



aquatherm energy
Processing



PROCESSING

Tools and accessories

The following tools are available for the professional and proper processing of aquatherm energy green and aquatherm energy blue service pipes, with which the insulated pipes and moulded parts are joined together using the socket or butt welding process.

Important!

Only original aquatherm welding equipment and tools or equipment and tools approved by aquatherm may be used.

1. aquatherm manual welder (800 W)

without welding tools (art. no. 9800050337)
For medium pipes with dimensions 32-63 mm

2. aquatherm manual welder (1400 W)

without welding tools (art. no. 9800050341)
For medium pipes with dimensions of 50-125 mm

3. aquatherm welding tools

for manual welders

Art. no. 9800050212	32 mm
Art. no. 9800050214	40 mm
Art. no. 9800050216	50 mm
Art. no. 9800050218	63 mm
Art. no. 9800050220	75 mm
Art. no. 9800050222	90 mm
Art. no. 9800050224	110 mm
Art. no. 9800050226	125 mm

4. aquatherm welding machine (1400 W)

with welding tools 20-125 mm
(art. no. 9800050148)
For medium pipes with dimensions of 50-125 mm

5. aquatherm butt fusion machine

For medium pipes with dimensions 160-630 mm



Hand welder 800 W and welding tools 32-63 mm



Hand welder 1400 W and welding tools 50-125 mm



Welding machine 1400 W with tools



Butt fusion machine type Light including accessories

6. aquatherm electric pulling device

Art. no. 9800050151

For service pipes with dimensions 63-125 mm

Note:

The following additional tools must only be used for processing aquatherm energy blue OT service pipes with dimensions of 32-125 mm, which are joined using the socket welding process. These must be used to remove the oxygen barrier layer from the pipe ends before the welding process.

7. aquatherm universal peelers

Art. no. 9800050481 32 mm

Art. no. 9800050482 40 mm

Art. no. 9800050483 50 mm

Art. no. 9800050484 63 mm

Art. no. 9800050485 75 mm

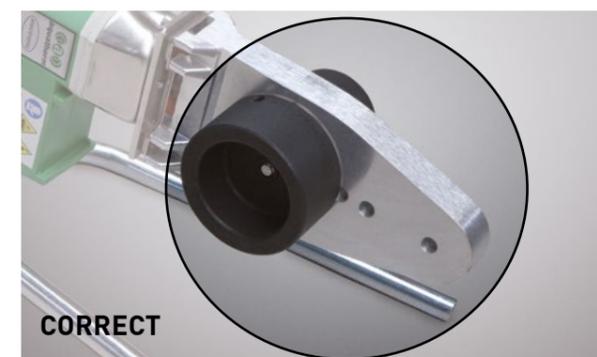
Art. no. 9800050486 90 mm

Art. no. 9800050487 110 mm

Art. no. 9800050488 125 mm

Instructions for fitting the welding tools!

- The heating blade of the welding device must be checked to ensure that it is in perfect condition.
- Damage to the heating blade, such as scratches, grooves, or dirt, must be removed.
- The welding tools, including the heating bush and heating mandrel, must be free from damage and checked for cleanliness before use.
- If needed, clean the heating bush and heating pin with a lint-free, coarse paper towel and, if necessary, use a spirit.
- Damaged tools must not be used and must be replaced.
- When the welding tools are cold, attach them by hand and then use the Allen key to tighten the screw securely.
- Welding tools must lie flat against the heating blade and must not protrude over the edge of the heating blade.



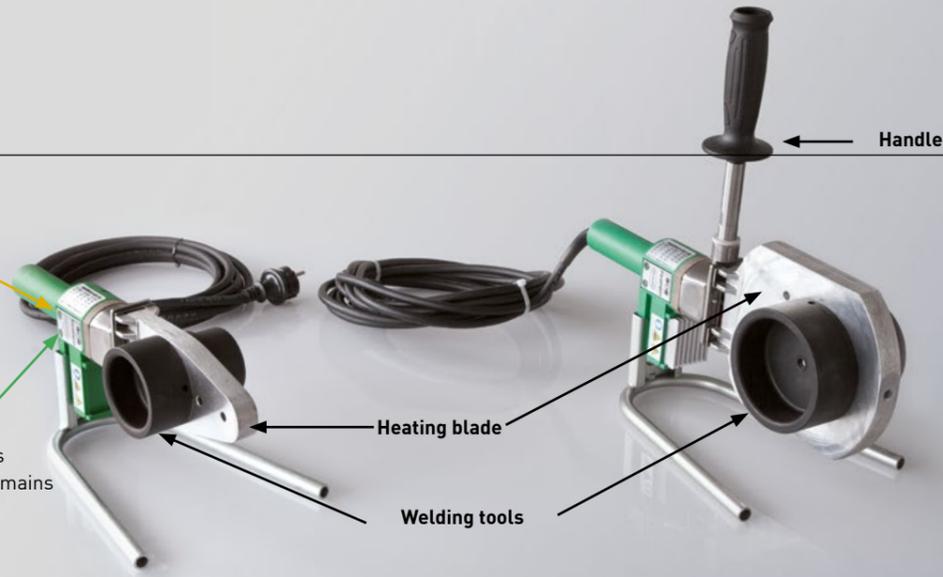


Operating indicator (yellow)

lights up constantly during the heating phase and flashes once the heatsealing temperature has been reached

Status indicator (green)

lights up constantly as soon as the device is connected to the mains



Heating phase

1. Connect the welding device to the power supply and check that the yellow operating indicator lights up.
2. Depending on the size of the welding tools and the ambient temperature, the tools take between 10 and 30 minutes to heat up.
3. During the heating phase, the welding tools must be tightened firmly by turning the screw with the Allen key. Ensure that the welding tools are in full contact with the heating blade.

Do not use pliers or other unsuitable tools to avoid damaging the coating of the welding tools.

4. The required welding temperature for processing aquatherm energy service pipes must be observed. In accordance with the DVS welding guidelines, the welding temperature must be checked on the tool before welding begins. The temperature is checked using a fast-indicating surface temperature measuring device.

Attention:

Start welding only 5 minutes after the welding temperature is reached!

Handling

5. When changing tools on a heated welding device, the welding temperature on the new welding tool must be checked again after the heating phase.
6. If the welding machine is switched off, e.g. during longer breaks, the heating process (from point 1) must be carried out again.
7. After completing the welding work, switch off the appliance and allow it to cool down.

Never cool the welding device with water or other liquids, otherwise the thermal resistors will be destroyed! Never open or repair welding equipment yourself. Send defective welding equipment to the factory for repair.

8. Welding equipment and welding tools must be protected from moisture and contamination. Burnt-on dirt particles can lead to faulty welding. The use of damaged and contaminated tools is not permitted.

9. Do not place the welding device on the welding tools before and after the welding process, as this could damage the Teflon coating of the tools. Always place the appliance in the stand supplied.

Guidelines and regulations

The general health and safety and accident prevention regulations must be observed when handling welding machines.

In particular, the guidelines of the Employer's Liability Insurance Association for the Chemical Industry apply to machines for working and processing plastics (chapter: "Welding machines and welding equipment").

The general guidelines of DVS 2208 Part 1 continue to apply to the handling of aquatherm manual welding equipment, machines and tools.

The manufacturer's instructions must be observed for the proper and professional handling of tools and accessories.

The general guidelines for hot plate welding in accordance with DVS 2207, Part 11 apply.

Note on the butt welding process for medium pipes with dimensions of 160-355 mm:

The relevant data for butt welding are dimension- and device-related and are listed in detail in the corresponding processing descriptions. These are enclosed with the machines or can be requested from aquatherm.

