User's Manual

HST – S – 315 2.0

Built on the German original version

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Contents

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1 Introduction

Dear Customer:

Thank you very much for purchasing our product. We are confident that it will meet your expectations.

The HST – S – 315 2.0 Welding Unit, set its practical transport case, is designed exclusively for joining PE discharge lines assembled with electrofusion fittings.

The product was manufactured and checked according to state-of-the-art technology and widely recognized safety regulations and is equipped with the appropriate safety features.

Before shipment, it was checked for operation reliability and safety. In the event of errors of handling or misuse, however, the following may be exposed to hazards:

- the operator's health,
- the product and other hardware of the operator,
- the efficient work of the product.

All persons involved in the installation, operation, maintenance, and service of the product have to

- be properly qualified,
- operate the product only when observed,
- read carefully and conform to the User's Manual before working with the product.

Thank you.

2 Safety Messages

2.1 Improper Use of the Welding and Power Supply Cables

Do not carry the product by one of its cables and do not pull the power cord to unplug the unit from the socket. Protect the cables against heat, oil, and cutting edges.

2.2 Securing the Fitting and the Joint

Use appropriate clamps where necessary to secure the fitting and the joint before welding. The welding unit is intended exclusively for applications where contact with water is not possible. It must not be used in the rain.

In particular for buried/in-backfill installations, verify against the relevant local standards that the welder may be used for the intended application and that all drains and pipelines comply with the requirements stipulated by such standards for the intended application.

2.3 Cleaning the Welding Unit

The preoduct must not be sprayed with or immersed in water.

2.4 Opening the Unit


Caution

The cover of the product may be removed only by specialized staff of the company HÜRNER Schweisstechnik or of a partner organization properly trained and approved by it.

2.5 Checking for Damage

Every time before operating the product, carefully check safety features or possibly existing parts with minor damage for intended and proper function. Make sure that the push-on connection terminals work properly, that contact is fully established, and that the contact surfaces are clean. All parts have to be installed correctly and properly conform to all conditions in order for the operator to be sure that the product works as intended. Damaged safety features or functional parts should be properly repaired or replaced by a qualified organization/service shop.

2.6 Mains Power Supply

Utility suppliers' wiring requirements, VDE provisions, occupational safety rules, DIN / CEN regulations, and national codes have to be respected.

Mains power fuse protection should be 16 A.

The product has to be protected against rain and humidity.

3 Service

3.1 Maintenance and Repair

As the product is used in applications that are sensitive to safety considerations, it may be serviced and repaired only by the manufacturer or its duly authorized and trained partners. Thus, constantly high standards of operation quality and safety are maintained.


Important

Failure to comply with this provision will dispense the manufacturer from any warranty and liability claims for the product, including any consequential damage.

When serviced, the unit is upgraded automatically to the technical specifications of the product at the moment it is serviced, and we grant a three-month functional warranty on the serviced unit.

We recommend having the product serviced at least every twelve months.

In Germany, do not neglect that the occupational safety check-up under rule DGUV Vorschrift 3 is mandatory.

3.2 Transport, Storage, Shipment

The product is shipped in its case.

Store the product-in-case dry and protected against humidity.

The product will be shipped exclusively in its case.

4 Principle of Operation

The HST – S – 315 2.0 welding unit allows using electrofusion fittings to join discharge lines routed indoors and made of PE for diameters up to 315 mm.

The microprocessor-controlled unit:-

- controls and monitors the welding process in a fully automated fashion,
- determines welding duration depending on ambient temperature,
- indicates all information with three LEDs and a seven-segment display screen.

Important

Watch the color coding to be sure you select the right one of the supplied welding cables, which matches the size and the manufacturer of the fitting to be welded (see Sect. 5.2).

