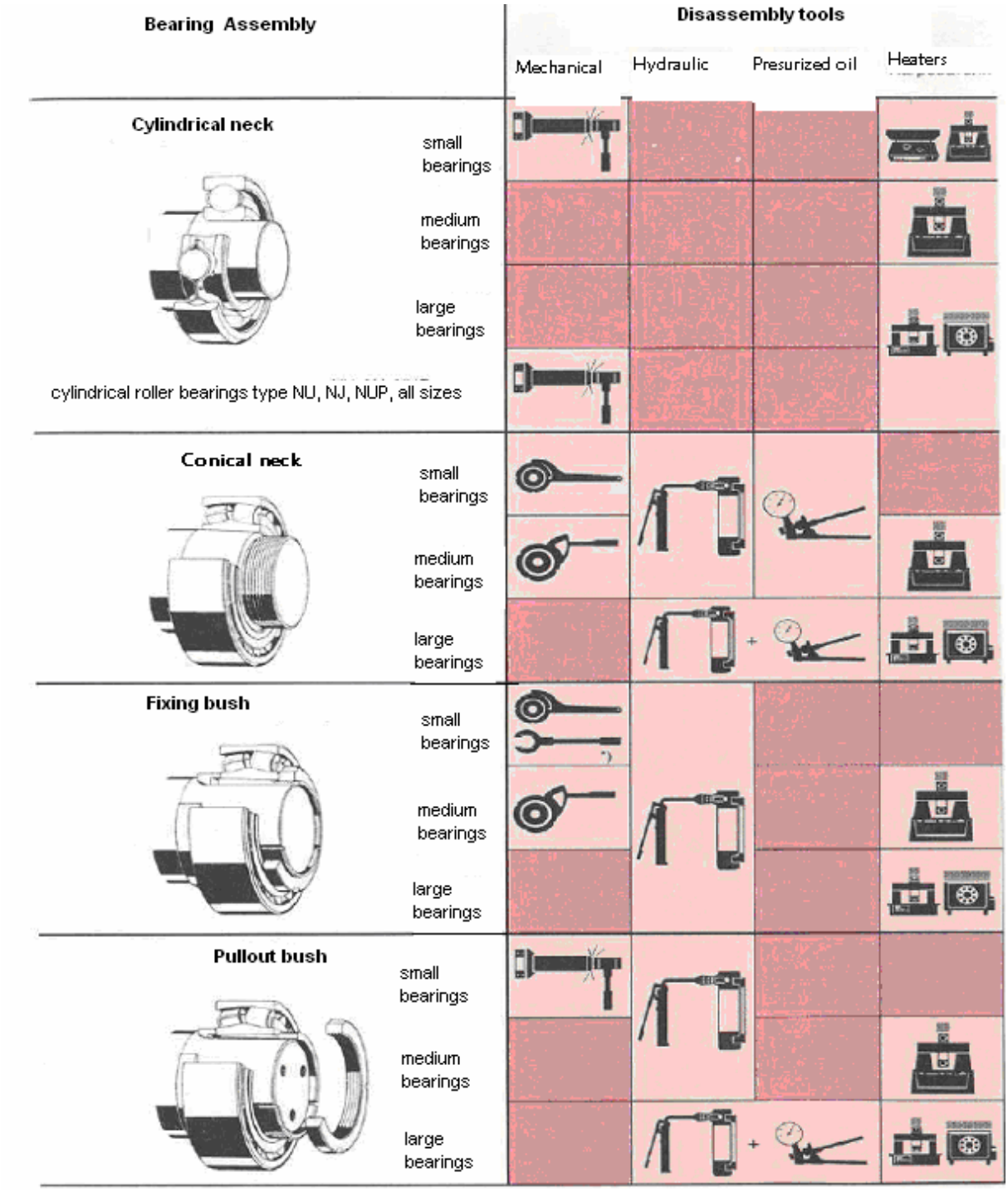
SPECIFICATIONS FOR MOUNTING AND DISMOUNTING OF ROLLER BEARINGS

Proper installation and maintenance are crucial for achieving maximum longevity of rolling bearings. Bearing failures are often due to contamination or corrosion prevention which is always cheaper than changing the camp itself.

Table. 8.1 Methods and tools for installation of molded roller bearings



Small bearings: inner diameter < 80 mm

* For self –adjusting bearings only

Medium bearings: inner diameter from 80 to 200 mm
Large bearings : inner diameter > 200 mm

To choose the right method and appropriate tools for assembly is therefore necessary to examine the correlation of geometric accuracy of the connection surfaces, which will be installed bracelets bearing assembly or detailed drawings. In table 8.1 presents the basic methods for mounting bearings and solid instruments for their implementation developed by the company SKF based on years of experience in the operation of the bearing assemblies. When mounting the bearings on the shaft using the following methods: mechanical, hydraulic (using hydraulic nuts) is done for two main circuits mounted in cold or installation with heating elements forming the assembled unit.

