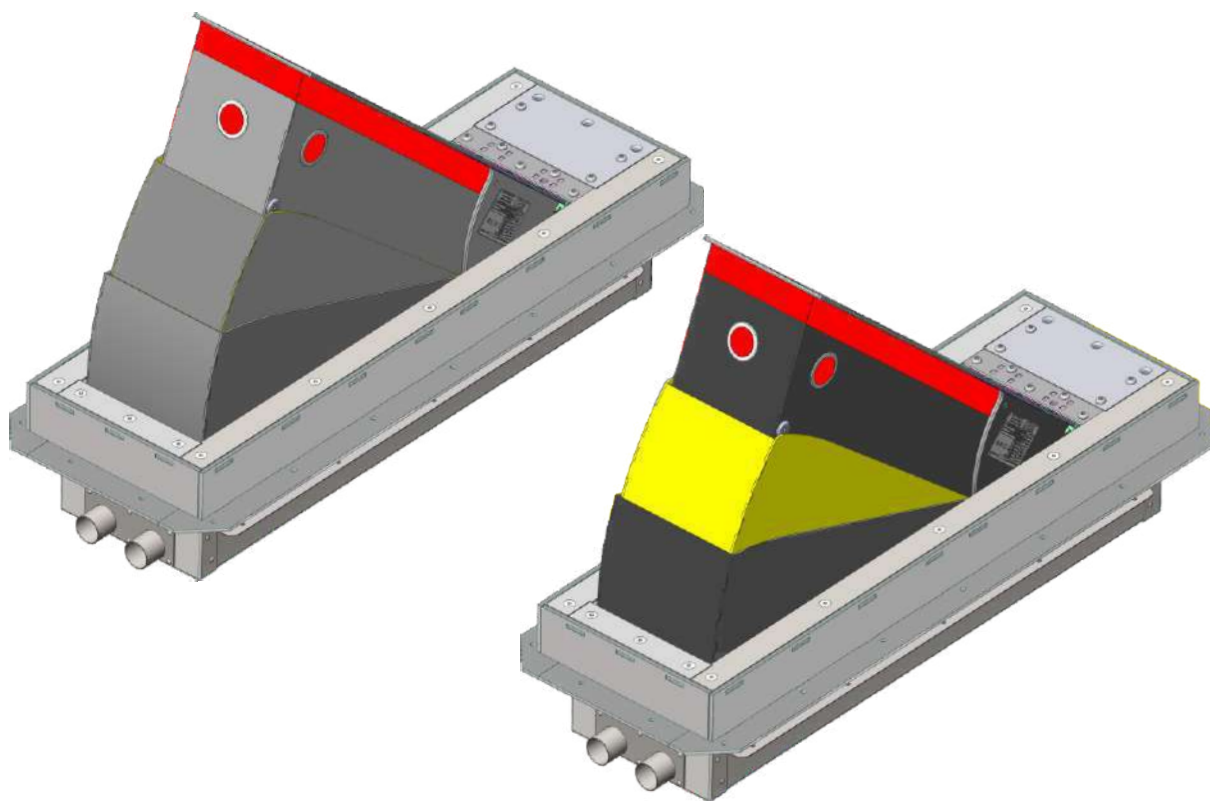


Original guide

AUTOMATIC ROAD BLOCKER CITY-LIGHT CYCLOPE RB 319-01

OPERATION MANUAL. PART I



ROAD BLOCKING SYSTEMS



Office and Production site:
14 Promyslova str., 02088, Kyiv, Ukraine,
E-mail: sales@tiso.global

Tel.: +380 (44) 291-21-11
Fax: +380 (44) 291-21-02
www.tiso.global

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*The Manual is provided for joint use with the **Operation Manual. Part II. The RB series Road Blockers wiring and operation.***



- *This Manual is an integral part of the product and shall be handed over to the customer. The manual shall be kept for future use and to be consulted, if appropriate.*
- *If the Road Blocker is to be resold, handed over to another owner or transported to another place, make sure that this manual is enclosed to the product to be used by a new owner and/or maintenance staff during installation and/or operation.*



The following abbreviations are used in this Manual:

- *M - Maintenance;*
- *HC - hydraulic cylinder;*
- *HS - hydraulic station;*
- *CU - Central Unit;*
- *DP - dynamic part;*
- *SP - static part;*
- *R.s.l. - Road surface level (reference point 0.000)*



CITY-LIGHT CYCLOPE RB319-01

DECLARATION OF CONFORMITY OF EQUIPMENT

There is confirmed the compliance with the basic safety requirements of following EU Directives:

- 2006/42/EC;
- 2014/30/EC;
- 2014/35/EC;




EU Notified Body
No. 2549

International Center for Quality Certification - ICQC Ltd.
63-19, Shokas str., Jurmala, LV-2016, Latvia
Phone: +371 27168371 E-mail: office@icqclv www.icqclv.lv
IA, International Center for Quality Certification - ICQC*
Reg. No. LV-981239825
Shokas iela 63-19, Jurmala, LV-2016, Latvija

CERTIFICATE OF CONFORMITY

ATBILSTĪBAS SERTIFIKĀTS

No. 1-127-180/2017

Holder of Certificate: <i>Sertifikācijas uzdevēja:</i>	TISO PRODUCTION LTD 72 Yamska Street, Kyiv, 03150, Ukraine Web: www.tiso.global; Phone: +380 44 291 21 11; E-mail: sales@tiso.global
Product name, model: <i>Produkta nosaukums, modeļi:</i>	Road blockers RB *A list of the models is contained in Appendix No. 1 to this certificate.
Manufacturer, address: <i>Ražotāja adrese:</i>	TISO PRODUCTION LTD 72 Yamska Street, Kyiv, 03150, Ukraine Web: www.tiso.global; Phone: +380 44 291 21 11; E-mail: sales@tiso.global
Trademark: <i>Zīmols:</i>	

This products have been certified on the basis of the review of the technical file. ICQC (International Center for Quality Certification-ICQC Ltd. Notified Body No. 2549) hereby confirms that the products mentioned above complies with the requirements of the below listed Directives and Standards:

Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery.
(Latvian: LR Ministru kabineta noteikumu Nr. 187 "Mācību drošības noteikumi")

Directive 2014/30/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to electromagnetic compatibility.
(Latvian: LR Ministru kabineta noteikumu Nr. 269 no 12.04.2014 "Izstrādājumu elektromagnētiskās saderības noteikumi")

Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits.
(Latvian: LR Ministru kabineta noteikumu Nr. 269 no 12.04.2014 "Izstrādājumu elektromagnētiskās saderības noteikumi")

Used standards: <i>Lietojamie standarti:</i>	EN ISO 12100:2010, EN 60204-1:2006 / A1:2009, AC:2010, EN 55011:2016, EN 61000-4:2009
Test reports references: <i>Testēšanas pārbaudes ziņojumi:</i>	No. 1612834514E/45011/TR/17 dated March 21, 2017 No. LEITC-TR-16-352 dated December 09, 2016


Notes:

- Technical assessment is carried out on the machine, which is not included in Annex I to the Directive 2006/42/EC on dangerous machinery; with that the continuous compliance of machine with the requirements of Directive is to be ensured by the manufacturer.
- This certificate is only valid for the equipment and configuration described and in conjunction with the text data detailed above.
- The certificate is valid only in presence of the declared technical conformity.
- The certificate is issued to a particular product with the provision that manufacturer will not make any changes in the product.
- The certificate holder is responsible for its correct use, maintenance and storage of technical documentation, as well as for the affixing of the CE marking.

Director of Certification:
Sertifikācijas direktors:



Sergey Kovalev



Date of issue: May 24, 2017
Certificate is valid until: May 24, 2022



Certificate No. 1-127-180/2017

EU-TYPE EXAMINATION CERTIFICATE

ES tipa pārbaudes sertifikāts

No. 1-127-180/2017

Appendix No. 1
List of types and models of products:

