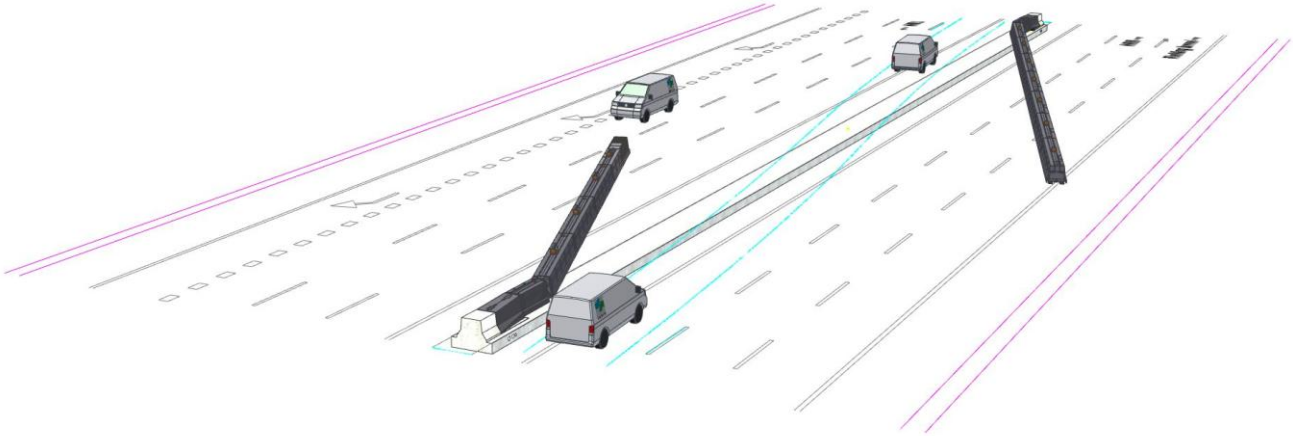
Installation Manual
VEVA®



Jansen Venneboer

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1 General

1.1 Introduction

This installation manual serves as a manual for safe installation of the VEVA system (movable crash barrier) and therefore is an integral part of the system. The installation manual should be retained up to the final life cycle phase of the VEVA - dismantling and disposal.

Careful use of this instruction warrants safe and responsible installation of the VEVA and ensures a maximum life-span of the installation.

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2 Overview VEVA

This section describes the main components of the VEVA. On the next page, images of the VEVA installation are provided. The VEVA-system is standard equipped with a pneumatic lifting system, but is also optionally available with a fully electric system.

2.1 Definitions

VEVA	Movable barrier consisting of one or two ‘arms’.
Arm	assembly of one or more VEVA ‘modules’
Module	modular section of VEVA system, equipped with various options

2.2 Product description

The VEVA system is a *horizontally* movable crash barrier system that safely leads traffic to another part of a road, road lane or tunnel tube. The VEVA system has a modular composition consisting of one or two arms assembled from smaller modules with a single length of 6 metres. The total length of the arms can vary from a minimum of 6 to a maximum of 120 metres. The arms drive on the road surface and with one or two hinging modules per passage, the VEVA can be used as entrance gate for a Tidal flow/C-way, or as a passage/gate to lead traffic through midways. The different variations are shown in the images below.
For maximum safety in case of a frontal collision with one of the arms, the end terminals can be equipped with crash cushions.

