INTRODUCTION — Lock out starting switch of prime mover. Mount sleeves, seals, end plates or Type T20 covers on shaft before mounting hub. Mount mill motor hubs on tapered shafts as instructed below. For accurate temperature control, heat hubs in an oven. If an oil bath is used, the oil must be removed from the hub bore before assembly.

1. PREPARE PARTS FOR ASSEMBLY — Remove all nicks or burrs from hub bore and shaft with a single cut mill file. Chamfer sharp corners (.015" to .020") of hub and shaft keyways and corners of key. Clean shaft and hub bore with a solvent that DOES NOT leave an oily film. CAUTION: Solvents may be toxic or flammable. Provide adequate ventilation to minimize health and fire hazards. Do not use in the presence of fire, heat or sparks.

2. CHECK KEY FIT — Insert key into shaft and check side clearance (.000" to .003" max) with feelers. Scribe a line on the side of the key as shown (Figure 1). Remove key from shaft and insert hub portion of the key into the hub keyway. The scribe mark must NOT be visible; if it is, check key height and depth of keyways. The key corners must not cut into the fillet of the keyway. Check side clearance in hub.

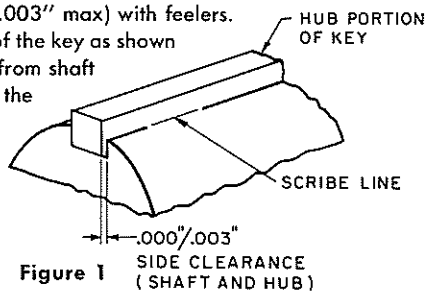

Figure 1

3. CHECK HUB/SHAFT FIT — Install key into shaft keyway. Lightly coat shaft with bluing. Mount cold hub and tap into place with a leather or plastic mallet. Check radial clearance (.015" to .030") between key and hub keyway and sides for binding of key. Remove hub from shaft and examine hub bore for contact with shaft. A minimum of 75% contact is required. If contact is not adequate, examine contact pattern of hub and shaft for possible interference points. Remove high points with single cut mill file and recheck contact. If contact is still less than required, have tapers checked with appropriate ring and plug gauges. DO NOT mount hub with less than 75% contact.

4. COLD DRAW METHOD — Assemble and seat hub on shaft by tapping with a soft mallet. Assemble lockwasher and nut but DO NOT tighten at this time. Proceed, using either method (A) or (B) as follows: (A) Mount dial indicator as shown in Figure 2 and set dial to zero. Use an open end wrench to tighten nut until dial indicator reading is equal to the "Hub Advance" value for the motor size as indicated in Table 1. (B) Use a feeler gauge thickness equal to "Hub Advance" value indicated in Table 1 for the motor size as a guide to scribe a mark on the shaft as shown in Figure 2. Tighten nut until the hub lines up with scribe mark on the shaft.

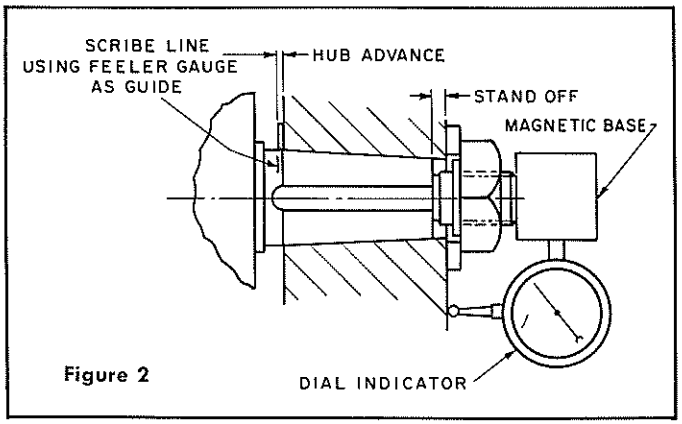

Figure 2

5. HEAT METHOD — Clean bluing from shaft and hub bore. Mount cold hub on shaft as in Step 3. Position depth micrometer or equally accurate device on hub face as shown in Figure 3 and mark its location on the hub face. Take cold and hot stand off measurements at this location. Measure and record the cold stand off position. Remove hub.

6. HEAT HUB IN OVEN — Heat hub in an oven as instructed on Page 1. Check temperature of the shaft with a surface pyrometer or equally accurate device. Add shaft temperature to temperature difference listed in Table 1 for the mill motor size. Heat hub in an oven to this temperature plus 20°F(10°C) to compensate for cooling while transporting from oven to the shaft.

TABLE 1 HUB MOUNTING DATA

Motor Frame Size	Temperature Difference★	Hub Advance - in.
2 802A AC1	155°F (68°C)	.010 to .015
602 802B AC2	155°F (68°C)	.010 to .015
802C AC4	155°F (68°C)	.010 to .015
603 803.....	145°F (63°C)	.011 to .016
604 804	145°F (63°C)	.011 to .016
606 806 AC8 & 12	130°F (54°C)	.013 to .018
608 808	120°F (49°C)	.015 to .020
610 810 AC18	115°F (46°C)	.016 to .021
612 812 AC25 & 30	107°F (42°C)	.017 to .025
614 814 AC40 & 50	100°F (38°C)	.019 to .027
616 816	100°F (38°C)	.021 to .029
618 818	98°F (37°C)	.022 to .030
620	98°F (37°C)	.027 to .037
622	95°F (35°C)	.028 to .038
624	95°F (35°C)	.031 to .041

★Values shown provide a minimum interference fit of approximately .0005" per inch of shaft diameter.

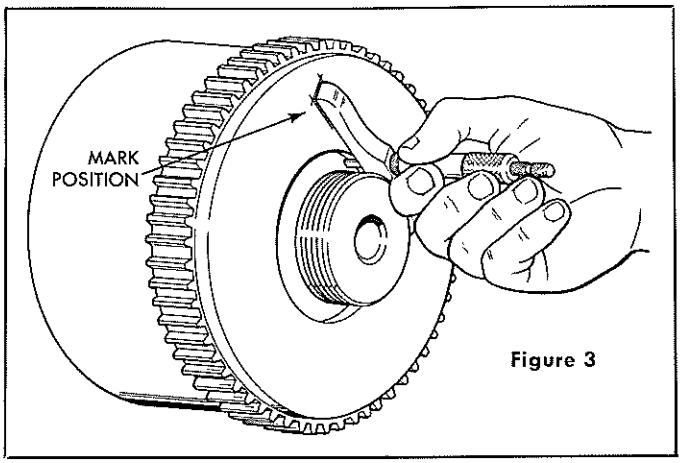

Figure 3

7. MOUNT HOT HUB — Remove hub from oven and allow it to cool to the temperature specified in Table 1. Measure the temperature on the hub face at small end of taper. Place the hub on the shaft until nearly engaged on the taper, but not actually in contact. Then quickly push the hub onto the shaft. Measure the hot stand off as instructed in Step 5. Subtract the cold from the hot stand off. This value must be within the hub advance figure specified in Table 1 for the motor frame size. If not within this value, remove the hub, adjust hub temperature and remount.

8. INSTALL LOCKWASHER AND NUT — Rapidly assemble lockwasher and nut before hub has time to cool. Tighten nut until snug; DO NOT torque nut. The hub will seat against nut as it cools. Secure lockwasher if required.

9. HUB REMOVAL — Unlock nut and back off two turns. DO NOT remove the nut; when broken loose the hub may release suddenly and violently. Use a suitable size puller for hub removal. To avoid damage to hub, motor bearings and shaft, DO NOT apply heat to the hub, use wedges between hub and motor housing or strike puller with a hammer.

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