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1. Safety instructions

Safety instructions for magnets

The exchangeable orifice contains high-strength magnets. These secure the orifice to the metal bearing ring in the shaft. The exchangeable orifice is delivered separately to the shaft. It is safety labeled.

**NB:** Magnets are potentially dangerous

**Contusions**
Magnets have a utterly strong pull force. If handled carelessly, skin or fingers may be caught between components due to magnetic forces (contusions, bruises).

**Pacemakers**
Magnets may affect the function of implantable defibrillators and pacemakers. If you wear these devices, keep sufficient distance from the exchangeable orifice.

**Magnetic field**
Magnets generate a strong and long-range magnetic field. The following devices and objects may be damaged, for instance: TV-sets, PCs, laptops, hard drives, cash or credit cards, mechanical watches, hearing aids, loudspeakers.
2. Application

RigoLimit V is a throttle shaft for the controlled discharge of stormwater from stormwater storage systems, such as Rigofill inspect, SickuPipe, MuriPipe or ground basins. Due to the principle of operation of the vortex technology coupled with a large cross-sectional discharge opening and a self-cleaning effect, RigoLimit V is ideal for systems with very high demands concerning operating reliability and with the need for a high drain efficiency through all operating stages. RigoLimit V is self-activating without external power supply, and it has no moveable parts.

3. Description

RigoLimit V is a plastic shaft with an extension pipe (black outside and yellow inside) for optimum inspectability.

Inlet diameter:
DN 200 KG, spigot.

Outlet diameter:
DN 250 KG, spigot.

The vortex outlet range depends on the head and can be selected between 0.5 l/s and 80 l/s.

The height difference between inlet and outlet is 0.33 m.
4. Function

Vortex formation through tangential inlet

Low water level in the tank

Uncontrolled discharge

High water level in the tank

Controlled discharge with vortex formation
5. The throttle shaft

Structure

Legend

1. RigoLimit V shaft bottom
2. Extension pipe
3. Exchangeable orifice, removable
4. Bearing ring to support the orifice
5. Inlet DN 200 KG spigot
6. Outlet DN 250 KG spigot
7. DOM sealing ring (optional accessory)
8. Sediment trap, large (optional accessory)
9. Shaft cover with ventilation openings LW 610 (to be supplied on site)
10. Concrete support ring h = 100 mm (to be supplied on site)
11. Bearing free from stationary loads (to be supplied on site)
12. Profile sealing ring (included in the delivery)

Legend

Shaft covers acc. to DIN EN 124 class B or D, LW 610
Support ring acc. to DIN 4034, Part 1
Sediment trap D9 600
DOM sealing ring
Extension pipe D9 600 incl. temporary construction site cover
Profile sealing ring
RigoLimit V

Exchangeable orifice
6. Inspection of components prior to installation

Prior to installation, all components must be checked for possible damage. Only undamaged parts may be used.

7. Creating the excavating pit and bearing

Create the excavation pit according to the design specifications. The provisions of DIN 18300 "Earthworks" and DIN 4124 "Excavations and trenches" apply. When installing the shaft, comply with DIN EN 1610 "Construction and testing of drains and sewers". Create and compact a planar shaft bearing with 10 to 15 cm of stoneless, compactable material.

8. Installing the base shaft

The shaft, initially with temporary construction sealing of the shaft opening (foil) and without exchangeable orifice, must be placed onto the prepared plenum at the appropriate height and secured against shifting. To ensure the vortex function, the shaft must be aligned upright!

Connect the supply pipe and the drain pipe according to design specifications. Appropriate lining is of particular importance in the case of a tangential inlet. Make sure no backfill material enters the shaft. The factory-provided foil on the shaft serves this specific purpose.

9. Embedding the pipe

DIN EN 1610 forms the basis for the entire installation. Bedding and side filling must be created by means of stoneless, compactable material. Compact material layer by layer.
10. Installing the exchangeable orifice

Prior to installing the extension pipe DN 500, the temporary construction site foil cover must be removed from the shaft bottom. The exchangeable orifice is packed separately and must be placed onto the metal bearing ring. To do so, the labelled TOP of the orifice must face upwards, otherwise the magnets will not stick! The metal bearing ring is tightly connected to the shaft. The safety instructions for magnets provided in Section 1 are of particular importance. Please make sure that the metal bearing ring is clean in order to provide optimum adhesive force of the exchangeable orifice.

