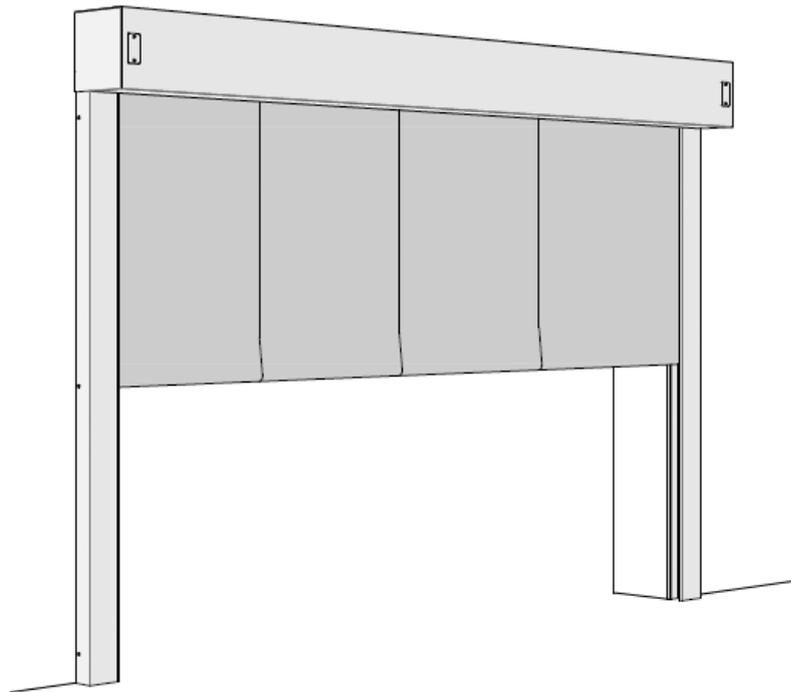


USE, OPERATION AND MAINTENANCE MANUAL



FIRE PROTECTION CURTAIN
type: **MARC-Ok + EI60**
with a VIC-type electric internal drive

Revision: 09.2022

 	FIRE PROTECTION CURTAIN MARC-Ok + EI60	Ref. no.: ISOiK_Ok-5
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1. INTRODUCTION

This Manual for the fire protection curtain type MARC-Ok + EI60 (hereafter referred to as the device / fire protection door / roll-up door), is a document containing data and instructions for the owner (user) necessary to familiarise themselves with its functioning, use, operation and maintenance.

To ensure long-term, safe use of the product, the user and operating personnel shall fully understand and comply with this Manual.

The use of the product, including its operation, maintenance, servicing, periodic inspection, parts replacement, and repairs shall conform to this Manual.

Keep the Manual and other technical documentation appended to it safe and available to the operators and service technicians.

We reserve the right to continuous verification of the Manual contents and their adaptation to the state of the art. We hope the user understands that the Manual contents can be modified without prior notice. Some of the figures and narrative of this Manual may vary from the actual product, and if so, it is due to continuous improvement necessary due to changes in regulations of law and similar reasons; these variations do not affect the recommendations for use applicable to the product.

If this Manual is lost or damaged, contact our Customer Service and order the same version of the document.

CAUTION!

Failure in compliance with the recommendations and guidelines contained in this Manual will release the manufacturer from all liability and warranty obligations.

The servicing intended to be done by the service technicians and the user is specified further in this Manual. Only the manufacturer's authorized service may attempt assembly, installation, adjustment, parts replacement, repairs, and troubleshooting of this product.

This Manual applies to the standard accessories of the fire protection curtain; the application of optional accessories, if any, is specified in the sales contract for the product.