Road Blockers:		
RB311-G-15-1/0-8-160/080-040	RB311-G-15-4/1-5-100/120-060	RB311-G-15-1/1-0-8-160/080-055
RB312-G-15-2/1-5-200/080-040	RB312-G-15-5/2-5-200/120-060	RB322-G-15-2/1-5-200/080-055
RB313-G-15-3/0/1-5-200/080-040	RB313-G-15-7/5/5-300/120-060	RB323-G-15-3/0-1-5-200/080-055
RB314-G-15-4/2/2-5-200/080-040	RB324-G-15-9/7/7-8-300/120-060	RB324-G-15-4/2-2-5-200/080-055
RB315-G-15-2/1-5-200/090-050	RB315-G-15-1/1-0-8-160/080-045	RB315-G-15-2/1-5-200/090-055
RB316-G-15-4/2/2-5-200/090-050	RB316-G-15-5/2-2-5-200/080-045	RB316-G-15-4/2-2-5-200/090-055
RB317-G-15-2/2-5-200/090-050	RB317-G-15-3/2-2-5-200/080-045	RB317-G-15-2/2-5-200/090-055
RB318-G-15-2/2-5-200/090-050	RB318-G-15-4/2-2-5-200/080-045	RB318-G-15-2/2-5-200/090-055
RB319-G-15-2/2-5-200/090-050	RB319-G-15-5/2-2-5-200/080-045	RB319-G-15-2/2-5-200/090-055
RB320-G-15-2/2-5-200/090-050	RB320-G-15-6/2-2-5-200/080-045	RB320-G-15-2/2-5-200/090-055
RB321-G-15-2/2-5-200/090-050	RB321-G-15-7/2-2-5-200/080-045	RB321-G-15-2/2-5-200/090-055
RB322-G-15-2/2-5-200/090-050	RB322-G-15-8/2-2-5-200/080-045	RB322-G-15-2/2-5-200/090-055
RB323-G-15-2/2-5-200/090-050	RB323-G-15-9/2-2-5-200/080-045	RB323-G-15-2/2-5-200/090-055
RB324-G-15-2/2-5-200/090-050	RB324-G-15-10/2-2-5-200/080-045	RB324-G-15-2/2-5-200/090-055
RB325-G-15-2/2-5-200/090-050	RB325-G-15-11/2-2-5-200/080-045	RB325-G-15-2/2-5-200/090-055
RB326-G-15-2/2-5-200/090-050	RB326-G-15-12/2-2-5-200/080-045	RB326-G-15-2/2-5-200/090-055
RB327-G-15-2/2-5-200/090-050	RB327-G-15-13/2-2-5-200/080-045	RB327-G-15-2/2-5-200/090-055
RB328-G-15-2/2-5-200/090-050	RB328-G-15-14/2-2-5-200/080-045	RB328-G-15-2/2-5-200/090-055
RB329-G-15-2/2-5-200/090-050	RB329-G-15-15/2-2-5-200/080-045	RB329-G-15-2/2-5-200/090-055
RB330-G-15-2/2-5-200/090-050	RB330-G-15-16/2-2-5-200/080-045	RB330-G-15-2/2-5-200/090-055
RB331-G-15-2/2-5-200/090-050	RB331-G-15-17/2-2-5-200/080-045	RB331-G-15-2/2-5-200/090-055
RB332-G-15-2/2-5-200/090-050	RB332-G-15-18/2-2-5-200/080-045	RB332-G-15-2/2-5-200/090-055
RB333-G-15-2/2-5-200/090-050	RB333-G-15-19/2-2-5-200/080-045	RB333-G-15-2/2-5-200/090-055
RB334-G-15-2/2-5-200/090-050	RB334-G-15-20/2-2-5-200/080-045	RB334-G-15-2/2-5-200/090-055
RB335-G-15-2/2-5-200/090-050	RB335-G-15-21/2-2-5-200/080-045	RB335-G-15-2/2-5-200/090-055
RB336-G-15-2/2-5-200/090-050	RB336-G-15-22/2-2-5-200/080-045	RB336-G-15-2/2-5-200/090-055
RB337-G-15-2/2-5-200/090-050	RB337-G-15-23/2-2-5-200/080-045	RB337-G-15-2/2-5-200/090-055
RB338-G-15-2/2-5-200/090-050	RB338-G-15-24/2-2-5-200/080-045	RB338-G-15-2/2-5-200/090-055
RB339-G-15-2/2-5-200/090-050	RB339-G-15-25/2-2-5-200/080-045	RB339-G-15-2/2-5-200/090-055
RB340-G-15-2/2-5-200/090-050	RB340-G-15-26/2-2-5-200/080-045	RB340-G-15-2/2-5-200/090-055
RB341-G-15-2/2-5-200/090-050	RB341-G-15-27/2-2-5-200/080-045	RB341-G-15-2/2-5-200/090-055
RB342-G-15-2/2-5-200/090-050	RB342-G-15-28/2-2-5-200/080-045	RB342-G-15-2/2-5-200/090-055
RB343-G-15-2/2-5-200/090-050	RB343-G-15-29/2-2-5-200/080-045	RB343-G-15-2/2-5-200/090-055
RB344-G-15-2/2-5-200/090-050	RB344-G-15-30/2-2-5-200/080-045	RB344-G-15-2/2-5-200/090-055
RB345-G-15-2/2-5-200/090-050	RB345-G-15-31/2-2-5-200/080-045	RB345-G-15-2/2-5-200/090-055
RB346-G-15-2/2-5-200/090-050	RB346-G-15-32/2-2-5-200/080-045	RB346-G-15-2/2-5-200/090-055
RB347-G-15-2/2-5-200/090-050	RB347-G-15-33/2-2-5-200/080-045	RB347-G-15-2/2-5-200/090-055
RB348-G-15-2/2-5-200/090-050	RB348-G-15-34/2-2-5-200/080-045	RB348-G-15-2/2-5-200/090-055
RB349-G-15-2/2-5-200/090-050	RB349-G-15-35/2-2-5-200/080-045	RB349-G-15-2/2-5-200/090-055
RB350-G-15-2/2-5-200/090-050	RB350-G-15-36/2-2-5-200/080-045	RB350-G-15-2/2-5-200/090-055
RB351-G-15-2/2-5-200/090-050	RB351-G-15-37/2-2-5-200/080-045	RB351-G-15-2/2-5-200/090-055
RB352-G-15-2/2-5-200/090-050	RB352-G-15-38/2-2-5-200/080-045	RB352-G-15-2/2-5-200/090-055
RB353-G-15-2/2-5-200/090-050	RB353-G-15-39/2-2-5-200/080-045	RB353-G-15-2/2-5-200/090-055
RB354-G-15-2/2-5-200/090-050	RB354-G-15-40/2-2-5-200/080-045	RB354-G-15-2/2-5-200/090-055
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RB356-G-15-2/2-5-200/090-050	RB356-G-15-42/2-2-5-200/080-045	RB356-G-15-2/2-5-200/090-055
RB357-G-15-2/2-5-200/090-050	RB357-G-15-43/2-2-5-200/080-045	RB357-G-15-2/2-5-200/090-055
RB358-G-15-2/2-5-200/090-050	RB358-G-15-44/2-2-5-200/080-045	RB358-G-15-2/2-5-200/090-055
RB359-G-15-2/2-5-200/090-050	RB359-G-15-45/2-2-5-200/080-045	RB359-G-15-2/2-5-200/090-055
RB360-G-15-2/2-5-200/090-050	RB360-G-15-46/2-2-5-200/080-045	RB360-G-15-2/2-5-200/090-055
RB361-G-15-2/2-5-200/090-050	RB361-G-15-47/2-2-5-200/080-045	RB361-G-15-2/2-5-200/090-055
RB362-G-15-2/2-5-200/090-050	RB362-G-15-48/2-2-5-200/080-045	RB362-G-15-2/2-5-200/090-055
RB363-G-15-2/2-5-200/090-050	RB363-G-15-49/2-2-5-200/080-045	RB363-G-15-2/2-5-200/090-055
RB364-G-15-2/2-5-200/090-050	RB364-G-15-50/2-2-5-200/080-045	RB364-G-15-2/2-5-200/090-055
RB365-G-15-2/2-5-200/090-050	RB365-G-15-51/2-2-5-200/080-045	RB365-G-15-2/2-5-200/090-055
RB366-G-15-2/2-5-200/090-050	RB366-G-15-52/2-2-5-200/080-045	RB366-G-15-2/2-5-200/090-055
RB367-G-15-2/2-5-200/090-050	RB367-G-15-53/2-2-5-200/080-045	RB367-G-15-2/2-5-200/090-055
RB368-G-15-2/2-5-200/090-050	RB368-G-15-54/2-2-5-200/080-045	RB368-G-15-2/2-5-200/090-055
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RB370-G-15-2/2-5-200/090-050	RB370-G-15-56/2-2-5-200/080-045	RB370-G-15-2/2-5-200/090-055
RB371-G-15-2/2-5-200/090-050	RB371-G-15-57/2-2-5-200/080-045	RB371-G-15-2/2-5-200/090-055
RB372-G-15-2/2-5-200/090-050	RB372-G-15-58/2-2-5-200/080-045	RB372-G-15-2/2-5-200/090-055
RB373-G-15-2/2-5-200/090-050	RB373-G-15-59/2-2-5-200/080-045	RB373-G-15-2/2-5-200/090-055
RB374-G-15-2/2-5-200/090-050	RB374-G-15-60/2-2-5-200/080-045	RB374-G-15-2/2-5-200/090-055
RB375-G-15-2/2-5-200/090-050	RB375-G-15-61/2-2-5-200/080-045	RB375-G-15-2/2-5-200/090-055
RB376-G-15-2/2-5-200/090-050	RB376-G-15-62/2-2-5-200/080-045	RB376-G-15-2/2-5-200/090-055
RB377-G-15-2/2-5-200/090-050	RB377-G-15-63/2-2-5-200/080-045	RB377-G-15-2/2-5-200/090-055
RB378-G-15-2/2-5-200/090-050	RB378-G-15-64/2-2-5-200/080-045	RB378-G-15-2/2-5-200/090-055
RB379-G-15-2/2-5-200/090-050	RB379-G-15-65/2-2-5-200/080-045	RB379-G-15-2/2-5-200/090-055
RB380-G-15-2/2-5-200/090-050	RB380-G-15-66/2-2-5-200/080-045	RB380-G-15-2/2-5-200/090-055
RB381-G-15-2/2-5-200/090-050	RB381-G-15-67/2-2-5-200/080-045	RB381-G-15-2/2-5-200/090-055
RB382-G-15-2/2-5-200/090-050	RB382-G-15-68/2-2-5-200/080-045	RB382-G-15-2/2-5-200/090-055
RB383-G-15-2/2-5-200/090-050	RB383-G-15-69/2-2-5-200/080-045	RB383-G-15-2/2-5-200/090-055
RB384-G-15-2/2-5-200/090-050	RB384-G-15-70/2-2-5-200/080-045	RB384-G-15-2/2-5-200/090-055
RB385-G-15-2/2-5-200/090-050	RB385-G-15-71/2-2-5-200/080-045	RB385-G-15-2/2-5-200/090-055
RB386-G-15-2/2-5-200/090-050	RB386-G-15-72/2-2-5-200/080-045	RB386-G-15-2/2-5-200/090-055
RB387-G-15-2/2-5-200/090-050	RB387-G-15-73/2-2-5-200/080-045	RB387-G-15-2/2-5-200/090-055
RB388-G-15-2/2-5-200/090-050	RB388-G-15-74/2-2-5-200/080-045	RB388-G-15-2/2-5-200/090-055
RB389-G-15-2/2-5-200/090-050	RB389-G-15-75/2-2-5-200/080-045	RB389-G-15-2/2-5-200/090-055
RB390-G-15-2/2-5-200/090-050	RB390-G-15-76/2-2-5-200/080-045	RB390-G-15-2/2-5-200/090-055
RB391-G-15-2/2-5-200/090-050	RB391-G-15-77/2-2-5-200/080-045	RB391-G-15-2/2-5-200/090-055
RB392-G-15-2/2-5-200/090-050	RB392-G-15-78/2-2-5-200/080-045	RB392-G-15-2/2-5-200/090-055
RB393-G-15-2/2-5-200/090-050	RB393-G-15-79/2-2-5-200/080-045	RB393-G-15-2/2-5-200/090-055
RB394-G-15-2/2-5-200/090-050	RB394-G-15-80/2-2-5-200/080-045	RB394-G-15-2/2-5-200/090-055
RB395-G-15-2/2-5-200/090-050	RB395-G-15-81/2-2-5-200/080-045	RB395-G-15-2/2-5-200/090-055
RB396-G-15-2/2-5-200/090-050	RB396-G-15-82/2-2-5-200/080-045	RB396-G-15-2/2-5-200/090-055
RB397-G-15-2/2-5-200/090-050	RB397-G-15-83/2-2-5-200/080-045	RB397-G-15-2/2-5-200/090-055
RB398-G-15-2/2-5-200/090-050	RB398-G-15-84/2-2-5-200/080-045	RB398-G-15-2/2-5-200/090-055
RB399-G-15-2/2-5-200/090-050	RB399-G-15-85/2-2-5-200/080-045	RB399-G-15-2/2-5-200/090-055
RB400-G-15-2/2-5-200/090-050	RB400-G-15-86/2-2-5-200/080-045	RB400-G-15-2/2-5-200/090-055
RB401-G-15-2/2-5-200/090-050	RB401-G-15-87/2-2-5-200/080-045	RB401-G-15-2/2-5-200/090-055
RB402-G-15-2/2-5-200/090-050	RB402-G-15-88/2-2-5-200/080-045	RB402-G-15-2/2-5-200/090-055
RB403-G-15-2/2-5-200/090-050	RB403-G-15-89/2-2-5-200/080-045	RB403-G-15-2/2-5-200/090-055
RB404-G-15-2/2-5-200/090-050	RB404-G-15-90/2-2-5-200/080-045	RB404-G-15-2/2-5-200/090-055
RB405-G-15-2/2-5-200/090-050	RB405-G-15-91/2-2-5	

1. General safety provisions



The Manual should be scrutinized prior to the equipment installation and operation to ensure the human safety. Safety is not ensured in case of improper operation or use.

- *TiSO ensures its best effort for guarantee and correctness of this Manual and reflecting material changes in the design. However, a policy of continuous improvement can lead to insignificant differences between the equipment supplied and the description in this document.*
- *The Manual to be kept for future use.*
- *Do not allow children and unauthorized persons to stay near operating equipment. The manufacturer shall bear no responsibility for violation of safety rules.*



Personnel involved in maintenance of existing electrical installations or commissioning, electrical installation, repair work, maintenance and installation shall be trained to work with this model of the device! Training shall be carried out at the manufacturer's representatives' or at the manufacturers' of the product.

- *Any actions that are not explicitly listed in these instructions shall be prohibited.*
- *Safety devices shall protect potentially hazardous areas.*



In the event of violation of the operating rules and the requirements of the operational documentation, the road blocker may present a danger to human life and health by virtue of high voltage and moving parts of product! Transportation of the product shall be ensured in the lowered state only!



The traffic area regulated by the road blocker shall contain appropriate warning signs effective for the territory of the country (see clause 6.5)!

For safe operation of the road blocker, the other warning sign shall be installed at a distance of at least 50 m according to the current traffic regulations!

Each vehicle must make a preliminary stop in front of the road blocker.



*Warning sign
(conditionally)*

ROAD BLOCKING SYSTEMS



Office and Production site:
14 Promyslova str., 02088, Kyiv, Ukraine,
E-mail: sales@tiso.global

Tel.: +380 (44) 291-21-11
Fax: +380 (44) 291-21-02
www.tiso.global

1.1 Instructions to the installer:

1. For your safety, follow the installation instructions;
2. The product shall be installed in accordance with applicable regulations and rules, in compliance with safety precautions during installation work;
3. Installation of the equipment shall be carried out with the power supply disconnected;
4. Packaging materials shall be disposed in accordance with applicable standards;
5. Strictly observe the sequence of operations for assembling the blocker specified in the instruction;



- It is forbidden to make changes to the arrangement of equipment and use of materials and components that are not included in the contents of delivery and are not provided for in this manual.
- Do not install this equipment during a lightning storm, heavy rain or snow, in an explosive atmosphere and in poor visibility. Mounting zone is equipped according to the current standards.



- Installation, connection and commissioning works shall be performed by specialists of the appropriate qualification.

6. If faults or defects are detected, contact the supplier's service desk.
7. The installer shall provide the user with the necessary information on the operation of the system in manual mode in the event of an emergency.
8. The manufacturer is not responsible for the operation of the equipment in the following cases:
 - non-compliance with the installation technology,
 - use of non-standard materials and components,
 - performance of work by unqualified personnel
9. The manufacturer is not responsible for the safety measures when installing the equipment by personnel not involved in the company's service desk.



Make sure of availability of the plate with manufacturer's details:

TISO		TISO PRODUCTION 14, Promyshlennaya Str. 02088 Kyiv, Ukraine	
Model:	<input type="text"/>		
Model Code:	<input type="text"/>		
Type:	<input type="text"/>		
Serial No.:	<input type="text"/>		
Power supply:	<input type="text"/>	V;	
Current:	<input type="text"/>	A;	
Weight:	<input type="text"/>	kg;	
Frequency:	<input type="text"/>	Hz;	
IP-code:	<input type="text"/>		
Power:	<input type="text"/>	kW;	
Manufacturing date:	<input type="text"/>	Made in Ukraine	

* All dimensions in the manual indicated in millimeters

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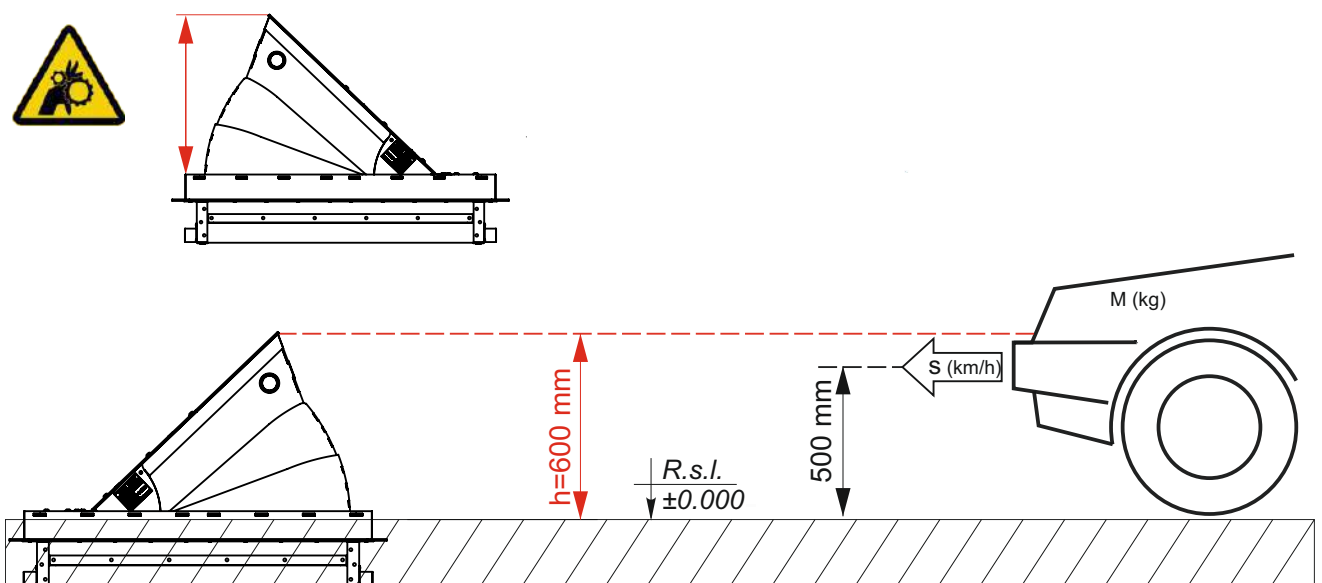
1.2 Instructions to user:

1. The operation regulations, prescribed by this Manual, shall be strictly observed.
2. No modifications of the equipment components shall be made.
3. The equipment shall be used for intended purposes, specified by the manufacturer.
4. Don't try to repair or adjust the road blocker on your own. The relevant service department shall be referred to. Breaking of seals shall cancel the manufacturer's warranty liabilities.
5. The road blocker control units (panels) shall be beyond the reach of outsiders.
6. The company "TiSO" shall not be liable for improper operation of equipment and violation of safety measures by the user.



