

Assembly and installation instructions

LORO-XCL stainless steel discharge pipes DN 40 - DN 150

LORO-X stainless steel discharge pipes are planned and installed in accordance with the technical rules and regulations of DIN EN 12056 (Gravity Drainage Systems inside Buildings) and DIN 1986 Parts 3, 4 and 100 (Drainage

Systems for Land and Buildings). Amongst others, DIN 4102 (Fire Prevention in Buildings) and DIN 4109 (Noise Control in Buildings) are also to be observed.

1. Establishing the LORO-XCL push-fit socket connection

For LORO-X push-in joints we recommend to use original sealing elements with the manufacturer's mark LORO. With consistent use of all LORO-X system parts, we ensure the tightness of the LORO-X push-in joint. Store LORO-X sealing elements at room temperature for easier assembly in case of lower outside temperatures.

1.1 Place sealing element in inclined position on the edge of the sealing chamber.
Push in top sealing element with your finger and let it engage in the sealing chamber until the collar of the sealing element lies level on the socket edge.

1.2 Smear only **original LORO-X lubricant** no. 986X or 9861X over the entire surface on the inside of the sealing element and the outside of the insert pipe.
Surplus lubricant is to be removed.
The use of other lubricants may lead to visual and technical impairments.

1.3 Line up the socket and insert pipe and push together.
Twist gently to secure.
Push the insert pipe in as far as the socket base.
For installing pipes of a nominal size DN 100 – DN 150, an assembly aid can be borrowed from the factory.

1.4 Finished LORO-X socket joint according to DIN 1986 (permanent tightness with an internal and external overpressure of 0 – 0.5 bar).

1.5 If higher pressures are expected, the socket joint can be secured by the LORO-XCL anchor clip, no. 4.806C (DN 40 – DN 125).
Tighten the bolts of the LORO-XCL anchor clip evenly to 30 Nm.

1.1



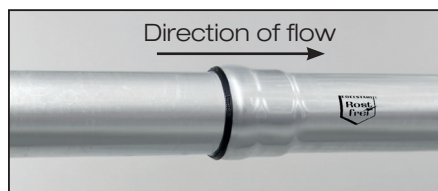
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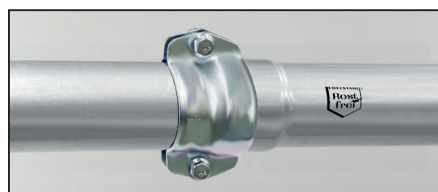
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1.4



1.5



2. Cutting to length

It is best to use a pipe cutter to cut the LORO-X pipes to length. It can also be cut to length at a right angle to the pipe axis with an angle grinder or saw (HSS fine-toothed saw blades and a cutting speed of 7 - 10 m/min). Intensive cleaning of all cutting tools is essential before use due to the danger of extraneous rust.

The pipe ends must be deburred inside and outside. Then thoroughly clean the cut surfaces.

The cut-to-length pipe ends with sockets can be used as adaptors. Waste is reduced as a result.

If a remaining pipe has no socket, add a LORO-X double socket no. 4.560X, to turn it into a socket pipe. Glue the double socket onto the remaining pipe with the LORO-X sealing element, no. 911X, and LORO-X adhesive no. 985X.

Attention: In frost-exposed areas, sockets (including double sockets) must not be facing opposite to the flow direction.

3. Pipe fastening

The following pipe clips from our product range can be used for fastening the pipes:

- Pipe clips with connecting threaded socket for hanger bolt or set screw, with/without sound-damping.
- Anchor clip up to DN 125 for suspension with perforated strap or flat bar. The firm seating of the anchor clip on the pipe and socket must not be impaired.

The following weights must be taken into account for the fastening of LORO-XCL stainless steel discharge pipes:

Weight of 1 m pipe completely filled with water:

DN 32: approx. 1.6 kg DN 70: approx. 6.8 kg DN 125: approx. 20.8 kg
 DN 40: approx. 2.6 kg DN 80: approx. 9.3 kg
 DN 50: approx. 4.0 kg DN 100: approx. 12.4 kg

The maximum distance between the fastenings of LORO-XCL stainless steel discharge pipes should be 2.0 m (for DN 40 – DN 50) or 3.0 m (for DN 70 – DN 150).