The roll-up fire protection door shall be used according to the engineering design developed for the intended installation location, and with consideration of the following:

- The prevailing construction and engineering standards and regulations, of which the particular ones apply:
 - a) Regulation of the European Parliament and of the Council (EU) No. 305/2011 of 9 March 2011 (CPR) laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (OJ EU L88 of 04.04.2011, as amended),
 - b) Act of 16 April 2004 on construction products (Journal of Laws of 2020 item 215),
 - c) Building Law Act of 07 July 1994 (Journal of Laws of 2020 item 1333),
 - d) Act of 13 April 2016 on the conformity and market surveillance system (Journal of Laws of 2019 item 554),
 - e) Act of 24 August 1991 on fire protection (Journal of Laws of 2020 item 961, 1610),
 - f) Regulation of the Minister of Infrastructure and Construction of 17 November 2016 and concerning the practice of declaration of performance for and construction mark labelling of construction products (Journal of Laws of 2016 item 1966),
 - g) Regulation of the Minister of the Interior and Administration dated 7 June 2010 and concerning the fire protection of buildings, structures, and land (Journal of Laws of 2010 item 109, 719, as amended),
 - h) Regulation of the Minister of Infrastructure dated 12 April 2002 and concerning the technical requirements for buildings and locations thereof (Journal of Laws of 2019 item 1065),
 - i) EN 16034:2014-11 (Harmonised standard), Pedestrian doorsets, industrial, commercial, garage doors and openable windows – Product standard, performance characteristics – Fire resisting and/or smoke control characteristics;
 - j) PN-EN 13501-2:2016-07, Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services,

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- k) EN 13241+A2:2016-10 (Harmonised standard), Industrial, commercial, garage doors and gates – Product standard, performance characteristics;
- l) PN-EN 12635+A1:2010, Industrial, commercial and garage doors and gates – Installation and use;
- m) PN-EN 12424:2002 Industrial, commercial and garage doors and gates – Resistance to wind load – Classification;
- The Declaration of Performance;
- this Use, Operation and Maintenance Manual.

Pursuant to the EN standard (i) and the Regulation (f), the fire protection door is a construction product eligible for System 1 of Assessment and Verification of Constancy of Performance. Based on the Regulation (a), the manufacturer who markets a construction product is required to issue its Declaration of Performance (DoP) and apply a legible CE marking label to the product.

CAUTION!

A copy of the Declaration of Performance and the Warranty Certificate are provided by the manufacturer to the user after the acceptance of the installation/assembly of the fire protection door, in accordance with the sales contract (and/or the quotation).

A copy of the Declaration of Performance and the Warranty Certificate for the fire protection door is an integral part of this Manual and shown as its Appendices, ref. Section 11 APPENDICES.

The CE marking of the fire protection curtain is placed on its nameplate, ref. Section 10 IDENTIFICATION.

The valid list of authorised providers of product installation, service inspections, and maintenance (complete with assessment and certification of proper performance of these services) is available on the official website of the fire protection door manufacturer (www.malkowski.pl).

2. APPLICATION SCOPE AND PREREQUISITES

2.1 INTENDED USE

The type MARC-Ok+ EI60 fire protection curtain is a vertical, moving fire partition intended as the closure of a passageway between fire partitioned zones inside industrial buildings, warehouse rooms, technical access floors in office buildings, hospitals, and other public buildings (constituting a fire barrier). It can also be used as a window curtain, mounted both externally and internally on window and door openings, designed to protect the interior of the aforementioned types of buildings.

If the door/curtain is used on the outside of the building, an additional drip edge and roof seal system are required to protect the inside of the cassette from the weather.

The operating temperature range of the door/curtain is -20 °C to +40 °C, whereby it may be difficult to carry out tests, trials and inspections at the minimum temperature in the range (does not apply to fire alarm situations).

The fire protection curtain/window curtain type MARC-Ok in its basic version is manufactured with a declared use category **C0** (number of cycles 1 – 499, according to EN 16034:2014-11) and a wind load resistance class **1** (according to PN-EN 12424:2002) or **2** in the case of a curtain door/window curtain installed on the outside of the building – provided that the manufacturer has been informed in writing of this intention of use.

On request, the MARC-Ok protection curtain/window curtain can be manufactured with a declared use category **1** (number of cycles 500 – 9,999) or **2** (10,000 – 49,999) and wind load resistance class **2**.

