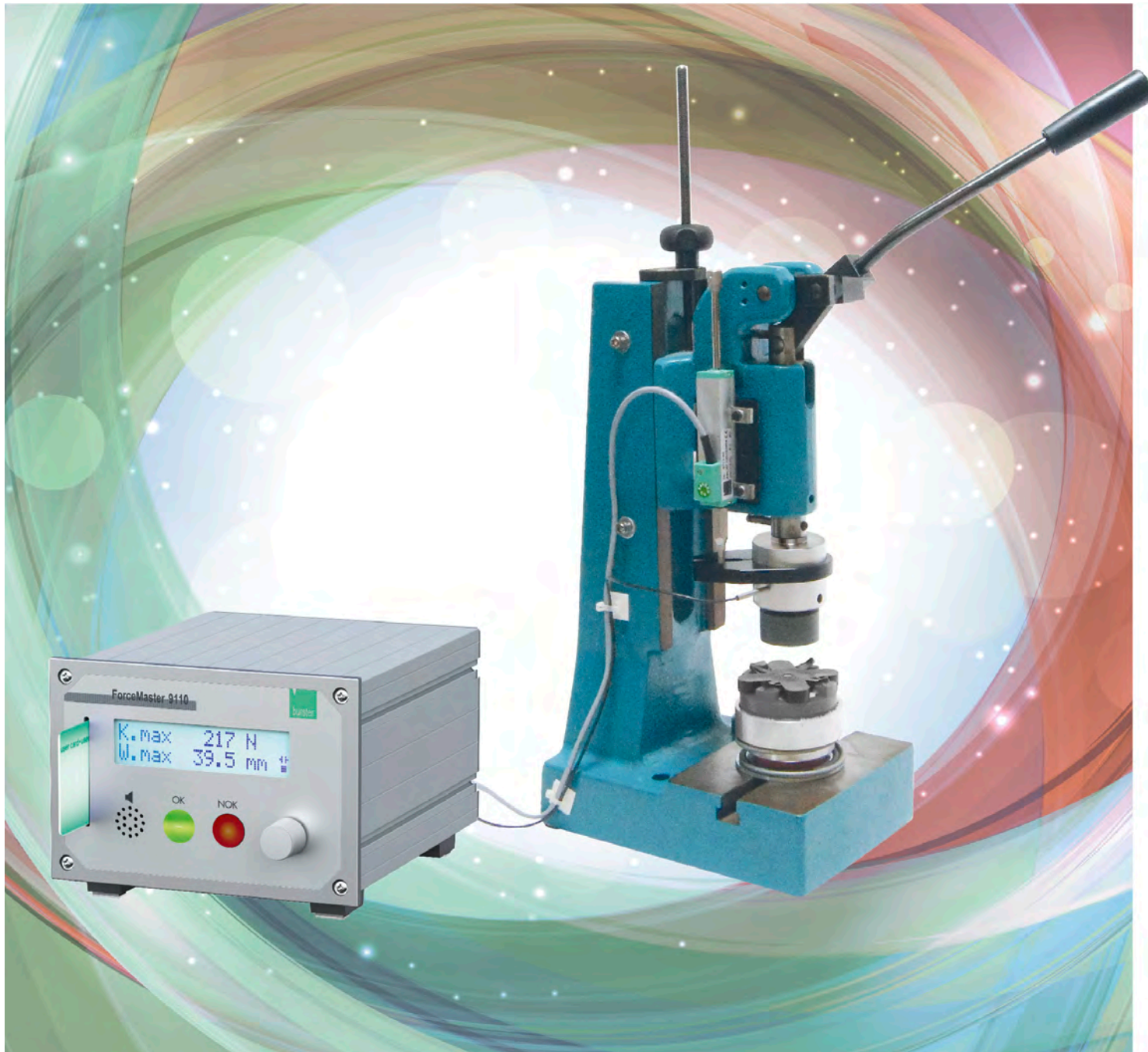


# ForceMaster 9110



**3 steps to  
successful installation**

This operation manual provides you with all information necessary for the set-up and operation of the instrument.

For more information  
please contact your  
local Representation:

If, contrary to expectations, you have problems with the operation of the instrument, the responsible product engineer is looking forward to supporting you under **telephone no. +49-7224-645-0** or please refer to the telephone extension given on the delivery note.  
Please feel free to send us an e-mail with your questions.