Dimension 160-355 mm:

These dimensions are butt-welded together.

Relevant data for the merger

Pipe Outer Ø	Welding depth	Warm-up time		Processing time	Cooling time
		sec. DVS	sec. AQT*		
mm	mm			sec	Min.
32	18	8	12	6	4
40	20,5	12	18	6	4
50	23,5	18	27	6	4
63	27,5	24	36	8	6
75	30	30	45	8	8
90	33	40	60	8	8
110	37	50	75	10	8
125	40	60	90	10	8

*In accordance with DVS 2207, Part 11, the heating time should be increased by 50 % at ambient temperatures below +5 °C.





Preparing the tools __

Checking the welding temperature

The welding temperatures of all welding devices and machines must be measured using high-speed surface temperature measuring devices. The measurement is carried out on the welding tools.

The temperature is always measured before the welding process begins. Failure to reach the specified welding temperature may result in faulty welded joints.



Temperature measurement on the aquatherm hand welder (800 W)

Welding temperatures for aquatherm energy

Heating element socket welding: 260 °C for medium pipes with dimensions 32-125 mm

Heating element butt welding: 210 °C for medium pipes with dimensions 160-355 mm



Temperature measurement on the aquatherm hand welder (1400 W)

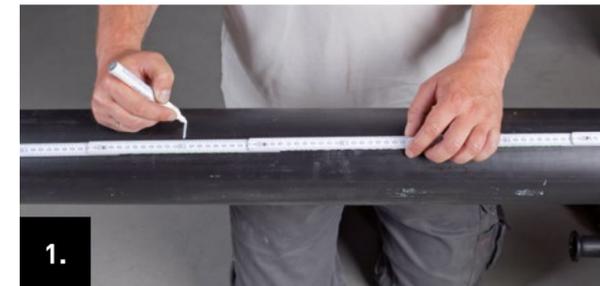


Temperature measurement on aquatherm welding machine



Temperature measurement on aquatherm butt fusion machine

Cutting and stripping pipe lengths* __



1. Measure the pipe length and mark it on the casing pipe.



2. Mark the cutting line on the pipe circumference with adhesive tape.



3. Cut the pipe along the cutting line using a standard tiger saw or foxtail equipped with a plastic saw blade.



4. Mark the stripping length of 22.5 cm from the pipe end on the casing pipe.



5. Cut through the entire circumference of the casing pipe with a pipe cutter up to the PUR insulation layer.



6. Cut the jacket down to the PUR insulation layer using a standard tiger saw or foxtail equipped with a plastic saw blade.



7. Cut off the end of the casing pipe and then mechanically remove the PUR insulation layer along the entire length of the insulation.



8. Clean the stripped carrier pipe and deburr the pipe end both internally and externally.

* This processing applies to aquatherm energy without leakage detection



Removing the oxygen barrier layer __

for aquatherm energy blue OT in the dimensions 32-250 mm

Attention: Do not forget the shrink sleeve!

For pipe and/or fitting connections that are to be re-insulated with an aquatherm energy sleeve or Red sleeve, it must be ensured that the shrink sleeve is pushed over the casing pipe on one side of the joint before the welding process.

However, the protective film surrounding the shrink sleeve must not yet be removed. Subsequent application of the shrink sleeve is not possible.

The end pieces of aquatherm OT (oxygen-tight) and UV (UV-resistant) can be peeled using the universal peeling devices. By evenly removing the outer layer of the pipe, the pipe system can be extended as required using a moulded part. The universal peeling devices are available in sizes \varnothing 20-125 mm (art no. 9800050479-9800050488). The peeling process is carried out either mechanically or by hand. For mechanical processing, two driver plates are available for pipe sizes \varnothing 20-63 mm (art. no. 9800050499) and \varnothing 75-125 mm (art. no. 9800050500). The drills or cordless screwdrivers should have a high torque.

1. Instructions for the mechanical peeling process

1.1 The driver plate is clamped into the cordless screwdriver with the hexagon bolt.

1.2. The peeler is fixed with its fitting screws in the groove of the driver plate that matches the diameter and turned clockwise so that the peeler is held on the driver plate.

1.3. The peeling tool clamped in the drill chuck is attached to the pipe end via the guide.

1.4 When the peeling device rotates, the peeling process begins in the axial direction under slight pressure (feed). The peeling process is complete when the driving plate strikes the end of the pipe.

1.5 The pipe can now be socket welded.

2. Peeling instructions for hand peeling

2.1. Two toggles are fitted to the peeling device for manual peeling.

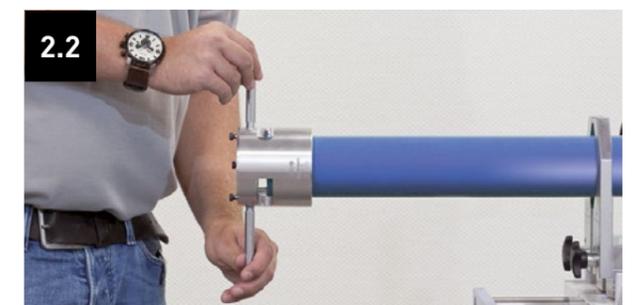
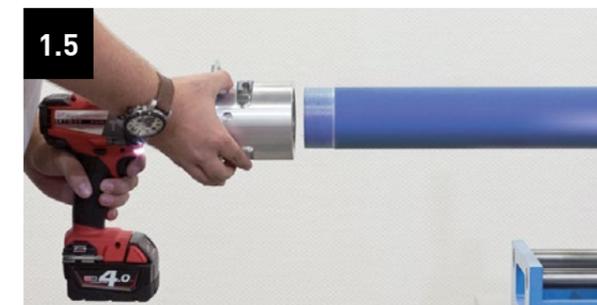
2.2. The peeler is pushed onto the untreated pipe as far as it will go.

2.3. Turn the peeler clockwise until the marked peeling depth (see table below) is reached.

2.4 Once the peeler has reached the specified/marked peeling depth (see table), the peeler is removed and socket welding can begin. If the e-socket is to be used as a sliding socket, the peeling depth for e-socket welding (see table) must be doubled.

Peel depth table for socket welding __

Diameter \varnothing	Peeling depth mm
32	22
40	25
50	28
63	32
75	34
90	37
110	42
125	44





Heating element socket welding with manual welder __

Welding process without mechanical aids



1. Remove dirt and impurities from the end of the pipe. [Attention: For aquatherm energy blue OT, see also the description S. 55.]



2. Mark the welding depth with the aquatherm welding depth gauge and graphite pencil.



3. Remove the aquatherm welding socket from the packaging. Unpacked moulded parts must be cleaned accordingly.



4. Press the aquatherm welding socket onto the heating mandrel and at the same time push the pipe end into the heating socket up to the marked welding depth mark.



5. After the heating time has elapsed, remove the aquatherm welding socket from the heating mandrel and the heating bush from the pipe end.



6. Push the sleeve onto the pipe end immediately after removing the welding device.



7. Press the welding socket onto the pipe end to the end of the welding depth within the processing time.



8. Align the aquatherm welding socket and fix for a short time. Further processing steps are only carried out after the specified cooling time has elapsed.

Heating element socket welding with manual welder and pulling device __

Welding process with mechanical aid



1. Push the pipe clamping slide into the rear slide rail until the arrow markings match and fix in place with the locking bracket.



2. Insert the moulded part clamping slide into the front slide rail until the arrow markings match and fix in place.



3. Slide the clamping jaws against the face of the moulded part and tighten them against the stop using the fastening screw.



