# Instructions for Model SB48-TC Super Bender® and TB60-TC Top Bender®
Automatic Simplified Mode - single bend program

⚠️ **WARNING!** **Thoroughly read operators manual before attempting to operate machine**
(Machine must be connected to correct power source before switching power on! **DO NOT USE** extension cord.)

Execute a single programmed bend.

1. Press Automatic icon from home page or from service bar.

2. The following page will open:

Bend number area ←

Desired angle →

Springback return angle →
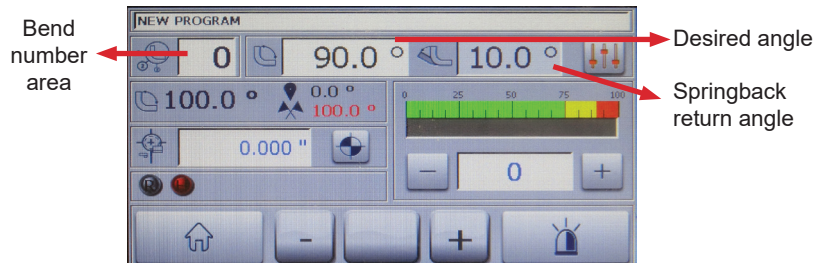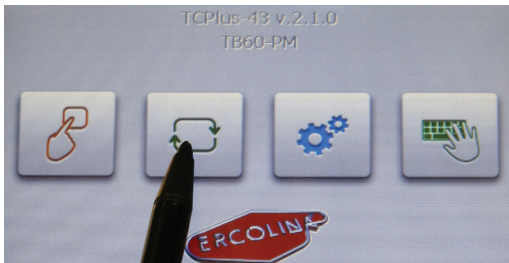
3. *Bend number area*: Press field and use numerical keypad to enter number 0 (zero). Must be zero to run simplified program.

4. *Desired bend angle* and *Springback return angle:* Press fields to enter values from numerical keypad. (Can be edited later.)
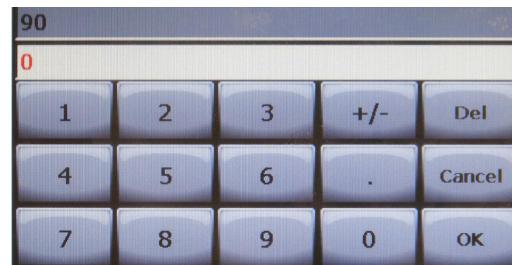
⚠️ "C"-axis will rotate until the software limit in machine data is reached. Alarm is generated.

Alarms area: Alarm symbol ⚠️ will be displayed.

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5. Press and hold Bend pedal or [+] icon on display to make a bend; the status bar will be green. "C"-axis will start moving at speed indicated in Speed area.

6. Machine will automatically stop movement when set value is reached in Automatic Simplified mode.

7. Return "C"-axis to zero after bending by pressing and holding Return pedal or [−] icon.

⚠️ If you should press opposite pedal/icon during a rotation machine will immediately stop movement without generating an alarm.

Understanding springback

➢ Desired angle *b* represents value in degrees to be obtained after bending.

➢ Springback angle *a* represents angle in opposite direction of bend in which material returns after being released from the tools.

➢ The *y* angle that represents movement of "C"-axis

Springback angle is difference in degrees between desired bending angle *b* and bending angle *y* obtained without considering the elasticity of processed material *a* = *y* - *b*

To obtain desired angle total bend rotation of "C"-axis equals *y* = *a* + *b*.

1)   2)   3)
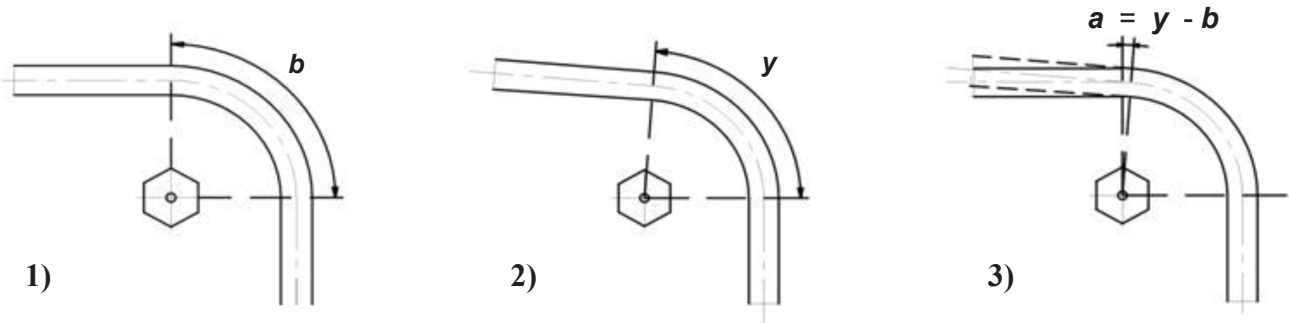
Use goniometer and measure angle obtained after test bend to determine value of springback return. The difference must be entered in springback return field.

Note: Angle measured with goniometer will be different from rotation value of the "C"-axis because of material elasticity. Make multiple bends and measure angle of each to determine actual springback return angle required.

Note: Rotation angle of "C"-axis cannot exceed 210°. If value entered in springback return field exceeds 210° the angle field will be automatically reduced to maintain limit.

By setting *b* = 200, if you enter *a* = 20 and therefore *a* + *b* = 220, the system automatically reduces the value of *b* and sets it equal to 190°

Note: entering a value between 0% and 10% in the Speed field, the machine will always move at a minimum speed of 10% while displaying the entered value.