

PITSID

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Operating Instructions

COMPRESS II

Contact Pressure Tester



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CONTENTS

1. Field of application	5
2. Operating principle	5
3. Checking strategies	5
4. The „roll check“ strategy	6
5. The „line check“ strategy	9
6. Battery control/change	11
7. External power supply	12
9. Fault clearance	12
10. Repair, Service	13
11. Transport, storage	13
12. Technical data	14
13. Figure	15

1. Field of application

The device has been designed for checking the contact pressure between bearer rings of printing presses. It can be used both for the assembly of the printing units and after sales service.

2. Operating principle

A strip of fine paper is inserted between the bearer rings of the cylinder pair to be checked and compressed by throwing on impression. A visible impression is left on the strip and the change of the transparency in this impression is opto-electronically evaluated and shown as a value in the display.

This value is a measure of the contact pressure between the bearer rings. In terms of absolute pressure force the value is non-calibrated, since in principle the device is not intended for the measurement of absolute values of force but for checking relative values (nominal values) only.

Checking of the pressure should always be carried out under approximately the same conditions. Above all this refers to the temperature of the bearer rings, the time the strip is compressed and its evaluation.

The results are shown numerically and graphically in the display.

3. Checking strategies

The user can choose between two different types of checks:

Check type 1: „Roll check“ (figure 1a and 1b)

Check type 2: „Line check“ (figure 2a and 2b)

Which of the two types is chosen depends on the type of machine.

The „line check“ is carried out under static conditions, i. e. at machine standstill. The „line check“ can be applied if it is possible to throw impression on and off, thus producing the necessary pressure between the bearers.

The „roll check“ is carried out under quazi-static conditions, i. e. at crawl speed of the press. The „roll check“ can be applied if a rolling

motion of the cylinders under contact pressure is possible at crawl speed.

The „roll check“ offers the following advantages:

- Higher accuracy of the check
- Indication of the force distribution in the contact area of the bearer rings
- A non-ideal radial cylinder movement under pressure does not effect the measured value

The displayed values depend on the type of check, i.e. once one of the two possible types has been chosen it should not be changed so that the nominal values remain comparable.

4. The „roll check“ strategy

4.1 Preparation of the check

- Remove the lubricating felts.
- Remove oil from the whole circumference of the bearer rings (especially from where the measuring strip shall be positioned).
- Roughly clean the spot where the measuring strip is fixed on the cylinder (see figure 1a).

4.2 Implementation of the check

- The printing press shall have room temperature, since heavily heated up bearer rings might increase the displayed values.
- Fix the measuring strip on the bearer ring with the attached adhesive tape (preferably on side 1 and side 2 simultaneously and in the action area of the cylinder channel) in such a way that the rolling impression will leave approximately 30 mm of the measuring strip uncompressed (see figure 1a).
- Make one cylinder revolution with the machine functions „impression“ and „crawl speed“ or turn the cylinder until the measuring strip has been rolled over and appears back at the starting point after impression has been thrown off and the cylinder turned back.

- Remove the adhesive strip with the measuring strip from the cylinder.
- Remove the measuring strip from the adhesive strip.
- Note relevant data on the strip (see figure 1b) like e. g. date, time, No. of printing unit, cylinder pair, side 1 or side 2.
- If the measuring strip is contaminated, has blotches of oil or if the bearer impressions are not rectangular the check must be repeated using a new measuring strip.
- Re-fix the lubricating felts.

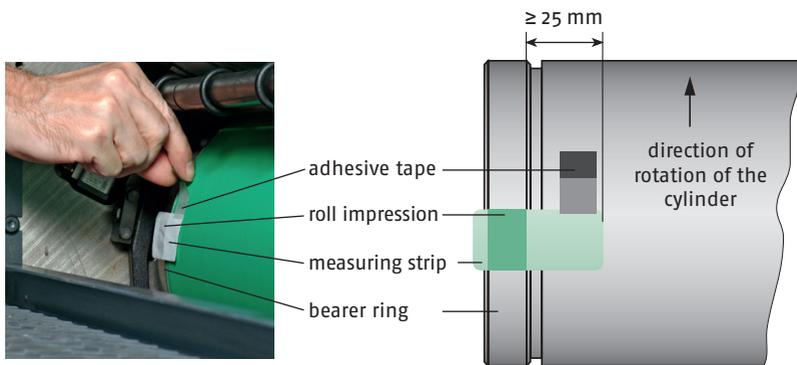


figure 1a: Alignment of the measuring strip for "roll check"

4.3 Evaluation of the measuring strip

- Push the on/off button (at least for 1 second) to switch the device on. The display shows „device ready“.
- Insert the measuring strip into the paper feed in such way that the bigger at least 25 mm long uncompressed part of the strip is positioned in front, i. e. in feeding direction.
- Push the strip forward until it is gripped by the automatic transport system.
- Take the strip from the delivery slot.