**ONLY in case of any repair matters**

please contact our service department under telephone  
no. +49-7224-645-14 or -64,  
or if you have questions regarding the repair or processing, please reach us  
under telephone no. +49-7224-645-53.

If you want to reach our service department by e-mail, please write to  
[service@burster.com](mailto:service@burster.com).

Upon questions or return shipments please keep ready all necessary data concerning your instrument. If you provide us with the exact type and serial number, we are able to provide you with an immediate information.



For all burster products  
Certificate of Conformity / Certificate of Manufacturer Conformity

# ForceMaster 9110

## SHORT OPERATING INSTRUCTION

### ForceMaster Serie 9110

© 2013 burster  
präzisionsmesstechnik gmbh & co kg  
All rights reserved

Valid from 06.02.2013

Manufacturer:

burster präzisionsmesstechnik gmbh & co kg	
Talstrasse 1 - 5	B.O.Box 1432
76593 Gernsbach	76587 Gernsbach
Germany	Germany

Tel.: (+49) 07224 / 6450  
Fax: (+49) 07224 / 64588  
E-Mail: [info@burster.com](mailto:info@burster.com)  
[www.burster.com](http://www.burster.com)

1058-BA9110KEN-5070-021515

## Exclusion of warranty liability for operating manuals

All information in the present documentation was prepared and compiled with great care and reproduced subject to effective control measures. No warranty is provided for freedom from errors. We reserve the right to make technical changes. The present information as well as the corresponding technical data can change without notice. Reproduction of any part of this documentation or its processing or revision using electronic systems is prohibited without the manufacturer's prior written approval.

Components, devices and measured value sensors made by burster praezisionsmesstechnik (hereinafter referred to as "product") are the results of targeted development and meticulous research. As of the date of delivery, burster provides a warranty for the proper condition and functioning of these products covering material and production defects for the period specified in the warranty document accompanying the product. However, burster excludes guarantee or warranty obligations as well as any liability beyond that for consequential damages caused by improper use of the product, in particular the implied warranty of success in the market as well as the suitability of the product for a particular purpose. Furthermore, burster assumes no liability for direct, indirect or incidental damages as well as consequential or other damages arising from the provision and use of the present documentation.

## Good parts without the stress ?

### Just 3 steps to successful installation of press-insertion monitoring on manual presses

You want to perform force-displacement monitoring on a newly purchased manual press or an existing manual press (with fitted press tool) so that you can implement optimum quality control to produce 100% good parts.

The aim of this quick instruction guide is to help you get the equipment into operation for the first time easily and efficiently by providing an example on an existing manual press (relevant to practically all standard makes).

You have purchased the following components:

- ▶ ForceMaster Series 9110 → Process monitoring
- ▶ Press load cell series 8552
- ▶ Displacement sensor series 8712/8713

and accessories

- ▶ Mounting kit including carrier model 5501-Z004



## **Step 1: Mounting the load cell on the manual press**

Slide the carrier (supplied in mounting kit 5501-Z004) over the load cell from the peg end and clamp it carefully on the upper edge of the load cell (figure 1.1); maximum tightening torque 3 Nm.



Figure 1.1: Fitting the carrier on the load cell

If mounting on an existing press with prefitted press tool, the press tool must be removed. Adjust the press head upwards by an amount equal to the height of the load cell (depends on measurement range) (Figure 1.2). Insert the load cell in the press ram and fix it in place using the grub screw in the ram. Then insert your press tool into the load cell from below (Figure 1.3), and again fix this in place using the grub screw in the sensor.