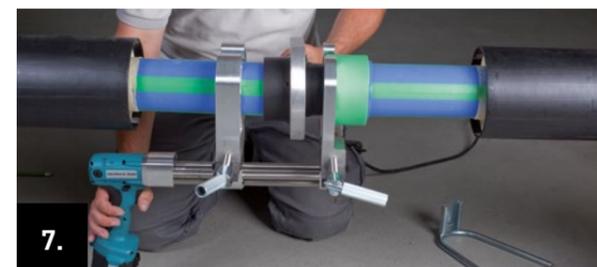
4. The welding depth and clamping distance are marked in a single operation using the aquatherm green clamping welding depth gauge.



5. Push the pipe end into the pulling tool up to the end of the clamping mark and tighten the clamping jaws with the fastening screw.



6. Remove dirt and impurities from the end of the pipe and the inside of the moulded part.



7. Position the hand welder centred between the fitting and the pipe end and slowly move the pulling device forwards.



8. Use the pulling tool to press the heating mandrel into the welding socket and at the same time push the pipe end into the heating socket up to the marked welding depth mark.

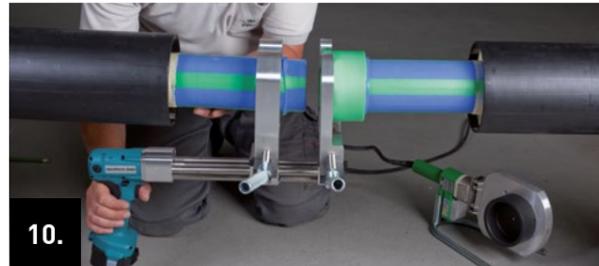


Heating element socket welding with hand welder and pulling device

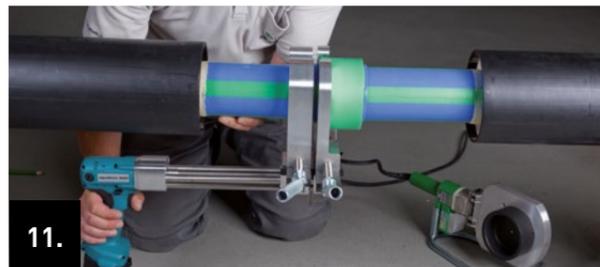
Welding process with mechanical aid



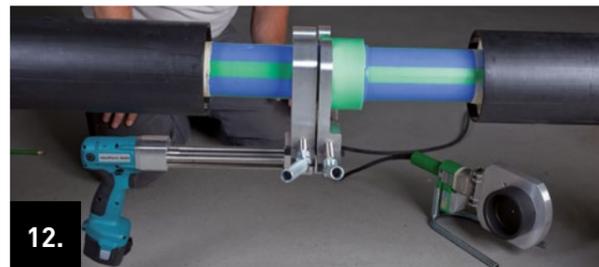
9. After the heating time has elapsed, move the pulling tool apart and remove the welding device between the pipe end and the moulded part.



10. Immediately after removing the welding device, the pulling tool is slowly and evenly retracted.



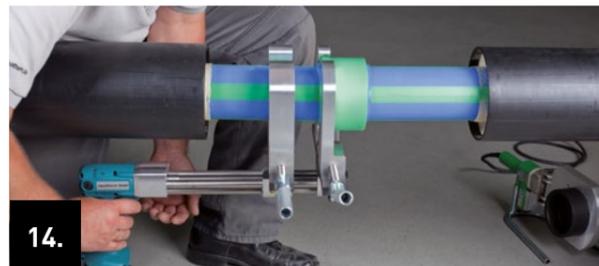
11. Press the pipe end into the welding socket with the pulling tool to the end of the welding depth within the processing time.



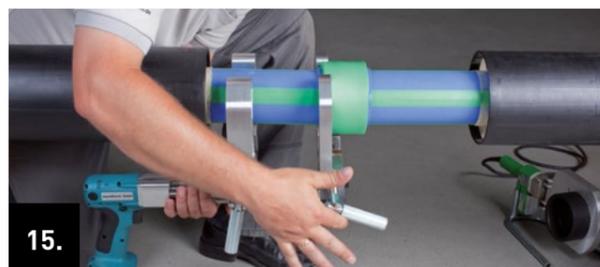
12. Align the welded joint with the pulling device and fix for a short time. Further processing takes place after the specified cooling time has elapsed.



13. After the cooling time has elapsed, loosen the clamping jaws on the pipe side by unscrewing the fastening screw.



14. Move the pulling tool apart to be able to loosen the fastening screw of the moulded part clamping jaws.



15. Loosen the clamping jaws on the moulded part side by unscrewing the fastening screw.



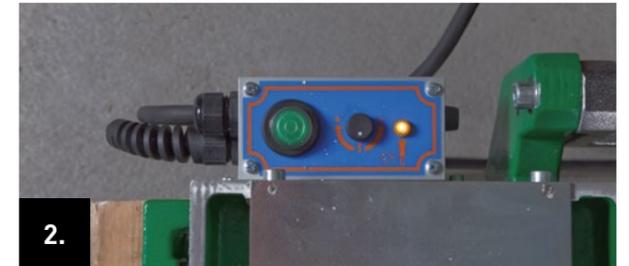
16. Open the clamping jaws of the pulling tool until the pulling tool can be removed sideways or downwards from the joint.

Heating element socket welding with welding machine

Setup and welding process



1. Set up and align the welding machine. Take space requirements into account! (Please note that the machine must be removed from underneath the pipe after welding work has been completed)



2. Connect the power supply and check whether the yellow operating indicator lights up.



3. The welding depth of the pipe dimension to be processed is set using the rotary knob (on the left front of the machine frame).



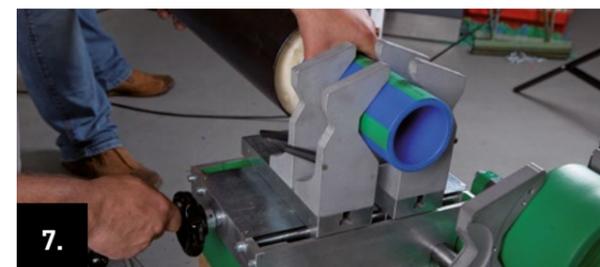
4. Slide the rear pair of clamping jaws for pipe fastening onto the front pair of clamping jaws and secure by tightening the fastening screws.



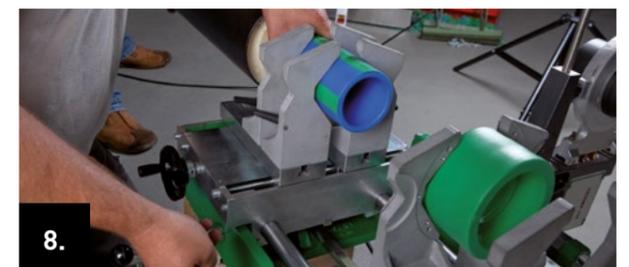
5. Hold the welding socket between the moulded part clamping jaws and press against the stops on the end face.



6. Fix the sleeve against the stop and tighten the clamping jaws firmly with the crank handle .



7. Push the pipe end between the clamping jaws and centre it by turning the crank handle, but do not tighten it.

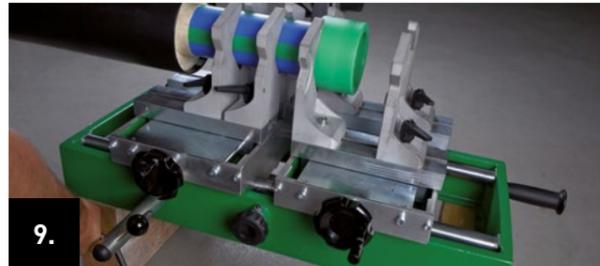


8. To preset the welding depth, press the calibration button located in the centre of the machine frame in as far as it will go.