- Read and note the displayed pressure value. (With impressions above 2200 the display shows „display limit exceeded“, with no impressions on the strip or if the pressure was too low, the device will show the basic value of the measuring strip)
- Evaluate further measuring strips in the same way (a new measuring strip always updates the result of the previous one).
- Switch off the device (to spare batteries it is advisable to switch the device off between each evaluation of strips).
- Close the top of the carrying case to protect the device against dust.

Under the aspect of comparability the evaluation should always be carried out at the same time after the strip has been compressed between the bearers, e. g. always after approximately 5 to 10 minutes. Due to ageing effects of the measuring strip in the pressure area up to 7 % lower values are to be expected if the strips are evaluated much later.

The displayed value represents the average value of the rolling impression. The graphic display shows the pressure distribution in the contact pressure zone of the bearer rings.

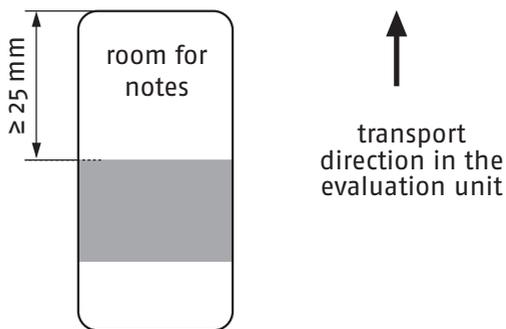


figure 1b: Alignment of the impressions on the measuring strip

5. The „line check“ strategy

5.1 Preparation of the check

- Remove the lubricating felts.
- Remove oil from the whole circumference of the bearer rings (especially where the measuring strip shall be positioned).

5.2 Implementation of the check

- The printing press shall have room temperature, since heavily heated up bearer rings might increase the displayed values.
- Fix the measuring strip on the bearer ring with the attached adhesive tape (preferably on side 1 and side 2 simultaneously and in the action area of the cylinder channel) in such a way that the bearer impressions will be centred and in rectangular alignment to the edge of the strip (see figure 2a).
- Turn the cylinders until the fixed measuring strip reaches the contact zone of the bearer rings.
- An impression is produced on the strip with the machine function „impression on/off“.
- By further turning the cylinders by approximately 1 cm in circumferential direction further impressions can be produced (2 or 3 impressions are recommended).
- See to it that the pressure time remains constant (2 to 3 seconds or at least until the full contact pressure has been built up).
- Remove the measuring strip from the adhesive strip.
- Note relevant data on the strip, like e. g. date, time, No. of printing unit, cylinder pair, side 1 or side 2 (see figure 2b).
- If the measuring strip is contaminated, has blotches of oil or if the bearer impressions are not rectangular to the edge of the strip the check must be repeated using a new measuring strip.
- Re-fix the lubricating felts.

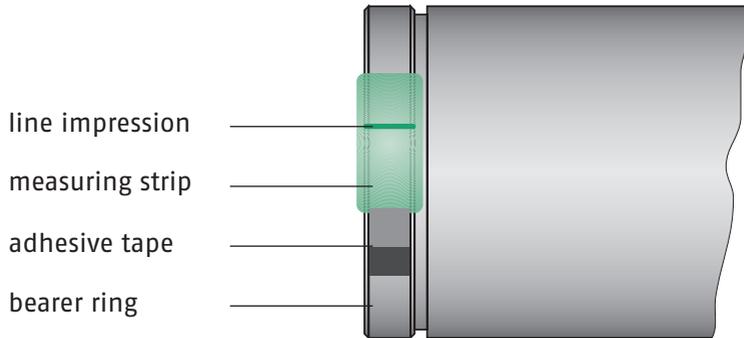


figure 2a: Alignment of the measuring strip for "Line check"

5.3 Evaluation of the measuring strip

- Push the on/off button (at least for 1 second) to switch the device on. The display shows „device ready“.
- Insert the measuring strip into the paper feed in such a way that the bigger at least 25 mm long uncompressed part of the strip is positioned in front, i. e. in feeding direction.
- Move the strip forward until it is gripped by the automatic transport system.
- Take the strip from the delivery slot.
- Read and note the displayed pressure value.
(With values above 2200 the display shows „display limit exceeded“. With no impressions on the strip or if the pressure was too low, the device will show the basic value of the measuring strip)
- Evaluate further strips in the same way (a new strip always updates the result of the previous one).
- Switch off the device (to spare batteries it is advisable to switch the device off between each evaluation of strips).
- Close the top of the carrying case to protect the device against dust.