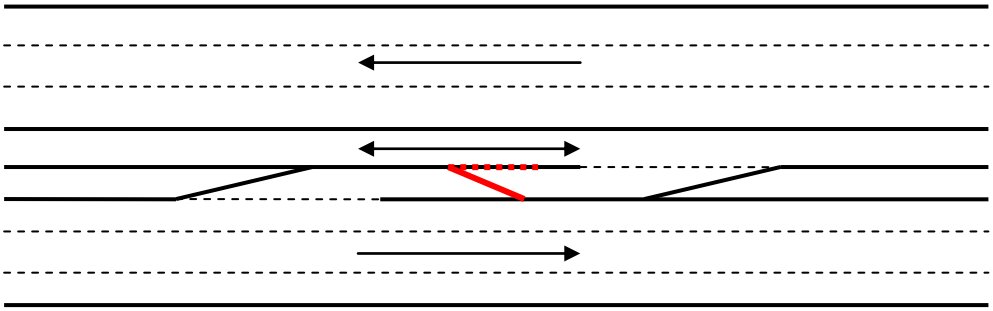

Image 1 Entrance gate for tidal flow/C-way

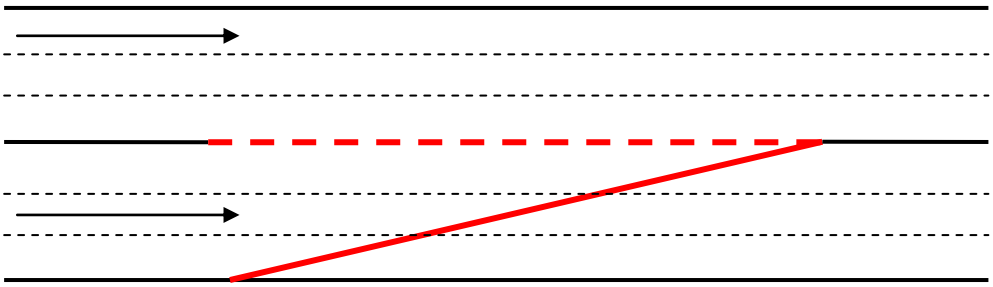

Image 2 Single arm for situations with traffic in one direction

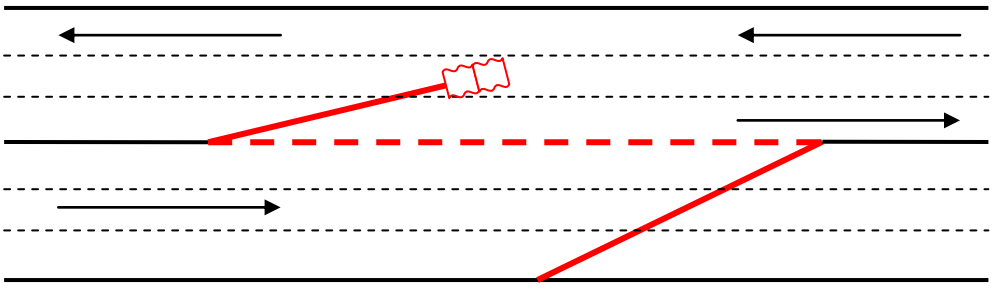

Image 3 Double arm for situation with traffic in opposite direction (incl. crash cushion)

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Image 4 Top view standard VEVA module