- The Road Blocker must be installed, precommissioned and serviced by the certified professionals having the relevant qualification and being familiar with the product design and instruction manuals:
 - Installation and operation manual (Part I, Part II);
 - Datasheet;
 - Instruction manuals for components.
- Technical inspections, maintenance, adjustment and repair shall be performed only when the road blocker is deenergized.
- The device, designed and manufactured in accordance with directives of the European Union, shall be marked according to CE standards.

7. Never put your hands into moving parts of road blocker to prevent an accident that could result in injury or death.



*See the section "Wiring diagram of road blockers" of the Manual, Part II, Wiring of road blockers (RB series)

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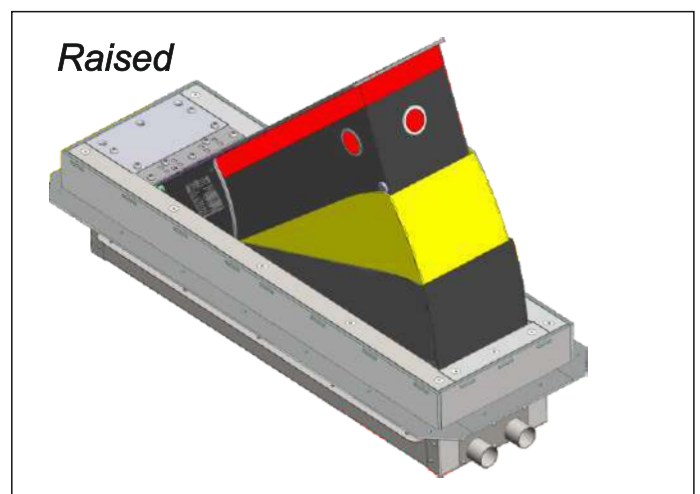
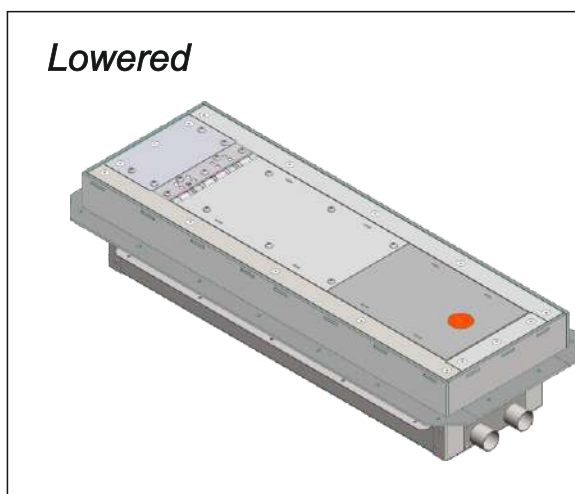
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2.

Description

2.1 The automatic traffic road blocker City-Light Cyclope is a fixed platform with built-in raising element. Such a traffic road blocker can be an alternative to bollards in cases where there is no possibility of installing equipment at a great depth.

This road blocker is operated by an integrated hydraulic unit. Due to its small size, the City-Light Cyclope meets the installation requirements for urban environments and can be mounted in pedestrian areas, city squares, etc. In the lowered position it is at the level of the roadway and does not interfere with the movement of vehicles. In the raised position, the barrier platform prevents unauthorized access.



2.2 Coating - warning paint:

Option 1: black and yellow.

Option 2: without warning paint - stainless steel.

2.3 The road blocker can be controlled:

- from wired or wireless remote control panel;
- automatically via access control system;
- manually (manual sinking in case of power failure).



Independent control of two road blockers with one control unit and parallel (simultaneous) group control of more than two road blockers are allowed.



ROAD BLOCKING SYSTEMS

3.

Intended use

3.1 The road blockers are used at public, commercial and private facilities for unauthorized vehicle access control, vehicular traffic management and regulation at different sites and adjacent areas.

3.2 The road blockers are recommended for passenger transport facilities, approaches to sports facilities and government facilities, to be installed in front of shops, hotels, shopping malls and office centers, health care facilities, at the approaches to cottages and cottage settlements, at central urban and historical sites, industrial and special facilities.

3.3 The road blockers can be installed in conjunction with other traffic control and unauthorized access prevention equipment.



OFFICE BUILDINGS



PLANTS



SPORTS AND LEISURE CENTERS



HAULAGE COMPANIES



PARKING LOTS

3.4 By impact of environmental factors the road blocker complies with EN 300 019-1-4 and is designed for outdoor operation in moderate climate (Class 4.1) with acceptable ambient temperature - 33°C to +40°C.



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4.

Technical data

4.1 Technical Features* of City-Light Cyclope series

Table 1. City-Light Cyclope technical features*

Road Blocker	CITY-LIGHT CYCLOPE
Road Blocker model	RB319-01
Actuator type/ layout	Hydraulic / Internal
Installation type	Submersible
Dimensions (LxWxH)	1273x496x260 mm
Blocking width	265 mm
Rising platform height	605 mm (± 20 mm)
Weight	117 kg
Power consumption	0,33 kW
Power supply	230V, 50/60 Hz;
Rising time/ Lowering time	5 s / 4 s ($\pm 1s$)
Protection level for road blocker	IP 67
Protection level for control cabinet	IP 55
Temperature range	-10 °C / + 40 °C
Temperature range **(optional)	-40 °C / +40 °C
Material	Structural steel C22/ Stainless steel
Coating	Epoxy Polyurethane RAL 9005 Black, RAL 1003 Yellow / without warning paint - stainless steel
Use intensity ***	Medium
Light indication	built-in LEDs
Remote control	RS485 - IP41
Road Blocker manual sinking	Hydraulic release device
Raising position locking	Hydraulic lock of hydraulic station
Additional options:	
Sound alarm	
Inductive Loop Controllers	
Corrosion-resistant coating - Hot dip galvanized	
Manual pump unit	
Wireless remote control radio controller	
Remote control - IP54	
Heating system for road blocker	
Residual-current device (RSD)	
Uninterruptible Power Supply (UPS)	
* Technical features can be changed without prior notice;	
** For temperatures below -10 °C heating system to be used	
*** At the temperatures above +40 °C the use intensity is below medium	

ROAD BLOCKING SYSTEMS



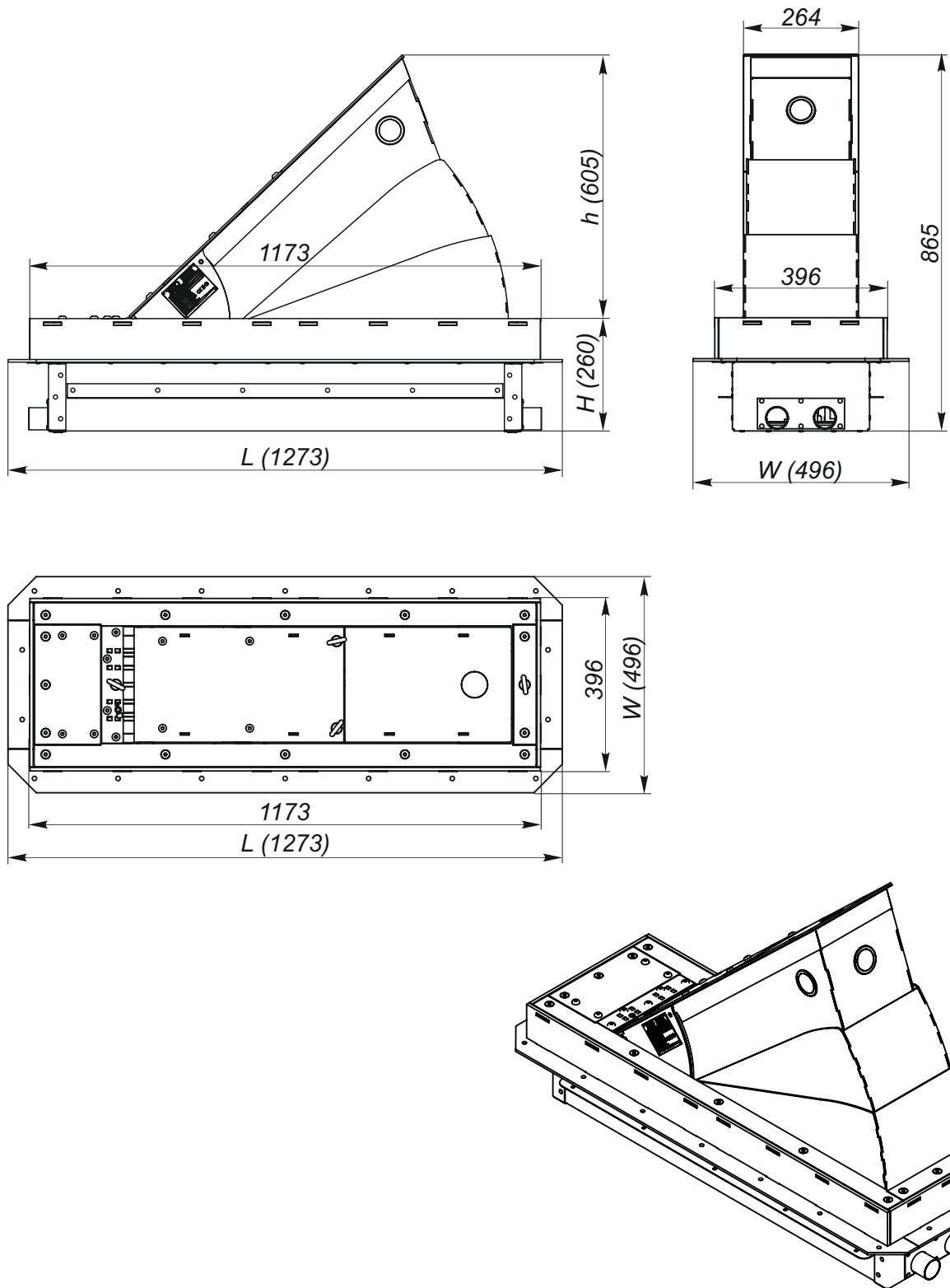
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CITY-LIGHT CYCLOPE RB319-01