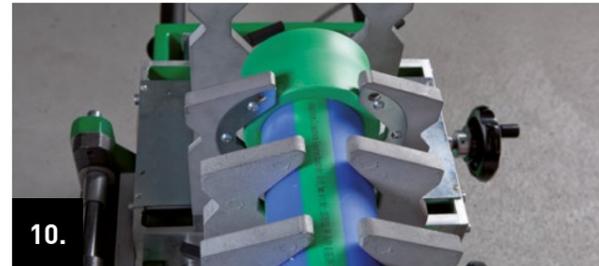
Heating element socket welding with welding machine __

Setup and welding process



9.

Move the carriage of the welding machine together using the rotary crank and press the pipe end onto the welding socket.



10.

Align the pipe end all the way round the welding socket and centre the position exactly.



11.

Clamp the pipe end firmly with the clamping jaws by turning the crank handle.



12.

Move the carriage of the welding machine apart using the rotary crank and pull out the calibration knob to preset the welding depth.



13.

Fold down the welding machine and retract the carriage of the welding machine using the rotary crank.



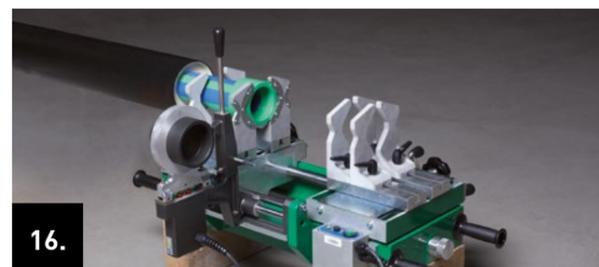
14.

After the heating time has elapsed, move the welding machine carriage apart using the rotary crank and fold up the welding machine.



15.

Move the carriage of the welding machine together as far as it will go using the rotary crank.

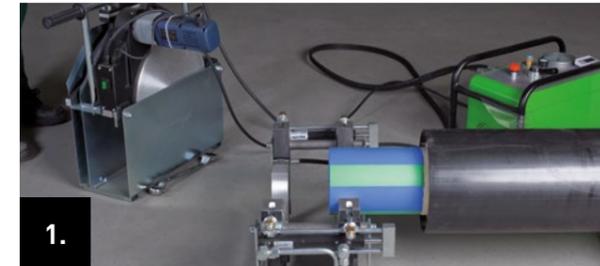


16.

After the cooling time has elapsed, release the clamping jaws on the moulded part and pipe end and turn the welding machine 180°.

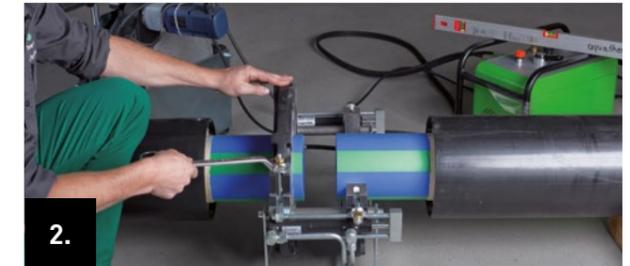
Heating element socket welding with butt welding machine type: Two-ring Widos __

Prepare pipe ends and welding process



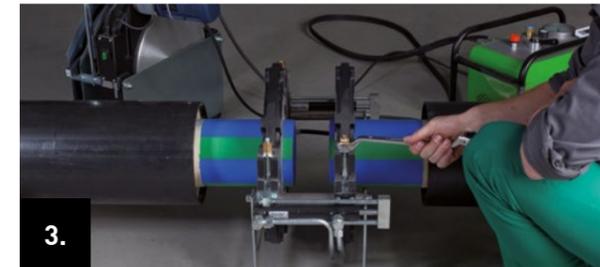
1.

Set up and align the welding machine, plug in the hydraulic hoses and connect the welding machine and milling tool to the power supply.



2.

Insert the first pipe end into the clamping device and align and fix it with the upper clamping element.



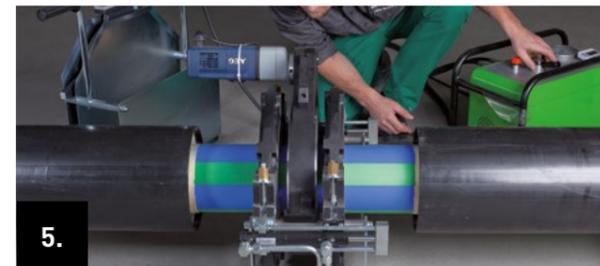
3.

Insert the other pipe end into the clamping device in the same way and align and fix it with the clamping element.



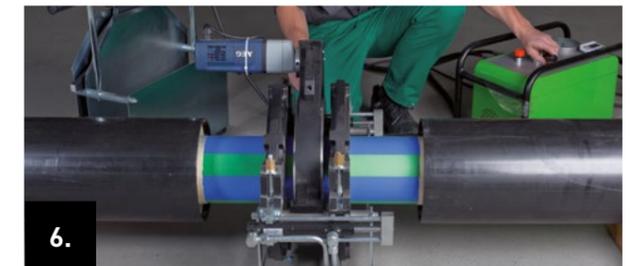
4.

Insert the milling tool between the pipe ends and secure it to the frame of the assembly slide with the locking mechanism. The tool can only be switched on if the locking mechanism is working properly.



5.

Switch on the milling tool and slowly move the pipe ends in the assembly carriage towards the milling tool by actuating the hydraulics.



6.

The pipe ends are slowly milled flat at the end faces by hydraulic actuation under slight contact pressure to the milling tool.



7.

With chip removal running all round, move the assembly slide apart, remove the milling tool and remove the chips.



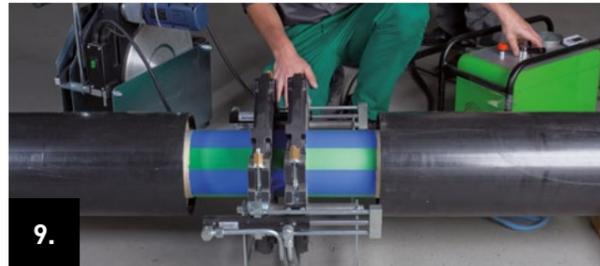
8.

Attention! For aquatherm blue OT pipes, the side to be welded must be chamfered with the aquatherm chamfering tool before welding.

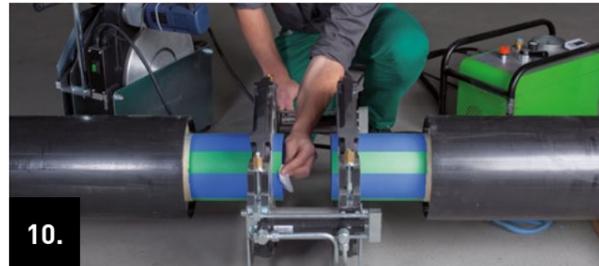


Heating element socket welding with butt welding machine type: Two-ring Widos

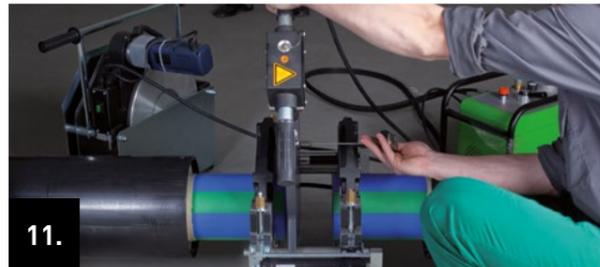
Prepare pipe ends and welding process



9. Slowly retract the assembly slide until the pipe ends are flush. Check the gap and offset dimensions and then adjust the pressure on the hydraulics in accordance with the data sheet.