Small ball bearings (with inner diameter d< 80 mm) mounted with bushes, coupled with bracelets forming fixed compounds. In Fig. 8.1 is showed such a bush for mounting the inner ring, and Fig. 8.1 – b and Fig. – 8.2 – internal and external both.

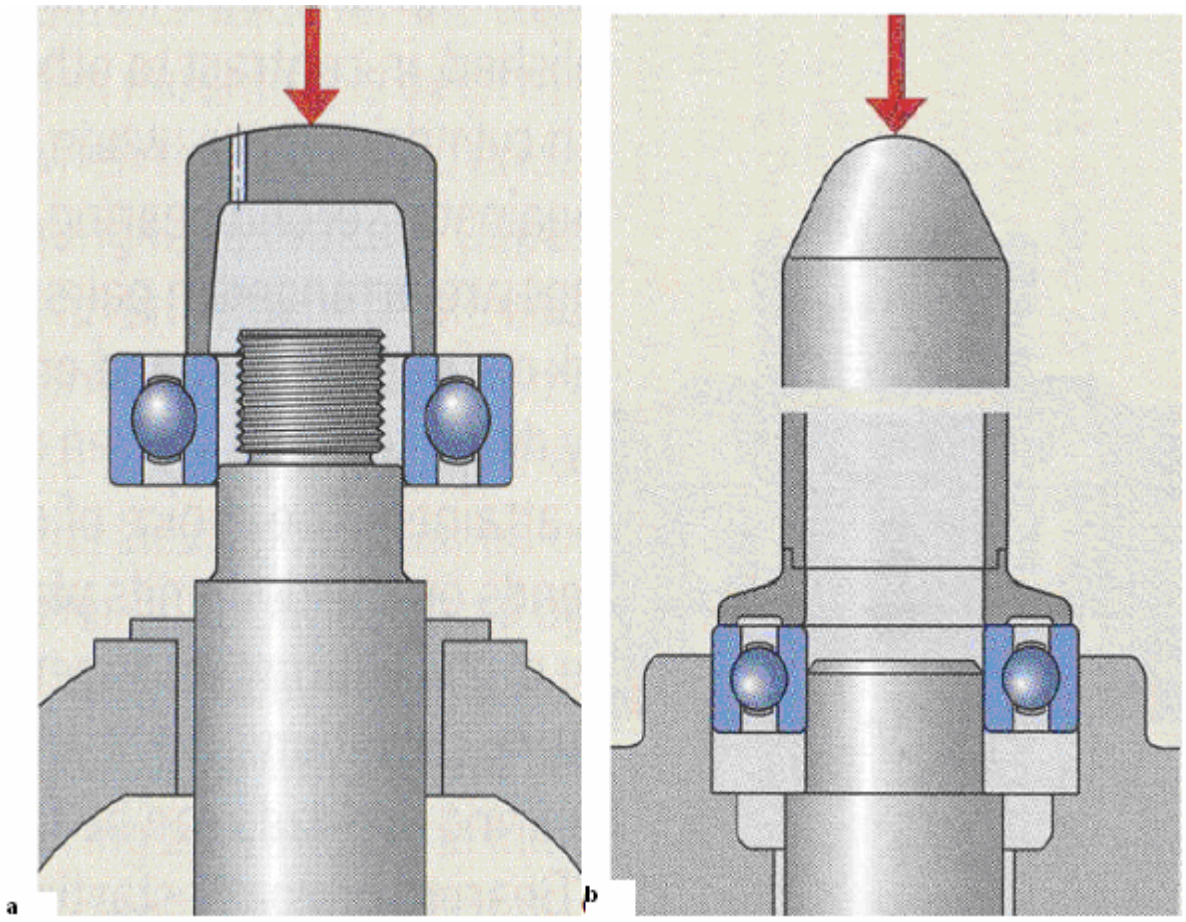


Fig.. 8.1

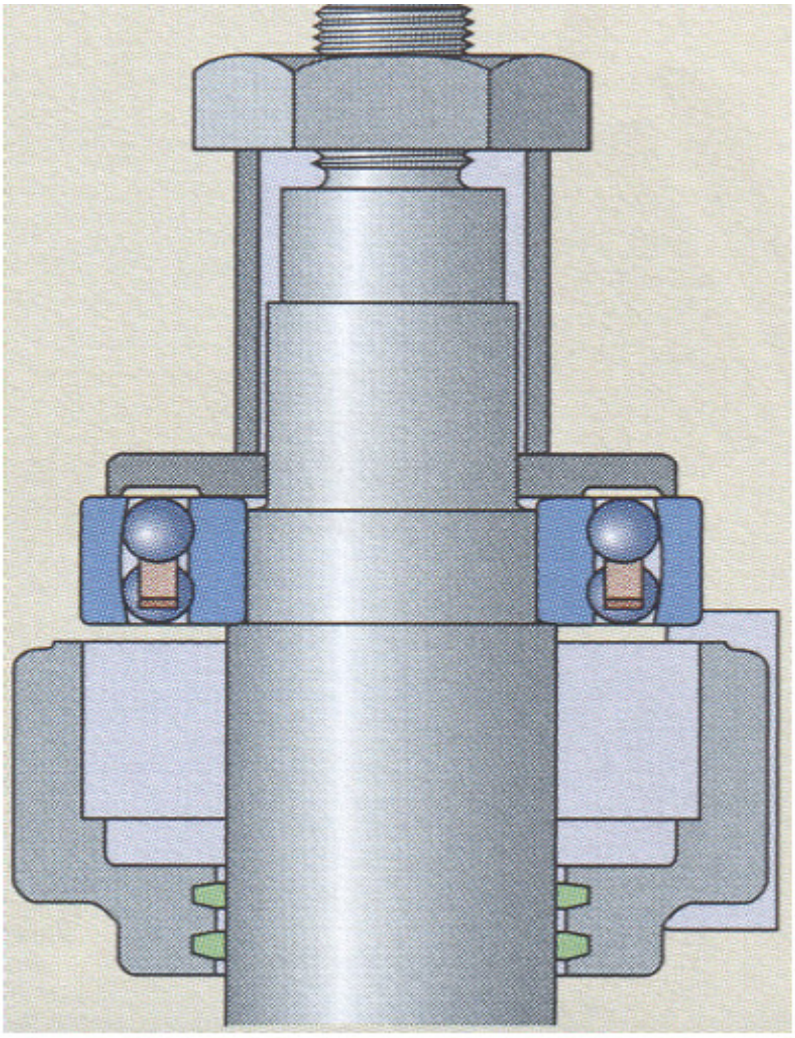


Fig. 8.2

If the design of the bearing unit allows axial force required for the formation of the compound can be realized by screw gear wrenches in Fig.8.2 or hydraulic press. Fig. 8.3