Optional accessories

- **Handheld Scraper**
- **Welding Cable Extension**

5 Operation

5.1 Turning the Welding Unit On

After connecting the power supply cord to 230 V mains power, turn the welding unit on at the On/Off switch. The unit then performs an auto-test. All three LEDs light up briefly and simultaneously to indicate that the unit is ready for operation. All segments of the seven-segment screen, too, light up as 888 for a check for approximately 1 second. After this, both the LEDs and the screen characters go off again.

5.2 Connecting the Electrofusion Fitting

Connect the welding adapter the terminals of which are going to be plugged into the fitting, to the welding cable routed out of the welding unit (see figures below). In doing this, be sure to use the welding adapter that matches the kind of fitting planned to be processed.

Connector at the Working End of the Welding Cable from the Welding Unit

Terminals of the Welding Adapter to be Plugged into the Electrofusion Fitting (color and identifier on one of them, to code the type of connector)

Plug of Welding Adapter to Be Connected to Connector of Welding Cable

Important

As long as no welding adapter is connected to the welding cable, the display shows ---. It changes to A00 when the adapter is used that has one yellow push-on terminal (connector type A00). When using the adapter with one green

terminal (connector type A0P), the screen displays A0P. Connecting the adapter with one blue terminal (connector type A01) will make the display switch to A01. The adapter with one red terminal (connector type A02), when used, will result in A02 being displayed. The adapter with one white terminal (connector type A04) matches A04 on the display screen.
As soon as a welding adapter was plugged into the welding cable of the unit, **all** indicators of the cable/adapter type (display screen, color of terminal, identifier printed on terminal) must match the fitting (size and manufacturer) that is going to be used.
Failure to comply with this instruction will result in a poor welding outcome, may cause damage to the welding unit, and will cancel any and all warranties under which the unit is. Bear in mind the following matches:

***Connector type A00 – yellow terminal* —— Fitting sized 32 - 160 mm, of the makes Valsir, Akatherm, Eurofusion, Geberit, Waviduo, Coes**

***Connector type A0P – green terminal* —— Fitting sized 200 - 315 mm, of the make Waviduo**

***Connector type A01 – blue terminal* —— Fitting sized 200 - 315 mm, makes Valsir, Akatherm, Eurofusion, Wavisolo**

***Connector type A02 – red terminal* —— Fitting sized 200 - 315 mm, of the make Geberit**

***Connector type A04 – white terminal* —— Fitting sized 200 - 315 mm, of the make Coes**

Connect the connection terminals to the fitting and check for proper fit. The contact surfaces of the connection terminals and the fitting have to be clean. Dirty terminals may lead to improper welding and also to overheated and fused terminal plugs.


Important

When using the so-called multi-adapter for the simultaneous welding with two fittings, make sure to connect it properly, as described in Sect. 5.8.

After the welding cable was connected to the welding unit, the display screen shows the connection type, A00, A01, etc. As soon as the welding cable is plugged into the electrofusion fitting to be processed, the yellow LED (Fitting connected) lights up. For the connection type A04 (white connector), additionally the diameter of the connected Coes fitting is displayed: 200 mm, 250 mm or 315 mm.

After connecting the electrofusion fitting, start the welding process by pressing the START key. Pressing this key will cause the welding unit to show the welding time, which is then counted down.

Depending on the processed fitting, the welding time, which is counted down on the display, may be up to 700 s.

5.3 Welding Process

The welding process is monitored for its entire duration, applying the welding parameters computed for the electrofusion fitting.

5.4 End of Welding

The welding process was completed successfully if the actual welding time is 0 s (000 on the display screen), the green LED (End) lights up at that point, and the audible signal beeps twice. As opposed to

this, with the connection type A02 the system recognizes the proper end of welding on its own, and despite 000 displayed on the screen, a welding process may be flawed (see Sect. 6.11).

5.5 Aborted Welding

The welding process has caused errors if the red LED (Fault) is on and the audible signal beeps intermittently. Additionally, an error code is displayed on the screen.

An error has to be acknowledged by pressing the STOP key.

