



Cast-iron pipe junction installation instructions CONNEX system

(Tested and suitable for gravity lines, no application in pressure lines)



Check packaging contents for completeness and any damage.

Scope of delivery (1):

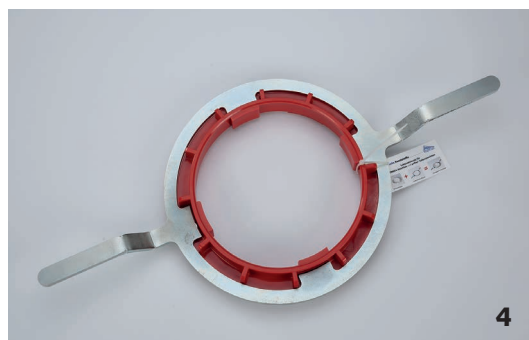
- Installation instructions
- CONNEX cast-iron pipe junction system
- Lubricant
- 2-C sealant with mixing tube
- Funke cleaner
- Cleaning cloth (white)
- If product comes with a 200 mm bore hole: plastic wedge (yellow)

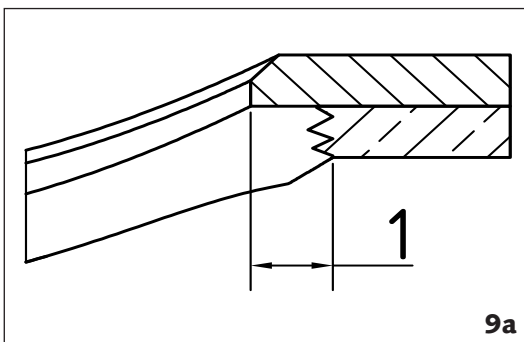
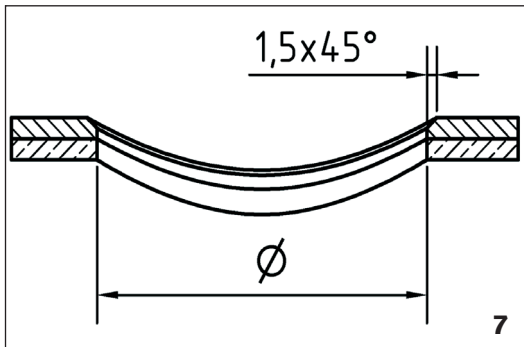
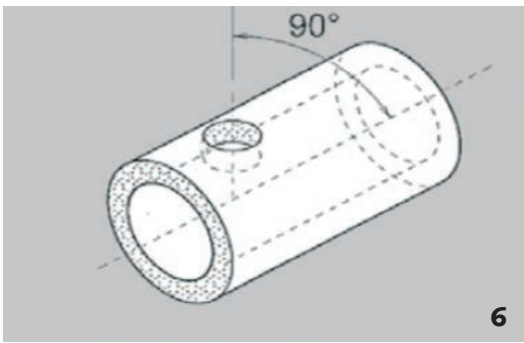
Tools required for proper assembly but not included in the delivery contents:

- Sewer system core drill with 'centring skids'
Drilling machines that centre themselves automatically when clamped onto the pipe are recommended. For example, the machines from the manufacturer Gölz; TYPE KB300 or KB350. (Drilling with a freehand drill is not possible). Depending on the type of drill, additional skid spacers (2a) must be fitted when drilling small pipe diameters, such as DN 300.
- Concrete or cast-iron core drill (without centring pin) (3)
- Threaded ring spanner with spanner insert (red) (4)
- Cartridge gun with a 25:1 reduction ratio (5)
- Personal protective equipment (protective goggles, FFP3 respiratory protective equipment, work gloves, etc.)

First, compare the dimensions of the junction (cardboard imprint) with the dimensions of the main sewer pipe.

The work safety regulations for working with cast-iron pipe materials must be observed at all times.





Then, bore the hole in the desired position.
Bore hole diameter according to cardboard imprint.
The following points are important when boring:

The core drill must exhibit the following properties:

- It must be the exact diameter needed
- It must be 'concentric'
- All cutting teeth must still be present
- The cutting teeth must not be completely worn out

If any of the above conditions are not met, a suitable core drill must be obtained.

The drilling machine must be clamped firmly onto the pipe to be bored so that it cannot move during the drilling process.

Ensure sufficient water cooling during the drilling process.

The forward speed of the core drill should be low so that the cement mortar lining does not flake off over a large area.

The tolerance of the bore hole, in relation to the specified bore hole diameter, is +/- 1 mm.

The bore hole is to be drilled centrally to the pipe axis.

This means that the centre axis of the main sewer pipe must cross the centre axis of the core drill and run at an angle of 90° to the centre axis of the pipe. (6)

After drilling the bore hole, it must be deburred.

