

Retrofitting guide

TruBend Serie 3000, 5000 und 7000

Angle measuring system OCB (option)

2012-11-05

Material number: 1714400





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1. Description

OCB stands for **O**perator **C**ontrolled **B**ending.

The complete OCB angle measuring system consists of the DP-601 digital goniometer (ID no. 1701972) with the data output via an interface as well as from the OCB radio measured value transfer device, which is installed at the goniometer. There is also the OCB USB stick, which is plugged into the machine control.

A paired radio measured value transfer system consisting of transfer device and stick has the ID no. 1701972.

The hardware as well as the software of the OCB system can work together with both the DELEM control system as well as with the TASC6000 machine control. Two USB cables are included as further accessories. All the parts of the OCB system are packed in a stable ABS case with inserts made of punched foam parts with the ID no. 1716453.



OCB system

Fig. 49843

Both the OCB transfer device as well as the OCB USB stick function as transmitter and receiver. The communication is done by 2.4 GHz via the ISM band and can cover at line-of-sight distances of about 20 meters.

OCB radio measured value transfer device

By pressing the button, the angles shown on the goniometer will be transferred to the control. The TRUMPF machine control TASC6000 also specifies which of the three position LEDs at the radio measured value transfer device should light up. The middle LED is a dual-color LED (red/green). If both parts of the dual LED are activated, the result is yellow. The left and right LEDs are yellow. These three LEDs show the positions where the angles should be measured in order to get the corrective values.

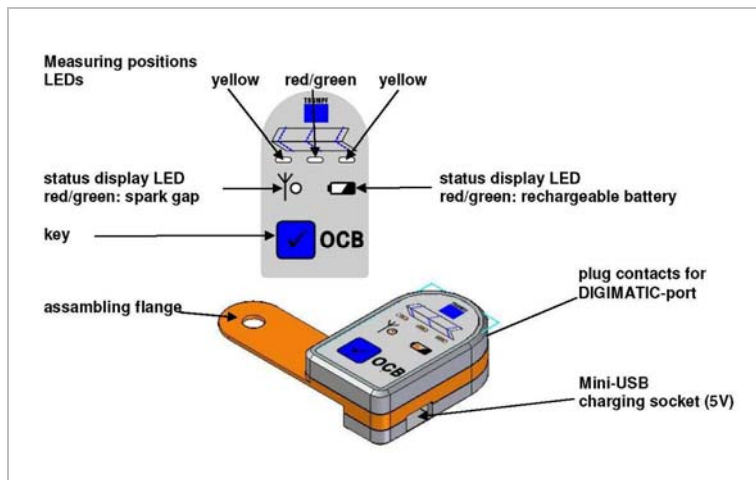


Fig. 49844

2. Installing the OCB transfer device

1. Pull off the rubber cover on the DIGIMATIC interface.
2. Unscrew the middle knob with the manufacturer's inscription.
3. Put on the transfer device and insert the plug contacts into the DIGIMATIC interface.
4. Screw in the middle knob.

The knob now rests on the mounting tab.

By using a 5-pole mini-B USB plug cable (even if the transfer device is installed at the goniometer), the rechargeable battery of the transfer device can be charged by any standard 5-volt mobile phone charger or by any computer with a USB socket. No data is exchanged by this USB connection; it is only used to recharge the LiPo rechargeable battery. The transfer device remains fully operative while it is being recharged.

LED status displays on the OCB radio measured value transfer device

Rechargeable battery status	Rechargeable battery LED
The rechargeable battery and the OCB radio measured value transfer device are both ready for use	flashes slowly, green
The rechargeable battery is almost empty	flashes slowly, red
The rechargeable battery is empty The device switches itself off again immediately	flashes 1 second, red
The source voltage is plugged in and the rechargeable battery is completely charged	lights up, green
The rechargeable battery can not be charged since the temperature is too high or the battery is defective	flashes quickly, red
The charging voltage is too low	lights up, red

Tab. 1

Radio transfer status	Radio links LED
If the transfer was successful.	flashes 1 second, green
If the transfer has failed after 5 attempts.	flashes 1 second, red
If data is present from the goniometer and the transfer is in progress.	flashes, yellow
If the goniometer is not switched on and, as a result, no transfer is in progress.	after a short time flashes 1 second, red

Tab. 2

OCB USB stick

The USB stick (USB-A plug) receives the angle values, administers the statuses of the position LEDs and the registered OCB radio measured value transfer device and prepares communication for the USB interface. The communication is done via a virtual COM, which is created by the FTDI-USB driver, with a baud rate of 57k6. USB traffic is shown by flashing of the yellow LED.