4.2 Dimensions of City-Light Cyclope



ROAD BLOCKING SYSTEMS



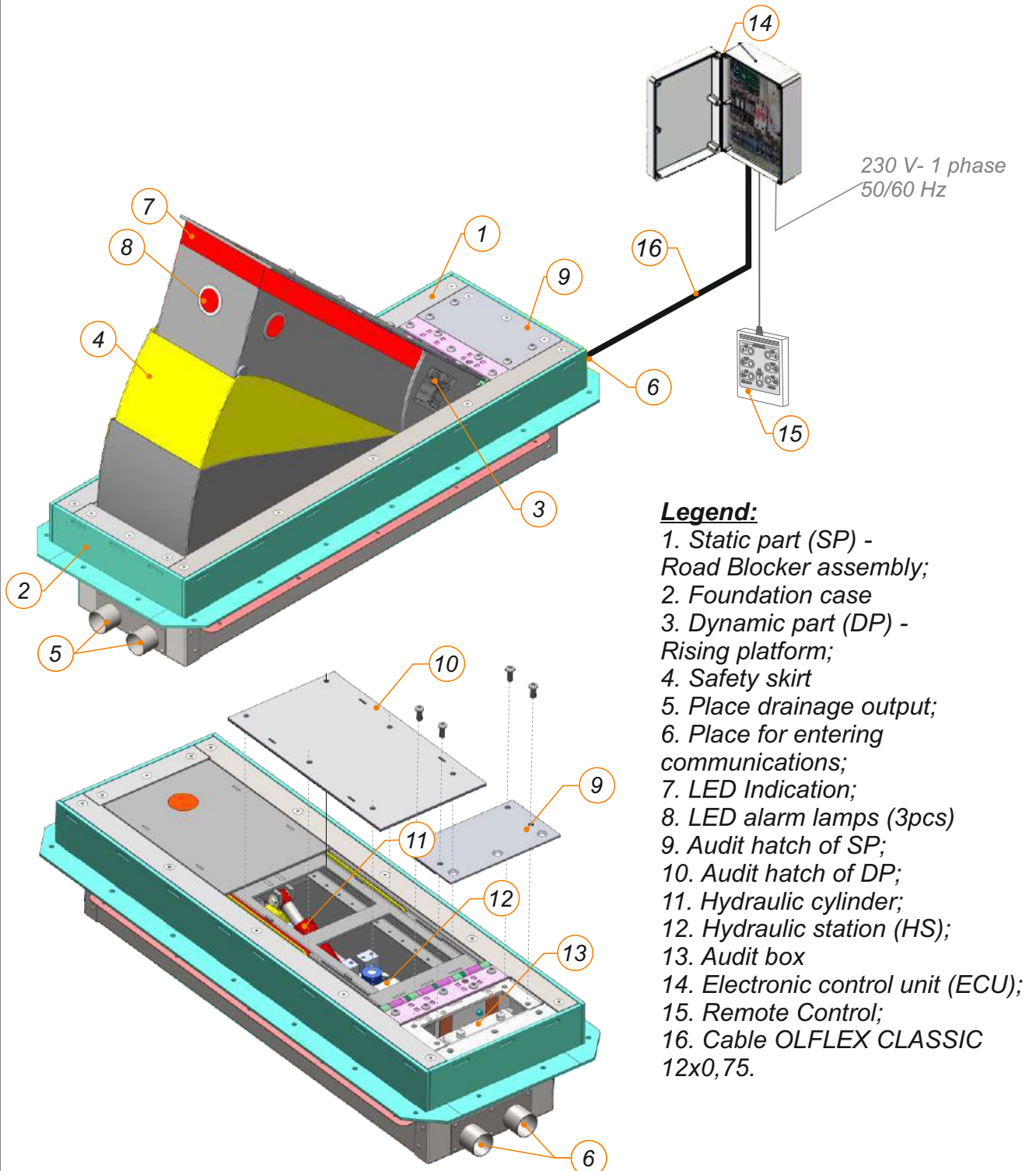
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5. Specifications

Road Blocker major components and scope of delivery:



Legend:

1. Static part (SP) - Road Blocker assembly;
2. Foundation case
3. Dynamic part (DP) - Rising platform;
4. Safety skirt
5. Place drainage output;
6. Place for entering communications;
7. LED Indication;
8. LED alarm lamps (3pcs)
9. Audit hatch of SP;
10. Audit hatch of DP;
11. Hydraulic cylinder;
12. Hydraulic station (HS);
13. Audit box
14. Electronic control unit (ECU);
15. Remote Control;
16. Cable OLFLEX CLASSIC 12x0,75.

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6. Installation of the road blocker.

6.1 Arrangement of the installation site:

- The installation site shall comply with the requirements of applicable regulations and standards.
- The work site is fenced along the perimeter by a temporary protective barrier or signal tape at a distance of 3 meters from the installation site.
- Prior to entering the site, the relevant warning signs ISO 7010: 2011 are displayed.



- Make sure there are no underground utilities on site!
- Do not allow unauthorized persons to stay in the work area!
- Follow the safety instructions for installation work!

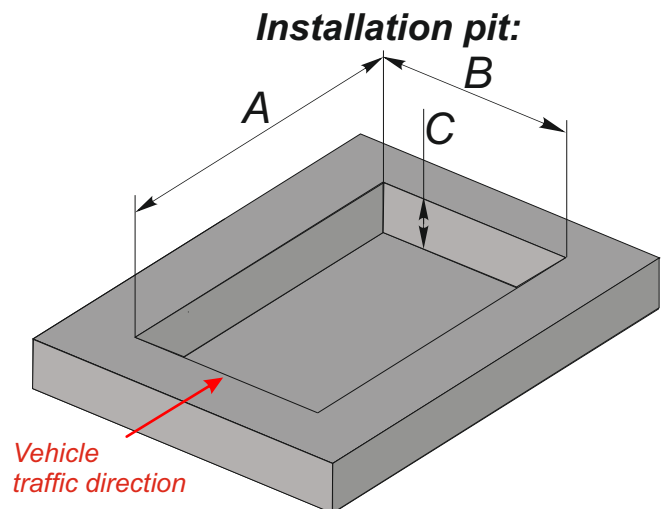
6.2 Sequence of installation works:

- Preparation of installation pit;
- Arrangement of concrete base (foundation);
- Installation of utility conduits and drainage;
- Installation of the Road Blocker assembly in the design position;
- Connection of utilities;

6.3 Installation procedure:

6.3.1 Layout of pit:

1. The required marking according to the design solutions to be made;
2. The roadbed to be removed;
3. A pit with $A \times B \times C^*$ (1670x900x410 mm) dimensions should be dug according to scheme of the pit layout installation;



- Make sure that soil absorbs water. For this purpose about **40 liters** of water to be poured into the pit and its complete absorption into soil in less than **30 minutes** to be checked!
- In case of insufficient soil permeability or abundant groundwater it is advised to use pumps of forced water discharge into the existing sewage system or earth.
- The pit layout may vary depending on the type of soil at the site. The soil conditions largely depend on their type, composition and bearing capacity.

* In the case of loose soils, the size of the pit is determined by the installation organization

ROAD BLOCKING SYSTEMS



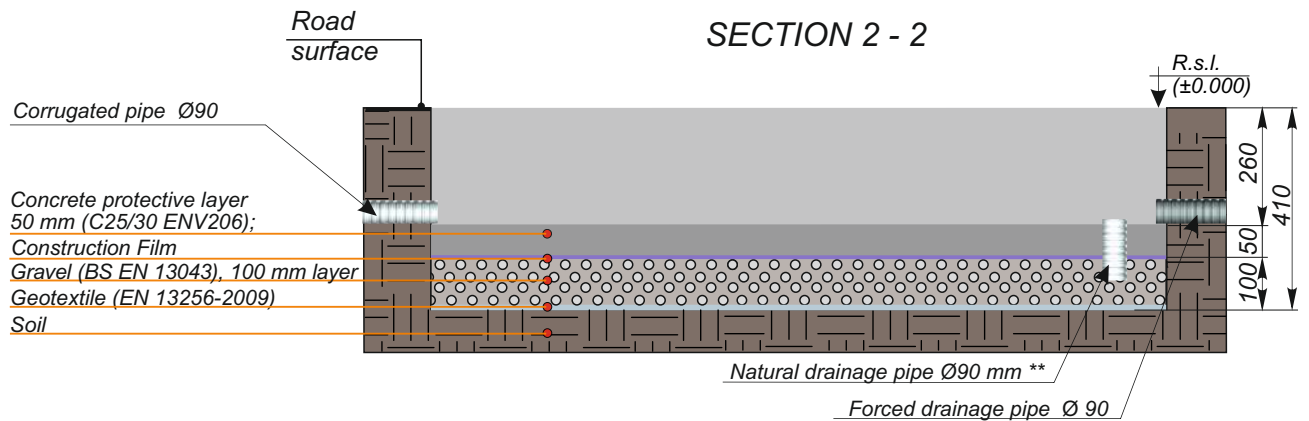
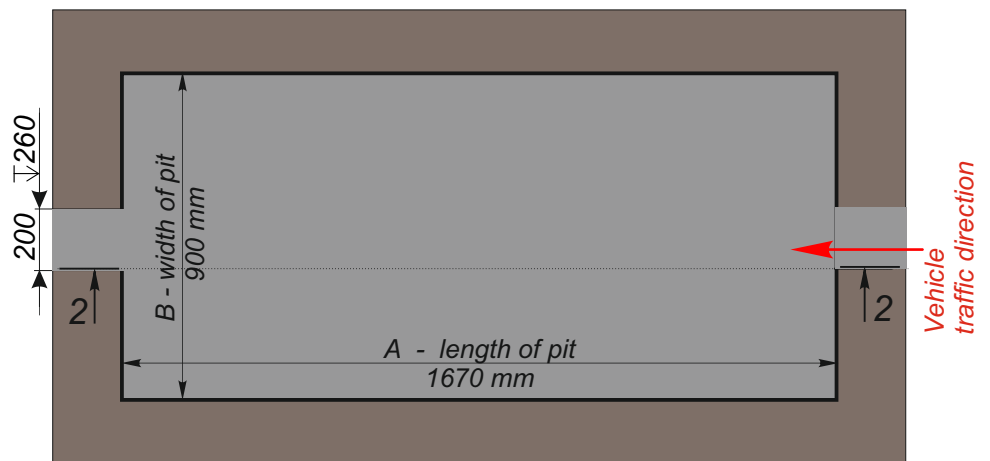
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CITY-LIGHT CYCLOPE RB319-01

4. Dig a trench for utility conduit installation;
5. Make sand preparation 50mm;
6. Put geotextile on the pit bottom;
7. Fill the pit with 10-20 mm grain size gravel to 100 mm height;
8. Pour the first 50 mm concrete layer (Concrete C25/30);
9. Lay utility conduits;

Recommended installation pit diagram for road blocker City-Light Cyclope



*In the case of loose soils, the size of the pit is determined by the installation organization;

** The road blocker utility conduit outlet side and drainage option to be determined by the installer.

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6.3.2. Road Blocker installation in the design position:

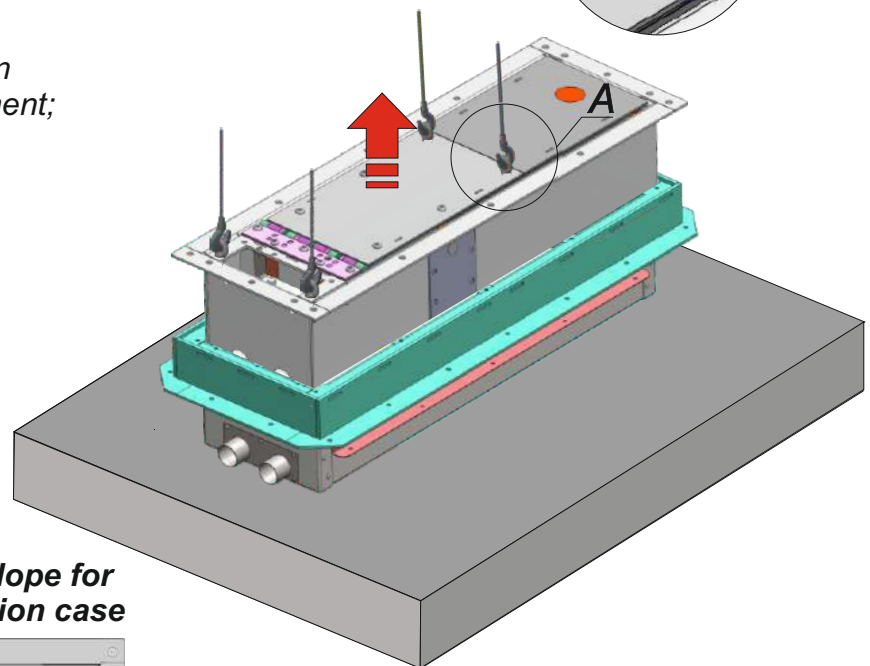
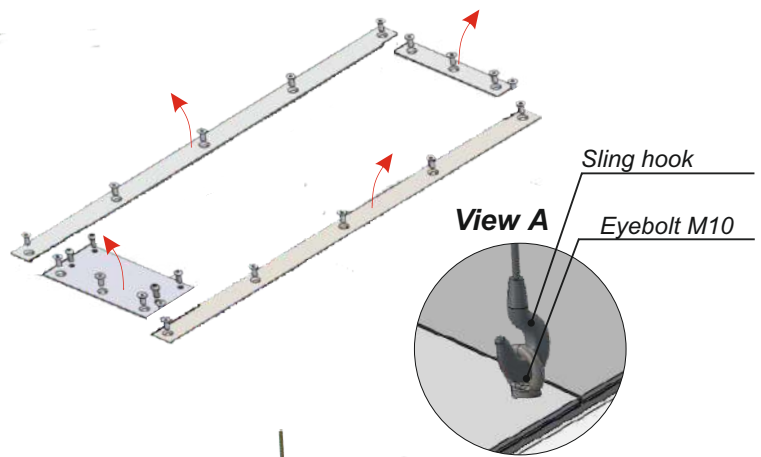
The Road Blocker to be installed by means of handling equipment



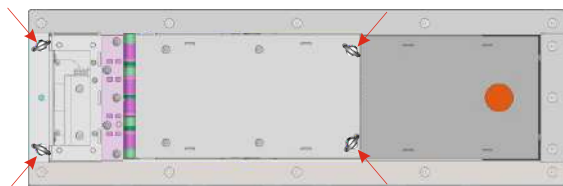
- Safety regulations to be observed according to the applicable standards during handling operations!
- Slings must be performed by the properly qualified slingers having the appropriate permit to work;
- Presence of unauthorized persons at the installation site during handling operations is **PROHIBITED!**

Sequence of operations:

1. The product to be unpacked. Outside condition and configuration to be checked;
2. Remove the front plates by unscrewing all the screws around the perimeter of the static part;
3. Unscrew 2 screws in the Audit hatch of SP and 2 screws of Audit hatch of DP - tighten the 4 M10 eyebolts in their place;
4. The road blocker to be installed in the design position by means of handling equipment;



