

Quality manual		
Intercomparisons on calibration objects in weighing	Issue 1	
Approved by Håkan Källgren	Date 2021-08-31	Page 1 (5)

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Planning of a calibration intercomparison with the calibration objects in the weighing area. There is also a possibility to participate in reverification (återkommande kontroll) on the same instruments.

Proficiency testing provider (PT)

Swedish Metrology and Quality AB (SMQ) is organising this intercomparison on calibrations and reverification.

List of objects

1. Truck scale 60 ton (6*12 meters), concerning calibration
2. Truck scale 60 ton (6*12 meters). concerning subsequent verification
3. Front wheel loader 10 ton concerning calibration
4. Front wheel loader 10 ton, concerning subsequent verification
5. Front wheel loader 30 ton, concerning calibration

For each situation there will be separate reports published on calibration and reverification. The report related to reverification is issued outside the accredited scope.

Participants may choose which of the objects they want to participate in for calibration and reverification.

This concept of the intercomparison on calibration has been decided by the advisory group related to this calibration areas. No subcontractors are involved in the intercomparison.

Participants in the intercomparison

There are three categories of laboratories that may participate in this comparison:

- Accredited laboratories
- Laboratories that will apply for accreditation.
- Laboratories that want to evaluate their calibration quality.

The result of the intercomparison will establish a base for the CMC values in calibrations for the laboratory

The number of participants is minimum 4 and maximum 10.

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Description of the instruments included in the intercomparison.

The following objects will be calibrated by a reference laboratory and will have a CMC level of:

- Truck scale 60 ton \pm 10 kg
- Front wheel loader scale \pm 10 kg

The objects calibrated by a reference laboratory will get their intercomparison reference value and its belonging uncertainty based on the calibration in the reference laboratory with a calibration performed before and possibly after the participants.

Time schedule and detailed documented instructions

All calibrations and verifications will be done at a place in Eskilstuna during week 38.

A detailed time schedule and technical instructions together with the reporting protocol in form of an excel document will be sent to the participants who have registered to the ILC.

Each participant will have access to the weighing instruments for maximum 4 hours and use its own method for calibration. A detailed planning will be sent to the participants who have registered to the ILC.

Preliminary data from the calibration shall be sent to the organiser by e-mail directly after finishing the measurements. Preferably the prepared excel protocol form should be used directly and send it in pdf-format.

Calibration site

Volvo Construction Equipment

Technical Center Reception Bolindervägen 5, 63510 Eskilstuna

The organiser (Håkan Källgren) will be present during the ILC and supervise the practical parts of the work.

Calibration points

The participants shall calibrate according to their own method and use their reference equipment. This implies that they are limited in the number of calibration points. For the comparison it is recommended to use all points that are available, and all will be evaluated.

Calibration points on the truck scale:

- 4 ton
- 10 ton
- 20 ton
- 40 ton
- 60 ton
- Eccentric loads on all 6 supporting points

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Calibration points on front wheel loaders:

- 20 % of Max
- 50 % of Max
- 100 % of Max
- 4 different tilting's
- Slow movement of the bucket
- Fast movement of the bucket
- Eccentric loading in 2 positions
- Slow driving of the loader
- Fast driving of the loader

Statistical analyses that will be used

The organiser is arranging to have a reference value that will be used in the calculations as described in ISO/IEC 17043:2010 annex B5 which gives En-values for each part of the calibration exercise.

Reporting

Participants shall send the calibration certificate or reports to the organiser within one week after the calibrations and tests are finished. The final documentation should have exactly the form you are used to and shall be sent as pdf-file after finalizing the work.

A draft report will be given to the participants within 4 weeks from the time when the last participant has reported the results in a calibration certificate.

The participant has the possibility to comment on the draft report within two weeks after receiving it.

A participant not following the described reporting rules without giving reasons will be excluded from the report.

A participant may decide to leave the work before the draft report is distributed to the participants. The results will not be a part of the report in that case. Nothing will be withdrawn from the draft report when the report is distributed to the participants.

The participant may however appeal to the full report if there are major faults in the report.

The report will be anonymously, and the participants will get an identification code related to the results in a separate e-mail. In this way each participant can only identify its own results.

Damaged PT item

The participant shall immediately inform the organiser about any damages on the PT item and the organiser will take appropriate actions.

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Price for participation

Price for laboratories:

- Basic price 22 000 SEK
- In addition, 2 000 SEK on each calibration certificate as defined in the listed objects above.
- In addition, 2 000 SEK on each reverification report as defined in the listed objects above

If the participant decides not to fulfil their part of the agreement the basic price shall be paid.