(Regulations on occupational safety and explosion protection must be observed)

There should be at least one chamfer of 1.5 mm x 1.5 mm x 45° all around the outer edge of the bore hole. (7) A correspondingly strong chamfer reduces the risk of injury and significantly simplifies the installation of the lower section.

The bore hole must be inspected after attaching the chamfer.

Inspection via measuring: Is the diameter of the bore hole as intended and within the tolerances?

Visual inspection: Is there spalling of the cement mortar lining?
What is the extent of the spalling?

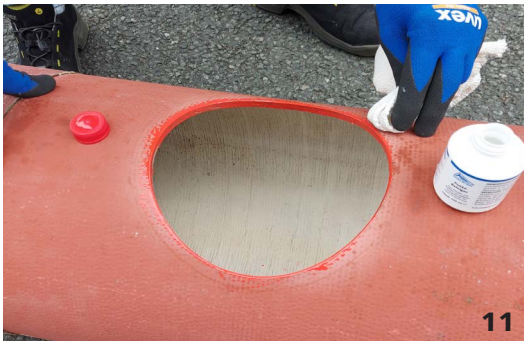
Case 1: There is very little spalling of the cement mortar lining. (8)

Measured from the edge of the bore hole – the spalling 1 (see drawing 9a) must not be greater than 5 mm.

Then, degrease the bore hole recess and apply the rust protection specified by the pipe manufacturer and allow it to dry according to the manufacturer's instructions. (Antirust coating on site)

Case 2: More severe spalling has occurred: if the spalling (1 in drawing 9a) is greater than 5 mm (see also image 9), the mortar lining must be repaired according to the pipe manufacturer's specifications. The specified curing times must be observed.

If necessary preliminary work such as rust protection (10) or repairing the cement mortar lining has been carried out according to the specifications of the cast iron pipe manufacturer, the CONNEX cast-iron pipe junction system can be installed as follows:



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First, degrease/clean all parts that come into contact with the 2-C sealant with the cleaning cloth and Funke cleaner.
 – The main sewer pipe and rim of the bore hole with a circumference of 3–5 cm (11)



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– Clean/degrease the outside of the lower section of the cast-iron pipe junction as well as its seal (12)



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– Clean/degrease the spacer from the underside and the seal on the spacer (13)

Then, place the individual section in such a way that they do not get dirty again, for example, on the main sewer pipe, on the enclosed bubble wrap in the pipe trench.



14

The rag is folded to a dimension of approx. 15 x 15 cm so that **four layers** lie on top of one another. Then the rag is placed in the bore hole parallel to the direction of flow. (14)

Now, reach into the lower section and hold it in the bore hole so that the lower section rests completely against the rag on one side. (15)



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IMPORTANT: Holding your hand in the lower section exerts the most force, the lower section must be **pulled** into the bore hole.

Now pull the lower section through the bore hole. A little force is needed, but the smooth surface of the cloth allows the lower section to slip through the bore hole.

When the lower section is in the pipe, continue to hold it and remove the cleaning cloth with the other hand.

Pull the lower section up with both hands and pull it alternately up or to the outside of the main sewer pipe or into the bore hole in four places. (16)



16

You can then feel how the sealing lip centres the entire lower section in the bore hole.

The lower section is then usually held in place solely by the pressure of the seal in the bore hole recess and does not fall back into the main sewer pipe.

There are also retaining collars on the lower section that can be folded out. (16A)



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21A

21



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During rest of the entire assembly process, make sure that all threads are free of soiling before applying the lubricant.

Place the spacer in such a way that the collar at the spacer becomes aligned with the groove of the lower section. **(17)** The groove of the lower section and the filling hole in the spacer need to point upwards (at 90° to the main sewer pipe axis). This makes it possible to fill it with a good amount of 2-C sealant. Make sure that the spacer rests flat on the pipe. This ensures that the curvature of the seals is optimally aligned with the pipe curvature.

Apply a sufficient amount of lubricant to the thread of the lower section around the circumference. **(18)**

In addition, apply lubricant all around the thread of the grey threaded ring.

Screw on the threaded ring by hand and tighten it by hand first. **(19)**

Pay attention to the position of the junction during the entire assembly process. The junction must not turn in the bore hole.

Place the threaded wheel spanner on the threaded ring. **(Proper assembly is only possible with the threaded ring spanner and the red spanner insert.**

If the threaded ring spanner and, if applicable, the spanner insert, are not used, the warranty will be void).

First, grab both handles of the threaded ring spanner and fasten the threaded ring.

Finally, using both palms, simultaneously strike the two handles of the threaded ring spanner two to three times. **(20)**

This applies a sufficient amount of force to the threaded ring nut and the seals can be sufficiently pressed into place.

For inspection purposes, reach into the junction and check whether the seal is in contact all the way around. The junction must not twist. (Check visually)

Visually check the all the way around the round cord seal on the upper section. **(21a)**

Then coat the entire surface of the thread all the way around with a sufficiently thick amount of lubricant. **(21)**

Also apply lubricant to the thread of the lower section.