5.6 Cooling Time

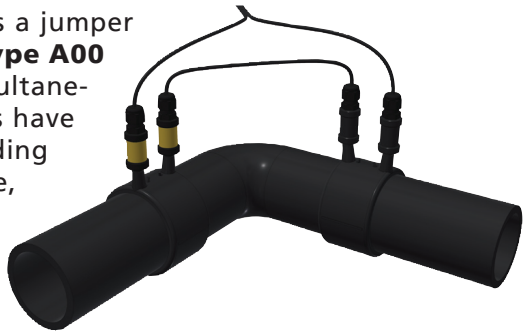
The cooling time as given in the fitting manufacturer's instructions has to be respected. Note that for that time the pipe/fitting joint which is still warm must not be subjected to an external force.

5.7 Returning to the Start of Welding

After welding is finished, disconnecting the welded fitting from the welding unit will cause the unit to return to the start of welding. An additional safety feature prevents a given electrofusion fitting from being welded twice inadvertently: after a properly completed or an aborted welding operation, the welding unit has to be disconnected from the fitting first, in order to be ready for the next welding.

5.8 Using the Optional Multi-adapter

The so-called multi-adapter, which is an optional extra, is a jumper cable which, **for electrofusion fittings of connector type A00 and with a nominal size ≤ O.D. 110 mm**, allows the simultaneous processing of two fittings. Both electrofusion fittings have to be of the same kind and have to require identical welding parameters. Then, the adapter cable daisy-chains, as it were, the fittings. The yellow connection terminal is meant to go to that one of the two fittings where the yellow connector of the welding cable/adapter is, accordingly the black connection terminal of the multi-adapter, to the same fitting as the black connector of the welding cable/adapter.



6 Self-Monitoring Functions Overview

6.1 System Error

Caution

The welding unit must be disconnected immediately from the power supply and the fitting. The auto-test has found an error in the system. The unit must no longer be operated and has to be turned in for check and repair.

6.2 Power Supply Failure

The last welding is incomplete. The welding unit was disconnected from the power supply. This error has to be acknowledged by pressing the STOP key.

6.3 No Contact

There is no properly established electrical contact between the welding unit and the fitting (check push-on terminal on fitting), or the heater coil is defective.

6.4 Low Voltage

The input voltage is below 180 volts. Adjust generator output voltage.

6.5 Overvoltage

The input voltage is above 280 volts. Adjust generator output voltage.

6.6 Temperature Error or Temperature Sensor Defective

The measured ambient temperature is outside the operating range of the welding unit, i.e., below –20°C or over +60°C.

If this error is displayed during the unit's auto-test, the temperature sensor is defective.

6.7 Frequency Error

The frequency of the input voltage is out of tolerance (40 Hz - 70 Hz).

6.8 Low Current

The actual current to the fitting in the course of the welding process is below the low tolerance threshold, which depends itself on the parameters applicable to the fitting being processed.

6.9 Emergency Off

The welding process was interrupted by pressing the STOP key.

6.10 Used Fitting Error

After welding, the unit was not disconnected from the electrofusion fitting, and the user tried to weld the same fitting a second time.

6.11 Welding Time Mismatch for A02 Type Fittings

With electrofusion fittings of the A02 type, the displayed welding time is informative only. The fitting itself indicates if a proper joint was achieved through to the end of the computed welding time. Therefore, it may happen that no proper joint was achieved, although the welding time count-down went down all the way to zero. The error code *E 10* tells you, independently of the displayed welding time, that the joint is flawed (welding took too long). If so, the fitting has to be replaced and the welding operation has to be repeated.

6.12 Excess Current

The actual current to the fitting in the course of the welding process is above the high tolerance threshold, which depends itself on the parameters applicable to the fitting being processed.

6.13 Resistance Error for A04 Type Fittings

For a connected electrofusion fittings of the A04 type, a resistance that is out of tolerance was measured.

6.14 Internal Operating Error at Start of Welding

During the welding start routine, an internal error was detected for the actuation of the welding automatics. The welding operation may still be possible after switching the unit off and back on. If the malfunction reappears every time or more and more often, have the welding unit checked by its manufacturer or seller.