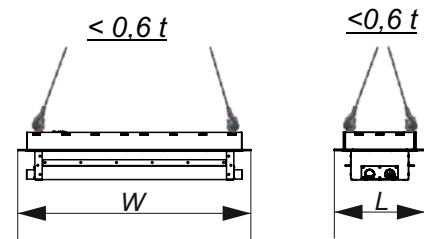
Slings place of City-Light Cyclope for removing it from the foundation case



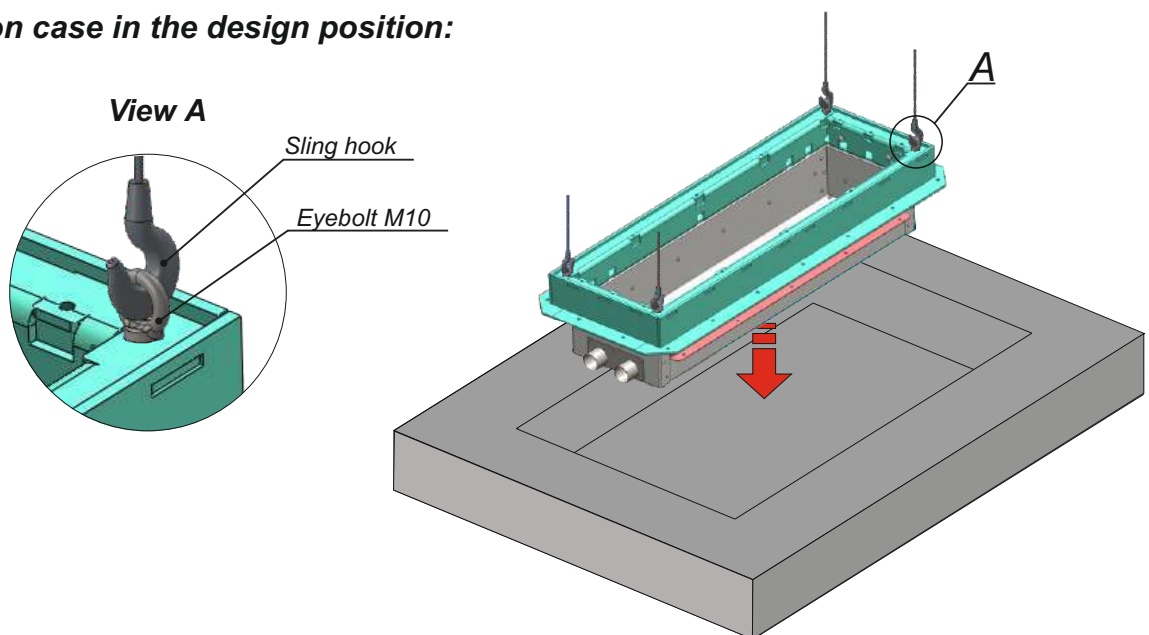
ROAD BLOCKING SYSTEMS

CITY-LIGHT CYCLOPE RB319-01

5. Screw 4 eyebolts M10 into the foundation case;
6. Drop the Road Blocker into the prepared pit;
7. The road blocker horizontal position shall be checked by means of leveling instrument;



Foundation case in the design position:



- The Road Blocker to be installed by means of handling equipment;
- Safety regulations to be observed according to the applicable standards during handling operations!
- Slings must be performed by the properly qualified slingers having the appropriate permit to work;
- Presence of unauthorized persons at the installation site during handling operations is PROHIBITED!

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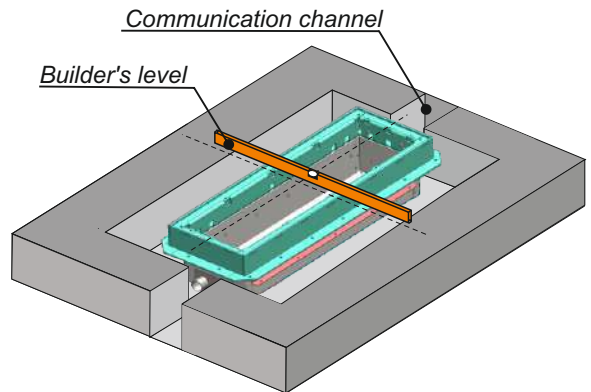
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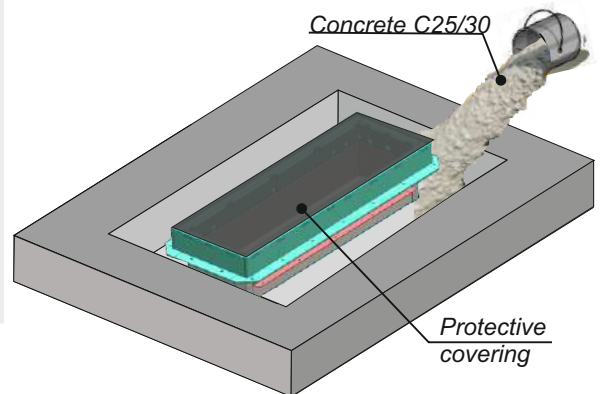


- Foundation case put along the central vertical axis of the pit;
- The road blocker horizontal position and compliance with the design reference marks shall be checked by builder's level, ± 0.000 is accepted as conventional level of the road surface of the site.

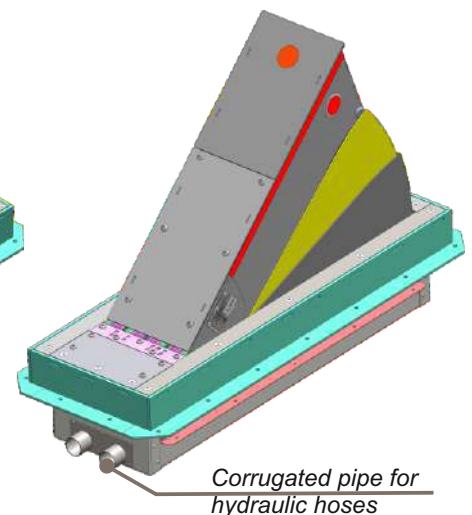
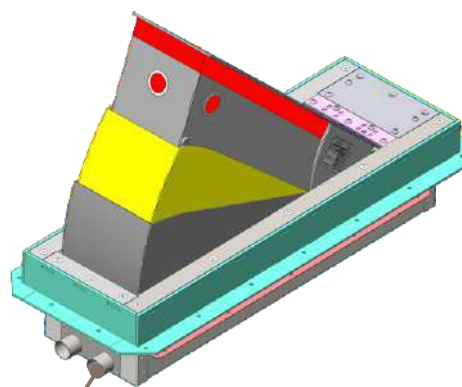
8. Lay utility corrugated pipes to the foundation case to a depth of 260 mm;
9. The Road Blocker case to be protected with additional coating prior to concreting;
10. The pit with the Road Blocker and reinforcement cage assembly to be filled with 260 mm concrete layer up to the roadbed level (C25/30 strength grade of concrete according to ENV-206);



- Concreting to be performed according to the applicable standards;
- It is advised to use waterproof additives to obtain water-resistant concrete;
- First layer drying of concrete foundation takes at least **5 hours**;
- Complete dry of concrete foundation takes at least **28 days!**



Communication output channels of City-Light Cyclope :

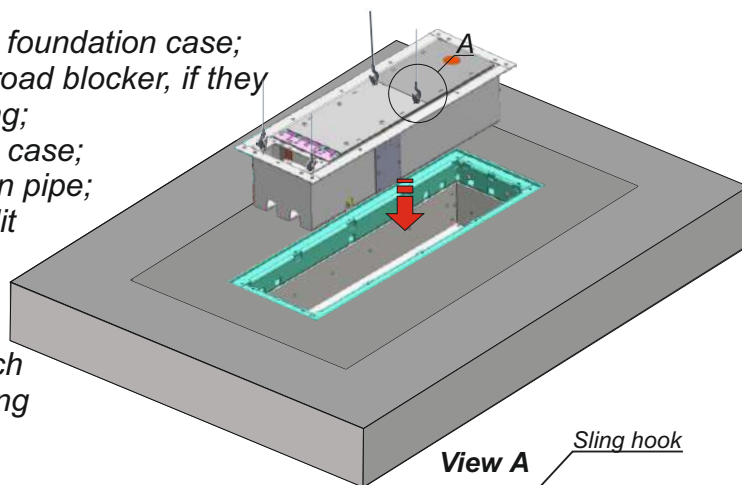


- For normal operation, the customer must ensure water discharge.
- In the absence of the possibility of using natural drainage of water into the soil, it is necessary to provide drainage to a separate pit.

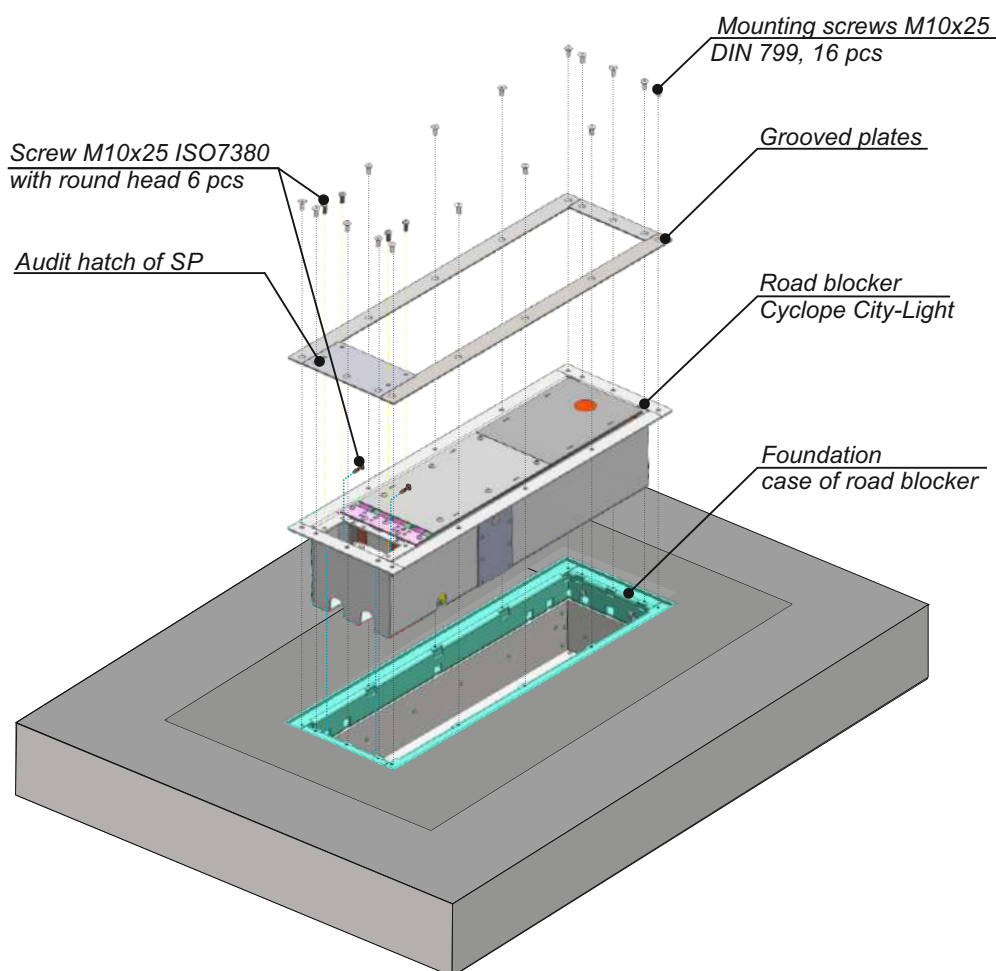
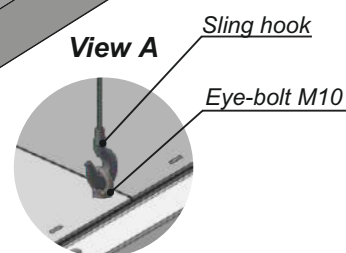
ROAD BLOCKING SYSTEMS

6.3.3 Installing the road blocker in the foundation case:

1. Remove the protective coating from the foundation case;
2. Install 4 M10 eyebolts at the top of the road blocker, if they were not installed at the stage of unpacking;
3. Put the road blocker into the foundation case;
4. Lay electric cables in the communication pipe;
5. Connect the electrical cables to the audit box of road blocker (for more details see Section 7);
6. Remove the eyebolts;
7. Install the grooved plates, the audit hatch of SP and fix the road blocker with mounting screws;



The loose electrical cables ends must be hermetically sealed to prevent against intrusion from dirt, moisture and foreign bodies.