2.2 NON-INTENDED USE

A standard MARC-Ok + EI60 fire protection curtain is not intended for the following applications:

- In Ex-zones (explosion hazard areas), unless qualified as intended for the application following suitable modifications by the manufacturer;
- In environmental conditions with presence of salinity, salts, acids, alkali, and/or other aggressive chemical (including cement and lime) which trigger corrosion (the maximum permitted relative humidity is 80% for this product);
- When exposed to strong electromagnetic fields (> 0.1 T);

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- In areas with wind exposure with a force higher than the wind load resistance class stated on the nameplate and a copy of the Declaration of Performance.

CAUTION!

The PN-EN 12424:2002 wind load resistance has been determined for the closed product. Operation of the product in high winds can be hazardous!

Never attempt to:

- have the fire protection curtain assembled/installed by a contractor who has not been authorised by the product manufacturer;
- perform repairs, troubleshooting or introduce improvements, modifications or replace and install assemblies without necessary authorisation;
- install any parts or components which are non-genuine or non-original or not specified and/or authorized by the fire protection door manufacturer;
- operate the fire protection door / curtain which is defective, out of order or partially or wholly incompatible with the specified properties or intended use (due to damage from fire, a building collapse, etc.);
- operate the product without the required operator’s inspections, periodic service inspections, and/or maintenance done as specified in this Manual (ref. Section 8 INSPECTION, MAINTENANCE, AND REPAIRS) or as specified in the custom provision of the sales contract concluded between the user and the manufacturer of the product;
- operate the fire protection door / curtain with mechanical damage or other defects caused by misuse, especially if it has been stopped in an emergency and the reason has not been cleared;
- operate the fire protection door / curtain if it or any of its components have been found to work abnormally and the relevant supervisor, maintenance team and the manufacturer’s technical service have not been notified;
- operate the fire protection door / curtain with its nameplate defaced or removed;
- service or repair the fire protection door / curtain when its components are in motion;
- passing / running through a closed fire protection door or while its components are in motion;
- transport (hoisting/lifting/lowering) of materials and/or persons through the fire protection curtain;
- wash or clean the fire protection curtain with formulas that are corrosive and/or based on any acid or solvent, or pressure clean with any liquid (see Section 8.4 CLEANING AND LUBRICATION).

Failure to comply with the foregoing restrictions will have the user lose all liabilities and warranty obligations of the manufacturer towards the former, including loss of the declared fire resistance and the DoP issued by the manufacturer.

CAUTION!

The manufacturer shall be released from their liability and warranty obligations:

- if the product has been installed by a contractor not authorised by the manufacturer;
- for all natural, whether partial or complete, wear and tear resulting from the characteristics or intended use of the fire protection door (which includes exposure to fire);
- if the user or any third party alters, modifies, or replaces components or structural features of the fire protection door without coordination and prior written authorisation of the manufacturer;
- for misuse or failure in routine maintenance of the fire protection door or its components as required by this Manual;
- for failure in the periodic inspections required in this Manual or any binding, custom agreement with the manufacturer or its authorized technical service, if the failure has caused damage and other defects (including the defacement or removal of the nameplate).

In the foregoing circumstances the manufacturer does not warrant that the declared fire resistance of the product will be maintained any longer.

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To ensure reliable operation and compliance with the warranty terms and conditions, please contact MAŁKOWSKI-MARTECH S.A. or its commercial partner for product training. The purpose of the training is to provide the necessary information about proper use and, among others, the requirements for operating personnel.

2.3 OHS RECOMMENDATIONS

The operation of the fire protection door requires compliance with the prevailing general occupational health and safety laws, including legal prerequisites of fire protection and timely inspections, servicing, maintenance, parts replacement, and repairs which are specified in the requirements. Do not operate the fire protection door if it has been stopped in an emergency until the root cause is cleared.

Follow the prevailing regulations of law for waste generation control and proper disposal during all work on the fire protection door. Special caution is required that during cleaning/washing, maintenance, replacement of parts or repairs of the fire protection door no harmful substances are released into the soil or sewers, like lubricants, solvent-borne cleaning agents, etc. These substances must be collected, contained and shipped for legal disposal in suitable containers.