Image 5 Front view standard module

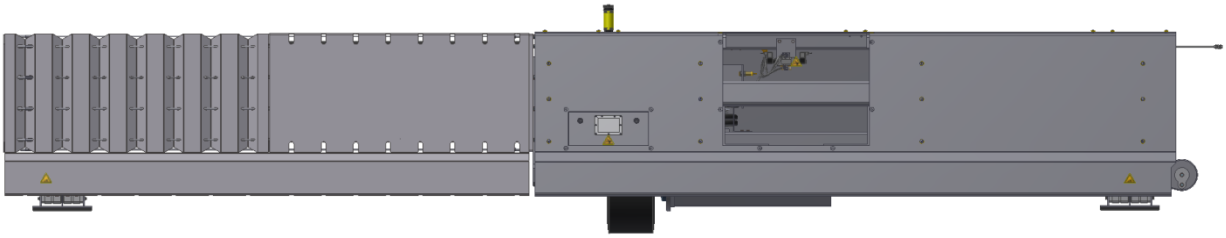

Image 6 Front view end terminal with crash cushion

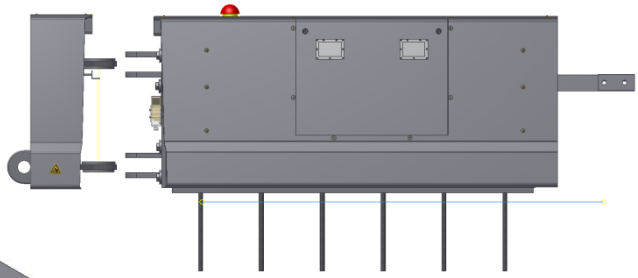

Image 7 Front view foundation module and hinge

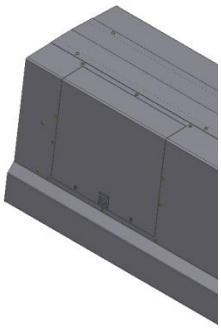

Image 8 isometric view foundation module with locking mechanism

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2.3 Specifications

Technical specifications VEVA	
Barrier type	Step barrier
Sheet thickness	5 mm
Material	S355
Corrosion protection	Hot dip galvanized
Rise/lowering time	App. 15 - 90 s (depends on total length of VEVA)
Locking time	App. 20 s
Driving speed	App 4,4 m/min
Module weight	App. 2000 kg
Module length	6,06 m
Module width	1 m
Drivetrain wheel	E-motor with reductor
Lifting mechanism	Pneumatic (standard) Electric actuator (option)
Locking mechanism	Pneumatic (standard) Electric actuator (option)
Max. wheel load on asphalt	Max. 1 N/mm^2
Compatible slope in transversal en longitudinal direction	Max. 10%
Operation modes	Local from cabinet Remote
Options	Remote operation traffic lights / signs RAL-colour of choice Full electric operation (without pneumatics)
Applied standards	NEN-EN-ISO 12100 NEN-EN-IEC 60204-1 NEN 1010 NEN-EN 1317-2

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3 Onsite installation

Installation and commissioning of the VEVA-system should be carried out by expert personnel, preferably employees of Jansen Venneboer.

3.1 Location preparation

The assembly location should be easily accessible for a truck with crane and trailer. During assembly, the road lanes alongside the location should be obstructed for other traffic and the speed limit on the road lanes that are still accessible should be maximally 70km/h. (Furthermore, all local regulations and laws have to be followed.)

The VEVA modules are provided with a unique identification number which corresponds with the overall assembly drawing. A load plan is drafted based on this drawing, to guarantee a correct fitting and mounting order.

Prior to the assembly the exact anchor positions are set out in the field. Holes are drilled into the foundations and anchors are glued in.

3.2 Installation of the modules

After the as-built anchor positions are re-checked, the foundation modules can be placed first, followed by the other modules.

All VEVA modules are 90% pre-cabled. Signalling- and 24V power cables are plug and play, using heavy duty connectors. After the complete arm is assembled, only the motor power cable and pneumatic hoses have to be rolled out separately along the arm.

From the junction box in the foundation modules, multi cables and the main pneumatic hose have to be pulled to the control cabinet. Therefore, there should be sufficient cable protection pipes available in the field.

3.3 Commissioning of the VEVA-system

During commissioning, the various end-positions are set and software settings are made. The pneumatic system (if appropriate) is extensively checked for any leaks.

3.4 Critical aspects

Regarding assembly, commissioning and operation the following critical aspects should be taken into account:

- The combined slope (transversal and longitudinal) of the road at the location of the VEVA may not exceed 10%.
- The working area of the VEVA has to have a smooth surface. No bumps or holes allowed. (abrupt changes in height may not exceed 35mm)
- The local road pavement must have sufficient load capacity for the wheel load of the VEVA. (see chapter 2.3) This prevents track markings of the VEVA wheels and stands.
- The adjacent barrier/guard profile must be connected fluently to the foundation modules using the appropriate transitions according to local laws and regulations.

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4 Contact Information

This Installation Manual has been written with great care. For any questions please contact Jansen Venneboer.

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