# 6 Routine checks

All SmartFlow milk meters must be validated regularly, preferably annually, to ensure the accuracy of the milk yield data.

The validation can be done by checking the auto calibration (recommended method) or alternatively, by checking the Zero Point test:

- Statistical routine check (page 36)
- Alternative routine check (page 37)

## 6.1 Statistical routine check

The SmartFlow milk meters can be validated by checking the auto calibration results of the milking points.

### Conditions

All of the following conditions must be met to enable the use of this test. When not all conditions are met, this test **cannot** be used.

- There must be accurate animal identification in the milking parlor.
- The animals are sufficiently mixed over the different milking points.
- The Nedap equipment in the milking parlor (animal identification and all SmartFlows) must have functioned without any problems or changes **for at least 21 days** , so that the data are representative and reliable.

The procedure that must be followed depends on the data in the SmartFlow settings report:

1. In Velos go to **Reports > Milking > Smartflows**.
2. Select the range of milking points that must be validated and click **Ok**.
   A report is displayed with the current SmartFlow statuses. The column "Validation - Status" shows if the SmartFlows are still measuring sufficiently.
3. Check the status of all milking points in the report:
   - Status **Ok** for all milking points: Go to step 7.
   - Status **Not ok** for one or more milking points: Go to step 4.
4. Check the SmartFlow milk meters with the status **Not ok** in the milking parlor:
   - Malfunction not found: Go to step 5.
   - Malfunction found: Go to step 6.
5. When the malfunction of the SmartFlow milk meters is unknown:
   a. Recalibrate the SmartFlow milkmeters (see Calibrate the SmartFlow (page 32)).
   b. In Velos go to **Settings > Milking > Smartflow settings** and select the milking parlor.
   c. Go to the tab **Overview**.
   d. Enter a remark about the recalibration.
   e. Click **Submit**.
   f. Go to **Reports > Milking > Smartflows**.
   g. Select the range of milking points that must be validated and click **Ok**.
   h. Go to step 7.
6. When the malfunction of the SmartFlow milk meters is known:
   a. Fix the malfunction of the milk meters.
   b. When the malfunction included replacement of the SmartFlow Float:
      1. Run the Zero Point Test (see Zero Point test (page 29)).
      2. Calibrate the SmartFlow (see Calibrate the SmartFlow (page 32)).
      3. Proceed with step 6d.

c. When the malfunction did not include replacement of the SmartFlow Float, check if recalibration is necessary:

| Malfunction | Recalibration |
|---|---|
| Housing defect | Yes |
| Housing dirty | No |
| Cleaning valve defect | No |
| Housing is tilted | No |

   1. If recalibration is required: Follow the procedure in Calibrate the SmartFlow (page 32) and proceed with step 6d.
   2. If recalibration is not required: Go to step 6d.

d. In Velos go to **Settings** > **Milking** > **Smartflow settings** and select the milking parlor.
e. Go to the tab **Overview**.
f. Enter a remark about the malfunction of the SmartFlow.
g. Click **Submit**.
h. Go to **Reports** > **Milking** > **Smartflows**.
i. Select the range of milking points and click **Ok**.
j. Go to step 7.

7. Send the SmartFlow report to the certifying organization.

# 6.2 Alternative routine check

When the auto calibration method cannot be used, the Zero Point test can be used as an alternative method for the validation check of the SmartFlow milk meters.

## Clean the milk meters

1. Run a complete cleaning cycle to clean the SmartFlow milk meters.

## Start the Zero Point test in Velos

1. In Velos, go to **Settings** > **Milking** > **Smartflow settings**.
2. Select the milking parlor.
3. Go to the tab **Zero Point Test**.
4. Click on the **Start all** button.

   ***Caution***
   *All SmartFlow milk meters must be tested annually!*

5. The message **Ready for new run** is displayed for all milking points that are tested.
6. Continue with Execute the Zero Point test in the milking parlor (page 30)

## Execute the Zero Point test in the milking parlor

1. Decouple the milk inlet tube from the milk claw.
2. Install an air compressor on the vacuum inlet (**max. 300 mbar**).