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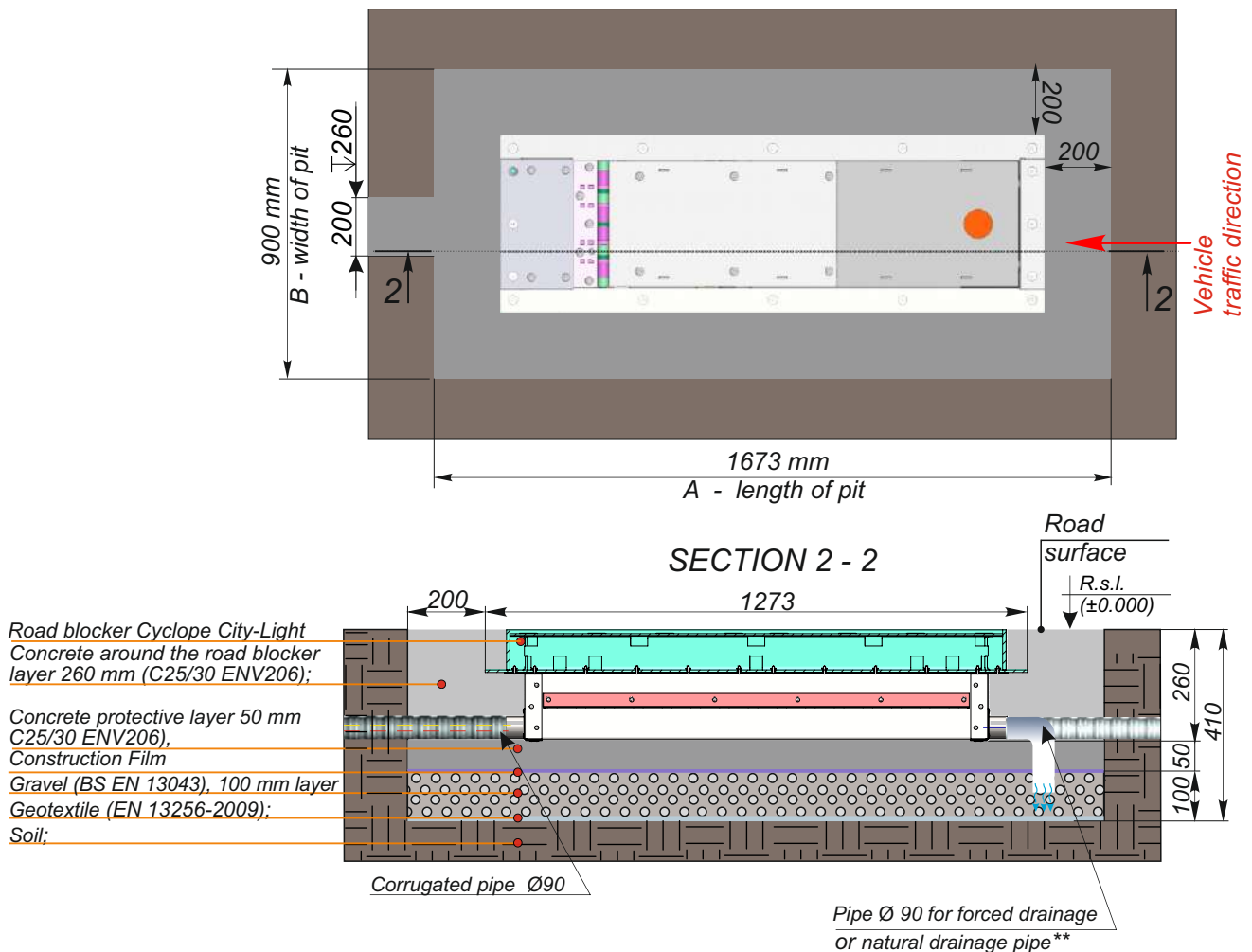
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- Installation of road blocker in foundation case is carried out only in the lowered position!
- Be especially careful when positioning the cable between the foundation case walls and the road blocker during lowering, as well as when connecting it to the termination box located on the side of the road blocker.
- After all installation work, restore the road surface around the road blocker, clean up the installation area.

Diagram of a mounting pit with an installed Cyclope City-Light



*In the case of loose soils, the size of the pit is determined by the installation organization;

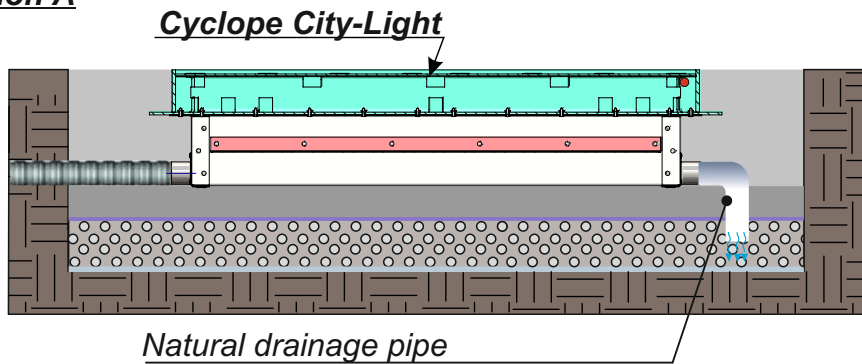
** The road blocker utility conduit outlet side and drainage option to be determined by the installer.

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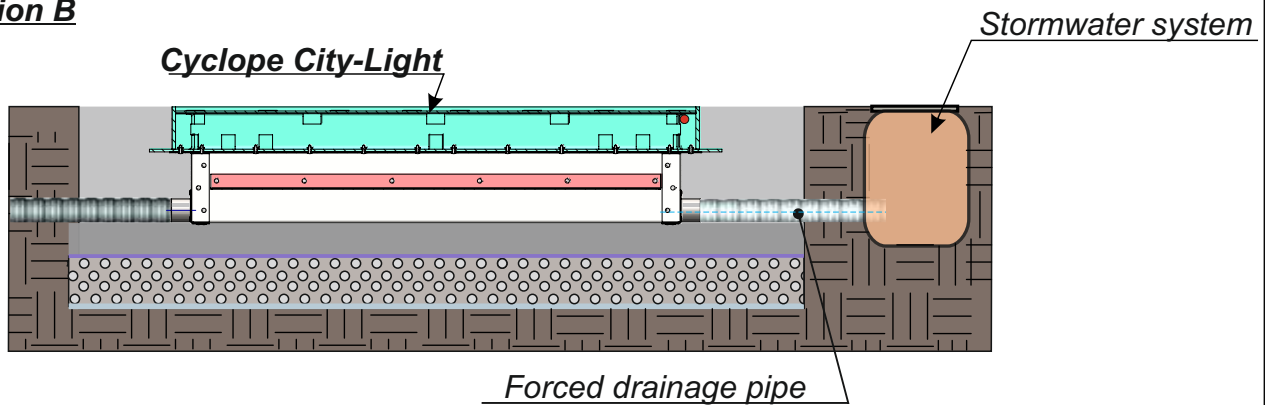
CITY-LIGHT CYCLOPE RB319-01

6.4 Options for drainage (conditionally) of road blocker Cyclope City-Light:

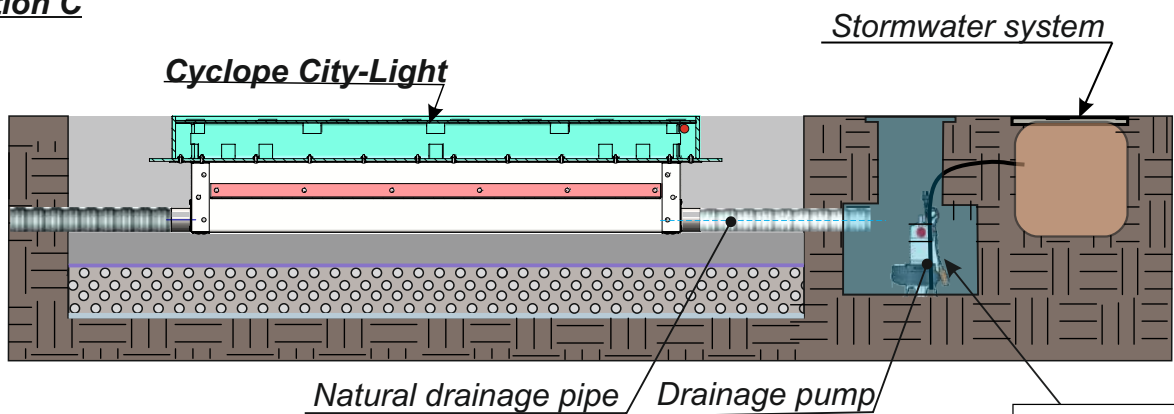
Option A



Option B



Option C



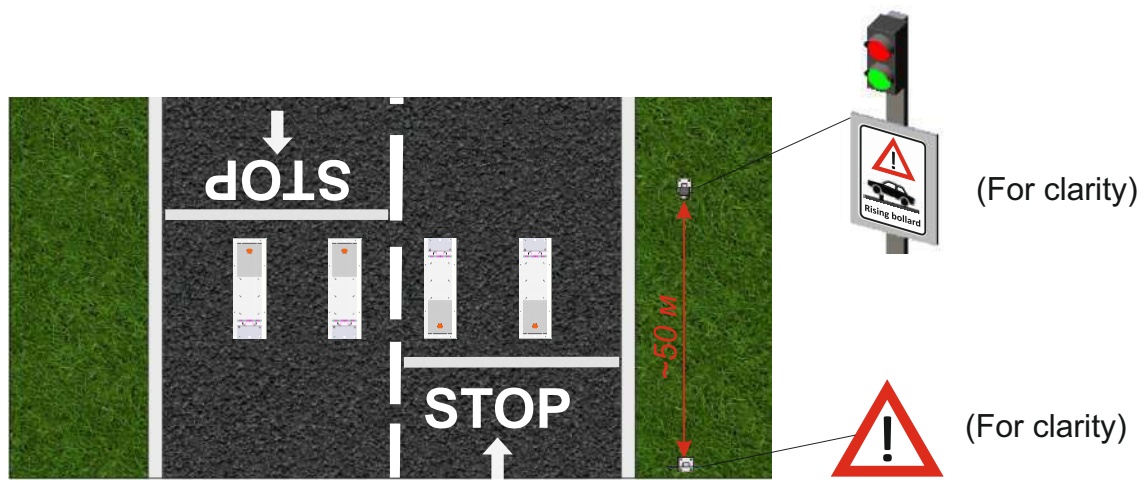
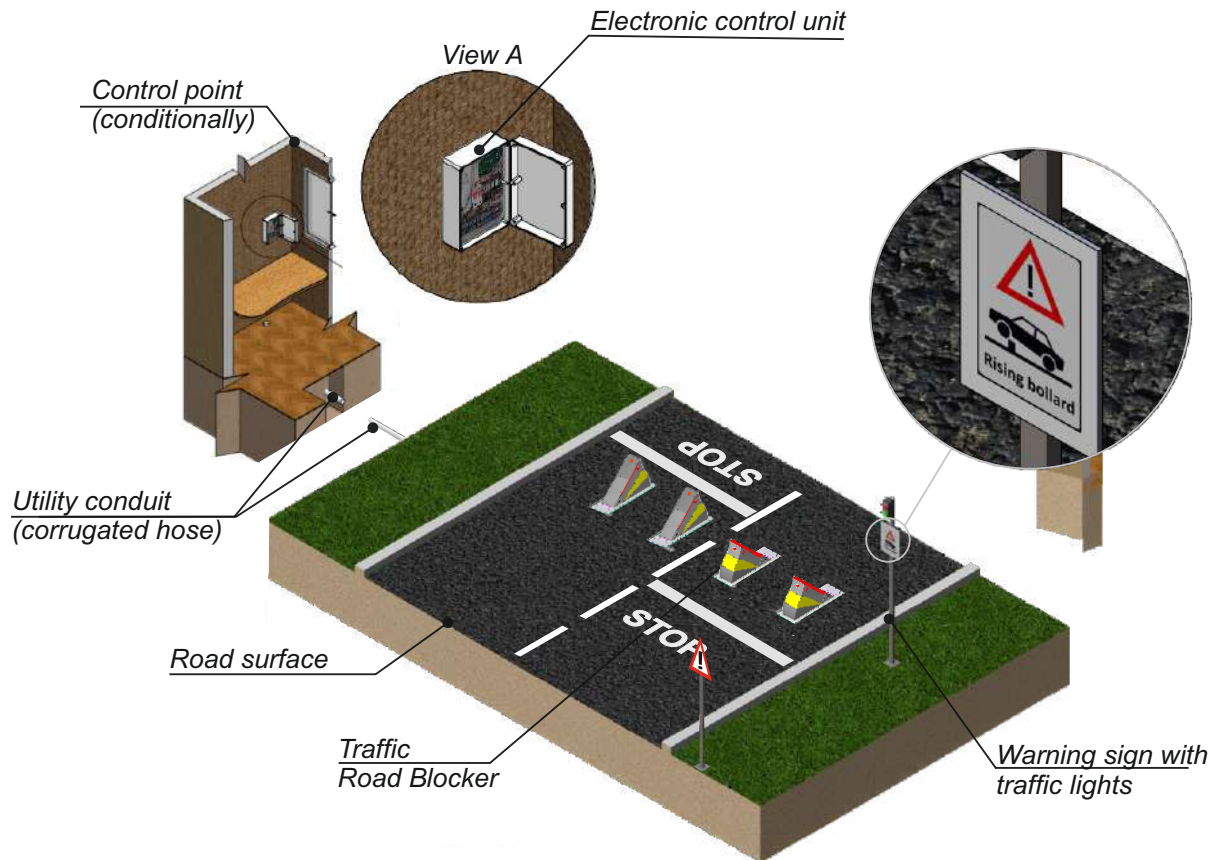
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6.5 Installation of the traffic automatic road blocker:



- At the traffic area controlled by the road blocker the appropriate warning signs in force within the country to be installed for sure
- The road blockers can be installed along with other traffic control (traffic lights, etc.) and unauthorized access prevention systems!

