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MOTOR ALIGNMENT PROCEDURE FOR H-W TRACTION MACHINES

Mounting and aligning the new motor on undrilled motor pads:

1. The first step in mounting the motor on undrilled motor pads is to mount the motor coupling on the motor shaft. HOLLISTER-WHITNEY bores the coupling approximately .0010" to .0015" smaller than the motor shaft. While the coupling can be pressed on, HOLLISTER-WHITNEY heats the coupling and shrinks it on.

2. The double taper keys are now installed as shown in Fig. 2.

3. On motors that have the inset key, the key-to keyway fit is such that no extra fitting is necessary. Just heat the coupling and push it over the shaft and key. The end of the motor shaft is to be flush with the recessed step on the coupling.

4. There is a small amount of play in the in-and-out motion of the motor shaft. The motor must be mounted approximately in the center of this movement. This is done by pushing the shaft as far back as it will go and scribing a line on the shaft. Then pull the shaft out as far as it will go and scribe a line. The shaft is then placed approximately in the center of these two lines.

5. The motor is set on base pads and roughly aligned with the brake drum or brake disc. This is accomplished by hoisting the motor from the eye bolt, close to the finished height (motor feet about 1/8" from pads). Now with the coupling resting in the pulley recess, lightly move the motor from side-to-side (while pushing the motor toward the pulley) until the flat surfaces of the coupling and the pulley fully meet. At this point, lower the motor onto the pads being careful to prevent side movement. Next pry between the coupling and the end bell, then move the motor back half of the free end play of the shaft.

6. Mounting holes are now scribed. The motor is removed and mounting holes are drilled and tapped.

7. The motor is again put onto the base pads. Install two (2) 5/16" tram rods (approximately 7" long) into the motor coupling (180° apart). Put two (2) 90° Starrett Model #196 indicators on one (1) tramming rod with one against the face of the brake drum or disc, and the other on the O.D. of the brake drum or disc. See Fig. 1 for indicator positioning.

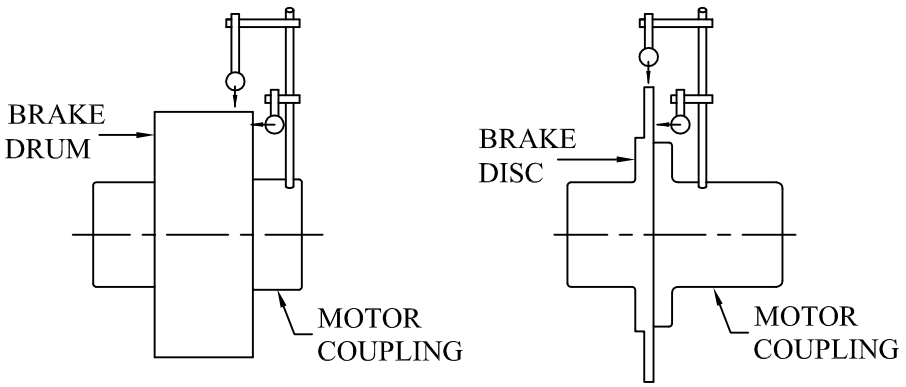


FIG. 1- INDICATOR POSITIONING

(cont'd.)

8. Turn the tram rods horizontally with the drum or disc until a "0" reading is obtained. Swing the tram rods, turning with the indicator, 180° on the brake drum or disc.

9. While taking readings of the indicators, you should tap the motor (depending on reading) as you swing 180°. They should both read "0" on the drum or disc.

10. This would indicate that the motor is straight in line with the brake drum or disc, and swinging the indicators to an upright position on top of the drum or disc, you would need to again take a reading. The indicator on the face tells you whether the back of the motor is high or low, while the indicator on the O.D. will tell you the height of the motor.

11. Adjust the shimming under the motor legs to maintain the height on the indicator from .0 to .0015. The reading on the O.D. should be from "0" to .002-. (A negative reading indicates that the motor is actually .002 high).

12. Go back and check the side reading to make sure they are still "0" readings. Swing the indicators to the top of the drum or disc to make sure they maintain .0 to .0015 on the face and that the O.D. of the drum or disc maintains "0" or .002- (high).

13. Install bolts in the motor coupling and the drum or disc, snugging them in and taking care not to overtighten.

14. Using a magnetic stand and indicator on the O.D. of the drum or disc, take a reading on the indicator to assure it is true to within "0" to .0005.

15. True reading within these tolerances can be obtained by taking a soft hammer and tapping on the positive side of the face of the drum, bringing it into the "0" to .0005 range. Tighten bolts and replace the lock nuts.

