



1. Intended use / product description



Medium:	Potable Water / Gas
Max. operating temperature:	Potable Water: 0°- 40° / Gas: -10° - 50°
Max. operating pressure:	Potable Water: 16 bar / Gas: 10 bar
Material:	Top and bottom part: PE 100 ZAK®-insert: brass UBA-BWGL metals*

HA-WELD® welding clamps are to be used for welding on PE pipes according to DIN EN 12201 / DIN 8074.

The joint surfaces (pipe surface and inside of the fitting) are heated to welding temperature by electrical energy using resistance wires in the fitting (heating coil) and welded to the pipe.
The parameters of the saddle fitting required for the welding process are recorded by the welding device by reading in a component-specific barcode. The barcode is located on the upper shell.

HA-WELD® have a universal PIN for welding equipment (suitable for 4.0 and 4.7 mm plugs). No plug adapter is required.

The top outlet is used in combination with ZAK fittings to connect service lines.
In combination with ZAK46 house connection fittings, the HA-WELD® welding clamp can be used for easy tapping of the main pipe, even when in operation.

During installation and maintenance operations, the applicable standards and guidelines, accident prevention regulations and the regulations of professional associations are to be observed and complied with.
Installation and maintenance operations may be performed by qualified personnel only.

2. Assembly

 **ATTENTION:** The HAKU pipe drilling saddle must be installed at a distance of 5x DN but must be installed at least 0.5 metres away (in accordance with DVGW W 333).



Welding machine, marking pen for marking the welding zone, rotary peeler, 99.9% ethanol (or Tangit KS/ Tangit KS cloths), absorbent, non-fraying and uncoloured paper, Allen key size 6 or 8, marking pen for marking the welding point, e.g. SNOWMAN SILVER MARKER

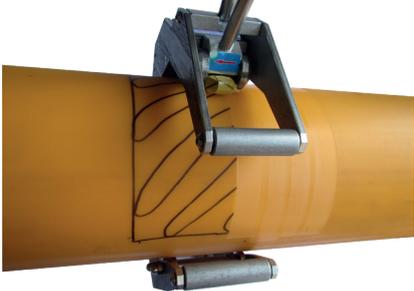
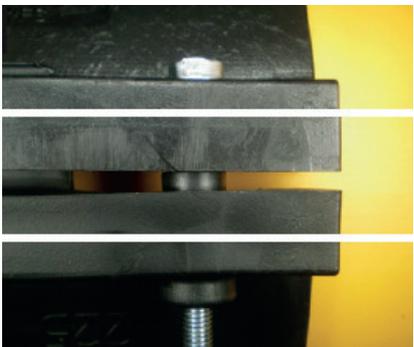
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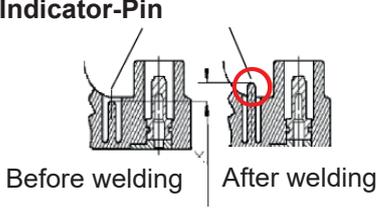
Storage

Store articles in the shade. Solar radiation in combination with the film packaging can strongly heat the article. This changes the winding resistance. This can then lead to welding errors.



CAUTION: Only use welding machines approved by the manufacturer for the welding parameters used (Table page 4 and DVS2207, part 1,5.2) The sequence of operations described must be observed.

2	<p>Fundamentals</p> <p>The quality of the welding is decisively determined by the careful implementation of the preparatory work. The drilling saddle can be used for SDR 11, 17 and 17.6 (for Ø63 only SDR 11.9). Only similar materials can be welded. Here, the materials PE 80 and PE 100 can be regarded as identical and can therefore be welded together.</p>
3	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Alignment</p> <p>Align the upper part of the drilling saddle on the pipeline and mark the welding zone (the pipe surface covered by the saddle) with a suitable pin.</p> </div> </div>
4	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Clean welding zone</p> <p>According to DVS 2207-1, the pipe surface must be completely and evenly cleaned of the oxide layer in the marked area of the welding zone immediately before installation using a rotary peeling tool (the use of manual scrapers is only permitted in exceptional cases).</p> <p>⚠ Caution! If the oxide layer is not completely removed, a leaky or defective welded joint may occur. At least 0.2 mm must be completely removed.</p> <p>This should result in an even surface without any recesses or scratches on the pipe surface. Sanding, filing or cleaning with solvent is not sufficient and is not permitted. The surface treated in this way must be protected from dirt and grease (such as hand cream, oily cloths, etc.), run-off water and rainwater or frost formation.</p> </div> </div>
5	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Cleaning</p> <p>The pipe surfaces to be welded and the inner surfaces of the drilling saddles must be absolutely clean, dry and free of grease. Immediately before assembly (after scraping) the welding surfaces are to be cleaned with 99.9% ethanol (or Tangit KS/ Tangit KS cloths) and exclusively with absorbent, non-fibrous and undyed paper. It must be ensured that no dirt from the edge area gets onto the welding surface. The cleaner must have completely evaporated before welding.</p> </div> </div>
6	<div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Montage des Anbohrsattels</p> <p>Place the upper part with the branch on the cleaned pipe surface and align. Snap the lower part with the clamping hooks into the upper part with the first locking. Remove the screws from the retaining holes and insert them into the holes provided for this purpose. Tighten all four screws evenly by allen key. Check the installation position again and tighten the screws evenly as far as possible using a suitable tool. Visually check the contact surface of the saddle on the pipe. The saddle must fit exactly on the pipe in the crown area. Welding should take place immediately after assembly.</p> <p>⚠ CAUTION: For lateral assembly, make sure that the bar code is visible upwards for welding. During assembly, make sure that the inner surface of the drilling saddle is not damaged.</p> </div> </div>

