CALIBRATION INSTRUCTIONS SSS

Attention: all calibration actions must take place at the reference height.

The indicator offers the possibility to enter a maximum of three calibration points (multiple point calibration). The advantage is that even weighing systems with bad hysteresis can be calibrated within specifications.

Since these instructions are often used in the field, where it is difficult to calibrate various points, we will start with the explanation of single point calibration.

POSSIBILITIES
There are two different ways to calibrate the system. In both cases a zero calibration should be performed before the calibration takes place.

1. Two point calibration (calibration weight 1000kg to 1500kg).
   This is a zero calibration and 1 weight calibration at about 50% to 75% of the capacity of the weighing system.

2. Multi-point calibration for weighing systems with accuracy problems (calibration weights about 200kg, 1000kg and 1500kg).
   This is a zero calibration + three weight calibrations at about 10%, 50% and 75% of the capacity of the weighing system.

DEFINING ZERO

- Unload the system.
- Switch the system on.
- Lift the system to the reference height.
- Push the >0< key for about 8 seconds.
  - The display counts down from AF 08 to AF 00.
  - The indicator shows which percentage of the total capacity has been zeroed, e.g. AP 6.4. This percentage should not be higher than 50.
  - The zero point has now been defined, the system automatically returns to standard weighing mode.

1. TWO POINT CALIBRATION

The weighing system should be turned on and the zero calibration should already be completed.

- Press the ▼ key for 20 seconds.
  - The indicator shows the value of the first calibration point, the NET pointer is flashing.
  - Use the ▼, ▲ and ▼ keys to enter the correct calibration weight.
- Press the ▼ key shortly, the right segment starts flashing.
- Use the ▼ or ▲ key to set the first calibration weight (eg. for 1472 kg, set to “2”).
- Press the ▼ key shortly to confirm, now the second segment is flashing.
- Use the ▼ or ▲ key to set this to “7”.
- Press the ▼ key shortly to confirm, now the third segment is flashing.
- Use the ▼ or ▲ key to set this to “4”.
- The thousands segment should be set, if necessary, to “1”, in the same way as the previous segments.
- Confirm all other segments with ▼ until the NET pointer is flashing.
- Lift the calibration weight (in the above mentioned example 1472kg).
- Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The first calibration value is displayed.
- Press the ▼ key, the ~ pointer is flashing, the middle calibration value should be set to “00000” for a two point calibration.
- Press the ▼ key shortly, the right segment starts flashing.
- Use the ▼, ▲ and ▼ keys to set the middle calibration weight (00000kg) as described above.
  - Confirm all segments with ▼ until the ~ pointer is flashing.
Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The middle calibration value is displayed.

Press the ▲ key, the NET + ~ pointers are flashing, the last calibration value should be set to “00000” for a two point calibration.

Press the ▼ key shortly, the right segment starts flashing.

Use the ▼, ▲ and ▼ keys to set the middle calibration weight (00000kg) as described above. Confirm all segments with ▼ until the NET + ~ pointers are flashing.

Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The last calibration value is displayed.

Press the ▲ key to leave the calibration mode, the weigh systems displays eg. AP 11 (internal value).

Press the ▼ key for about 4 seconds, the system returns to standard weighing mode, shows the actual weight on the forks, the calibration is completed and the calibration load can be lowered.

or: MULTI-POINT CALIBRATION

The weighing system should be turned on and the zero calibration should already be completed.

Press the ▼ key for 20 seconds.

The indicator shows the value of the first calibration point, the NET pointer is flashing.

Use the ▼, ▲ and ▼ keys to enter the correct calibration weight.

Press the ▼ key shortly, the right segment starts flashing.

Use the ▼ or ▲ key to set the first calibration weight (eg. for 250 kg, set to “0”).

Press the ▼ key shortly to confirm, now the second segment is flashing.

Use the ▼ or ▲ key to set this to “5”.

Press the ▼ key shortly to confirm, now the third segment is flashing.

Use the ▼ or ▲ key to set this to “2”.

The thousands segment should be set, if necessary, to “0”, in the same way as the previous segments.

Confirm all other segments with ▼ until the NET pointer is flashing.

Lift the calibration weight (in the above mentioned example 250kg).

Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The first calibration value is displayed. The first calibration weight can be lowered.

Press the ▲ key, the ~ pointer is flashing, the middle calibration value can now be entered.

Press the ▼ key shortly, the right segment starts flashing.