Instructions for the installation and removal of the double taper keys:

1. First press or shrink the flange or pulley on the shaft, being careful to have the keyways in perfect alignment. This may be done by putting the two keys in the keyway in the shaft, about halfway in, before the hub is started. If the flange is heated and slipped on the shaft, the two keys can be driven lightly in the keyway before the hub cools.

2. The keys are identical, but the one inserted first is referred to as key No. 1, and the other one as key No. 2. Insert key No. 1, large end first, and let it extend about one inch from the end of the shaft.

3. Insert key No. 2, small end first, and tap it lightly with a hammer to be sure the two keys are solidly together. The large end of key No. 2 should extend about 3/8 to 1/2 inch out from the small end of key No. 1. If it extends farther than 1/2 inch, mark it and cut it off. If it does not extend at least 3/8" inch from the small end of key No. 1, mark No. 1, and remove it and cut it off at the mark. This 3/8 to 1/2 inch must be maintained.

(cont'd.)

4. Now insert key No. 1 in the keyway as far as it will go. It should go 3/8 to 1/2 inch below flush. If it does not, remove it and cut off the LARGE end of the required amount. It does not matter if the distance below flush is a little greater than the 1/2 inch.

5. Remove key No. 1, and try key No. 2 in the keyway, small end first. It should go at least flush with the end of the shaft. If it does not go this far, remove it and cut off the SMALL end.

6. The necessary fitting has now been done. File or grind both ends of both keys approximately flat and chamfer all edges of the ends.

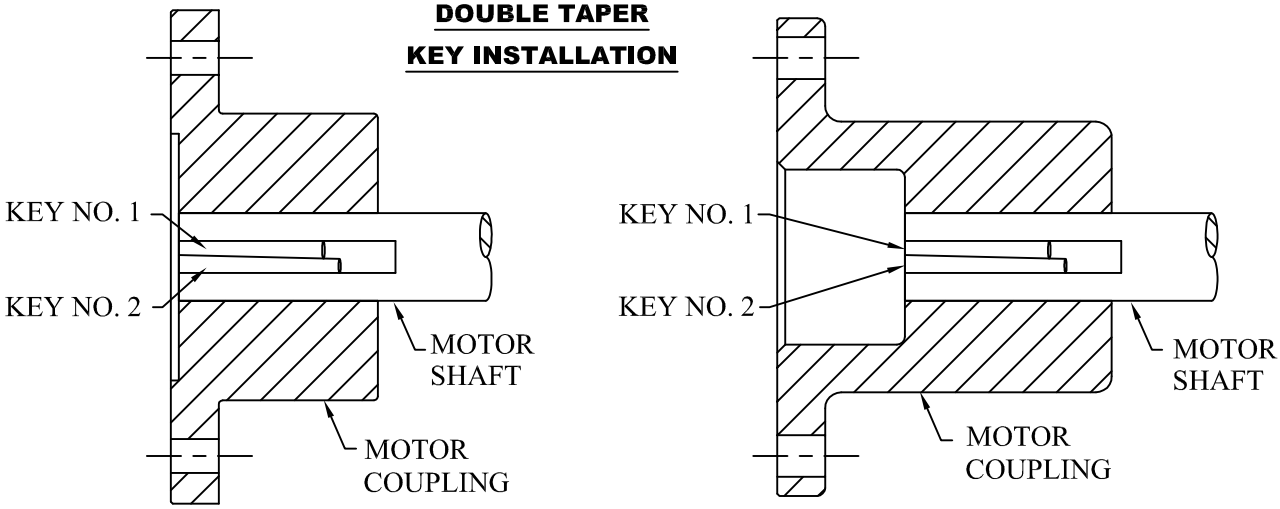
7. Dope the keys with "Never-Seez" or "Anti-Seize". Place key No. 1 in the keyway, large end first, letting it protrude about 1/2 inch. Insert key No. 2, and drive it in with a soft hammer or a soft drift until it is flush with key No. 1, then drive both keys flush with the end of the shaft. If key No. 1 creeps in as key No. 2 is driven in so it appears that No. 1 will be below flush, remove both keys and start again with No. 1 farther out. Wipe off the excess dope and the job is done.

8. To remove the keys, make a soft steel drift just the size of the exposed end of key No. 1, this is the small end of the keys. Drive key No. 1 in as far as it will go. This loosens the keys and they can be easily removed. In case the dope causes key No. 2 to stick in the groove, the keys do not need to be removed in order to get the flange off the shaft. As soon as key No. 1 is driven in, the assembly is loose and the hub can be removed without interference by the keys.

9. If the keys are not damaged in assembly or disassembly they can be used many times.

10. Fig. 2 shows the keys properly fitted and in the driven up position for drum or disc brakes.

FIG. 2-
DOUBLE TAPER
KEY INSTALLATION



MOTOR COUPLING FOR DRUM BRAKE

MOTOR COUPLING FOR DISC BRAKE