

Manual Vario-Bender



Read, observe and follow this manual and the other applicable documents, especially all safety instructions and warnings.





Always wear protective gloves!
Handle tool carefully and protect against dirt. If necessary lubricate shafts (e.g., sewing machine oil).



#91545S6 Vario-Bender
200 mm length, 0°-90°

Item no.	Bending 0°- 90°	Bending height	kg
91545S6	Vario-Bender 3/200, without O-handle	5 – 200 mm	1,5
91545S8	Duo-Vario-Bender 3/200 the Duo-Vario-Bender consists of two Vario-Benders connected by an adapter	5 – 200 mm	3,5

Item no.	Accessories		kg
91549-1	Adapter set (adapter + handle) to connect two Vario-Bender and ensure a convenient grip		0,5
KH70400	O-Handle for Vario-Bender		0,3

Technical data

Max. thickness of materials:

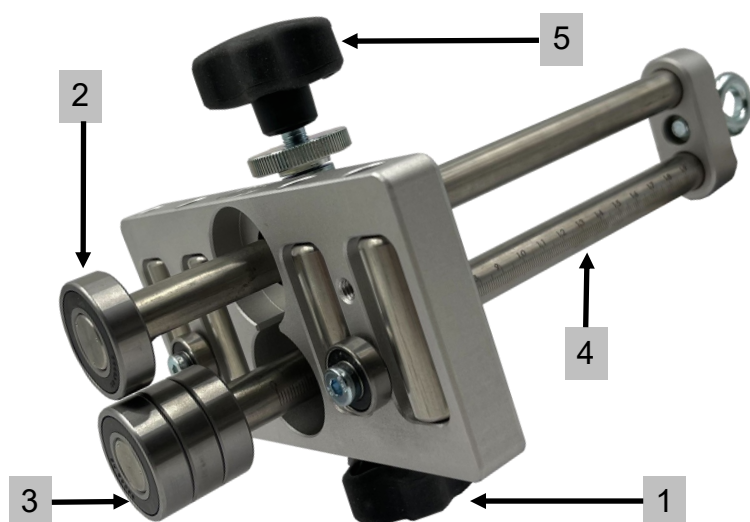
Lead	up to	5.00 mm
Copper / zinc / aluminium	up to	1.00 mm (19 ga.)
Galvanized steel	up to	0.70 mm (22 ga.)
Stainless steel / Uginox	up to	0.50 mm (25 ga.)

Values can vary depending on the user



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Tool elements



1	Set screw
2	One bending roller above
3	Three bending rollers below
4	Measuring scale (mm & inch)
5	Star grip with knurled nut

Operation method Vario- & Duo-Vario-Bender

- 1) The rotary handle enables the height adjustment of the top roller. Adjust opening according to the material.
- 2) Unlock the set screw and adjust the desired bending height by using the integrated measuring device and lock it with the set screw.
- 3) Place the metal between the bending rolls. The single roller is on top and shows in the bending direction (bending edge), the other three rollers carry the force to bend up.
- 4) First pass: Hold the bender in the most convenient way for you. Move the bender forwards and backwards and push up at an angle of 10-25°. The pressure should be held on the middle of the bending rolls and always move bender all the way to the edges. Depending on the material characteristics, proceed in the following way:
 - 5) Move bender back at an angle of 20-45°.
 - 6) Move bender forward at an angle of 60° (now it may be easier to hold the bender from below).
 - 7) Continue to move bender forwards and backwards by pushing slightly up until the requested angle (max. 90°) is reached.



If necessary, depending on material characteristics, repeat movement more often & in smaller steps.

Addition to Duo-Vario-Bender:

The Duo-Vario-Bender consists of two Vario-Bender connected by an adapter. If working on shorter and more curvy sheets, it may be helpful to detach the Duo-Vario-Bender into two Vario-Benders.

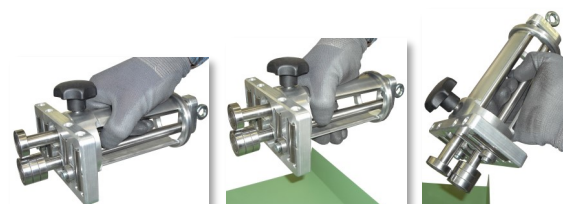
You want to expand your Vario-Bender into a Duo-Vario-Bender? Get a second Vario-Bender and an adapter (*item no. 91549-1*) and connect them to a Duo-Bender. A Duo-Bender makes bending even easier when working on long and straight sheets.