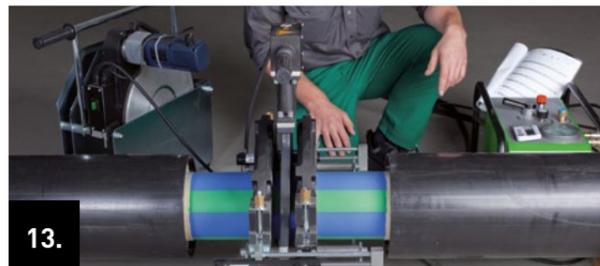
10. Remove dirt and impurities as well as milling residue from the ends of both pipe ends.



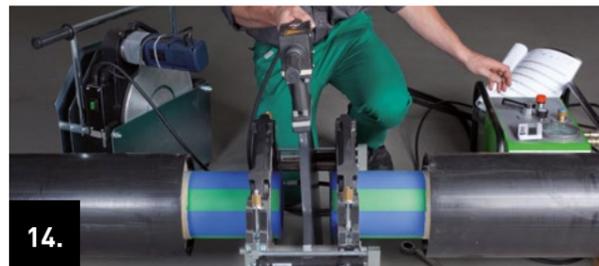
11. Insert the welding tool between the pipe ends, check that the welding sword is clean and measure the welding temperature.



12. Slowly move the assembly carriage towards the welding blade by actuating the hydraulics and press the pipe ends against the welding blade until the specified equalisation pressure is reached.



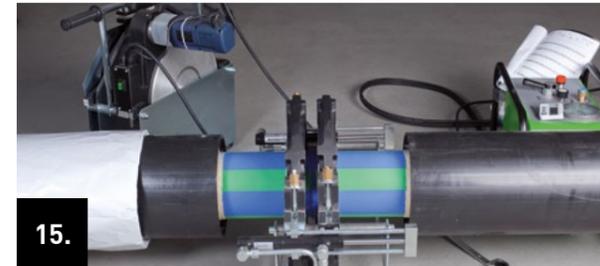
13. Once the specified bead height has been reached, the pressure on the hydraulics is reduced. The heating time then begins, during which the end faces of the pipe ends are brought to the required welding temperature.



14. After the heating time has elapsed, quickly move the assembly carriage apart by actuating the hydraulic and remove the welding tool.

Heating element socket welding with butt welding machine type: Two-ring Widos

Prepare pipe ends and welding process



15. By actuating the hydraulics, the pipe ends are slowly joined together until the required welding pressure is reached.



16. The assembly carriage remains at the welding pressure set on the hydraulics until the end of the cooling time.



17. After the cooling time has elapsed, the pressure is released from the hydraulics. The clamping elements are then released and the clamping device removed.





Corrosion protection tapes

Corrosion protection tapes are designed for the high-quality re-wrapping of pipework. They can be applied quickly and safely to weld seams, bends and moulded parts. The systems comply with the DIN 30672 and EN 12068 standards and are DVGW-approved (Reg. No.: NV-5180BQ0144).

MonoTop40 single-band system

This system is used to wrap weld seams and entire pipe strings, especially for bends and moulded parts up to DN 600.

Thanks to its high flexibility, it is particularly suitable for manual processing without a wrapping machine.

MonoTop40 is a robust, self-welding corrosion protection tape with a flexible plastic outer layer.

The following material is required for re-wrapping the aquatherm energy insulating sleeve set with the MonoTop40 corrosion protection tape:

1. Adhesive tape for fixing the PUR half-shell elements.
2. 40 or 60 grit lubricating linen.
3. Winding machine for MonoTop40 corrosion protection tape (not absolutely necessary)
4. MonoTop40 corrosion protection tape (visible on the winding machine)
5. Primer to dissolve the KM pipe
6. Cutter knife for cutting the MonoTop40 corrosion protection tape after completion of the winding process.
7. Flat curved brush (spreads the colour well and can be used „crosswise“; good for relatively narrow strokes and corners)



Die hier gezeigte Wickelmaschine ist zur Verarbeitung des MonoTop40 Korrosionsschutzbandes nicht zwingend erforderlich.

MonoTop40 requirement for aquatherm energy pipes

Pipe DN (SDR 11)	Outer casing DA in mm	Wrapping width in mm	Rec. width MonoTop40	Linear metre MonoTop40	Are for priming by square metres
DN 25	90	650	50	7,63	0,057
DN 32	110	650	50	9,33	0,069
DN 40	110	650	50	9,33	0,069
DN 50	125	650	50	10,60	0,079
DN 65	140	650	50	11,88	0,088
DN 80	160	650	50	13,57	0,101
DN 80/100	200	650	50	16,96	0,126
DN 100	225	650	50	19,09	0,141
DN 125	250	650	100	11,00	0,157
DN 150	315	650	100	13,85	0,198
DN 200	400	650	100	17,59	0,251
DN 250	450	650	100	19,79	0,283
DN 300	500	650	100	21,99	0,314

Technical data primer

Feature	Test method	Unit	Typ PSI P27
Colour			black
Density	ASTM 1298	g/cm ³	0,83
Solvent content	ISO 1515	%	27
Viscosity	ASTM D 1200	Sek.	35
Flash point	ABEL IP 170	°C	- 12
Consumption		l/m ²	ca. 0,2
Processing temperature		°C	- 30 to 60

Technical data MonoTop 40

Eigenschaft	Test method	Value	Notes
Adhesive base		Butyl rubber mixture	
Carrier tape base		Polyolefins	
Colour		black	
Total thickness		1,016 mm	
Adhesive thickness inside		0,610 mm	
Beam thickness		0,406 mm	
Tensile strength	DIN EN 12068	7 N/mm	
Elongation at break	DIN EN 12068	400 %	
Core diameter	DIN EN 12068	76 mm	
Adhesion on primed steel at 23°C	DIN EN 12068	20 N / 10mm	
Adhesion on primed steel at 50°C	DIN EN 12068	3 N / 10 mm	
Adhesion to itself	DIN EN 12068	20 N / 10 mm	
Sheating resistance		40 KV / mm	
Water absorption		0,60 %	Measurement with tape adhering to steel
Processing temperature		-35 °C – 70 °C	Belt temperature min. 10 °C
Continuous operating temperature		-35 °C – 85 °C	



Nachumhüllung mit MonoTop40

Vorbereiten des Mediumrohres

Preparation of the winding machine



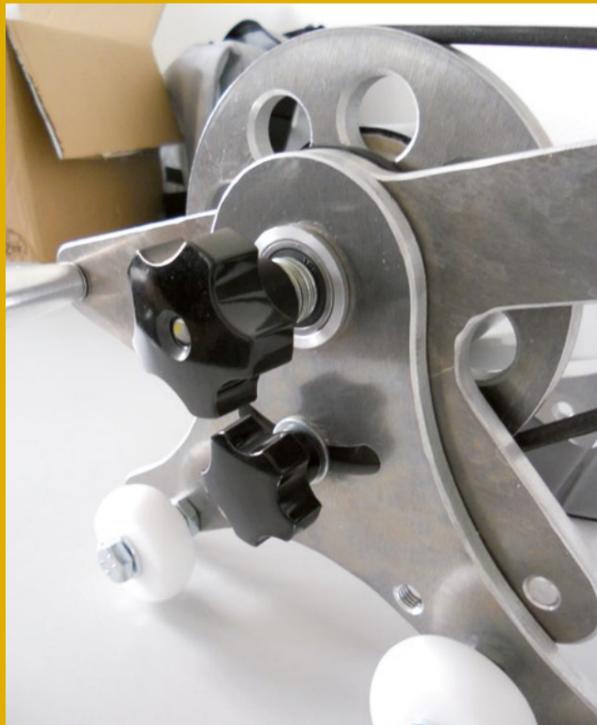
The MonoTop40 corrosion protection tape is pushed onto the centre roll. The release film is threaded into the slot of the outer roll. The wrapping machine is then adjusted.