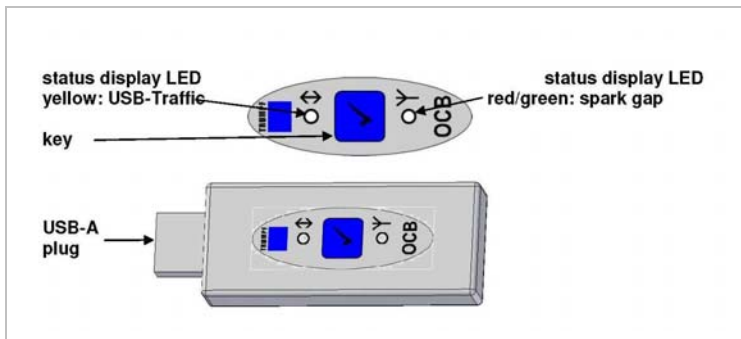


Fig. 49845

The OCB USB stick can, in principle, be plugged into any USB plug socket of the machine control. However, USB plug sockets outside the switch cabinet should be selected since a closed switch cabinet significantly impedes radio signals.

The cap protects the plug from contamination. It is taken off before plugging in and can then be put on again at the rear for storage purposes during use.

Registering the OCB transfer device at the OCB USB stick

Before delivery, all OCB systems are already paired. Every OCB transfer device is already assigned in the factory to the respective supplied OCB stick. For this reason, the registering of the OCB transfer devices to OCB USB sticks by the user is only necessary if new arrangements between OCB transfer devices and OCB USB sticks are to be established.

Up to 16 OCB transfer devices can be assigned to one OCB USB stick. An OCB transfer device can be registered to more than one OCB USB stick. The machine controls do not participate in this registration procedure.

DELEM machine control TruBend Series 3000

Note

Angle transfer by OCB for DA65TW control is not possible.

Prerequisite for angle transfer by OCB

- T3000 with software version $\geq$ V1.2.32.

Activating the option

1. Check whether the option recognition OP-W-PROTRACTOR and the brief description have been set.



Option voucher

Fig. 49859

2. When requesting an option, enter the identifier of the voucher including the hyphens.

If an option for a control is requested, the control receives a license for the requested option. From this moment on, the voucher and the internal hard drive are linked. The voucher can not be used on another control. In case required, the option can be requested several times. In case an option is lost, the same option for the same control can be requested again.

3. Switch to the Windows environment in the control.
4. Activate Windows Explorer in the start menu and change to the "WCE Tools" folder.
5. Activate the "appopt.exe" application.

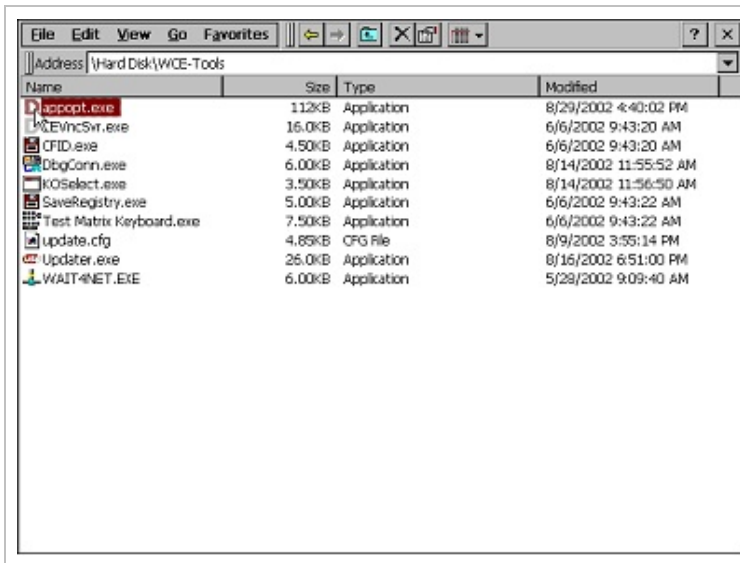
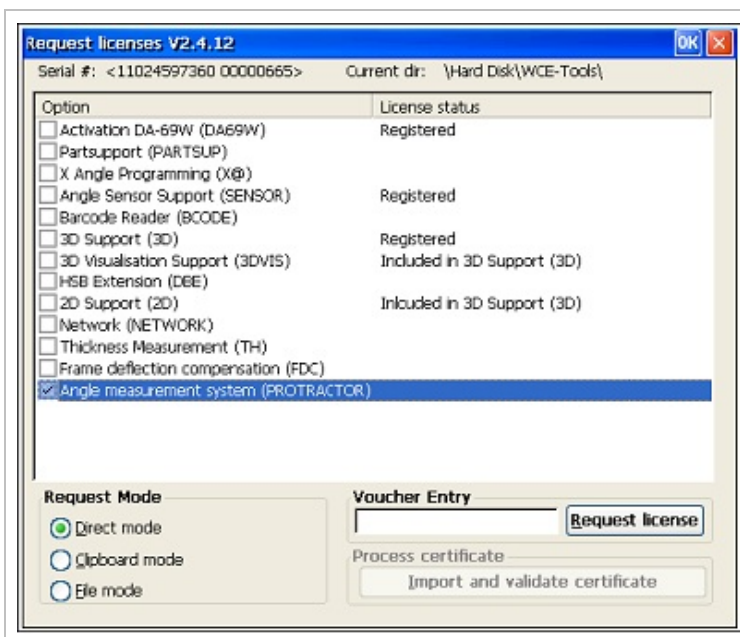


