

James Walker	Title: Mitutoyo SJ-201P Surface Roughness Meter Calibration Procedure	Date: Aug 21, 2020 Reaffirmed 2023	Rev: 3	Page: Page 1 of 3	Document No: QPD115 Approved by: Test Room Manager
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REASON FOR UPDATE:

- QPD115 revision 2 focused predominantly on sending out the calibrated specimen for re-calibration as opposed to calibration of the surface roughness meter.
- Renamed from "Surface Roughness Block" to "Mitutoyo SJ-201P Surface Roughness Meter Calibration Procedure"
- Significant changes to wording to describe the procedure exactly, after performing a dummy calibration procedure.
- Removed the step saying the device must be re-checked every ten times and re-calibrated if required, as it's now calibrated once every year.
- Responsibility changes from Product Testing Team Leader to Test Room Manager.
- Additional procedures of what to do if the device repeatedly fails calibration.

ASSOCIATED DOCUMENTS: F219 Form / Calibration Certificate

1. PURPOSE

- 1.1 To provide a procedure for the Mitutoyo SJ-201P surface roughness meter calibration process.

2. SCOPE

- 2.1 This document applies to all those involved with the calibration of a Mitutoyo SJ-201P surface roughness meter in conjunction with a precision reference specimen plate.

3. RESPONSIBILITY

- 3.1 The Test Room Manager is responsible for updating and communicating the details within this procedure.

4. PROCEDURE

Transfer Standard – Calibrated Mitutoyo precision reference specimen plate.

- 4.1 Make sure there is no damage to any part of the device.
- 4.2 Place the device on the resting plate.
- 4.3 Switch on the device.
- 4.4 Ensure the device settings are suitable for the task and change if necessary.
- 4.5 Gently position the precision reference specimen plate at the front of the device underneath the needle, in the section for the current year as per fig 4.4.1.

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Year Identifier e.g. 2018 Exclusive Area for 2018

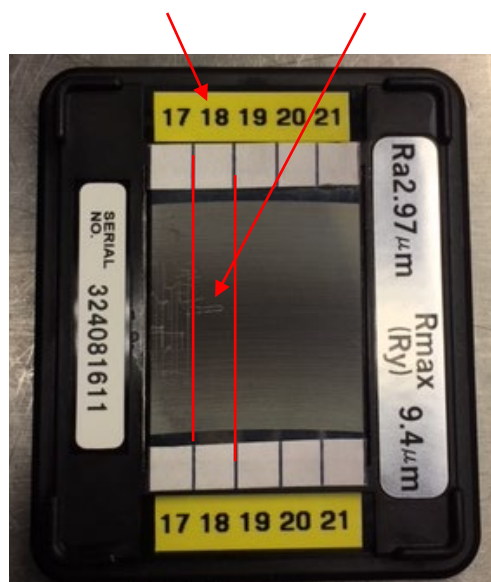


Fig 4.4.1 Reference Specimen Plate

- 4.6 Press start and take reading and record in "tester value" box next to reading 1 on F219.
 - 4.7 If reading is acceptable, i.e. within $\pm 5\%$ of reference specimen ($2.97\mu\text{m Ra}$), reposition needle within correct section of plate and repeat step 4.6 until 10 readings have been taken.
 - 4.8 If all ten readings are acceptable, i.e. within $\pm 5\%$ of reference specimen ($2.97\mu\text{m Ra}$), no further action need be taken and skip to 4.18
- However if one reading falls outside of the range, proceed with calibration process detailed 4.9 to 4.17.
- 4.9 To start the calibration process press CAL then enter the precision reference specimen plate value e.g. 2.97 then press ENTER.
 - 4.10 Press START on the device and let it take a reading off the reference specimen plate.
 - 4.11 Once the reading is displayed press ENTER and the procedure is complete.
 - 4.12 Repeat step 4.7, but record on form F219 where it says 'Actual reading post-calibration'.
 - 4.13 If the value is incorrect by more than **5%** after step 4.11, then repeat the procedure again.
 - 4.14 If the repeat procedure fails to bring the value within range, then try once more.
 - 4.15 If the second repeat procedure fails to bring the value within range, then consider repair or replacement of the device, and repeat the procedure.
 - 4.16 If the repaired/new device value is not in range, repeat the procedure once more.

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- 4.17** If the repaired/new device value is not in range after the repeat procedure, seek technical assistance.
- 4.18** Ensure the following items are documented on form F219
- Certificate Number
 - Device TT Number / Cal Date
 - Calibrated Reference Specimen Plate TT Number / Cal Date
 - All Readings
 - Calibration Interval
 - Next Calibration Due
 - Accept / Reject Decision Box
 - Employee's Name and Signature
- 4.19** Check the device number is clear.
- 4.20** Place a new colour coded calibration sticker on the device.
- 4.21** If there is a digital display, add an offset label to the display if required.
- 4.22** Update the calibration spreadsheet, type up the hand written form electronically and save the final certificate in the appropriate folder.
- 4.23** Once all usable sections on the calibrated reference specimen have been expired, dispose of the reference specimen and contact Mitutoyo UK to obtain a new calibrated reference specimen and update calibration system accordingly.