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7. Road Blocker connection to control unit



- Power supply and hydraulics connection diagrams to be carefully studied prior to the road blocker connection;
- The road blocker utilities to be connected when it is deenergized!
- The relevant instructions to be strictly followed during connection! The installation manual (Part I) is provided for conjunctive use with **"The Operation Manual. Part II. Wiring and operation of the Road Blockers with internal hydraulic unit"**
- The road blocker utilities to be connected only by the properly qualified professionals!

7.1 Road Blocker connection to control unit *

1. The Road Blocker to be connected to control unit with electric control cable OLFLEX CLASSIC 12 x0,75 and protective earthing cable PE 1x2.5.
2. 50 cm cable length margin from each side to be left to ensure remedial maintenance.



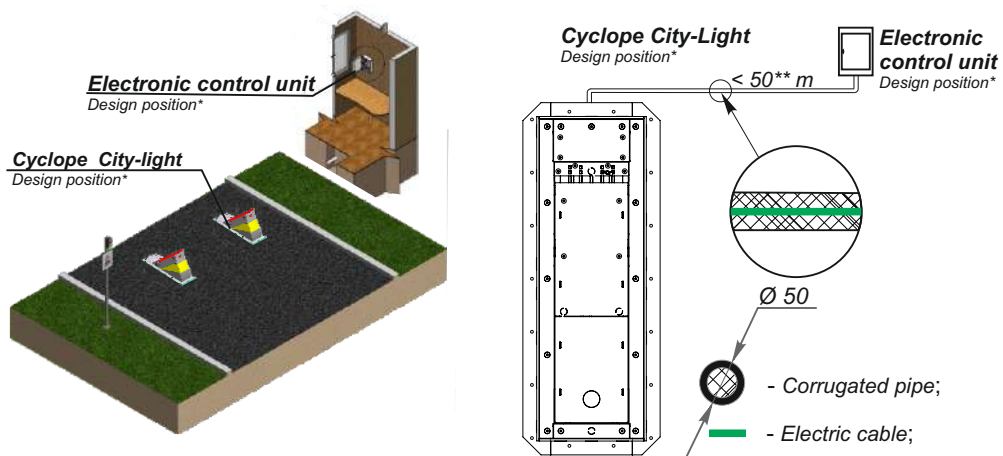
It is advised to put electrical cables in corrugated polyamide tube with waterproof sealed connectors to protect them against mechanical damage and environmental harmful impact.

7.2. Road blocker connection to additional devices:

Additional options can be provided for traffic road blocker: a heating unit with a thermostat, sound alarm, radio controller for wireless remote control, controllers of induction loops.



The general scheme of connection of road blocker to the control unit RB121-1 and additional devices is given in Appendix 1 and Appendix 2 of the Operator's Manual. Part II. Electrical connection and operation of road blocker with integrated mini hydraulic unit.



* Control unit can be located within up to 50 m from the road blocker when external hydraulic unit is used. Design position is determined by individual design solutions.

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7.2 Installation of induction loops

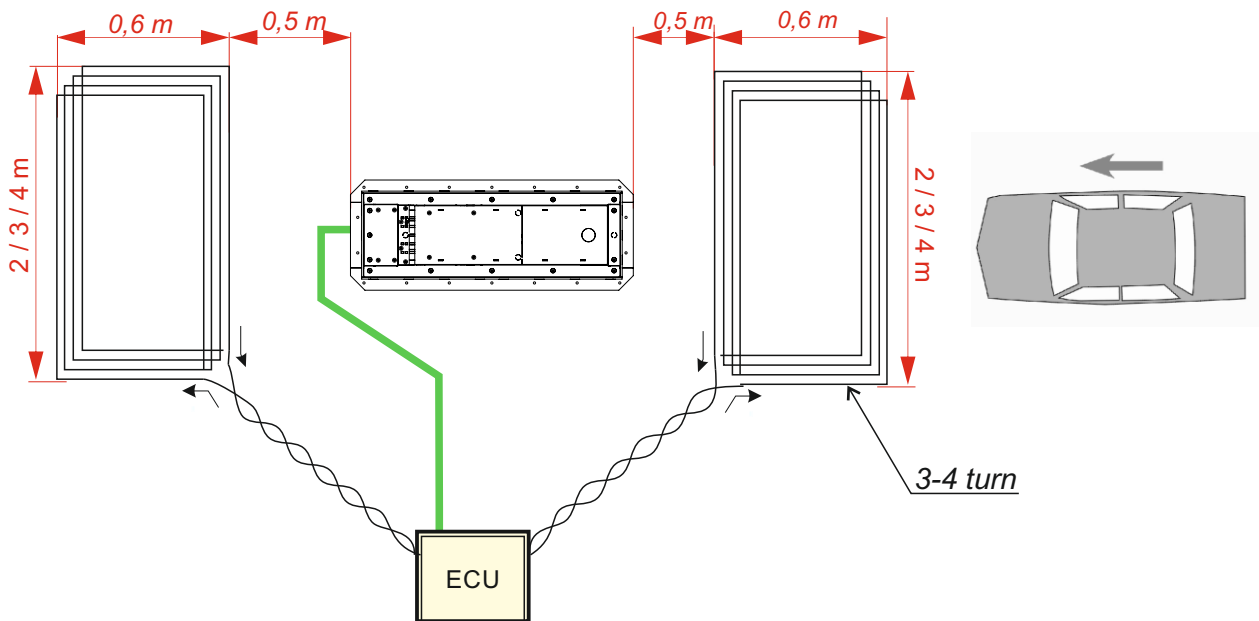
Installation of the Road Blocker induction loops is defined by steps:

- Definition of loop geometry;
- Preparation of slot;
- Laying of wire;
- Asphalt or synthetic resin grouting;
- Check of induction loop detector function;

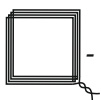
The use of induction loops and other motion detectors prevents actuation of the Road Blocker when a vehicle is over Road Blocker or in the vicinity specified by design.



The operation sequence specified in the guide to be followed.



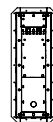
Legend:



- Induction loops;



- Electronic control unit;



- Road Blocker;

- Electric cable;

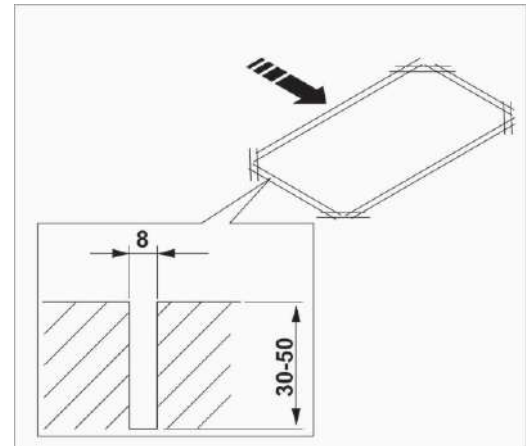


- Wire SIFF 1x1,2,7 mm

• **Definition of loop geometry**

;

- Loops to be located within at least 50cm from metal objects;
- Loop installation depth to be 30mm-50mm from road surface;
- Loop to be made by means of one cable without any joints or shunts inside pit;
- Two cable ends going out of perimeter outline to be twisted or bound with each other;
- Loop shape to be rectangular;



Preparation of slot

- Deep slot to be prepared (width 5-10 mm and depth 30-40 mm);
- Loop slot shape to be rectangular
- Corners to be cut at angle 45° to prevent failure of cable due to vibration of transit vehicles or possible subsidence of road surface;

Laying of wire

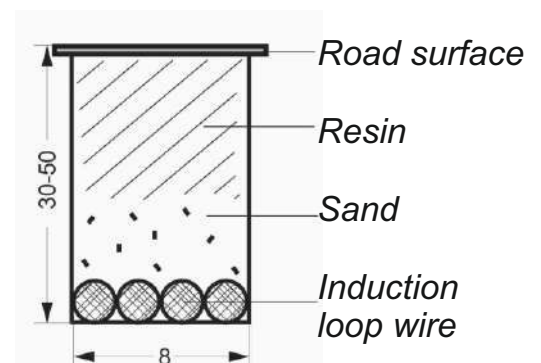
- Loop wire to be laid in slot as deep as possible.

The number of loop turns and size to be selected from "Table 19 - Recommended sizes of loops and height of vehicle deduction over induction loop" of the document "Operation Manual. Part . Wiring of the RB serie Road Blockers".

- Heat-resistant and extra-flexible wire SiFF 1x1 with outside diameter 2,7mm is recommended for loop laying;
- Led to loop wire to be twisted at least 8 times per meter and to be put in slot or plastic pipe;

Asphalt or synthetic resin grouting

- Asphalt or synthetic resin can be used as potting material. Temperature should not exceed loop isolating value during pouring (The permissible temperature limit for heat-resistant and extra-flexible wire SiFF is -60°C to +180°C).



На участке движения, регулируемом блокираторами устанавливаются соответствующие знаки.

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E-mail: sales@tiso.global

Tel.: +380 (44) 291-21-11
Fax: +380 (44) 291-21-02
www.tiso.global

8.

Precommissioning



- *Precommissioning, equipment adjustment, troubleshooting to be performed only by the properly qualified professionals*
- *It is necessary to comply with safety regulations during precommissioning and equipment adjustment!*

It is forbidden:



1. *to prevent the Road Blocker rising/sinking;*
2. *to touch the Road Blocker moving parts during its operation;*
3. *to initiate movement of vehicles prior to complete Road Blocker sinking*

8.1 Preparation for precommissioning:

- *Compliance and reliability of the road blocker, hydraulic unit and control unit electrical cable connections to be checked;*
- *The roadbed around road blocker to be restored;*
- *The equipment power network to be checked;*
- *Reliability of connection with earth loop to be checked.*

8.2 Precommissioning:

- *Hydraulic unit and control unit to be energized;*
- *Road Blocker trial operation to be conducted;*

During the trial operation, check:

1. *The operation parameters of the hydraulic unit;*
2. *The operation parameters of the control unit and remote controls;*
3. *The parameters of road blocker.*

- *Upon completion of all connections and energization a trial raising and sinking of the road blockers to be initiated and their proper operation to be controlled.*
- *When the road blocker operation is improper, then the cause to be found and the fault to be remedied according to Table 2.*
- *After trial run and operation control cable glands and inspection box lid to be carefully tightened to prevent water ingress!*
- *Check and tighten all hydraulic connections!*

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Table 2. Road Blocker troubleshooting

<i>Malfunction</i>	<i>Cause of malfunction</i>	<i>Action</i>	<i>Note</i>
<i>Road Blocker is raising by fits and starts</i>	<ul style="list-style-type: none"> - There are foreign particles in guides; - Cylinder is jammed; - Low oil level; 	<ul style="list-style-type: none"> - Guides to be cleaned and lubricated; - Cylinder condition to be checked and replaced, if appropriate; - Oil level to be checked and refilled to the required level; 	
<i>Incomplete raising and sinking of Road Blocker</i>	<ul style="list-style-type: none"> - There are foreign particles in guides; - Low oil level; 	<ul style="list-style-type: none"> - Guides to be checked; - Guides to be cleaned and lubricated; - Check the oil level and refill until it is necessary; 	
<i>Operation noise</i>	<ul style="list-style-type: none"> - Oil leakage; - High-viscosity hydraulic fluids; - Pump is worn out; - System air inleakage 	<ul style="list-style-type: none"> - Guides to be checked; - Oil to be changed; - Pump to be replaced; - Air to be evacuated from hydraulic system; 	
<i>Excessive heating of hydraulic fluid</i>	<ul style="list-style-type: none"> -Contamination of hydraulic system; -Continuous operation; 	<ul style="list-style-type: none"> - Hydraulic system to be cleaned; - Operation conditions to be observed according to OM. 	

9. Road Blocker operation regulations

9.1 To ensure the Road Blocker continuous and reliable operation it is necessary:

- to use road blocker according to its intended purpose;
- all rules specified in this Manual shall be strictly observed during operation;
- to provide maintenance and repair of equipment in due time;
- to prevent the Road Blocker operation and maintenance to be performed by unauthorized persons;

9.2 Equipment maintenance:

9.2.1 The Road Blocker maintenance includes preventive measures to be taken according to the established frequency to maintain the road blocker in operational condition, decrease component wearing and prevent faults and malfunctions.

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The equipment examination and maintenance to be performed according to the Schedule (See Table 3) and only by the properly qualified professionals.

9.2.2 Recommended types of the Road Blocker maintenance (M):

- ✓ Daily inspection (daily);
- ✓ M-1 (monthly);
- ✓ M-2 (semiannually);
- ✓ M-3 (annually);
- ✓ Major repair (MR) – after 1 500 000 cycles.

Table 3 - Road Blocker maintenance schedule

M type	Frequency	Scope of control/work
Daily inspection	daily	<p>Normally the daily maintenance is performed before commencement of work and includes visual inspection of the Road Blocker and, if required, prompt mechanical troubleshooting, elimination of corrosion and surface pollution.</p> <p>The following control shall be conducted during daily maintenance:</p> <ul style="list-style-type: none"> • availability of all units and sensors in their proper locations and their fastening security; • performance of all sensors and cable integrity; • Road Blocker normal operation without jerks and abnormal noises, jamming of movable constructional elements; • motor heating (over 70°C).
M-1	monthly	<p>M-1 is performed monthly and includes the following measures:</p> <ul style="list-style-type: none"> • measures in the scope of daily inspection; • elimination of dust and dirt from the road blocker housing and components; • cleaning of actuators, sensors and actuators; • verification of sensors fixation reliability and their performance; • verification of good condition and fastening security of cable connections to actuators, sensors; • check of availability and integrity of protective fences and devices.
M-2	semiannually	<p>M-2 maintenance is performed semiannually including the following types of work:</p> <ul style="list-style-type: none"> • measures in the scope of M-1; • verification of fastening security of units and devices; • lubrication of shafts and moving parts
M-3	annually	<p>M-3 maintenance is performed annually including the following types of work:</p> <ul style="list-style-type: none"> • measures in the scope of M-2; • check of status of bearings, sealing cups and lubrication; • blowing and cleaning of terminal boxes; • tensioning of screw joints of terminal boxes; • check of reliability and quality of cable connections and earthing; • check of insulation resistance; • repair of paint coatings; • check accumulator charging; • oil change in a hydraulic unit.