<p>7</p>		<p>Welding the drilling saddle</p> <p>Connect the contacts (version according to EN 1555-3 type A) to the welding machine. Make sure that the contacts are clean and dry, if necessary clean them beforehand. The welding parameters are contained in a bar code which is placed on the side of the saddle. The parameters are read into the welding machine via the stylus (observe the operating instructions of the welding machine). The attached traceability code can also be read with the stylus. Start welding. The data on the display of the welding machine must be compared with the saddle data (see Table page 4). If the barcode is not readable, the parameters can also be entered manually.</p> <p>⚠ CAUTION: For general safety reasons, keep a distance of 1 m from the welding point during the welding process. Welding while media is leaking is not permitted. The welding process must not be interrupted. Welding with pipe materials other than PE 80/100 is not possible. The welding may only be carried out at ambient temperatures between 0°C and +45°C. Temperature differences between pipe and drilling saddle must be avoided.</p> <p>⚠ CAUTION: If the cooling time is not observed, the saddle may be separated from the pipe in the welding plane. The lower half of the saddle must not be dismantled or loosened during this time.</p>
<p>8</p>	<p>Review</p> <p>Indicator-Pin</p>  <p>Before welding After welding</p>	<p>After completion of the welding process, check whether the welding has been carried out correctly: no error indication on the display of the welding machine (observe operating instructions of the welding machine)</p> <p>The indicator pin only indicates that welding has been carried out. A statement about the achieved quality is not given. Depending on the gap between saddle and pipe, the outlet height may vary. The correct welding sequence is only indicated by the welding machine.</p>
<p>9</p>	<p>Labelling</p>	<p>The welding point must be marked captively with a suitable marking (e.g. SNOWMAN SILVER MARKER) with the position from the installation plan. The welding must be documented with the protocol of the welding machine.</p>
<p>10</p>	<p>Welding defect</p>	<p>If a welding fault (winding short circuit) is indicated on the welding machine, the welding must be rejected. If no pipe penetration (drilling) has yet taken place, the saddle piece can remain on the pipe, but must be permanently marked as defective welding. At a new position, the assembly and welding must be repeated.</p> <p>⚠ CAUTION: It is not allowed to use the used drilling saddle for repeat welding.</p>
<p>11</p>	<p>Pressure testing</p> <p>After successful welding, a pressure test must be carried out in the open pipe trench in accordance with DVGW regulations, for gas in particular G469 A4 Leak test of gas house connection and gas supply lines, observing the specified minimum cooling time..</p>	

12 Drilling with Hawle pipe drilling device Ord.No. 830-00 for potable water or with a commercially available pipe drilling device for gas::

The following instructions / regulations must be observed:

Corresponding operating instructions for the drilling device

W333 for tapping water pipes

Regulations for working with asbestos-cement pipes

Regulations that apply when working with gas fittings and gas pipes.

When drilling into gas pipes, care must be taken to ensure that the escaping gas is discharged safely.

DVGW Code of Practice G 452-1, G 465-2 and G 459-1

Accident prevention regulation according to BGR 500, DGUV 203-90 'Working on gas pipes'

Explosion protection regulations

Nominal size	Outflow	max. bore diameter
D90-D225	ZAK46	36 mm

13 Pressure testing

After successful tapping, a pressure test must be carried out in the open pipe trench in accordance with DVGW regulations, for gas in particular G469 A4 Leak test of gas house connection and gas supply lines, observing the specified minimum cooling time.

Table Welding parameter

PipeØ	Welding stress	Resistor	Welding time	Cool down period	Number for barcode Code Interleaved 2 of 5 with checksum
63mm	10 V	0,40 Ω	120 sec.	20 min.	 080123330633100405110556
90mm	18 V	0,90 Ω	210 sec.	30 min.	 080123340903180905210555
110mm	20 V	0,90 Ω	235 sec.	30 min.	 080123341103200905225559
125mm	20 V	0,90 Ω	235 sec.	30 min.	 080123341253200905225553
160mm	20 V	0,90 Ω	235 sec.	30 min.	 080123341603200905225554
180mm	20 V	0,90 Ω	235 sec.	30 min.	 080123341803200905225552
225mm	20 V	0,90 Ω	235 sec.	30 min.	 080123342253200905225550

3. Commissioning and pressure testing

For commissioning and pressure testing, see the instructions in the installation procedure!

4. Service and maintenance

The HA-WELD welding clamp is maintenance-free.

* Brass/red brass components > 0.1% lead acc. to Regulation (EU) No. 1907/2006 (REACH Regulation)

If you have any other questions or if you need more information please contact:

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