Under the aspect of comparability the evaluation should always be carried out at the same time after the strip has been compressed between the bearers, e. g. always after approximately 5 to 10 minutes. Due to ageing effects of the measuring strip in the pressure area up to 7 % lower values are to be expected if the strips are evaluated much later.

The displayed value represents the average value of the individual impressions. The graphic display shows the position and the pressure height of the individual line impressions.

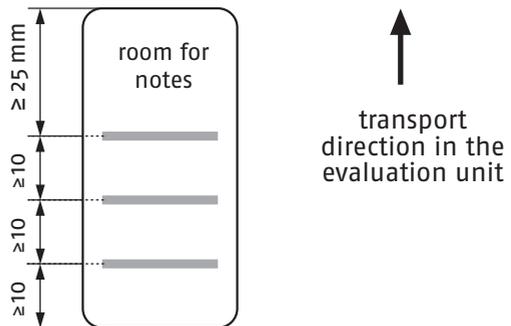


figure 2b: Alignment of the impressions on the measuring strip

6. Battery control /change

„LOW BAT“ in the display indicates the necessity of the battery change.

If „LOW BAT“ appears in the display the batteries can be changed as follows:

- Take the device out of the carrying case
- Open the battery compartment at the left side of the device
- Remove the battery plug
- Pull out the battery pack

- Remove the old batteries and set in the 6 new ones (1.5 V, type Mignon (AA))
- Put the battery pack back
- Mix the battery plug
- Close the battery compartment
- Put the device back into the carrying case

7. External power supply

Power can optionally be supplied via the mains adapter, which is part of the delivery. Connect the plug of the adapter with the corresponding jack at the left side of the device and put the adapter into a socket outlet.

Changing-over from battery voltage to mains voltage is automatic.

8. Fault clearance

- Operating problems due to undervoltage are to be solved by the replacement of the batteries or by checking the batteries on correct polarity and correct position of the battery plug.
- With external power supply with a mains adapter other than the one supplied make sure the device is correctly set to 6 ... 9 V DC and check its correct polarity (negative pole on the outside of the plug). Also check the fit of the plug in the socket.
- Disturbances in the measuring strip transport should be handled as follows:
 - Switch the device off
 - Pull out the strip by hand (in feeding direction or against it)
 - Repeat the evaluation by inserting the strip again into the paper feed
- If in exceptional cases the strip is getting jammed
 - Switch off the device

- Take the device out of the carrying case
- Remove the countersunk screws on the right side wall
- Take off the side wall
- Visual control of the function of the rubber belt
- By turning the biggest plastic pulley by hand a jammed strip may possibly be removed from the device
- Re-assemble the device in reverse order

In case there should be no remedies to the disturbances of the type described above, the manufacturer is to be informed or the device to be returned to him for repair.

9. Repair, Service

The basic service (maintenance/calibration), a general overhaul or repairs other than a general overhaul are carried out by the manufacturer. The cycle of a basic service (maintenance/calibration) is left at the discretion of the user, since the necessity of such service mainly depends on the intensity of its use.

10. Transport, storage

The measuring strips are to be handled with care. They should always be kept in the boxes under standard non-extreme conditions.

The device should be kept and transported in the carrying case. It shall be protected against dust and humidity. Heavy shock and impact on the device is to be avoided. A rigid packaging is necessary for shipment of the device.

12. Technical data

Display	Indication of the results of the evaluation of the measuring strips: - numerically - graphically
Scope of indication	200 ... 2200 (non-calibrated display values)
Operating principle	Opto-electronic evaluation of impressions on fine paper strips
Test uncertainty	10 %
Dimensions	190 x 150 x 40 mm
Weight	app. 800 g
Supply voltage	Battery operation: 6 x 1.5 V, Mignon type (AA) Mains operation via the delivered adapter or any other adapter, 6 ... 9 V, 500 mA, stabilised, negative pole outside on the plug
Operating temperature	15° C ... 30° C
Calibration	By means of test strips. Carried out by the manufacturer as part of his basic maintenance and calibration service.
Measuring strips	70 x 37 mm fine paper, part of the basic equipment, follow-up supply by the manufacturer.
Scope of delivery	Pressure test device with batteries, carrying case, mains adapter, set of adhesive strips, 2 packages of measuring strips (400 pieces/package), operating manual

13. Figure

- 1 on/off button
- 2 display
- 3 measuring strip
- 4 delivery slot
- 5 paper feed
- 6 box with adhesive tape
- 7 battery compartment
- 8 jack for mains adapter

