



Puriton System Protecting Drinking Water

Butt-fusion Jointing Guidance Puriton Mains Pipe 90mm to 180mm

Safety



Minimum recommended personal protection equipment



The surface of the pipe will become hot during the butt-fusion process. Do not touch the pipe until fully cooled.



If there is aluminium swarf or debris on the prepared pipe surface, do not attempt to make the butt-fusion joint. Failure to comply may result in premature failure of the butt-fusion joint.



A visual check of all electrical components including the generator, butt-fusion unit should be made to ensure that they are in good working order and fit for use. Follow the supplier's recommendations.

When removing the cutting swarf, use the round nose snips to cut, DO NOT pull with bare hands

Equipment



Puriton Bead Gauge



Marker Pen



Round Nose Snips



Measuring Tape



Pipe Cutter



De-beading Tool



Pipe Surface Preparation Tool

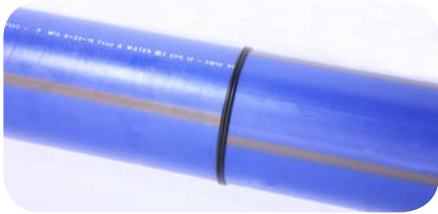


Standard Butt-fusion equipment

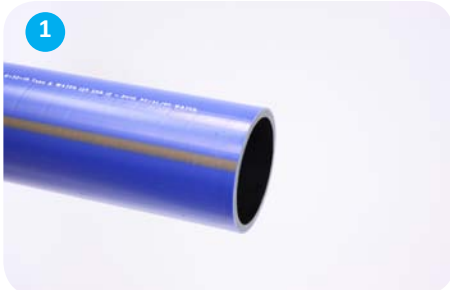
BEFORE JOINTING PURITON PIPE, ENSURE THAT THE PIPE'S BARRIER LAYER IS NOT DAMAGED



Pipe Surface Preparation for Butt-fusion Jointing



A 2-pass surface preparation process is used for butt-fusion jointing of Puriton pipes



1 Ensure the pipe ends are cut square and re-round if necessary



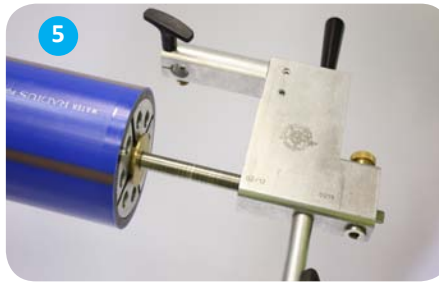
2 Use the Puriton butt-fusion gauge to mark the minimum pipe surface preparation distance (refer to gauge)



3 Select the correct size tool, insert the mandrel into the pipe, ensuring the fins are equally spaced and flush with the pipe end



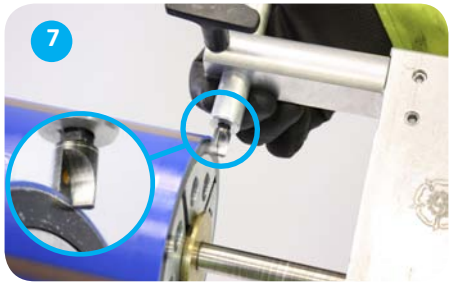
4 Using a 10mm ring spanner, secure but **do not overtighten** the mandrel as this will distort the pipe



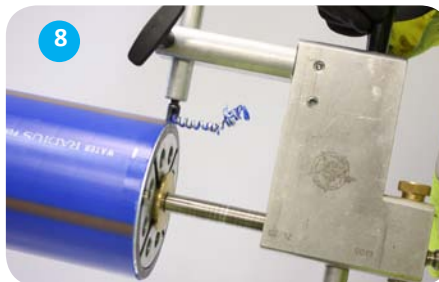
5 Place the body of the Puriton surface preparation tool onto the mandrel thread



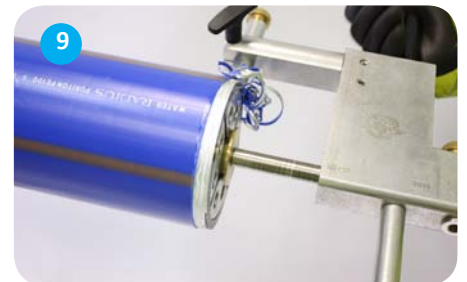
6 **FIRST PASS:** Select the Puriton cutting blade and insert into the pipe surface preparation tool



7 Rotate the spring screw, loosen the locking screw and lower the blade to be in contact with the pipe end. Tighten the locking screw and rotate the spring screw



8 Rotate the tool continuously in an anti-clockwise direction to remove the Puriton skin and aluminium layer



9 Continue until the surface preparation mark is reached. Do not remove the protective layer beyond the recommended distance



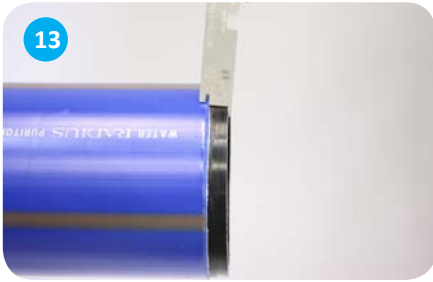
10 **SECOND PASS:** Loosen the locking screw and remove the Puriton cutting blade. Select the standard blade and position into the tool
NOTE: Do not attempt a second pass with the Puriton cutting blade



11 Repeat steps 7 to 9



12 Inspect the pipe surface. If there are any debris, dirt or aluminium, cut back the prepared end of the pipe and repeat the surface preparation process



13
Check the correct pipe surface distance using the Puriton butt-fusion gauge. Prepare the second pipe following steps 1 to 13



14
Follow water industry standard butt-fusion procedure. Program the butt-fusion unit with the correct Puriton pipe parameters: diameter, water PE100 pipe, SDR17



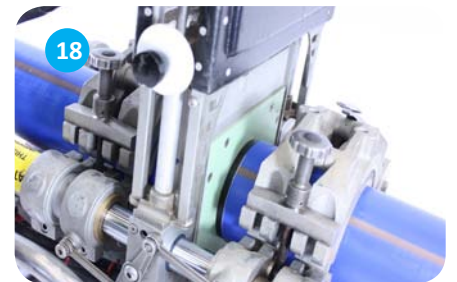
15
1. Trimming cycle



16
Check the min and max exposed core pipe distance tolerance after trimming. Ensure no contaminants come into contact with the prepared pipe ends



17
2. Pipe check cycle
The automated jointing phase can begin



18
3. Heating cycle



19
4. Weld cycle
The final bead should be uniform in shape and correctly sized. Check the bead size using the Puriton butt-fusion gauge



20
Allow the joint to cool in the butt-fusion unit. Once cooled remove the bead using a de-beading tool



21
Assess the joint by checking the bead quality and carrying out a bend back test. If the bead is defective, cut-out and remake the joint

- During the second pass, a sign of good surface preparation is the removal of a continuous layer of polyethylene swarf
- After the second pass, if there is any debris, dirt or aluminium on the pipe surface, then the prepared end should be cut back and the surface preparation process repeated
- There is no requirement to wrap the butt-fusion joint

Prepared pipe and bead tolerances

| Pipe size mm | Pipe preparation distances | After trimming distances | Bead width |
|--------------|----------------------------|--------------------------|------------|
| 90 | 10-12mm | 6-8mm | 9-16mm |
| 110 | 10-12mm | 6-8mm | 9-16mm |
| 125 | 12-14mm | 7-9mm | 9-16mm |
| 160 | 13-15mm | 8-10mm | 9-16mm |
| 180 | 14-16mm | 9-11mm | 8-16mm |

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