Fig. 49860

The serial number of the control's internal hard drive is displayed on the screen. On the left side of the screen, a list of the possible options for the control is shown. An already activated option is displayed by the word "Registered" in the right column. The procedure for the requesting of an option depends on the selected mode. The "Direct mode" selection is only possible if the control has Internet access. If this is not the case, select "File mode".



Activated program

Fig. 49861

Installing an option

1. In the "Option" field, click on the respective control element.
2. Select "File Mode" in the "Request Mode" field.
3. Enter the 16-digit voucher identifier for the option in the "Voucher entry" field and click on the "Generate UIR" button.

A UIR text file is created which contains the code for requesting.

4. Send the UIR text file to TRUMPF Maschinen Austria.
5. Receive the license file from TRUMPF Maschinen Austria and transfer it to a USB stick.
6. In the option program, select the requested option, select "File mode" and click on the "Import and validate certificate" button.
7. In the file dialog that is now displayed, select the received license file on the USB stick and click on "OK".

If this is carried out successfully, the message "License successfully imported" is displayed and the license status changes to "Registered".

8. Click on "OK" above in the window.
9. Change to the start menu and select "Suspend".

The control carries out a restart.

10. Insert the OCB USB stick into a USB plug socket and restart the control.
11. Select PROGRAMMED OPERATION.
12. At "11. Program data", "Serial connection", "Device for angle measurement", select *Mit. 187-50x U-WAVE*.

Note

The OCB USB stick must remain plugged in during the entire transfer. In the event of interruption, a restart of the control has to be done.

Starting angle transfer

13. Measure the angle at the bending part.
14. Change to angle correction at the control.
15. Press the OCB button on the goniometer.
or
 Press the DATA/HOLD button on the goniometer.
 The green position LED lights up for a few seconds.
 The displayed angle is transferred to the control. The LEDs on the OCB transfer device and at the OCB USB stick light up briefly.
16. Press ENTER.



Fig. 49846

Note

The goniometer has to be set to degree $0^{\circ}0'0.00^{\circ}$ with the button. It is so that the degree units as well as minutes and seconds can not be determined via the goniometer interface. The direction of rotation from the adjustable side [(3) Fig. 49846] has to be set in such a way that the goniometer counts positively upwards in the clockwise direction.

TASC6000 machine control TruBend Series 5000 and 7000

Necessary versions

- TruBend Series 5000 starting from V08.02
- TruBend Series 7000 starting from V03.01

Activating of OCB

- No option code is necessary for OCB with the TruBend Series 5000 and 7000. If the OCB USB stick is plugged into a USB socket for these machine controls, then the OCB system will be automatically activated.

Correction input mask for OCB

The correction input mask for OCB is called up by the correction buttons in production so that a bend that has just been performed can be corrected whenever desired.

The two input fields for left and right corrective values (to enter the measured angles) can be selected freely. The values can be automatically entered with the OCB system or also manually with the keyboard in the correction input box. The three measuring position LEDs on the OCB broach are controlled by the selection of the input fields for the measured angles.

Once an angle has been successfully transmitted by the radio link, the next input field is selected right away in order to be able to enter the angle there. In this way, the user can measure all corrective angles and send them to the control without having to go to the control after every angle measurement to manually switch-over the input field at the control for the next angle input. If the red LED lights up, then the measured angle is beyond the tolerance range of ± 10 degrees.

As an example, here an OCB application is run.

Entry of the left measured angle

Fig. 49853

The left yellow LED of the radio measured value transfer device is lit.
The control waits for the angle measurement. The actual angle is transferred and the position LEDs are switched over. The user can also simply enter this value by keyboard.



Entry of the right measured angle

Fig. 49854

The right yellow LED of the radio measured value transfer device is lit. The control waits for the angle measurement. The actual angle is transferred and this LED goes out.



Transfer of the measured angle

Fig. 49855

All angles have been measured and successfully transferred. The measured angles have to be confirmed by being accepted before the Y1 corrective value and the Y2 corrective value are then calculated from them. These corrective values are then saved in the bending program. This input mask disappears and all LEDs are then off, since no further input field has been selected for the measure angle.