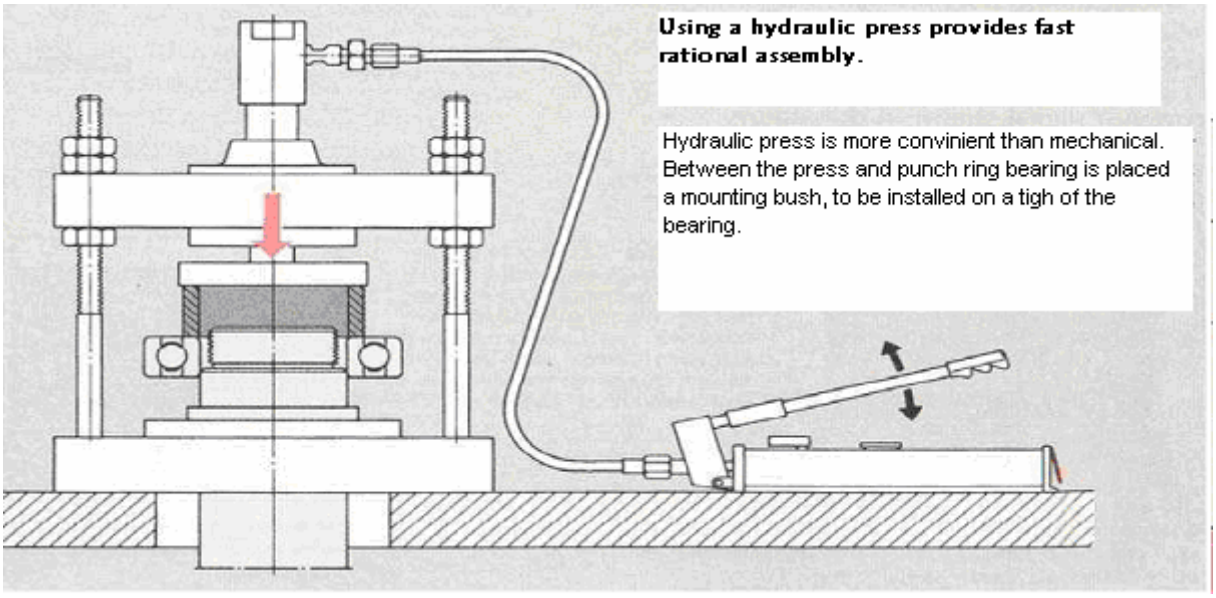


Fig. 8.3

The use of hydraulic nuts for mounting and de-installation of roller bearings, provides significant savings of time and effort. In Fig. 8.4 presents design of hydraulic nut.
When installing a large marker bearings cylindrical opening of the inner ring bearing tapered hole method is used to supply oil under pressure between the ring and shaft assembly. The oil is highly viscous and is fed through specially treated fitting holes and grooves in the shaft, Fig. 8.5.

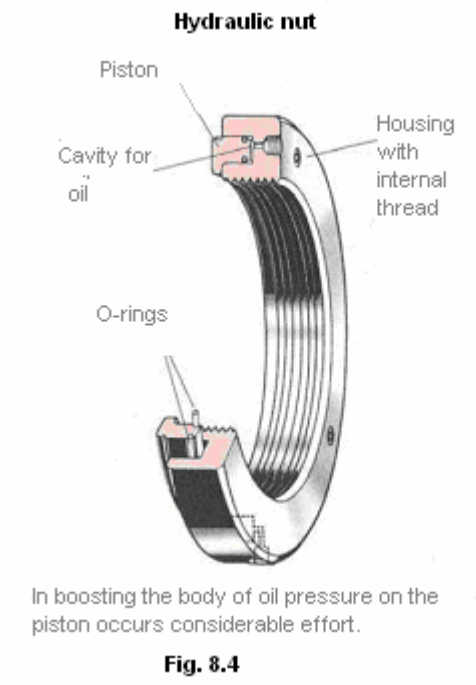


Fig. 8.4

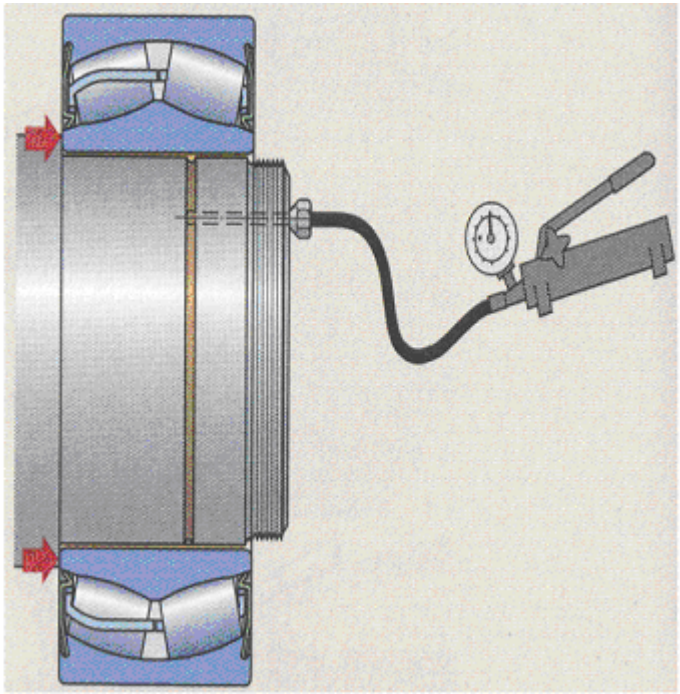


Fig. 8.5

Fig. 8.6

Temperature deformation of attachments most commonly implemented by inducers or thermal plates, the maximum temperature for heating the bearing rings is 125°C, if there are no restrictions imposed by the sealing elements in the construction of the bearing. In Fig. 8.6 is presented inductor operating on the principle of eddy current heating of the bearing rings. Inducer bracelets bearing heated to a preset temperature.
When removing bearings can be easily damaged. Not exluded contamination of the bearing unit and reinstallation errors.
As for installation and removal when bearings are used four basic types: mechanical, cylindrical, with hydro - stretching and method of heating. Choosing the appropriate instrument is a prerequisite for quality installation or dismantling of roller bearings.
Proper installation and maintenance of the bearings are crucial to reach their maximum durability. This applies also for cleanliness, proper selection of bearings and the use of appropriate tools. The bearings must be protected from dirt and moisture, properly fitted and plastered. The design of the bearing assembly, the condition of seals, type of lubricant, terms

of spreads and qualifications of staff are also very important factors for the reliability of the bearings.