Animation assembly

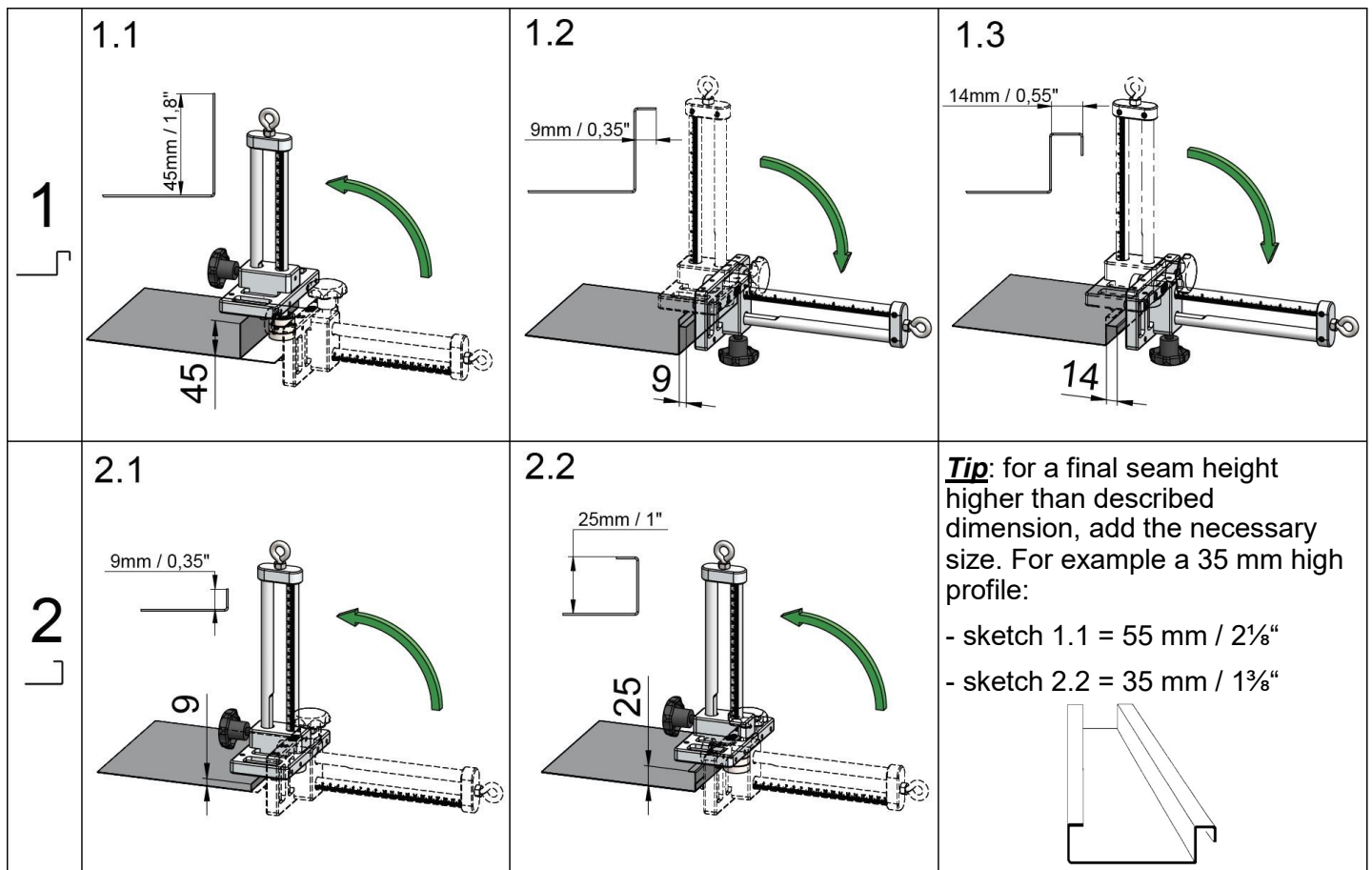
Addition to O-Handle:

The optional O-Handle enables the full usage even when leverage is entirely extended to 200 (8 inch). The O-Handle also offers three ergonomic grip positions.



Fabrication of standing seam profile

(25 mm/1" height) Shown in the following example with an EcO-Bender



1 Female profile (over cloak)

- 1.1 Set the bending height to 45 mm (1.8") and bend up to 90° in accordance with the "Operation Method" explained on the previous page.
- 1.2 Set the height to 9 mm (0.35"), about the width of the upper bending roller, and bend up to 90° in the opposite direction. The single bending roller is always the bending edge, the 3 bending rollers are always the bending bar.
- 1.3 Set the height to 14 mm (0.55") (depending on material specifications) and bend to 90° over the second bend downwards.

2 Male profile (under cloak)

- 2.1 Set the bending height to 9 mm (0.35"), about the width of the upper bending roller, and bend it to 90° in accordance with the "Operation Method" explained on the previous page.
- 2.2 Set the height to 25 mm (1") and bend up over the first profile to 90°.