The large adjusting screw in the centre regulates the tension pressure, while the small lower screw adjusts the winding radius, also known as the winding angle adjustment. This adjustment ensures that the corrosion protection tape is guided diagonally over the pipe to ensure the correct overlap.

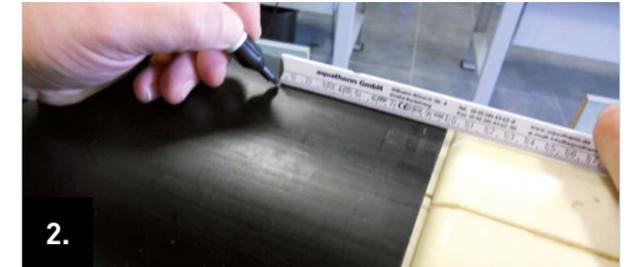
Either the right front or the right rear wheel can be adjusted. Adjusting the front wheel changes the winding angle directly at the starting position, while the rear wheel influences the angle during winding.

To adjust the wrapping radius:

- Loosen the screw.
- All 4 wheels must touch the base surface evenly touch the base surface.
- Divide the diameter of the KM tube by 20 (e.g. 160 mm KM tube / 20 = 8 mm).
- The distance between the base surface and one wheel should be the value determined (here approx. 8 mm).
- Tighten the screw hand-tight.



The PUR half shells are laid around the service pipe using a tongue and groove connection, aligned according to the numbering and fixed in place with suitable adhesive tape.



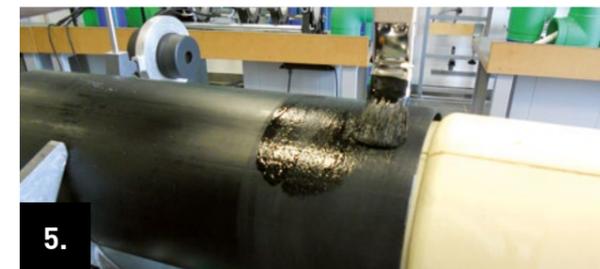
Mark the KM pipe with a white felt-tip pen. The starting point for winding the corrosion protection tape is between 50 and 100 mm from the end of the pipe.



Roughen the surface of the KM pipe with 40 - 60 grit emery cloth to optimise the adhesion of the corrosion protection tape. Repeat on the opposite end of the pipe.



Thoroughly clean both sides of the roughened KM pipe ends with Tangit cleaning cloths or ethanol/spirit (min. 99.9 %) and a white, dry, grease-free and lint-free cloth.



Apply a thin, even coat of primer to the entire surface of the dried area of the KM pipe. Use a flat brush or paint roller. Observe the processing guidelines on the packaging.



Apply a thin, even coat of primer to the entire surface of the dried PUR half-shells. Use a flat brush or paint roller. Observe the application guidelines on the packaging.



After application, the primer must flash off for at least 10 minutes. Then check by touch test whether the primer is dry. If the flash-off time exceeds 4 hours, the primer must be reapplied.



Rewrapping with MonoTop40 without winding machine __



8. Before attaching the anti-corrosion strap, remove the release film on the underside. Attach the strap to the marking at the 3 or 9 o'clock position.



9. The first winding of the corrosion protection tape is applied with an even tension around the KM pipe.



10. After the first winding of the corrosion protection tape, the tape is positioned so that the second winding can take place with at least 50 % overlap around the KM pipe.



11. Several windings of the corrosion protection tape are applied. The overlap of at least 50 % is maintained while the release film is removed evenly.



12. The entire area to be wrapped is completely covered with the corrosion protection tape. The windings are applied evenly and without gaps.



13. Once the wrapping is complete, the corrosion protection tape is cut to length with a sharp knife and then pressed down firmly with the palm of your hand.

Rewrapping with MonoTop40 with winding machine __



8. Remove the release film from the anti-corrosion tape. Position the tape in the winding machine at the marking at the 3 or 9 o'clock position and start the first winding.



9. Use the wrapping machine to create the first wrap with an even tension around the KM pipe. Make sure that the tape is guided tightly and evenly.



10. With the correct setting of the wrapping machine, the tape is spiraled around the KM pipe with at least 50% overlap. The release film is removed evenly to ensure optimum adhesion.



11. Continue the wrapping up to the mark on the opposite side and ensure that the overlap and pressure remain constant.



12. Once the winding is complete, the corrosion protection tape is cut to length. Press the end firmly with the palm of your hand to ensure good adhesion.



aquatherm energy shrink sleeve* __

Product description

The aquatherm energy sleeve is a cross-linked, self-sealing shrink sleeve for pre-insulated pipe systems. It can be shrunk over its entire length and is primarily used in conjunction with PUR half-shell technology.

The aquatherm energy shrink sleeve SuperSeal (WTD) consists of the following components, which are supplied as a set in a packaging unit:

- 1 pc. shrink sleeve SuperSeal (WTD)
- 2 PUR rigid foam element type 1
- 2 PUR rigid foam element type 2
- 1 PP-R welding socket (only for carrier pipes with dimensions 32-125 mm)

All components must be protected from dirt and moisture before and during processing.

Storage and safety

To ensure optimum and long-lasting functional quality, aquatherm energy sleeves that have not yet been processed should be stored in a dry, well-ventilated place. Avoid storage at temperatures above +80 °C and below -20 °C, in direct sunlight, rain, snow, dust or other unfavourable environmental influences. Processing must be carried out in compliance with the relevant regional health and safety regulations.

Equipment required for processing:

- Propane gas flame with hose, a suitable burner and an approved safety fitting
- Grease and lint-free cleaning cloths
- Greaseless marking pen
- Ethanol/spirit (min. 99.9 %)
- Emery cloth (grain 40 or 60)
- Tape measure, knife, scissors, triangular scraper, hollow rasp, pressure roller
- Temperature measuring device with contact sensor
- Wooden wedges
- Mounting roller blocks

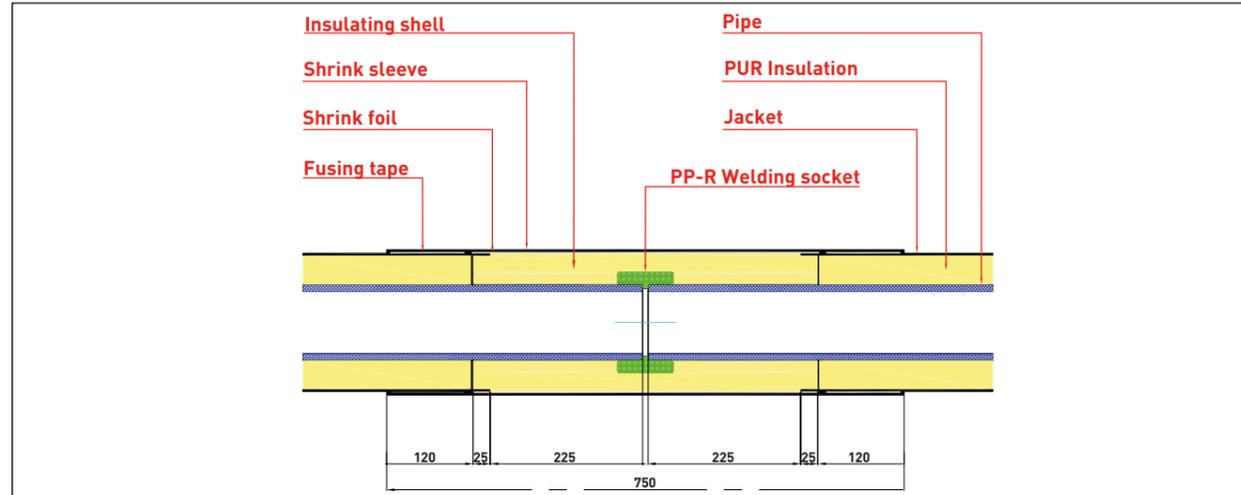


aquatherm energy shrink sleeve SuperSeal (WTD)

