



USER MANUAL FOR:

Stainless Steel (Vortex Flow) Controls

UCY series, CY series, CE/V series, OP series



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Preface

This user manual is written according to NEN 5509 user manuals and is intended for the installer and or user of the ESEP stainless steel (Vortex) Flow Controls. This manual is written for the easy installment, start-up, use and maintenance of the ESEP Flow Controls. This manual should be read carefully before installment and use and to be archived together with the relevant calculation and drawings.

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Introduction

The ESEP Stainless Steel (Vortex) Flow Control is a device intended for the restriction of (waste) water flows in sewer systems by using the water height at the inlet level. The flow control is suitable to restrict the flow of waste water in overflow systems, storm water systems, storage systems, combined systems, and rainwater systems to a predetermined maximum flow capacity. The flow control consists out of a durable stainless steel AISI 316 housing without any moving parts.

The stainless steel flow control can be divided into two different types: the cyclone type and a vertical type. The vertical type can also be removed.

The flow control series OP, is used as a restriction for larger (waste) water flows combined with a relative low water head. By varying the actual opening size the capacity can be precisely determined. A cable or pole can be used to remove the plate from the housing.

1 Identification

This manual is only valid for the following Vortex Flow Controls:

CE/V series
UCY series
CY series
OP series

Example product identification: U CY 250 L S 190

U = U-shaped inlet
CY = cyclone model
250 = diameter Flow Control
L = left inlet
S190 = nominal connection diameter spigot

The producer of these Flow Control is:

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2 Product Specifications

A stainless steel Vortex Flow Control consists out of a cyclone like body suited with a specific inlet and outlet. An OP Flow Control consists out of a removable orifice plate. Other specifications and constructional details of the mentioned Flow Controls can also be downloaded from our website: www.esep.nl.

Assuming correct installation and normal usage the minimum lifespan of a Flow Control should be at least 10 years. That is to say that the Flow Controls will yield there effective operation until that time. The maximum lifespan will be reduced if the Flow Control is not used or installed as described in this manual or under extreme circumstances.

Optionally the Flow Control can be fitted with an integrated bypass system. This system will assure a full bypass of the wastewater in the case of blockage in the Flow Control. This bypass system can be operated by means of a manual pulling cord which is to be fitted just below the manhole.

3 Safety

The following safety precautions should be followed at all times:

- a. Fire, open flames and smoking within a radius of 15 meters is strictly prohibited due to the possible presence of explosive vapors.
- b. Never enter a sewer pit alone for installation prepuces. When installing or inspecting a Flow Control this should be done by at least two persons. Before entering a sewer pit a gas/oxygen measurement should be executed according to the relevant local norms and regulations. Further breathing equipment should be available.
- c. Use safety gloves for protection.
- d. Manhole covers should only be opened for inspection and maintenance purposes and should never be left unattended.
- e. Use safety shoes according to the relevant norms.

4 Transport and storage

Storage of Flow Controls should be in a stable and protected environment. External influences like bumping should be avoided at all times. The Flow Controls should be secured firmly during transport.

5 Installation

Always check if the order is delivered completely.

When installing the Flow Control the following (safety) guidelines should be followed at all times:

- a. Remove all packaging materials like pallets, plastic foals, steel wires etc. before installing the Flow Control.
- b. Position the Flow Control in such a way that its function is optimally used. The upstream waste water is to be guided through a channel in such a way that the waste water is adequately directed towards the inlet. This channeling should be constructed without any sharp edges to make sure the dry weather flow is guided towards the inlet. (see also figure 1)
- c. The internal dimensions of the pit and the manhole should be wide enough to install the Flow Control and to construct the channeling.
- d. If there are any objects within the sewer pit or system that can possibly damage the Flow Control these should be removed before bringing the Flow Control in to use.
- e. The Flow Controls can be installed in several ways:
 - 1: The outlet of a cyclone like Flow Control is positioned into the outlet of a sewer pit. This is possible by inserting part of the cyclone or the prefabricated spigot into the concrete wall. Then the Flow Control should be poured into the channeling concrete and by doing so will be securely fastened. The concrete channeling should be minimally poured until the top of the U-shaped inlet or covering 1/3 of the cyclone diameter in such a way that the identification plate is not covered.
 - 2: The Flow Controls OP and CE/V series are installed by a mounting plate against the outlet of the sewer pit. A minimum space of 40 centimeters is to be preserved underneath the outlet. When the concrete wall is not completely flat a kit or rubber seal should be inserted between the plate and the wall.
- f. The upstream and downstream sewer pipes should have an adequate flow and no deficiencies.
- g. Due to the Vortex Flow effect the water at the outlet can create corrosion to the sewer pit or piping. If this is the case, protective measures should be taken to prevent this.
- h. It is highly advisable to position a penstock valve next to the flow control in the overflow wall to provide a bypass opportunity in the case of blockage.

Incorrect installation will affect the performance of the Flow Control. Incorrect installation or use for other purposes than intended will not be covered by the guarantee conditions.

Always check if all the manhole covers are securely closed to prevent any accidents.