6.15 Internal Operating Error During Welding

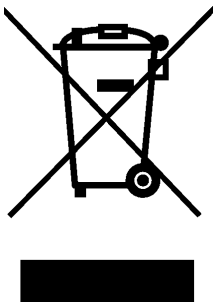
The actuation problem described in Sect. 6.14 occurred in the course of the welding process. The welding operation has to be repeated after switching the welder off and back on, provided no error appear when the welding is started. A problem with the terminals of the welding adapter may also be the cause of this error; their state should therefore be checked, too. If the malfunction reappears every time or more and more often, have the welding unit checked by its manufacturer or seller.

6.16 Safety Relay Malfunction

The internal relay that acts as a safety switch for the control circuit expresses a malfunction. The ongoing welding was therefore aborted. If the error is momentary and disappears on its own, or if it does not reappear after it was acknowledged, the welding operation can be repeated. If it occurs every time or more and more frequently, have the welding unit checked for malfunctions.

7 Technical Specifications of the Product

Nominal Voltage	230 V
Frequency	40 - 60 Hz
Power	2500 W
Ingress Protection	IP 54
Primary Current	AC 16 A
Ambient Temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Max. Output Current	11 A
Tolerances:	
Temperature	± 5 %
Current	± 2 %



Pursuant to the directive 2012/19/EU on Waste Electrical and Electronic Equipment (so-called WEEE Directive), equipment that was manufactured or distributed by ourselves may be returned to us. To discuss the exact procedure we will follow, please contact us with the details below.

We also declare that equipment manufacture complies to the directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (so-called RoHS Directive).

8 Service and Repair Contact

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Info

We reserve the right to change technical specifications of the product without prior notice.

9 Accessories for the Product

Multi-adapter HST – S for simultaneous welding	402-300-002

HÜRNER
SCHWEISSTECHNIK

KONFORMITÄTSERKLÄRUNG
Declaration of Conformity
Déclaration de conformité

Wir / We / Nous

HÜRNER Schweisstechnik GmbH
Nieder-Ohmener Str. 26
D-35325 Mücke-Atzenhain

erklären in alleiniger Verantwortung, dass das Produkt
declare under our sole responsibility that the product
déclarons sous notre seule responsabilité que le produit

HÜRNER HST – S – 315 2.0

Heizwendelschweißautomat für die Verschweißung von Haustechnik-PE-Rohren mit Fitting
Electrofusion Unit for Jointing Indoor PE Pipes with the Help of Electrofusion Fittings
Poste d'électrosoudage pour l'assemblage des tubes en PE à l'intérieur avec raccord électrosoudable

auf die sich diese Erklärung bezieht, mit den folgenden Normen oder normativen Dokumenten übereinstimmen
to which this declaration relates, are in conformity with the following standards or standardizing documents
auxquels se réfère cette déclaration, sont conformes aux normes et documents de normalisation suivants

CE-Konformität / CE Conformity / Conformité CE
Richtlinie 2014/30/EU
Richtlinie 2014/35/EU

Andere Normen / Other Standards / Autres normes
DIN EN 61000-6-2
DIN EN 61000-6-3
DIN EN IEC 60335-1
DIN EN 60529
ISO 12176-2

Bei einer nicht mit uns abgestimmten Änderung der Maschine oder einer Reparatur von Personen, die nicht von uns im Hause geschult und autorisiert wurden, verliert diese Erklärung ihre Gültigkeit.
Any and all modifications of the device without our prior approval, and any repairs by persons who were not trained and authorized by us, shall cause this declaration to become void.
En cas de modification apportée à l'appareil sans notre accord préable ainsi que de réparation effectuée par des personnes non formées et agréées par nos soins, cette déclaration deviendra caduque.

Mücke-Atzenhain .....
CE Marking Date 02.04.2019 Dipl.-Ing. Michael Lenz
Geschäftsführer
General Manager
Directeur général