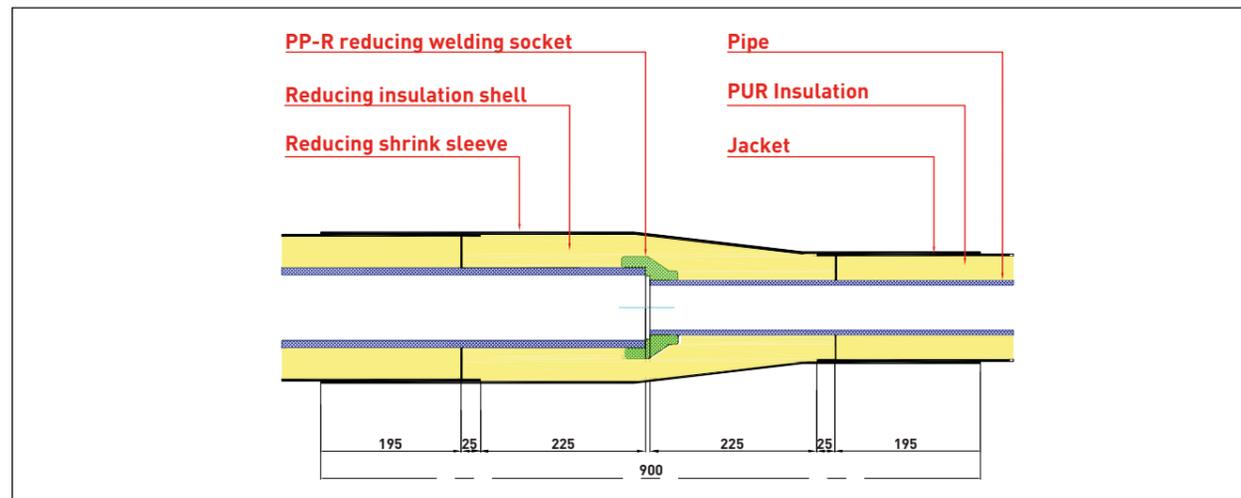
* This processing applies to aquatherm energy without leakage detection



