

Work execution:

Electric motors

Reliability bulletin WE 1014

Pocket-sized book saves BIG in the pocket

The SKF Bearing Handbook for Electric Motors is available from your Local Authorized SKF Distributor. Ask for SKF Publication Number 140-430. Included in this gem are twelve great tips for avoiding common mistakes, which start on Page 2 of the Handbook:

Tip #6 says: "Pay attention to the bearing's press fit. Use a press for any bearing under 4 in. O.D. Pressure should be applied only to the bearing ring with the press fit, which is usually the ring that rotates after the bearing is installed."

There are many "whys" beneath the surface of these recommendations. A press fit of the inner ring of a bearing to a shaft literally stretches the ring like a rubber band, although on a very small scale.

Using proper mechanical tools such as a fitting tool evenly distributes mounting forces across the side face of the bearing when mounting the bearing. This is fine for smaller bearings up to 4 inches (100 mm) Out-

side Diameter (O.D.). The forces required to mount larger bearings could be great enough to either damage the shaft during mounting (adhesive wear) or to crack a ring since they are generally made of through-hardened steel. There is also a risk of personal injury if a chip cracks off during mounting. Don't risk it

For bearings larger than 4 inches (100 mm) O.D., use temperature mounting. Heat the bearing or cool the shaft to achieve a 150°F (~80°C) temperature difference between the bearing ring and the shaft. When mounting bearings with a press fit in the housing the same temperature difference is required. Place the wrapped bearing in the freezer and a shop lamp in the housing. Cover with a flameproof blanket to retain the heat. In 30 minutes or so the temperature difference will be safe for mounting. Alternatively, some housings can be heated with an induction heater if the heater has the proper capacity.



Heating a bearing with an induction heater is the safest, fastest method for shaft mounting larger bearings. Ensure that the heater has temperature controls to control heat and expansion and to prevent over heating. Additionally, only use heaters that provide an automatic demagnetization cycle.

