

## Installation Instructions for the invatec Ground-mounted System Vario-Tec®

Dig out the trench for the cable duct, the width required is approx. 40 cm. The material dug out may partially be reused for filling the space, which remains between the cable ducts after their installation. No draining layer is required, since any water is reliably routed around the duct. The control of the water flow prevents any erosion of the formation. Insert some fine-grained material into the bottom of the trench and use a rake or a ballast fork for levelling.

Placing a cord in the direction of installation will make the proper installation of the ducts (height and alignment) easier.

The ducts are installed in the direction of travel, paying attention to the position of the hinges: facing away from the formation.

After the first duct has been placed and aligned in the trench and secured by means of a ground anchor, push the second duct from the top onto the dovetail connection of the duct already installed – make sure to hold the duct in a horizontal position. If required<sup>\*</sup>, secure the duct with a ground anchor. Make sure to place a piece of wood on the head of the ground anchor when driving it into the ground in order to prevent any damaging of the duct floor. One ground anchor per duct is fully sufficient to secure the ducts. Always make sure to drive in the ground anchor on the side of the duct, which faces in the direction of the duct already installed. The conical design of the dovetail connection together with an overlapping section at the bottom reliably retains the duct already installed on the ground.

The tolerance provided on the dovetail connections allows for the installation of the ducts with a radius of  $\geq 100$  m.

If an obstacle is to be detoured, cutting lines on the duct make their cutting in an angle of 45° easier. The ducts that are cut with a mitre joint will have to be secured with one each ground anchor at the cut, the lid is secured to the lower part of the duct at the cut with two self-tapping screws (ready-to-use angle elements are available at an extra charge).

Make sure not to compact the material (soil, grit) filled into the remaining space. We recommend mounting the lid prior to the filling in of the material, however, without bolting it in place. This will prevent any soil and gravel from entering the still open duct.

Position the lid vertically onto the hinge bolts at the lower part of the duct with the hinges facing down and latch in place by exerting slight pressure. After the cables have been installed, the lid will be locked in place, using the triangular screws supplied. Thread the screws into the tapped hole and tighten with the special spanner. The screws will securely latch in the lid to where they may not be lost anymore.

<sup>\*</sup>) If the duct is filled with fine grain material (grit size 5-8), it will be sufficient if one out of ten ducts is secured in place with a ground anchor. The conical shape of the lateral tubes will reliably prevent the duct from floating.