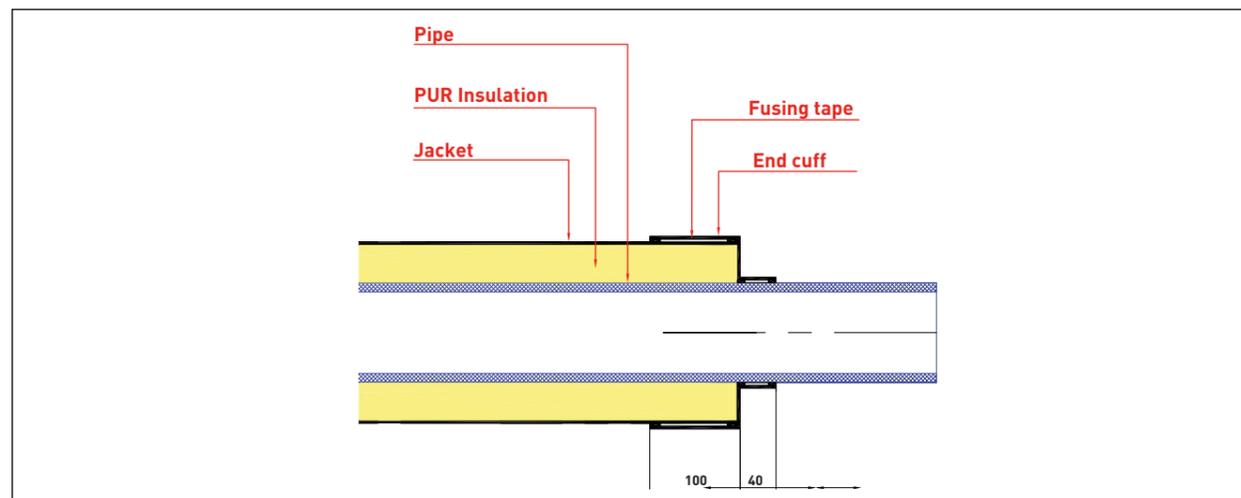
Shrink sleeve system __



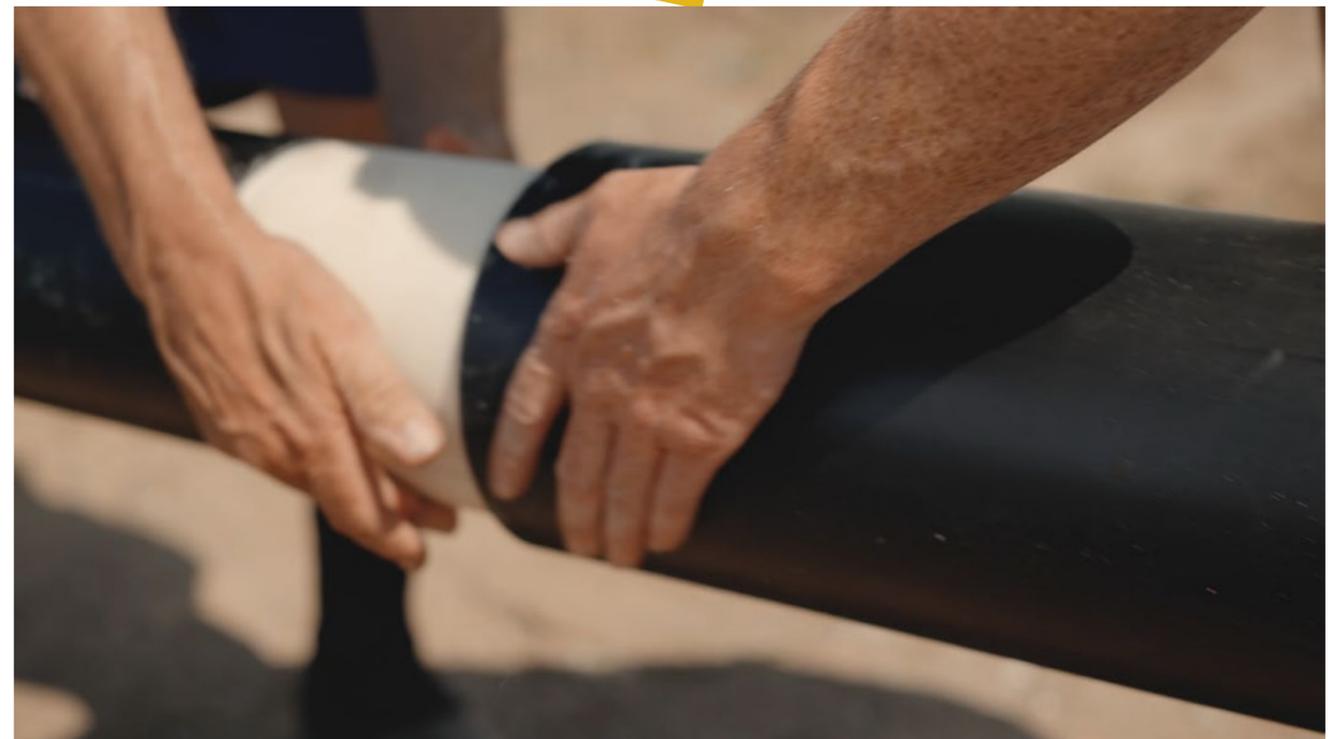
aquatherm energy sleeve



aquatherm energy reducing sleeve



aquatherm energy end collar

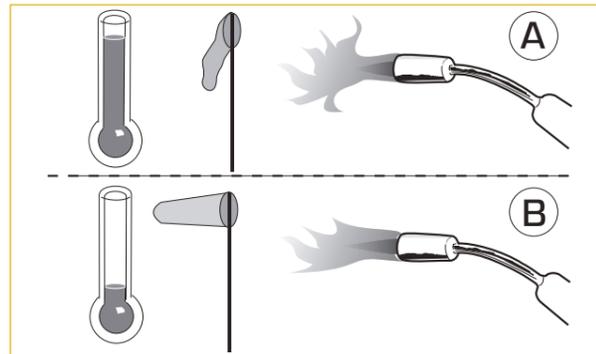




Instructions for processing with the propane gas burner

The propane gas flame must be adapted to the respective construction site and weather conditions:

- A soft, yellow flame for thin-walled casing pipes and heat-shrinkable products, when there is no wind, at high outside temperatures and lack of space in the trench (A).
- A harder, blue flame for thick-walled casing pipes and shrink products, in windy conditions and at low outside temperatures (B).



Instructions for processing with the propane gas burner

Guide the propane gas flame only to the cross-linked shrink product. Constant movement in the circumferential direction minimises the risk of burning the PE casing pipes.

1. Preparatory work in the assembly area

1.1 Before the carrier pipes are connected with a socket using the heating element socket welding process or the heating element butt welding process, the shrink sleeve must be pushed over one of the two pipe ends. However, the white protective film is not yet removed! During the welding process, it is crucial to protect the shrink sleeve from burns to ensure its effectiveness.



Preparatory work in the assembly area

1.2 Dry and pre-clean the entire socket area and all sealing surfaces to remove loose dirt using a propane gas flame and a grease and lint-free cleaning cloth.

1.3 Removal of the capillary-bound moisture in the PUR end faces. The cut-back must be carried out with a suitable saw - preferably flat-vertical - to ensure it does not interfere with the fitting of the PUR insulating shell elements.

1.4 Remove plastic burrs and adhering dirt from all sealing surfaces using a triangular scraper or hollow rasp.

aquatherm energy shrink sleeve SuperSeal (WTD)



1.

1. Preparation:

Dry and clean the entire sealing area with a grease and lint-free cloth.



2.

2. Installation of the PUR insulating shells:

Push one of the PUR insulating shells labelled 1 and 2 into the cut-back cavities of the casing pipes on both sides, join them together and turn them onto the underside.



3.

3. Insert the other PUR insulating shells labelled 1 and 2 as described. The tongue and groove profile of the shells ensures a gap-free and precise fit.



4.

4. Fix the PUR insulating shells in the centre with all-round adhesive tape.



5.

5. Marking of the shrink sleeve position:

To ensure that the shrink sleeve overlaps evenly, mark 30 cm on both sides starting from the centre of the sleeve area.



6.

6. Preparation of the sealing area:

Roughen the casing pipe ends up to the marking with an abrasive belt or emery cloth (grain size 40 or 60) over the entire surface and all round.



aquatherm energy shrink sleeve SuperSeal (WTD) __



7. Clean the grinding surfaces on both ends of the casing pipe with Tangit cleaning cloths or ethanol/spirit (min. 99.9%) and a dry, lint-free cloth.



10. Wrap the sealing area evenly with the shrink film and remove the protective film on the underside.



8. Attach the shrink film:
Heat the cleaned casing pipe ends (with a soft flame when using a propane gas burner) to approx. 80 °C. Check the temperature before fitting the shrink film.



11. Lay the shrink film tightly onto the PUR insulating shells and ensure an overlap of at least approx. 10 cm.



9. Check the shrink film for damage before installation and place it in the centre of the sealing area.



12. Place the sealing strip on the overlap (min. 100 mm) of the shrink film and press down firmly. Remove the protective film. Ensure good adhesion.



13. Shrinking process:
Check again for cleanliness and damage before starting the shrinking process. Start shrinking on one side of the film.



15. The shrinkage is complete when the film is in contact with the PUR insulating shells and the casing pipes over its entire length and circumference.



14. Shrink the film all round to the right and left using a controlled and "helical" forward movement of the hot air device or gas burner.

Control:
Use the "finger test" to check that there are no cold areas and that the hot melt adhesive has liquefied evenly. If not, reapply heat to these areas.



aquatherm energy half shells __

The aquatherm energy half-shells were developed to prevent energy loss at the joints and thus ensure complete insulation of the pipework system. The half-shells are made of PUR foam and polyurea and have similar insulation values to the pipe. They are also 100 % watertight. The new aquatherm energy half shells are suitable for all applications in which the aquatherm energy pipework system is installed. They demonstrate their advantages in outdoor installation, in buildings, on the roof of buildings, or in underground installation.



With the new aquatherm energy half shells, laying the aquatherm energy pipework system is even easier and quicker. The half-shells are already foamed and encased in the factory and only need to be glued to the outer surfaces on site. This saves a considerable amount of time, as time-consuming shrinking on site is reduced to a minimum.

Advantages:

- Quick and easy installation
- Already foamed and encased at the factory
- Significant time saving
- Quick on-site installation due to stock availability
- Narrower pipe system design possible

 aquatherm energy half shells

aquatherm energy half-shell installation instructions __



The PUR half shells are laid around the service pipe using a tongue and groove connection, aligned according to the numbering and fixed in place with suitable adhesive tape.



Mark the KM pipe with a white felt-tip pen. The starting point for winding the corrosion protection tape is between 50 and 100 mm from the end of the pipe.



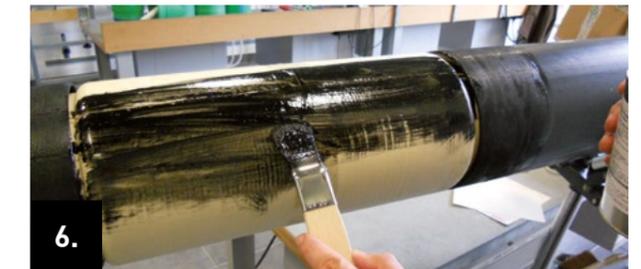
Roughen the surface of the KM pipe with 40 - 60 grit emery cloth to optimise the adhesion of the corrosion protection tape. Repeat on the opposite end of the pipe.



Thoroughly clean both sides of the roughened KM pipe ends with Tangit cleaning cloths or ethanol/spirit (min. 99.9 %) and a white, dry, grease-free and lint-free cloth.



Apply a thin, even coat of primer to the entire surface of the dried area of the KM pipe. Use a flat brush or paint roller. Observe the processing guidelines on the packaging.



Apply a thin, even coat of primer to the entire surface of the dried PUR half-shells. Use a flat brush or paint roller. Observe the application guidelines on the packaging.



Hot tapping aquatherm energy __

Hot tapping - this refers to the tapping of pressurised pipelines during operation. This process can be used to make connections between pipework without having to interrupt or drain pipe sections. aquatherm energy pipework systems can also be processed using hot tapping. This saves time and therefore money on the construction site - with full flexibility.

