
H	1/4"	95 In-Lbs.
P	5/16"	180 In-Lbs.
Q	3/8"	348 In-Lbs.

- Turn propellor by hand and check it for freedom of rotation and uniform tip clearance before reinstalling the fan guard.

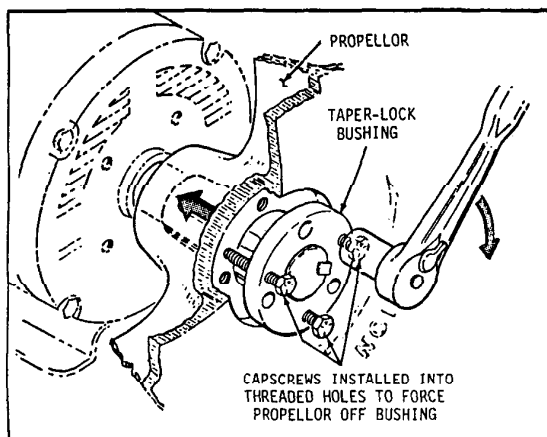


FIG. 2 - CAPSCREW ARRANGEMENT FOR DISASSEMBLY

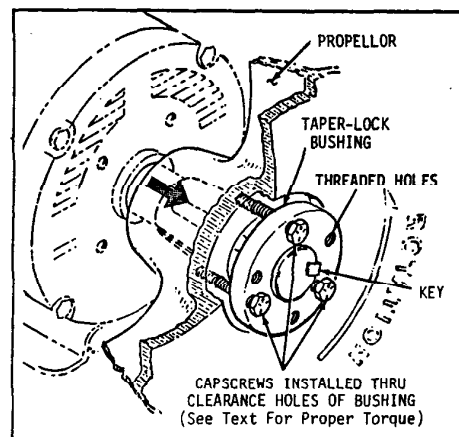


FIG. 3 - CAPSCREW ARRANGEMENT FOR REASSEMBLY