Operating and maintenance instructions for

Service valve with milling device and electrofusion saddle with horizontal PE fusion end Order No. 313-05

1. Intended use / product description:

Medium: Potable water

Max. operating pressure: 16 bar

Material: Milling saddle: red brass*, Hawle epoxy powder coated
Electrofusion saddle (HA-WELD®): PE 100
Milling cutter: brass
Outlet: PE 100, SDR 11

Application range: PE, SDR 11: d 63 - d 225
PE, SDR 17: d 63 - d 225

Ausführung: with Milling cutter
Drilling diameter: 25 mm

Abgang: with horizontal PE fusion end (90° to pipe direction)
installation of a push-fit fitting or for welding into PE pipelines via resistance welding or butt-welding possible

Milling saddles with HA-WELD® electrofusion saddles are to be used for welding onto PE pipes (EN 12201, DIN 8074)

Hawle milling saddles are provided with integrated drilling tool and operational shut-off device. Therefore it is possible to drill pipes of PE and PVC also with the pipe being in service.
To ensure proper drilling, the drilling tool is fed in at high speed until it almost touches the material. The drilling process proper is performed at low feed rate. For infeed and drilling process approx. 27 turns are necessary. Shut-off during operation is effected via a profile gasket plunging into a cylindrical gasket surface.

When laying, installing the pipes and during maintenance, it is necessary to refer to and comply with applicable standards and regulations, accident prevention regulations and regulations from trade associations.
Installation, assembly and maintenance should only be carried out by qualified personnel.

2. Installation

	hex key M6, M8

2.1 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 T.1, page 4). (see DVS2207, part 1,5.2) The sequence of operations described must be observed.

2.2 Fundamentals

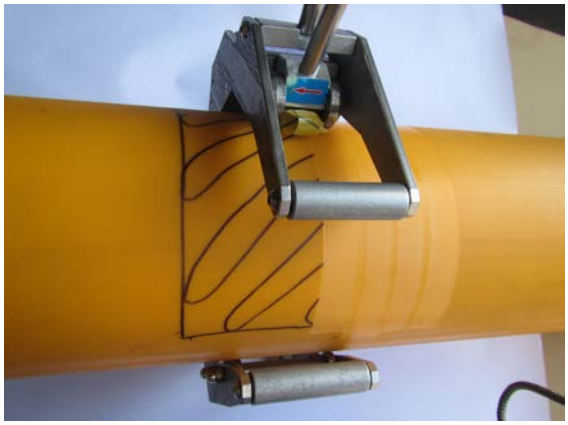
The quality of the welding is decisively determined by the careful implementation of the preparatory work. The drilling saddle can be used for SDR 11.17 and 17.6 (for Ø63 only SDR 11.9). Only similar materials can be welded. Here, the materials PE 80 and PE 100 can be regarded as identical and can therefore be welded together.

2.3 Installation electrofusion saddle

1

Alignment
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.

2



Clean welding zone
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).

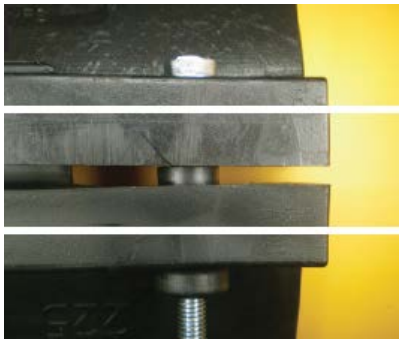
Caution!
If the oxide layer is not completely removed, a leaky or defective welded joint may occur.
At least 0.2 mm must be completely removed.

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.

3

Cleaning
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.

4



Assembly of the drilling saddle
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 hand. 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.

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.

5

Welding the drilling saddle

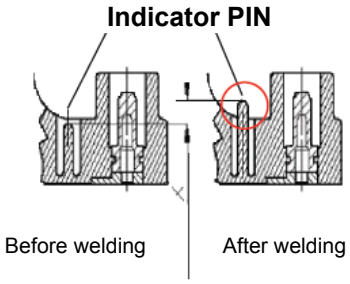
Connect the contacts (version according to EN 1555-3 type A) to the welding machine. Make sure that the contacts are clean and dry, if necessary clean them beforehand. The welding parameters are contained in a bar code which is placed on the side of the saddle. The parameters are read into the welding 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 T.1). If the barcode is not readable, the parameters can also be entered manually.

⚠ **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.**

⚠ **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.**

Review

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)



Indicator Pin

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.

Labelling

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.

Welding defect

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.

⚠ **It is not allowed to use the used drilling saddle for repeat welding.**

T.1 Welding parameter

Pipe Ø	welding stress	resistor	weld time	cool-down period	No. for barcode Code Interleaved 2 of 5 with checksum
63 mm	10 V	0,40 Ω	110 sec.	20 min.	08012333063310040511055 6
90 mm	18 V	0,90 Ω	210 sec.	30 min.	08012334090318090521055 5
110 mm	20 V	0,90 Ω	225 sec.	30 min.	08012334110320090522555 9
125 mm	20 V	0,90 Ω	225 sec.	30 min.	08012334125320090522555 3
160 mm	20 V	0,90 Ω	225 sec.	30 min.	08012334160320090522555 4
225 mm	20 V	0,90 Ω	225 sec.	30 min.	08012334225320090522555 0

2.4 Drilling process

Do not change the milling position before the drilling process.
Valve is delivered in drilling position.

Perform drilling with uniform closing movement.

3. Service and maintenance

The Hawle Service valve with milling device and electrofusion saddle is maintenance-free.

4. Commissioning and pressure testing

After successful welding, a pressure test must be carried out in an open pipe trench in accordance with DVGW regulations, observing the specified minimum cooling time.

* 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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