2.4 SERVICE PERSONNEL REQUIREMENTS

The servicing of the fire protection door requires no professional license. The fire protection door shall be operated and serviced by an operator (e.g. a maintenance technician) designated by the fire protection door user. The designated operator requires operating training from the fire protection door manufacturer's representative or the manufacturer's authorized installation contractor; once completed, the operating training must be certified as such in writing.

The user shall ensure that the operating personnel is and remains trained in occupational health and safety, including the possible risks of this product, the job safety instructions, this Manual, and all instructions attached to this document.

3. PACKAGING, STORAGE, AND TRANSPORT

Depending on the sales contract/quotation provisions agreed to with the manufacturer, the fire protection door can be collected from the manufacturer's warehouse or shipped and delivered by the manufacturer to the installation site against a written proof of acceptance of the product quantity and quality in a form of a shipment specification document.

The fire protection door is delivered in assemblies and components to be assembled and installed at the user's site. Each assembly and component is protected against mechanical damage for the duration of shipping as follows:

- the sheet is wound on the winding shaft, protected with protective film and laid on the pallet, on spacers made of mineral wool or expanded polystyrene; it is also possible (depending on the total dimensions of the door) to place the shaft with the sheet inside the assembled door cassette;
- guides, covers, etc. are placed on a pallet with mineral wool or polystyrene spacers;
- each aforementioned pallet (loading unit) is secured with foil and fastened with polyester tape through wooden securing beams,
- small accessory items, like fasteners, etc. are packed in a separate cardboard box;
- each delivery packaging is labelled with the packing list of the assemblies and components, showing the customer's purchase order, the assembly number, the fire protection door type, and the DoP reference number.

Transport, storage, and assembly/installation of the fire protection door are regulated as follows:

- the assemblies, components, and single parts of the fire protection door must be properly secured in transport (with lashing, straps, spacers, etc.);
- following the unloading from delivery and for the duration of storage, store all parts of the fire protection door in a sheltered room, away from sources of damage, dirt, and the elements (like snow and rain);
- do not step, walk, or drive over any assembly, component, or part of the fire protection door; do not place any loads, tools, or any chemicals on these items; do not lean on these items; do not attempt anything

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unspecified here which might contribute to damage and reduction of value/quality of the fire protection door items.

4. ASSEMBLY AND INSTALLATION

The electrical and mechanical installation and assembly of the fire protection door shall only be done by trained personnel of the manufacturer or its authorized installation contractors. Fire protection door pre-installation/assembly procedure:

- before attempting any work, inspect all delivery items for possible incorrect quantity and damage during transport or storage;
- verify conformity of the installation conditions against the purchase order / sales contract drawing.
- All connections and joints must be carefully made and assembled and re-checked for proper tightening and fit.

Install the fire protection door in compliance with the INSTALLATION INSTRUCTIONS (ref. Section 11 APPENDICES), and follow with the installation work inspection and functional testing.

The acceptance of the installed fire protection door is to be done in witness of the buyer's authorized and the manufacturer's authorized representatives (it can be witnessed on behalf of the manufacturer, by the authorized installation contractor) who will certify the acceptance in the Periodic Inspection and Maintenance Log (appended to this Manual) or in a separate installation acceptance certificate.

4.1 MECHANICAL INSTALLATION

The assembly/installation of the mechanical components of the fire protection door shall proceed in compliance with the installation instructions (ref. Section 11 APPENDICES) which are dedicated engineering documents intended only for the installation contractor's foremen who hold relevant installation certificates issued by the fire protection door manufacturer.

CAUTION!

For proper handling, lifting, and fastening of the fire protection door structure, ensure proper OHS conditions and the work equipment required for the tasks, like ladders of suitable height, fall arrest harnesses, lifelines and other gear, e.g. slings, lifting beams, a hoist, or a MEWP with a lift capacity and outreach sufficient for the weight and installation height of the product's structure.

The sales contract specifies the party required to secure the work equipment for the assembly, installation, and periodic inspections/maintenance processes.