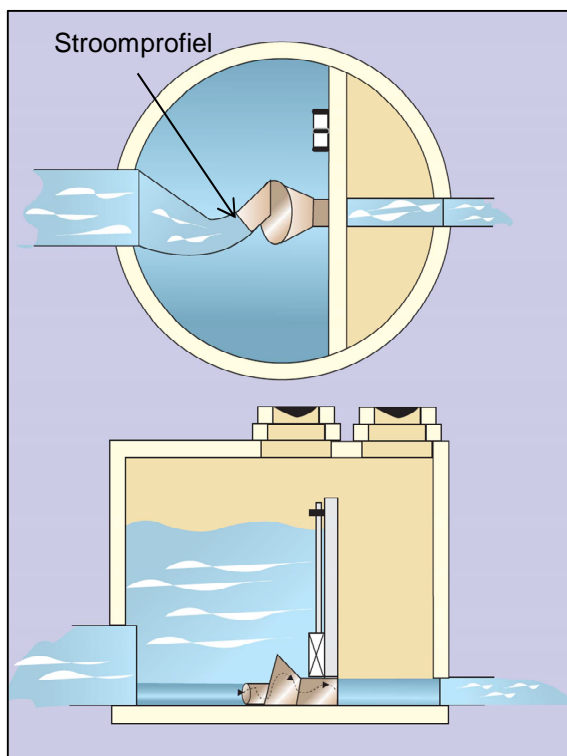


Figure 1; Flow control with overflow wall and bypass penstock valve.

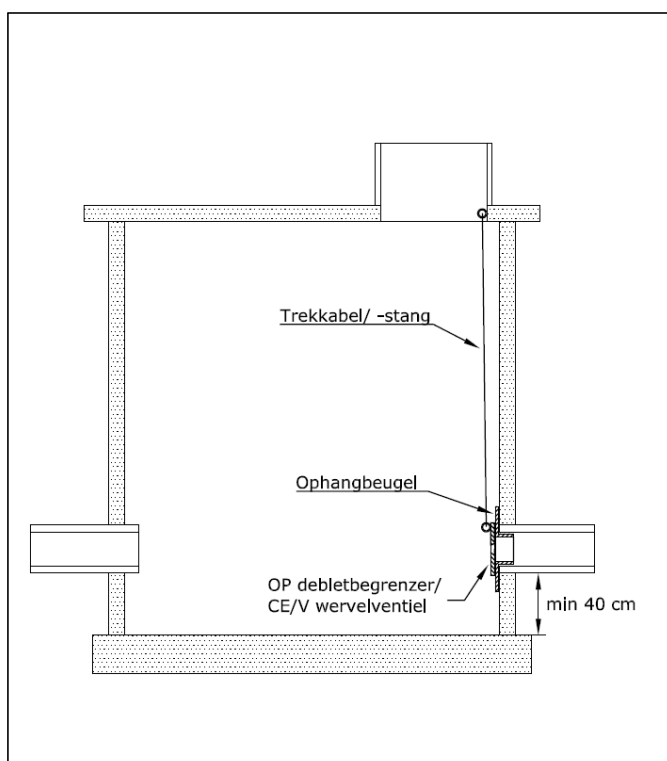


Figure 2; Flow control OP-series or CE/V-series.

6 Maintenance

The following safety precautions should be followed at all times:

- a. Fire, open flames and smoking within a radius of 15 meters is strictly prohibited due to the possible presence of explosive vapors.
- b. To make sure the Flow Control is working correctly frequent inspection is necessary. Specially shortly after installation frequent inspection should take place also depending on the nature and quantity of existing pollution.
- c. Any damages or deficiencies that are observed during inspections should be repaired immediately. Small reparations can be done at the site, more complex reparations should be done by a specialized mechanic. All damages or deficiencies should be communicated in writing within 24 hours to ESEP Milieutechniek according to our guarantee conditions.
- d. Never enter a sewer pit alone!

7 Guarantee

The guarantee on Flow Controls is 1 year according to the relevant specifications starting from the date of delivery. In the case of a proven deficiency on a ESEP Flow Control the customer is entitled to repair or replacement of the goods delivered. This is only valid when the goods have been used for their intended purposes and in normal circumstances. Further the customer should have complied with all guidelines in this manual, correct maintenance and communicating any deficiencies within the time specified.

All rights to damage compensation like lost income, consequential damages, direct or indirect, as a result of using the deficient goods are excluded. All goods that are installed by the customer are assumed to have been accepted in good order.

Any changes to the delivered goods without prior written consent of ESEP will forfeit the guarantee. All used products and accessories should be approved by ESEP.

See for detailed guarantee conditions our general terms of sales as provided at the time of the order.

8 Malfunctions

In the malfunction table some malfunctions are described with their possible solutions.

Malfunction	Possible cause	Solution
1. No watersupply	A. Check the incoming pipe for blockage B. Check the fall of the incoming pipe	A. Unblock the pipe B. Create fall in the pipe
2. No discharge	A. Check the outgoing pipe for blockage B. Check the Flow Control for blockage C. Check the watersupply	A. Unblock the pipe B. Empty the pit and check the Flow Control for blockages C. See malfunction 1
3. High waterlevel	A. Check the discharge	A. See malfunction 2

Table 1 – Malfunction table