

Test manual for vertical conveyors

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This manual describes how to perform the mandatory overload tests for hoisting and lifting machines on a Qimarox vertical conveyor.

This manual is an “Original manual” and was originally written in the English language and was issued by:

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Overload Test

The Machinery Directive requires a static and dynamic overload test for hoisting and lifting machines in appendix I – 4.1.3 before it is put into service

This must be done on all ready-to-use hoisting and lifting machines, even after they have been reassembled, for example.

For the following Qimarox products this test manual must be used : **Prmk1, Prmk9, Prmk10, PR11** and **PR12** .

The continuous vertical conveyor PRmk5 and the Pallet (de)stackers PDx have their own test manuals.



CAUTION

Make sure you use the correct version of the test manual for the machine. The correct version is found in the Specification sheet of the machine.

Safety

Think about your safety

- Follow the safety instructions in the vertical conveyor user manual.
- Check at that the vertical conveyor is electrically properly connected. Note that the connection in star or delta is prescribed in the specification sheet.
- Only a qualified person may test the machine. A qualified tester has experience with operating machinery and lifting and hoisting machinery and is familiar with the contents of this manual. The tester must be informed about the contents of the user manual and the operating manual.
- If area fencing and other safety features are not in place, take adequate precautions against hazards from moving parts and potential energy from gravity.
- Never go under the carrier.

- Make sure that the test weight cannot move or fall, also due to possible failure of machine parts.
- Make sure that you and others cannot be hit by any falling test weight or falling machine parts.
- Make sure machine is anchored as prescribed in the machines user manual. If not, ensure that the stability of the machine is not compromised by the tests.
- Hold the carrier close to the bottom position during the static test.

Test data

The test data can be found in the specification sheet of the vertical conveyor “ Test to verify the integrity of lifting machinery”.

- Check whether the data on type plate and “max. load” sticker match the test data.
- If the conveyor on the carrier has not been supplied by Qimarox, check the dead weight of the conveyor. **Contact Qimarox if the conveyor is heavier than indicated in the test data before performing the test.**

Static overload test

The static test is performed first. When stationary, the carrier of the machine is loaded with a weight of 1.25x the maximum working load. The aim is to see whether the mechanical strength of the machine is sufficient. The machine must be able to withstand the test without permanent deformation or apparent defect.

The static test weight (static test load) can be found in the specification sheet of the vertical conveyor under “ Static overload test”.

The position of the center of gravity of the test weight must correspond to the most unfavorable position of that of the load as it may occur.

The environment in which it is tested must correspond to the operating conditions stated in the machine's specification sheet.

The working order is:

1. Inspect the machine.
2. For a carrier with automatic safety pins: Move the carrier near the bottom position. When doing so, ensure that the underside of the automatic safety pins or pawls is a few inches clear of the underside of the openings in the safety profile. For the test, the carrier must be carried by the drive's brake only.
3. For a Prorunner mk1: insert the manual safety pin into the column, leaving the carrier a few inches clear of it. For the test, the carrier must be carried by the drive's brake only.
4. For a Prmk10-PS: Lift the nominal workload a few inches up. ensure that the underside of the automatic safety pins or pawls is a few inches clear of the underside of the openings in the safety profile.
5. Place (the rest of) the static test weight on the carrier.
6. Check that the carrier is still not resting on the safety pins. If so **STOP** and remove the test weight, raise the carrier slightly and start over.
7. Remove the test weight from the carrier.
8. Inspect the machine for permanent deformations or apparent defects. If these are not found, the test is passed. When permanent deformations or apparent defects are found contact Qimarox.
9. For an Prorunner mk1: Remove the safety pin from the column.

Dynamic load test

The dynamic test is performed after a successful static test. The carrier of the machine is loaded with a weight of 1.1x the maximum working load and moved. The aim is to see whether the machine can perform its function. The machine must be able to pass the test without failure.

The dynamic test weight (dynamic test load), speeds and accelerations can be found in the specification sheet of the vertical conveyor under “ Dynamic overload test”

The position of the center of gravity of the test weight must correspond to the most unfavorable position of that of the load as it may occur.

The environment in which it is tested must correspond to the operating conditions stated in the machine's specification sheet.

The working order is:

1. Inspect the machine.
2. Turn on the machine.
3. Check that the speeds and gears are set correctly.
4. For a Prmk10 under a palletiser: Open stacking plates manually.
5. Move the vertical conveyor with empty carrier at the specified speeds and accelerations for at least one complete conveying cycle.
6. Place the dynamic test weight on the carrier.
7. Move the test weight vertical conveyor at the specified speeds and accelerations for at least one full conveying cycle.
8. Switch off the machine, switch off the main power switch and lock it with a padlock.
9. Inspect the machine. If there are any defects or problems: **STOP** go to step 17.
10. Turn on the machine.
11. Move the test weight vertical conveyor at the specified speeds and accelerations for at least one full conveying cycle.
12. Hit an emergency stop while the carrier moves down at the high speed.
13. Switch off the machine, switch off the main power switch and lock it with a padlock.
14. Remove (if possible) the test weight from the carrier.
15. Inspect the machine.
16. The test has passed successfully when:
 - no permanent deformations or apparent faults are found
 - all functions have been performed successfully
17. When permanent deformations or apparent defects are found contact Qimarox.
When functions could not perform successfully, first check the controls and the accelerations and speeds of the machine. If that gives no solution, contact Qimarox.

Documentation

If the test has been passed successfully, the person who performed it must fill out and sign the test statement. The test statement can be found in the specification sheet of the vertical conveyor under “ Static overload test”.

The test statement must be sent to Qimarox and be kept with the vertical conveyor's documentation.