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The hydraulic unit maintenance shall be performed according to the guidelines specified in the hydraulic unit instruction manuals, combining them with M-2 or M-3.

Overhaul is recommended to be carried out by the manufacturer or a specialized repair company according to the manufacturer's documentation with the use of the manufacturer's spare parts, as well as those restored or manufactured at special repair enterprises according to the documentation of the manufacturer. Mean lifetime between major repair is at least 20000 hours.

- The terms of maintenance and overhaul may vary (prolonged or reduced), depending on the actual performance of the road blocker, and shall be determined by the enterprise operating the equipment.
- All types of maintenance shall be recorded in the maintenance and repair log.

9.3 Safety regulations:

9.3.1 The appropriate safety measures shall be observed during operation and maintenance of the road blocker.



IT IS FORBIDDEN TO USE DEFECTIVE APPLIANCES, TOOLS, INSTRUMENTATION THE SERVICE LIFE OF WHICH EXPIRED.

9.3.2 The road blocker must be repaired by the persons over 18, having at least level III of electrical safety qualification, relevant permit to work with electrical facilities up to 1000V, be safety briefed at workplace and scrutinized the product instruction manuals.

9.3.3 The responsibility for security measures shall be borne by the owner.

9.3.4 The types of danger in the operation of a road blocker are:

- mechanical effect of the rising/lowering dynamic part;
- damaging by electric current with voltage of 230 V.

9.3.5 Service and repair work shall be carried out only after the equipment has been disconnected from the electrical network, the safety sign according to ISO 7010:201 with the inscription "Do not switch on - men at work!"
The removal of safety signs and the start-up of equipment after work shall be carried out only after permission of the work manager in charge.

9.3.6 The electrical equipment of the road blocker shall be grounded. The resistance value between the grounding bus and each available metallic non-conductive part of the housing of the electrical equipment of the road blocker shall not exceed 4 ohms.

Forbidden:



- to perform repair and maintenance work in electrical machines and apparatus of the road blocker under voltage;
- to perform repair and maintenance work with the equipment in operation.

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9.3.7 Apply for installation and operation of the road blocker the general safety provisions adopted at the plant. Comply with safety requirements at preserving and re-commissioning.

9.3.8 Observe fire safety rules when using inflammable liquid for washing parts and components.

9.3.9 When operating a road blocker, follow the safety instructions in the operating manual for purchased products and the control system.

9.3.10 Safety regulations:

The appropriate safety measures shall be observed during operation and maintenance of the road blocker.



Strictly forbidden:

- to allow persons who are not familiar with the rules of operation and safety precautions to service the road blocker;
- to operate the product without grounding;
- to touch the current-conducting parts;
- to touch the moving parts of the road blocker during operation;
- to operate the road blocker with the protective devices and switches removed;
- to prevent the raising and lowering of the road blocker;
- to use the metal structure of the road blocker to connect the neutral wire of the electric welding machine;
- to perform electric welding work near the road blocker without protection by noncombustible materials in order to avoid its burning.

Warning!



- Before operating the product, make sure that all safety-related components are in order and correctly installed.
- Please note that the product could be damaged in transit.
- Do not disconnect any safety-related components and do not attempt to alter them.
- In the event of any malfunctions or defects, inform the person in charge for maintenance and servicing.

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10. Hydraulic system

10.1 Hydraulic drive of Cyclope:

- Hydraulic drive of Cyclope shall be provided by hydraulic station Vico 2240

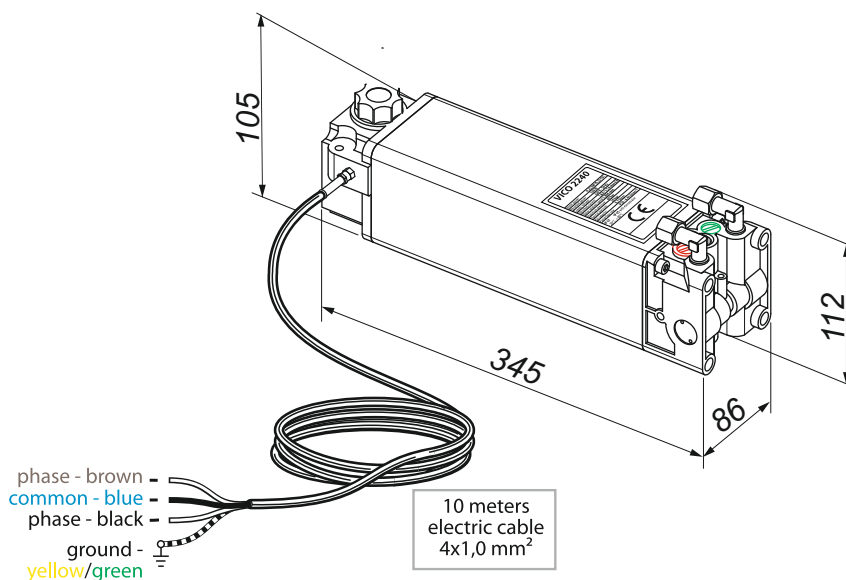
Table 4. Main technical data of hydraulic station

Model of hydraulic station		Vico2240
<i>Pump:</i>		
Maximum pump capacity	l/min	4,4
Working pressure	bar	40
<i>Electric motor</i>		
Shaft rotation frequency	rev/min	2800
Alternating current	V	230
Engine power	W	330

10.2 Hydraulic actuator fluid:

- Recommended hydraulic actuator fluid is 708L
- Working fluid at outdoor temperature from -20 °C to +80°C

10.3 General view of Vico 2240 hydraulic station:



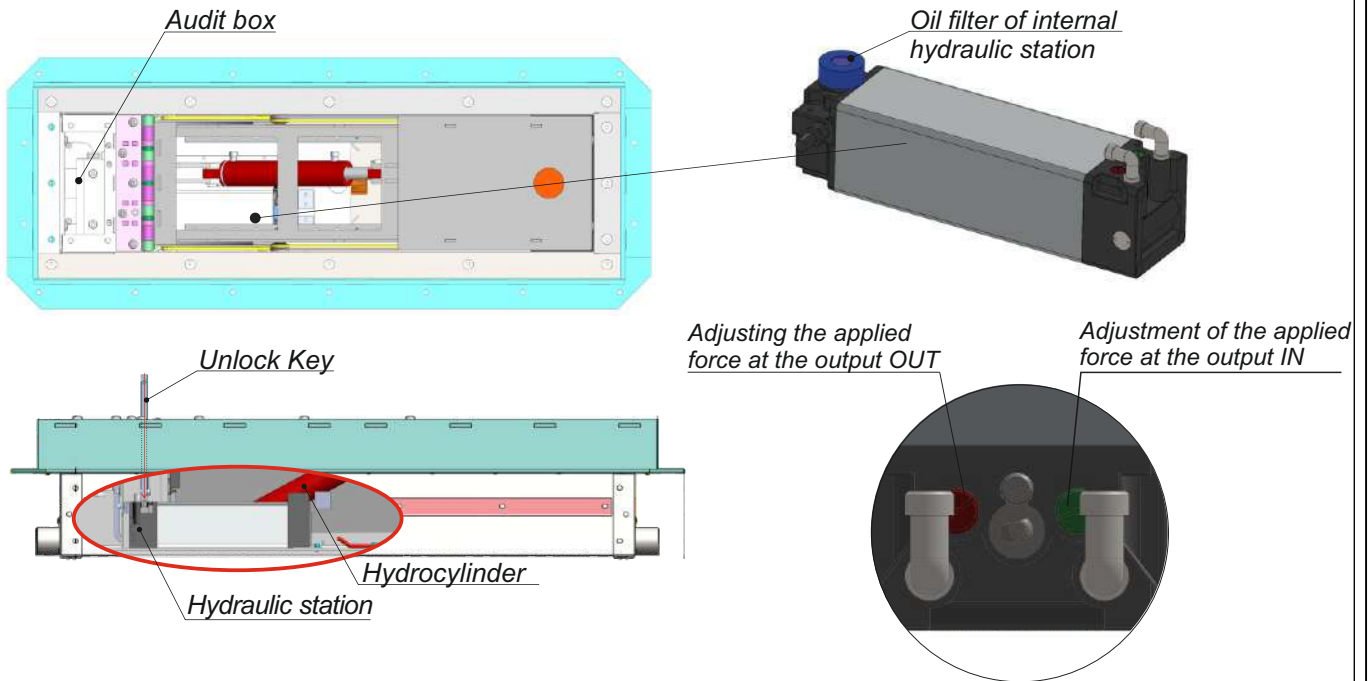
WARNING:

- Use only the recommended types of hydraulic fluid in the hydraulic system;
- Fluid shall be replaced not less than after 2 000 operating hours of the station;
- It is forbidden for an unqualified specialist to change the valve setting;
- During operation of the pump station, avoid oil leakage, refraction and pinching of the hydraulic hoses.

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10.4 Hydraulic system - in-built hydraulic station Vico2240:

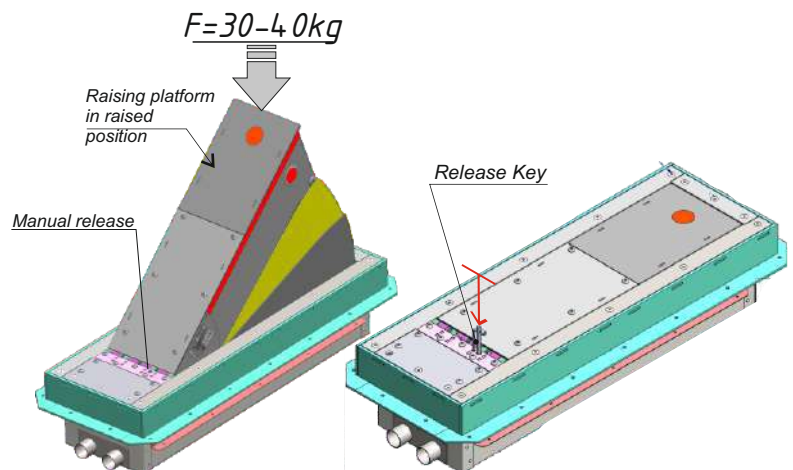
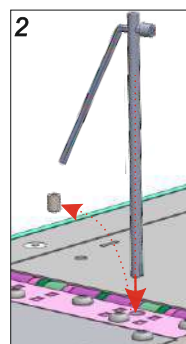
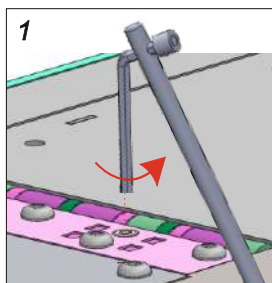
For access the road blocker communications, hydraulic cylinders and hydraulic station, it is necessary to open the audit hatch of the dynamic part and the audit hatch of the static part by unscrewing the screws.



10.5 Manual release:

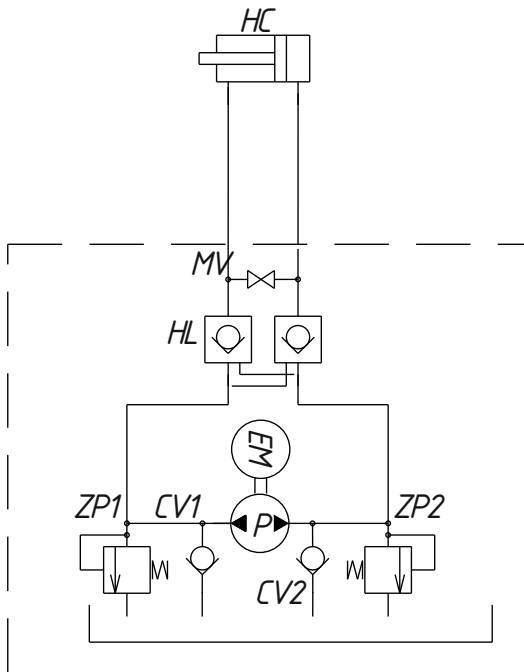
In case of power failure - use the manual release to force the lowering of the dynamic part (raising platform of the road blocker):

- 1) Insert allen wrench and unscrew the threaded plug
- 2) Insert release key and turn 90° contraclockwise
- 3) Apply force of 30-40 kg to the road blocker raising platform to sink it
- 4) After the platform lowers to turn the release key on 90° clockwise



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10.6 Universal basic hydraulic circuit:



Legend:

- HL - hydraulic lock;
- HC - Hydraulic cylinder;
- CV1, CV2 - check valve;
- ZP1, ZP2 - Pressure control valves;
- EM - Electric motor;
- P - pump;
- MV - manually-operated valve;



Marking of joints (fittings) shall be strictly followed during HPH connection!

11.

Notes



To download the Manual online, use the QR code.

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