Insert the thread of the upper section as straight as possible into the lower section. First, applying slight pressure, twist to the left in the direction of the main sewer pipe until the threads of the upper and lower sections are perfectly aligned with each other.

Then, twist it clockwise by hand without tilting. There must not be any resistance of the upper section being screwed fully into the lower section. If this is not the case, check if the upper section is tilted.

Take the threaded ring spanner with the red adaptor and fasten it



again. Then, using your palm, strike the handles of the threaded ring spanner two to three times. **(22)**

Only with a bore hole of 200 mm: Lock the guide groove in the lower section using the plastic wedge enclosed **(23)**. Insert the wedge and push it further into the groove applying slight pressure. The wedge prevents the 2-C sealant from leaking out. In order to be able to apply the 2-C sealant easily, it should be warmed up to at least +10°C prior to use in winter.

The 2-C sealant can be applied at an ambient temperature ranging from +5°C to +40°C.

Unscrew the cap from the cartridge, unscrew the mixing tube and insert it into a cartridge gun (reduction ration of 25:1). Squeeze out 3–4 cartridge strokes worth of sealant and dispose of it. When the 2-C sealant is consistently grey throughout, immediately fill the 8 mm hole of the spacer ring with the sealant **(24)**. Check regularly if the sealant leaks into the inside of the pipe.

If this is the case, it must be collected.

Opposite from the filling hole in the spacer, there is a 3-mm vent hole that is also used to check the proper filling of the void with sealant. **(25)**

Keep filling the sealant until a significant amount of it leaks from the vent hole **(25)**. When this is the case, the junction is deemed sealed.

IMPORTANT:

If the sealant does not leak from the vent hole, check to see where the sealant, and in what amounts, may leak instead.

If the leak point is large, the CONNEX cast-iron pipe junction system may not be able to provide a proper seal in accordance with DIN EN 1610.

In this case, it may be necessary to use a complete installation kit.

The permanently elastic sealant fully cures after 50 to 70 minutes, depending on weather conditions.

The pipe trench can be filled in regardless of the curing time.

The construction advantage of the ball joint can be used up to 5° for changing the direction of the connection. The remaining 6° are intended as a reserve to compensate for the different settlement behaviour of the pipes.

| Main sewer pipe DN | Inner diameter Main sewer pipe mm | Wall thickness main sewer pipe mm | | DN/OD junction mm | Bore hole diameter ± 1 mm | Item no. |
|-----------------------|---|---|------|----------------------|---------------------------------|------------|
| | | min. | max. | | | |
| 300 | 295-313 | 3,0 | 27,0 | 160 | 200 | 1601750001 |
| 400 | 392-412 | 3,0 | 27,0 | 160 | 200 | 1601750002 |
| 500 | 453-513 | 3,0 | 27,0 | 160 | 200 | 1601750003 |
| 600 | 572-612 | 3,0 | 27,0 | 160 | 200 | 1601750013 |
| | | | | | | |
| 300 | 295-313 | 3,0 | 27,0 | 200 | 200 | 1601750004 |
| 400 | 392-412 | 3,0 | 27,0 | 200 | 200 | 1601750005 |
| 500 | 453-513 | 3,0 | 27,0 | 200 | 200 | 1601750006 |
| 600 | 572-612 | 3,0 | 27,0 | 200 | 200 | 1601750014 |
| 700-800 | 665-812 | 3,0 | 27,0 | 200 | 200 | 1601750015 |
| 900-1500 | 856-1500 | 3,0 | 27,0 | 200 | 200 | 1601750016 |

Funke cleaner

CONNEX cast-iron pipe junction system

For cleaning and degreasing of surfaces that will subsequently be in contact with the Funke 2-C sealant

AREA OF APPLICATION: For cleaning and degreasing as a preparatory measure for sealing with Funke 2-C sealant.

CLEANING CONTACT SURFACES: Only apply to dry surfaces after coarse dirt has been removed. Apply cleaner to an unsoiled cloth and use it to thoroughly clean and degrease the contact surfaces for the Funke 2-C sealant. Tightly reseal after use. Detailed technical information available upon request.

FUNKE CLEANER

(Index: 603-117-00-0)

Highly flammable liquid and vapour. Causes serious eye irritation.

May cause drowsiness and dizziness. Keep away from children. Keep away from heat/sparks/open flame/hot surfaces.

No smoking. Only use outside or in well-ventilated spaces. If medical advice is needed, have product container or label at hand.

In case of sickness, contact **POISON CONTROL CENTRE** or a doctor.

Disposal of contents/container only in accordance with local/regional/national/international regulations.

Contains 2-propanol (EC No. 200-661-7).

IN CASE OF CONTACT WITH EYES: Rinse carefully with water for several minutes.

Remove contact lenses if present and unobstructed. Continue rinsing.

Store tightly sealed container in a well-ventilated space.