Use the ▼, ▲ and ▼ keys to set the middle calibration weight (eg. 1250kg) as described above. Confirm all segments with ▼ until the ~ pointer is flashing.

Lift the calibration weight (in the above mentioned example 1250kg).

Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The middle calibration value is displayed. The middle calibration weight can be lowered.

Press the ▲ key, the NET + ~ pointers are flashing, the last calibration value can now be entered.

Press the ▼ key shortly, the right segment starts flashing.

Use the ▼, ▲ and ▼ keys to set the last calibration weight (eg. 1875kg) as described above. Confirm all segments with ▼ until the NET + ~ pointers are flashing.

Lift the calibration weight (in the above mentioned example 1875kg).

Press the ▼ key for about 4 seconds to confirm. The display counts down to “AF00”. The last calibration value is displayed.

Press the ▲ key to leave the calibration mode, the weigh systems displays eg. AP 11 (internal value).

Press the ▼ key for about 4 seconds, the system returns to standard weighing mode, shows the actual weight on the forks, the calibration is completed and the calibration load can be lowered.

Attention: When a weighing system is calibrated using the multi-point calibration, the smallest weight should be used first, then the middle weight and finally the largest weight. If only 1 calibration weight is used, then values 2 and 3 must be set to “00000”. 
Calibration and test procedure for Hu-Lift Single Sensor System

*Only for pallettruck with 75 mm forks height for USA market*

1. **Sensor position:**

   13 mm right from the middle of the head of the pallettruck

   - The upper surface of the head of the pallettruck must be flat and without painting
   - The sensor must be mounted tightly

2. **Reference height:**

   The reference height is 140 mm. Use this height accurately during:
   - calibration
   - weighing

   Mount the indication arrows on the pallettruck. When the arrows are in line, the height of the forks must be exactly 140 mm!
3. Recommendations for calibration and testing:

- always perform calibration on a flat and stable surface
- use an accurate and easy to use measurement tool to measure the reference height
- use a stable, flat pallet for calibration!
- use accurate calibration weights of 500, 1000 and 2000 kg
- position the weight centrally on the pallettruck:
4. Calibrating the weighing system:

**STEP 1: Heavily loading the weighing system:**
1. After mounting the sensor, lift a weight of 2000 kg
2. Move the lever to left and right to create dynamic forces to really load the system heavily.

**STEP 2: Zero calibration (with pallet):**
1. Pick up an empty pallet with the pallettruck.
2. Lift the pallettruck from lowest position to the reference height
3. Do zero calibration

**STEP 3: 500 KG calibration:**
1. Load the same pallet with 500 kg
2. Lift the pallettruck from lowest position to the reference height
3. Do calibration
**STEP 4: 1000 KG calibration:**
1. Load the same pallet with 1000 kg
2. Lift the pallettruck from lowest position to the reference height
3. Do calibration

**STEP 5: 2000 KG calibration:**
1. Load the same pallet with 2000 kg
2. Lift the pallettruck from lowest position to the reference height
3. Do calibration

**STEP 6: Zero check (with pallet):**
1. Remove all calibration loads from the pallettruck
2. Lift the pallettruck with the pallet from lowest position to the reference height
3. The display should show “0 kg” (+/- 5 kg is allowed)
4. If OK, then continue with step 7
   If not OK, check if the sensor is mounted correctly and start again from step 1
**STEP 7: Final zero calibration (without pallet)**

1. Remove the pallet from the pallettruck
2. Lift the empty pallettruck from lowest position to the reference height
3. Do zero calibration
5. Testing the weighing system:

Corner test
- Lift the pallettruck to the reference height.
- Stand on each corner of the pallettruck.
→ The difference between the four corners may not be more than 10 kg.

Testing with different weights
- Do a weighing with 500, 1000, 1500 and 2000kg close to the body (position 1):
→ The allowed tolerance is +/- 20 kg

<table>
<thead>
<tr>
<th>Load</th>
<th>Tolerance ( +/- 20 kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>480 - 520</td>
</tr>
<tr>
<td>1000</td>
<td>980 - 1020</td>
</tr>
<tr>
<td>1500</td>
<td>1480 - 1520</td>
</tr>
<tr>
<td>2000</td>
<td>1980 - 2020</td>
</tr>
</tbody>
</table>

Position 1: Front loading

- Also do a weighing with 1000 kg at the tips of the forks (position 2):
→ Difference between front loading and rear loading may not be more than 25 kg

Position 2: Rear loading