# ForceMaster 9110

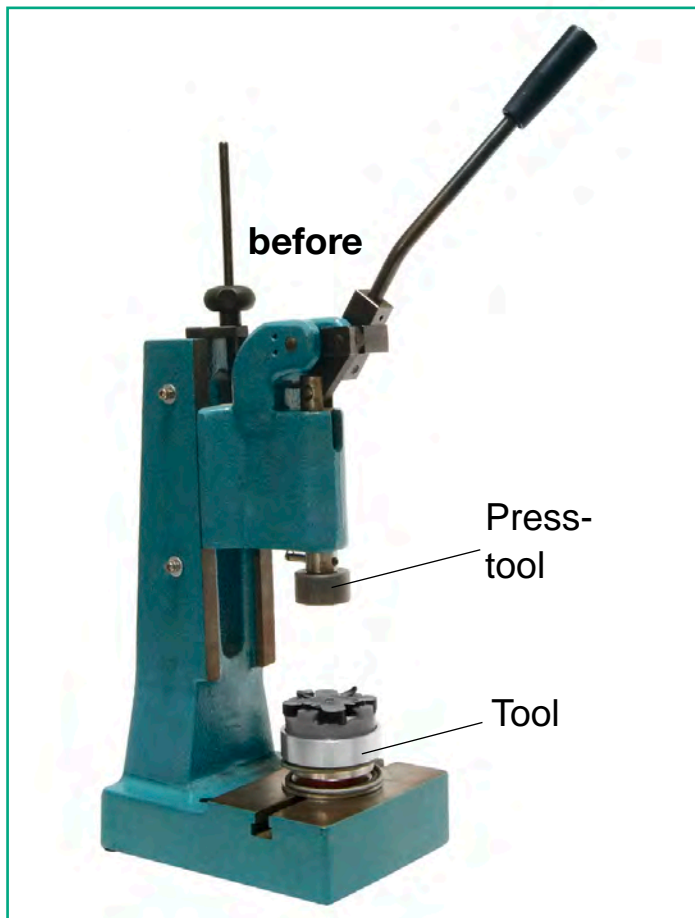


Figure 1.2



Figure 1.3

## **Step 2: Mounting the displacement measuring system on the manual press**

In the next step you need to mount the displacement-sensor adapter on the side of the press (Figure 1.4).

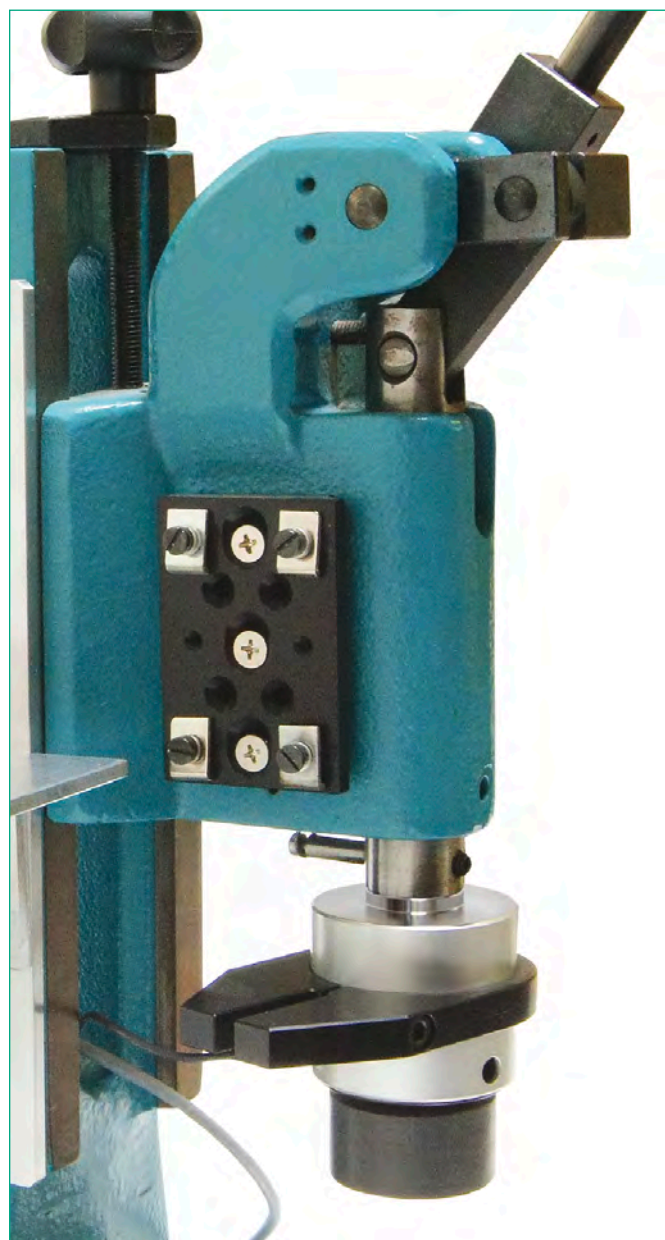


Figure 1.4: Displacement measuring system on the press



# ForceMaster 9110

Please use the adapter 5501-Z004 included in the mounting kit to fit the displacement sensor.