Calculated corrective values

Fig. 49856

Direct total angle correction input

By focusing of the correction field in the production mask, all position LEDs are automatically controlled at the OCB radio transfer broach. In this way, it is shown that the angle to be measured has no clearly defined position assignment. The measured angle is then automatically taken over into this field as correction and all the position LEDs flash as confirmation several times briefly.

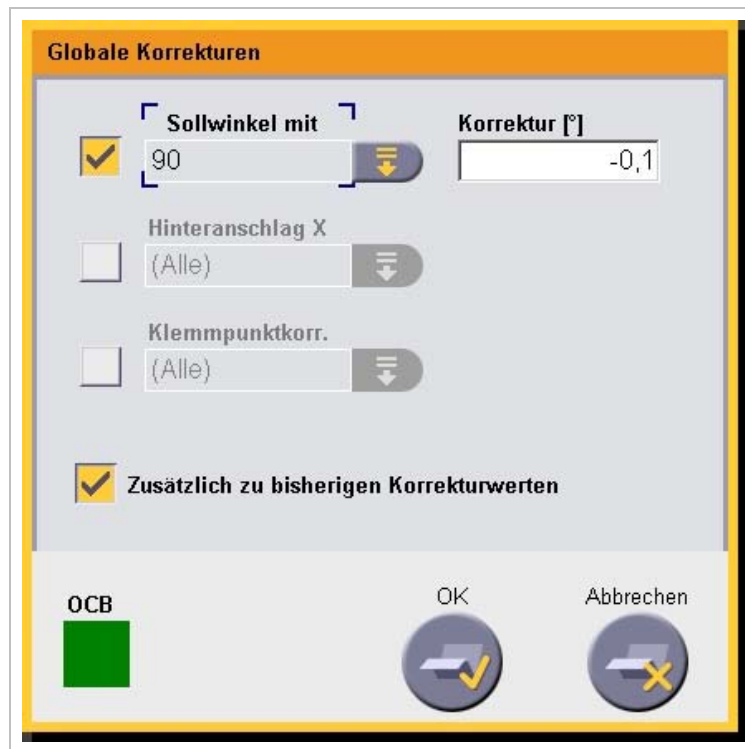


Corrective values in the production mask

Fig. 49857

Global corrections

By focusing of the correction field in the global corrections mask and selection of the appropriate nominal angle, all position LEDs are automatically controlled at the OCB radio transfer device. In this way, it is shown that the angle to be measured has no clearly defined position assignment. The measured angle is then automatically taken over into this field as correction and all the position LEDs flash as confirmation several times briefly. All nominal angles in this bending program with the displayed angle value now receive this transferred corrective value.



Global corrective value for all 90° angles

Fig. 49858

Note

The goniometer has to be set to degree 0°0'0.00° with the button. It is so that the degree units as well as minutes and seconds can not be determined via the goniometer interface. The direction of rotation from the adjustable side [(3) Fig. 49846] has to be set in such a way that the goniometer counts positively upwards in the clockwise direction.

Complied rules and standards



ISM-Band 2,405 GHz
EN300440, ReceiverClass3
EN30440-1 V1.6.1 (2010-08)
EN30440-2 V1.4.1 (2010-08)
EN301489-1+3
Radiated Susceptibility (Electromagnetic Field, modulated) (EN 61000-4-3)
Electrostatic discharge (ESD) (EN61000-4-2)



FCC Registration Number (FRN): 0021739461
Trade name: OCB-Stick
FCC ID Number: QYB-1701972-A
Trade name: OCB-Sensor
FCC ID Number: QYB-1701972-B

These two devices comply with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:

- (1) These two devices may not cause harmful interference,
and
- (2) These two devices must accept any interference received,
including interference that may cause undesired operation.

Caution: Any internal changes or modifications of the two devices
named above void the user's authority to operate the equipment.



DECLARATION OF CONFORMITY

We TRUMPF Maschinen Austria GmbH + Co. KG

Industriepark 24; 4061 Pasching; Austria

declare under our sole responsibility that the two products

Material number	Product	Title/Model
1701972-A	OCB USB Stick OCB-Stick	OCB-Stick
1701972-B	OCB Wireless angle transfer device	OCB-Sensor

to which this declaration relates is in conformity with the following standards:

ISM-Band 2,405 GHz
 EN300440, ReceiverClass3
 EN30440-1 V1.6.1 (2010-08)
 EN30440-2 V1.4.1 (2010-08)
 EN301489-1+3
 Radiated Susceptibility (Electromagnetic Field, modulated) (EN 61000-4-3)
 Electrostatic discharge (ESD) (EN61000-4-2)

Following the provisions of R&TTE Directive 1999/5/EC

Pasching, 6th November 2012

(Place and date issue)

(name and signature of authorized person)