

	AI TAKAMUL COMPANY FOR ENGINEERING TESTS AND PROFESSIONAL SAFETY LIMITED Lifting Inspection	Doc No: QC-LIF-P-003
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Title: Inspection Procedure of Jacks		Rev: 2
Established By: Ashraf Elsaid	Position: Lifting Supervisor	Date: JULY-2022
Approved By: Ahmed Mohamed	Position: Operation Manager	

Inspection Procedure of Jacks

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1. YOUR SAFETY IS FIRST:

Your safety wear is mandatory at job sites including in general: suit, shoes, helmet, gloves, ear plugs, glasses, and mask.

2. SCOPE:

This procedure covers the inspection and testing of mechanical and hydraulic jacks.

3. PRODUCT/ MANUFACTURE STANDARDS:

BS EN 1494: 2000 + A1:2008	<i>Mobile or movable jacks and associated lifting equipment</i>
AS/NZS 2693:2007	Vehicle jacks
B30.1 - 2020	Jacks, Industrial Rollers, Air Casters, and Hydraulic Gantries

4. DEFINITION OF JACKS:

A jack is a mechanical lifting device used to apply great forces or lift heavy loads.

A **mechanical** jack is a jack in which the load is moved by means of mechanical devices, e.g. rack and pinion jack, screw type bottle jack or mechanical elevator such as a mechanical transmission jack. The jack can also be equipped with claws.

A **hydraulic** jack is a which the load is moved by means of hydraulics.

5. INSPECTION:

Inspection intervals of jacks shall not exceed twelve months.

The jack shall be inspected to ensure that it is structurally sound and all the functions of the jack can be safely and correctly carried out.

For inspection of jacks, the general requirements are as follows:

- Check the correct operation of the controls
- Check that the safety devices are functioning as intended
- Operate the **unloaded** jack through one complete cycle
- Place the WLL distributed as specified by the manufacturer on the jack and operate it through one complete cycle. Record the maximum operating pressure in steady state for hydraulic and pneumatic drives.
- Record the time taken to fully lower the jack while carrying the WLL. The average speed shall not exceed 0,15 m/s.
- Leave the jack, still carrying the WLL, fully raised for 10 min. Measure and record the vertical descent of the jack in this time. Generally, this descent shall not exceed 2 mm. On hydraulic jacks using mechanical linkages (e.g. trolley jacks) a maximum descent of 5 mm is admissible

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Visually inspect jacks for the following:

General: Inspect jacks for

- Body: Damaged, cracked, or distorted.
- Base: cracked, distorted, or does not sit solidly on the floor.
- Bent or cracked operating level/handle.
- Cracked or distorted toe or claw attachment.

For Hydraulic jacks, check jacks for oil leakage, any distortion or nicks in the ram, the operation of the release valve.

The following figure shows examples of possible defects in hydraulic jacks:

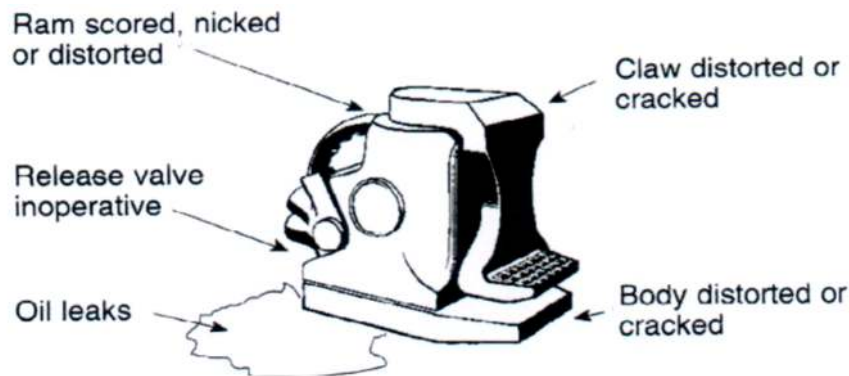


FIGURE (1): Inspection points and possible defects of hydraulic jacks

For mechanical jacks, check the rack teeth and screws for wear or corrosion or any sign of damage, and check swivel head.

The following figure shows examples of possible defects in mechanical jacks:

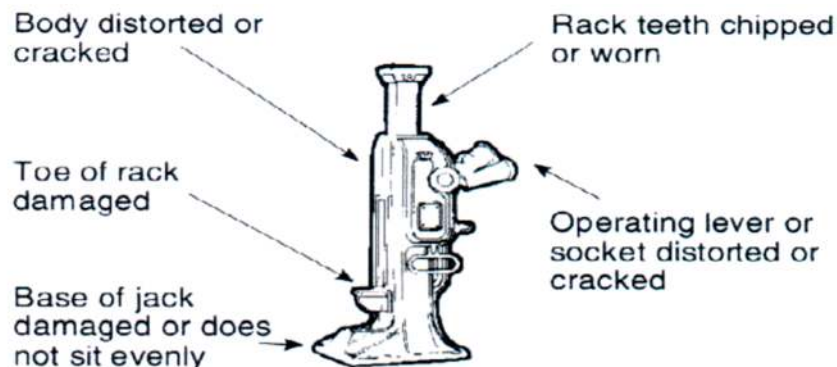


FIGURE (2): Inspection points and possible defects of mechanical jacks

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6. EXAMINATION:

The examination of a hydraulic jack will always include some form of test, usually with a load imposed on the jack. Functional tests, with a light load will be helpful in confirming the correct function of the jack. A load test at the rated capacity, lifted through the full range of lift, then held for a period of time will help to reveal faults and defects within the hydraulic system, e.g. leaking seals or valves not operating correctly, which might not otherwise be apparent.

7. MARKING:

Every jack shall be marked permanently and legibly on a non-removable part of the device with the following information:

- Manufacturer name and address;
- Product code;
- Serial number or batch code;
- Year of manufacture;
- WLL;
- Where the WLL depends on the configuration of the jack the WLLs shall be shown for each configuration on a load plate, preferably in diagrammatic form or by means of tables;
- All necessary hydraulic supply information if an external hydraulic power supply is used;
- All necessary pneumatic supply information if an external pneumatic power supply is used;
- All necessary electrical supply information if an external electric power supply is used;
- Hint to residual risks.

If the item is not already marked, it shall be clearly stamped or marked with an identification number and if the test is satisfactory, the WLL and date of the test.

8. REPORTING AND CERTIFICATION:

A certificate of test and thorough examination will be issued upon the satisfactory completion of the examination, i.e. the lifting equipment is safe to operate

A defect report will be issued if the lifting equipment fails to meet the requirements.

9. Inspector Competency and Qualification:

Inspector shall have minimum qualification of LEEA Foundation – LEEA Lifting Equipment General- LEEA Lifting Machines Manual