

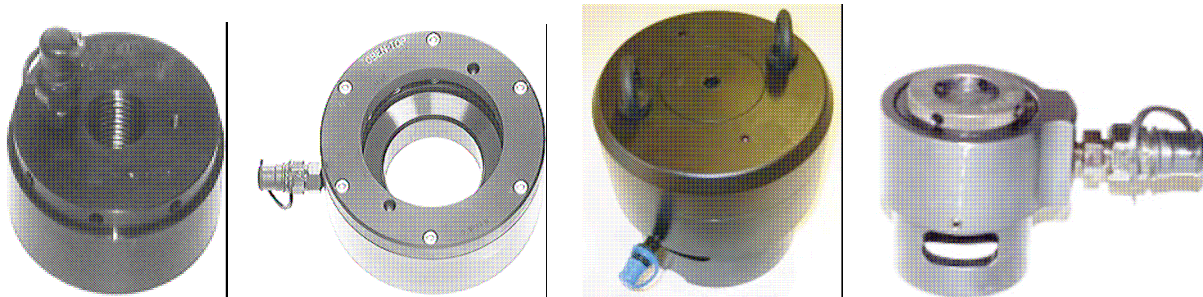
Service Information No. 14 / 08

Date: September 19, 2008

Safety Instructions for Hydraulic Clamping Devices

General

These Safety Instructions apply to all hydraulic clamping devices consisting of pump, hoses and hydraulic jack which are supplied as accessories to the MaK engines and used for work on hydraulically pretensioned screws. They describe the particular hazards stemming from the high operating pressure of the clamping devices and list the actions to be taken as protection against such hazards. The pictures below show some examples of hydraulic jacks.



1. Hazards to Man and the Environment

- Injuries caused by fragments catapulted away.
- Injuries caused by hydraulic oil emerging under high pressure.

2. Protective Measures and Rules for Appropriate Handling

- The clamping device may only be used for work on hydraulically pretensioned screws.
- The clamping device is only to be used by persons who, based on their education, job experience and function, know hydraulic components and systems.
- Use appropriate safety glasses and protective gloves.
- Use hydraulic jacks with cycle counters. If there is no cycle counter, a log is to be kept for the number of cycles.
- A maximum number of 2,000 cycles must not be exceeded. When 2,000 cycles are reached, stop working with the clamping device and send it to an authorized Caterpillar/MaK dealer for an overhaul.
- Before start of work inspect the clamping device and all connections for possible damage (sight check) and check the cycle counter or the log book.
- Release the hydraulic jack only when all connections are safely mounted.
- While pressure builds up a safety distance of at least 3 meters from the hydraulic jack is to be kept. If in spite of continual generation of pressure the pressure does not rise any more, the build-up process must be stopped immediately.

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- The operating pressure must be kept for 15 seconds before going near to the hydraulic jack again.
- During operation of the hydraulic jack it is forbidden to stay in axial direction of the tensile force.
- Do not apply any pressure exceeding the lowest nominal pressure of any of the components.
- Do not allow excessively small bending radii of the hydraulic hoses (for clamping devices supplied with engines of type M 43 these are min. 250 mm; for clamping devices supplied with all other engine types, these are min. 120 mm).
- Latest 6 years after delivery, the hydraulic hoses must be replaced regardless of how often they were used during that period. The period between two applications of the hydraulic hoses should not be more than two years.
- All hydraulic elements must be stored under dry conditions at an appropriate location (protected against UV irradiation, dust, vibration). Use anti-dust caps for the coupling parts.

3. Actions in Case of Malfunctions or Hazards

In case of irregularities, leaks, or uneven clamping process immediately stop working with the clamping device and send it to an authorized Caterpillar/MaK dealer for inspection or overhaul.

4. Servicing and Maintenance

Oil changes (1 x p.a.) as well as replacement of coupling nipples and sealing rings may be carried out by persons who, based on their education, job experience and function, know hydraulic components and systems. When tightening new coupling nipples a torque of 50 Nm must not be exceeded. All other servicing and maintenance work may only be carried out by authorized Caterpillar/MaK dealers.

5. Consequences of Non-observance

Any failure to observe the above safety instructions may lead to severe or even fatal injuries.