   ***Warning***
   *Do not exceed this pressure to avoid damage to your installation!*

3. Pour drinking water in the milk inlet tube (minimum flow of 5 L/min and for at least 5 seconds)

   *The temperature of the drinking water must be ca. 10 °C (50 °F)*

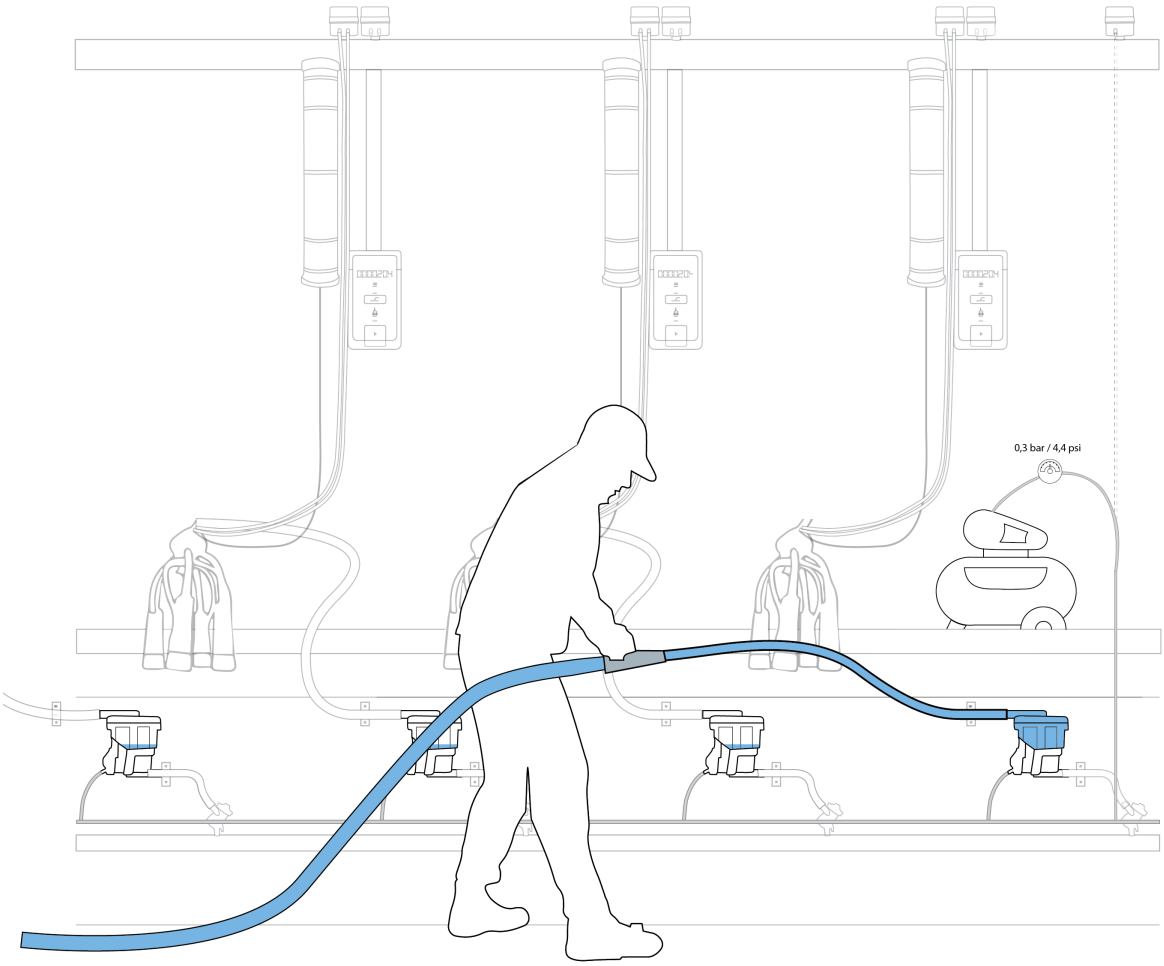


*Figure 6: Pouring water in the milk inlet tube*

4. In Velos the message **Run in progress..** is displayed.

   *a. The progress of the 5 runs of the Zero Point test is shown between brackets (x/5).*

   *b. If the test needs to be stopped while running, click on the **Stop** button.*

5. A test run is completed when the message **Ready for new run** is displayed.
6. Repeat step 3 and 4 four times.

   ***Caution***
   *The total Zero Point test session consists of five consecutive runs, with at least 3-minute intervals.*

7. For each tested milk meter, check if Velos has accepted the results of all 5 test runs:
   a. If all test runs are accepted, go to step 8.
   b. If less than 5 test runs are accepted: Run the missing number of test runs for that milk meter.
   c. If all test runs are not accepted: Click on the **Restart Zero Point Test** button and return to step 3.
8. Check the Zero Point test results (see Zero Point test results: (page 31)).
9. De-install the air compressor.
10. Reconnect the milk inlet tube to the milk claw.

## Zero Point test results:

1. When the Zero Point test is completed, the result passed or failed is shown immediately.
2. **PASS: new Zero Point Test value is in range.** : No further action is needed, the result is stored and can be checked in the report.
3. **FAILED: Zero Point Test result is not in range.**: Check the SmartFlow in the milking parlor for technical issues.
   a. **The SmartFlow is technically fine**: Select one of the following options to proceed:
      - Cancel the new Zero Point test results.
      - Restart the Zero Point test.
      - Save the new Zero Point test result by selecting the option to overwrite the existing value and recalibrate (see Calibrate the SmartFlow (page 32)).

   b. **The SmartFlow is technically not fine**: Follow the following procedure:
      1. Fix the SmartFlow.
      2. Perform a new Zero Point test.
      3. Recalibrate (see Calibrate the SmartFlow (page 32)).
4. Click on the **Submit** button to leave the test page.
5. The **Reports** > **Smartflows** page is opened automatically to show an overview of the Zero Point Test (ZPT) results.
6. The report can be printed by using the print  icon.
7. Send the "Zero point test" report to your ICAR Member Organization.