11. Mounting the extension pipe

The extension pipe must be inserted into the upper area of the shaft base body. Place the profile sealing ring into the second corrugation of the extension pipe. Evenly apply a sufficient amount of FRÄNKISCHÉ lubricant onto the profile sealing ring and the inner surface of the insertion area. Do NOT use oils and greases.

Afterwards, insert the extension pipe all the way into the insertion area. When backfilling the extension pipe, it must be aligned upright. Upright alignment of the shaft is crucial to its throttle function!

The shafts can be seen better during the construction period if the extension pipes protrude through the planum. Extension pipes feature a cover in order to prevent backfill material from entering the system. This cover is neither accessible nor resistant to static loads! Do NOT remove it until the backfill material has been added.

**NB**

Mind upright alignment
12. Shortening and cutting the extension pipe

If necessary, extension pipes can be cut to length in the middle of corrugations with a fine-toothed saw or a pipe cutter. Remove edges and irregularities on the cutting surfaces with a grater, file or another suitable tool. Extension pipes can also be extended with the help of couplings and sealing rings.

13. Placing the shaft covers

As soon as the road superstructure is being prepared, the bearing for the shaft covers must be created. Common standard 625 mm covers according to DIN EN 124 with ventilation openings are used. Shaft covers and concrete support rings are not included in the scope of delivery of FRÄNKISCHE and must be supplied on site. Put a support ring \( h = 100 \text{ mm} \) according to DIN 4034 under the shaft cover on an appropriate bearing. The shaft cover can be placed on a 10-mm-thick mortar joint to avoid stationary loads between equalisation ring and shaft cover. Create the bearing from in-situ concrete C 16/20. Avoid interlocking of the bearing with the corrugations of the extension pipe by any means (use casing aid!). Vertical loads may only be transferred to the load-bearing underground.

The gap between the support ring and the outer shaft wall can be closed using a DOM sealing ring. This guarantees a tight connection. The sealing ring is mounted onto the last corrugation trough of the extension pipe. Place a \( D_0 \), 600 sediment trap on the shaft pipe.
14. Installation limits

<table>
<thead>
<tr>
<th>Maximum shaft depth for infiltration systems without groundwater:</th>
<th>Maximum shaft depth for infiltration systems with groundwater:</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.33 m</td>
<td>4.5 m</td>
</tr>
</tbody>
</table>

15. Maintenance

Due to the principle of operation of the vortex technology coupled with a large cross-sectional discharge opening and a self-cleaning effect, RigoLimit V is particularly maintenance-friendly thanks to the vortex energy.

If blockages occur, e.g. in very small outlets with correspondingly small orifice diameters, these can be cleared by using a water hose. If the exchangeable orifice needs to be removed from the shaft, the safety measures for magnets provided in Section 1 must be observed.

Important note:

General information on using our products and systems
Information about or assessments of the use and installation of our products and systems are exclusively provided on the basis of the information submitted. We do not assume any liability for damage caused by incomplete information. If the actual situation deviates from the planned situation or if a new situation occurs or if different or new installation techniques are applied, these must be agreed upon with FRÄNKISCHE, since these situations or techniques may lead to different conclusions.

Notwithstanding the above, the customer is solely responsible for verifying the suitability of our products and systems for the intended purpose.

In addition, we do not assume any liability or responsibility for system characteristics and functionalities when third-party products or accessories are used in combination with FRÄNKISCHE systems. We only assume liability when original FRÄNKISCHE products are used.

For use in other countries than Germany, country-specific standards and regulations must also be observed.
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Torcy-le-Grand, France
Ebersbach/Fils, Germany
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FRÄNKISCHE is an innovative, growth oriented, medium-sized family-owned enterprise and industry leader in the design, manufacturing and marketing of technically superior corrugated pipe systems for drainage, electrical, building technology and industrial applications.

We currently employ about 2,800 people worldwide. Both our many years of experience and expertise in plastics processing, our consulting services and the large array of products are highly valued by our customers.

FRÄNKISCHE is a third generation family owned business that was established in 1906 and is now run by Otto Kirchner. Today, we are globally represented with production facilities and sales offices. The proximity to our customers enables us to develop products and solutions that are perfectly tailored to our customers’ needs. Our action and business philosophy focus on our customers and their needs and requirements for our products.

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