Slide the displacement sensor into the adapter with the sensing tip pointing downwards (typical application). The sensing tip must touch the carrier fitted earlier on the load cell. Slide the displacement sensor downwards (with press in raised position) until the sensing tip of the displacement sensor lies practically in its upper limit of travel (1-2 mm difference) (Figure 1.5).



Figure 1.5: Displacement measuring system in the raised position

Now check the operation of the press in the lowered position (bottom dead center BDC) by moving the press ram carefully downwards. The displacement sensor must travel with it smoothly and with no transverse forces acting on, and must not reach its lower limit of travel in the BDC. Make sure that the sensing tip is resting on the load-cell carrier (Figure 1.6).



Figure 1.6: Displacement measuring system in the lowered position

# ForceMaster 9110

## Note/Tip

Any pre-use correction required simply involves slight readjustment of the displacement sensor. The aim is to let the sensor move freely to and fro between the raised and lowered press position without it reaching its limits of travel. Since the system has been designed to provide numerous adjustment options (carrier, displacement sensor and press head), you will quickly find the correct position for the displacement sensor.

After any readjustment/realignment that is needed, finally fix all relevant attachments in place (carrier, displacement sensor and press head if necessary).

With the sensors now fitted on the manual press and mechanically adjusted to fit the parts to be pressed, they now need to be connected to the ForceMaster.

Then switch on the ForceMaster 9110.

## **Step 3: Configuring the measurement chain on the ForceMaster 9110**

After a self-test, the message "sensors changed" is displayed.

This is correct because new sensors have been fitted and connected to the ForceMaster 9110.

Press the gray operating knob to confirm this message.



Only 9110 display

To train the measurement chain, you simply need to run an **"Autoconfig"** process.

The ForceMaster 9110 sets the evaluation elements automatically for the part to be pressed.

To access this menu, you need to insert the Master card in the card reader (on front of unit) and turn the operating knob to the right until **"Autoconfig"** appears in the display (Figure 1.7).

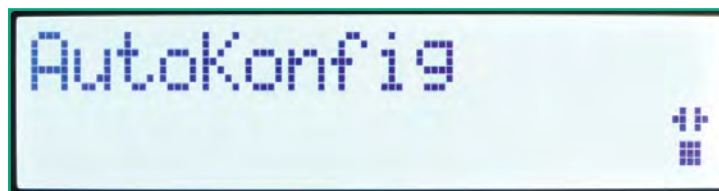


Figure 1.7: Autoconfig

Pressing the operating knob takes you into the submenu. You are now at **Step 1 teach-in**. Press the gray operating knob again.

The display now shows:

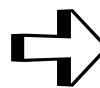


Figure 1.8: Step 1 - Display and press process...



# ForceMaster 9110

After you have pressed a part, the following appears on the display:



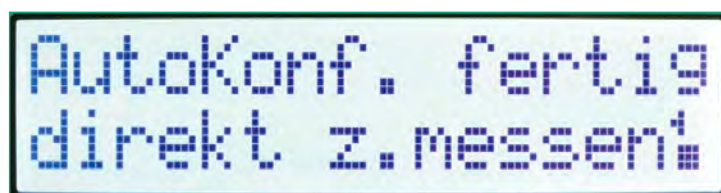
Step1 teach-in  
Warte: abwärts \*



Figure 1.9: Display and press process...

Then the numerical display shows Step 2, set modes.

Turn the operating knob until you get the following display (Figure 1.10):



AutoKonf. fertig  
direkt z. messen!

Figure 1.10: And we're ready!

The ForceMaster 9110 saves the trained teach-in values and you can now start monitored production.

Some corrections may be needed to the teach-in values trained during the autoconfig process. This can be done manually as required.



This quick guide is merely intended as a brief introduction to help you get working fast.

Please contact us if you have further technical questions.

**Tel.: (+49) 07224-6450**  
**E-mail: [info@burster.de](mailto:info@burster.de)**  
**[www.burster.de](http://www.burster.de)**

We wish you continued success and are happy to provide you with advice on new measurement tasks and projects.

**burster präzisionsmesstechnik gmbh & co kg**

# ForceMaster 9110

**The measurement solution.**

