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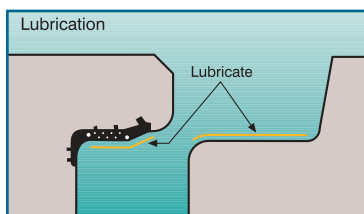
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## Elliptical Pipe Installation

### Preparation

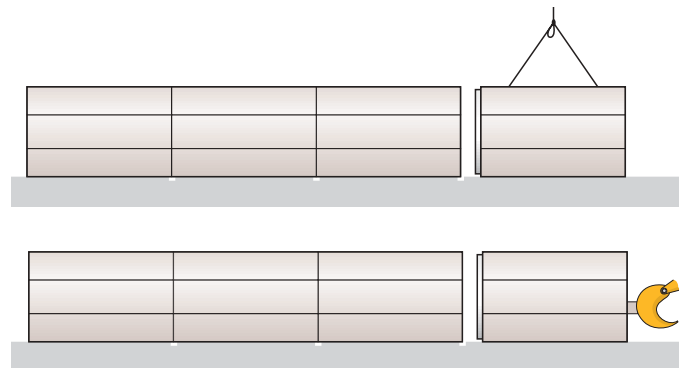
- The bedding material in the bottom of the trench should be laid to the specified thickness and levelled. The material directly under the units should not be heavily compacted.
- In order to prevent collection and trapping of bedding material in the bottom of the joint, a 25 mm deep, 100 mm wide niche should be dug in front of the joint of the previously laid pipe. The niche should extend either side of the base of the unit.
- Before lowering the pipe into position the spigot and socket of the joint concerned should be cleaned and inspected to ensure they are free from damage.
- The spigot surface and the gasket must be coated with joint lubricant supplied by Stanton Bonna. Do not use oils, grease etc as they can damage the gasket.

### Lubrication

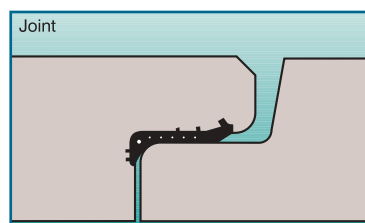


### Joining

- The unit should be lowered into the trench and the spigot entered into the socket of the previously laid pipe. It should be allowed to rest on the bedding with support from the crane.
- The alignment of the pipe should be adjusted until the spigot and socket of the joint are square and concentric.
- Pipes may be adjusted by pushing down on the crown with mechanical equipment. When carrying out this operation timber packings shall be used to avoid pipe damage.
- The weight of the pipe should not be supported on the gasket.
- When the joint is correctly aligned it should be pulled home by means of a Tirfor, a hydraulic cylinder or pushed home by using the excavator arm as shown above.



- During jointing the joint should be inspected to ensure the spigot is moving smoothly into the socket and that no damage to the joint or displacement of the gasket occurs.
- Care should be taken to ensure that the pipes remain square during the operation. If the joint starts to close on one side only, packings should be placed at springing level to stop further closure until the joint is square.
- If jointing forces increase suddenly it is likely that the joint is misaligned and locked tight. The pipe should be disjoined and realigned before continuing.
- After completion of jointing, line and level should be checked. Joint gaps should be not less than 5mm nor more than 25mm. The verticality of the axis of the socket should be checked using a plumb bob and the marks on the concrete face.



### Anchor Recesses

- Prior to backfilling anchor recesses should be made good flush with the outer surface with epoxy or polyester resin or a 1:3 cement sand mortar proportioned by mass.
- Make good anchor recesses that are not required for lifting into the installed position, before jointing.

### Backfilling

- Backfilling should proceed as soon as possible after laying.
- Material should be placed in layers and compacted, evenly on both sides of the pipe. It should be carefully placed in position and not dropped or bulldozed into the trench.
- Trench supports should be removed as backfilling proceeds, particularly in the case of 'Full Bed and Surround' bedding.

### Backfill Material

- Material for backfill should be similar in character to the surrounding soil. It should be readily compactable, free from large lumps, roots, rubbish and building rubble.
- To avoid point loading, ensure that no hard spots are created over the pipe.

### Crossing of Pipeline

- Construction plant may apply excessive loads on the pipeline and the designer should be consulted.

### Acceptance Tests

The pipeline should be visually inspected to check for:

- Joint gaps within allowable limits.
- Obstructions and debris.
- Structural soundness.
- Properly sealed joints, eg ingress of water or misplaced gaskets.
- Line and level.