In the case of pressure pipe systems the installation notes from the brochure "LORO-X roof drainage systems" are to be observed.

4. Tightness values when using the anchor clip, no. 4.806C

The tightness of the LORO-X push-fit socket connection is secured till at least 0.5 bar for all nominal sizes.

If higher pressures are expected, the socket joint can additionally be secured against axial thrust by the LORO-XCL anchor clip (DN 40 - DN 125).

The tightness is ensured with LORO-X sealing element and LORO-X anchor clip until:

DN 40: 15 bar overpressure DN 100: 5 bar overpressure
 DN 50: 15 bar overpressure DN 125: 4 bar overpressure
 DN 70: 5 bar overpressure DN 150: 1.5 bar overpressure
 DN 80: 5 bar overpressure

5. Thermal expansion

LORO-XCL STAINLESS STEEL PIPES have a low coefficient of expansion: 0.017 mm/m per °C.

Example:

3 m pipe, temperature difference = 25 °C
 Elongation = $3 \times 25 \times 0.017 = 1.275 \text{ mm}$

6. Casting-in

The coefficient of expansion of the LORO-XCL stainless steel discharge pipe is approximately equivalent to that of the concrete.

The casting-in of stainless steel discharge pipes has been the state of the art for years. If additives are used in the concrete (frost protection, retarder, setting accelerator), the pipe must be given a coat of a standard building protection agent on site.

All contact with iron reinforcements is to be avoided. It is advantageous to use LORO-X clips with an insulation layer for fixing in the concrete. For socket joints inside the concrete, the LORO-X anchor clip or anchor hoop can be used as an additional safety measure. When using the LORO-X anchor clip or anchor hoop, the socket joint is secured against axial thrust. Concreting can lead to increased structure-borne sound transmission and thus to deviating sound measurement values.

7. Underground installation

According to DIN 1986-4, LORO-XCL stainless steel discharge pipes are also approved for underground installation. In this case, depending on the load/surrounding ground, LORO-XCL stainless steel discharge pipes must be provided on site with corrosion protection according to DIN 30672.

8. Releasing the socket joint

Heat the insert pipe well with a soft soldering flame close to the socket rim until the pipe can be pulled out of the socket. The tip of the flame should be about 10 cm away from the pipe to be heated.

The sealing element is to be renewed when reassembling the socket joint.

9. Connection to other types of pipe

LORO-XCL connectors are to be used to connect LORO-XCL stainless steel pipes to other types of pipe (cast iron pipe, plastic pipe, stoneware pipe). The sealing elements to match the LORO-XCL sockets of the connectors are supplied by LOROWERK. Original sealing elements for the sockets of the external makes are not part of our scope of supply. LOROWERK supplies special sealing elements for the connection of odour traps of sanitary objects.

10. Other installation instructions

1. Pipes exposed to corrosion by electrical current, corrosive liquids, gases or fumes, must be protected in a suitable manner.
2. Roof drains and pipes in areas endangered by frost are recommended to be completed by a trace heating by customer (see EN 12056, Part 1, or DIN 1986, Part 100).
3. **Attention:** LORO-XCL stainless steel discharge pipes must be checked for leak-tightness by the installer after installation.

11. Auxiliary tools

The following assembly aids can be provided on request:

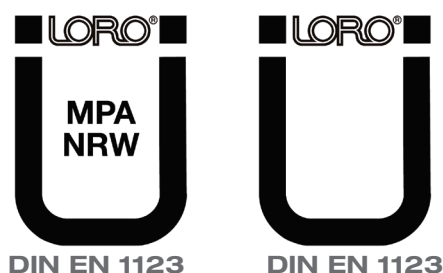
- Assembly tool for making socket joint
- Pipe cutter.

12. Supervision

Supervision is done by:

For rubber sealing elements: **MPA-NRW**

For steel discharge pipes: **LGA QualiTest GmbH**



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