

General recommendations for repair operations of a Carraro axle or transmission

(from Carraro Service Manuals)

Before starting any disassembly or assembly operations, read carefully the following recommendations.

Shafts oil seals

Observe the following recommendations during shafts oil seals assembly:

- clean thoroughly the shaft and make sure that the parts in contact with the seals are not damaged, scratched or deformed (*Fig.1*);
- do not damage the seals during the assembly of the shaft;

Fig.1

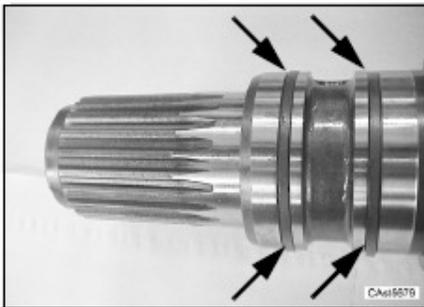
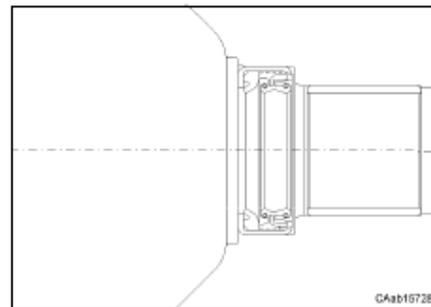


Fig.2



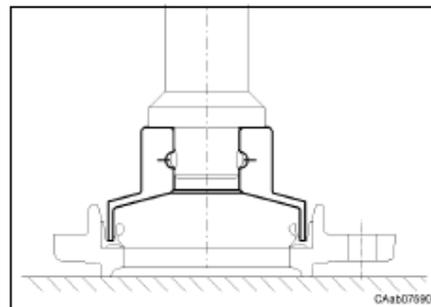
- assemble the seals so that the lip is fitted towards the oil side (*Fig.2*). There may be specific applications requiring a different assembly, you should check the existing orientation of the ring before disassembly. If in doubt contact your trusted dealer;
- lubricate seals lip (use preferably oil) or fill with grease 3/4 of seals cavity (*Fig.3*);
- use an appropriate tool to assemble the seals (*Fig.4*).

Warning: do not use a hammer directly on the seals. We recommend to use the appropriate tools specially designed and provided by CARRARO.

Fig.3



Fig.4



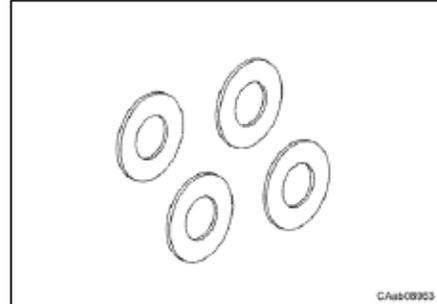
O-rings

Lubricate them properly before the introduction in their seat and avoid o-ring “rolling” during the assembly of the shaft (*Fig.5*).

Fig.5



Fig.6



Setting shims

Use appropriate setting shims, choosing the correct combination to obtain the required dimensions (*Fig.6*).

Bearings

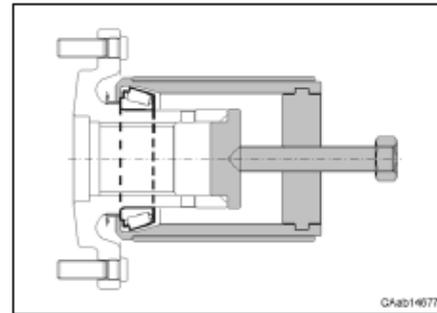
Observe the following recommendations during bearings assembly:

- before reassembly the bearings, clean, check and lubricate them;
- replace bearings showing signs of pitting or irregular rotation;
- to simplify the assembly you should warm up them in the oven at a temperature of 80-90 °C (*Fig.7*) before assembly the bearings on their respective shaft or cool them before the introduction in their seats;
- always use appropriate tools to remove and assemble the bearings (*Fig.8 – Extractor, Fig.9 – Driver*).

Fig.7



Fig.8



Spring pins

Observe the following recommendations during spring pins assembly:

- before assembling spring pins make sure the notch is oriented towards the stressing force (*Fig.10*);
- spiral spring pins do not need orientation.

Fig.9

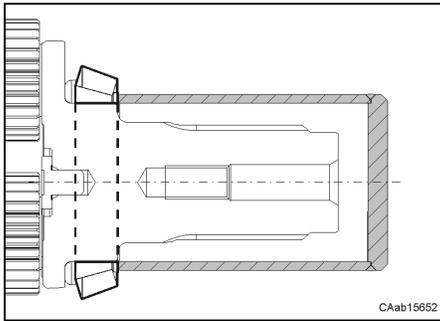
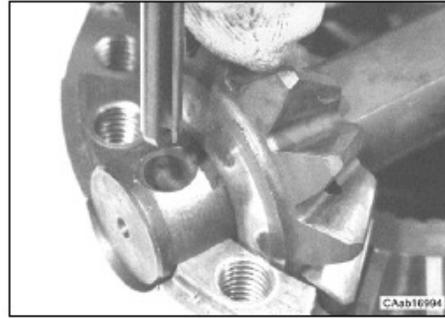


Fig.10



Cleaning

To clean the axle/transmission:

- wash accurately all moving parts with diesel fuel or kerosene;
- gasoline and watery alkaline solutions are forbidden;
- do not wash with steam or hot water, because it would be difficult to eliminate surface humidity;
- dry thoroughly all the details with an air jet or rag to avoid scratching the surface with abrasive residuals;
- after cleaning operations, all the surfaces should be covered with lubricant to protect them from future oxidation.

Checks

During the control operations of the axle/transmission observe the following recommendations:

- check all splines, assure they are not over-wear or damaged;
- replaced damaged parts with genuine spare parts;
- before the reassembly, the seals (both static and dynamic) on rotating shafts and/or closing cover must be replaced;
- examine accurately all bearings, external rings which may still be assembled on their seats or other parts with bearing function;
- replace all parts with presence of wear or damage (*Fig.11*);

Fig.11

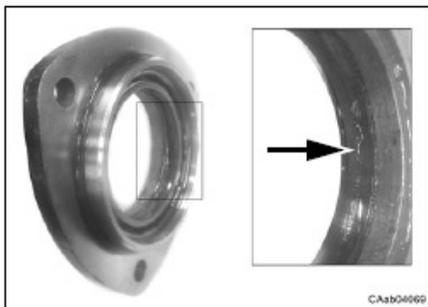
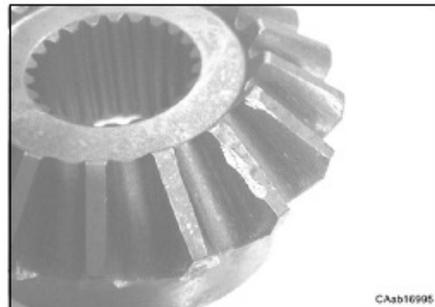


Fig.12



- check that all gears do not show damage, chipping or excessive wear of teeth (pitting or other damage) (*Fig.12*).

Ends of flanges and special tools

Be careful hammering special tools or flanges to avoid compromising the integrity or functionality of the tools and/or the components on which you are operating.