4.2 ELECTRICAL INSTALLATION

The configuration of the electrical accessories for the fire protection door depends on the purchase order specifications and their installation must conform to the engineering documentation (for the installation contractor) appended to this Manual.

The electrical wiring diagram is shown inside of the control panel cover and in the electrical accessories installation manual appended to this Manual (ref. Section 11 APPENDICES).

CAUTION!

The fire protection door user shall prepare the electrical power connection at the fire protection door installation site for this product. The electrical power connection shall have compatible electrical and protection ratings to permit wiring to the fire protection door, its functional testing, and normal operation.

The electrical power connection must be wired to the fire protection curtain electrical accessories, tested, and repaired whenever it fails by a suitably licensed professional electrician only.

5. OPERATING PRINCIPLE OF THE ELECTRICAL ACCESSORIES KIT

The primary function of the electrical accessories (ref. Sections 6.10 to 6.13 ELECTRICAL ACCESSORIES KIT) is the automatic activation of the curtain sheath deployment to the so-called technically closed position as soon as a fire hazard is detected. A detailed description of the structure, installation and operation of the fire alarm and

detection accessories delivered with the fire door is included in the electrical accessories installation manual appended to this Manual.

The fire protection curtain electrical accessories kits are also equipped with rechargeable batteries, which enable the curtain sheet to be unfolded (closed) in the event of a power failure, including a minimum of one roll-up (e.g. after a false fire alarm). Carrying out service inspection or maintenance requires mains electricity.

Manual control of the curtain sheet winding up / winding down is carried out using the elevated control panel shown below.

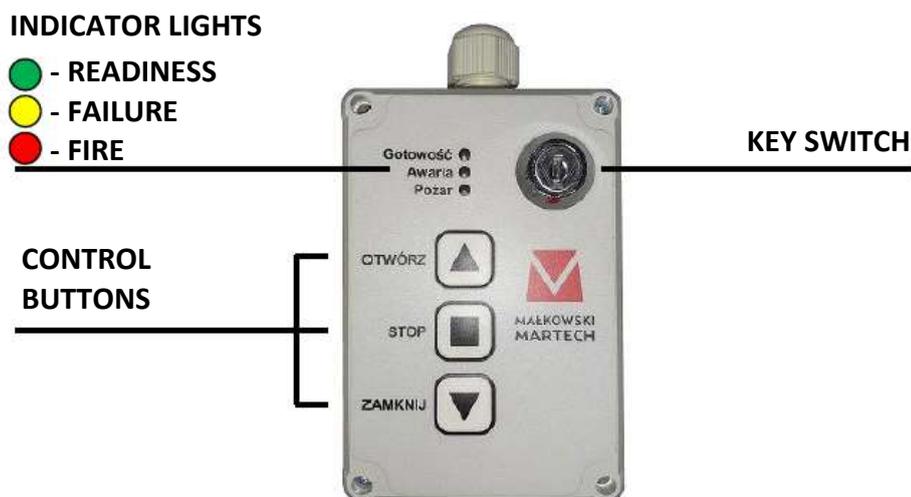


Fig. 1 – Elevated control panel for fire protection curtain type MARC-Ok

The process of manually activating the winding up and winding down of the curtain sheet, i.e. the movement of the electric drive motor, is only possible with the key in the key switch.

6. TECHNICAL SPECIFICATIONS

Door

Specification	Value	Notes
Fire resistance class	EI145, EI260, EW120	-
Closing speed	< 0.15 m/s	-
Operation (manual / powered)	-	operation only by means of electric drive
Sheet colour	grey, similar to RAL 7035	-
Colour of guide rail assembly fascia and shaft guards	hot-dip galvanised / any RAL	Standard colours: RAL 7035, 9010, 9002

Electric drive

Type of drive	Voltage / amperage	Notes
VIC-0403	24 V DC / 2.3 A	-
VIC-0423, VIC-0426, VIC-0428 VIC-0429, VIC-0430, VIC-0431	230 V AC / 1.05 – 5.3 A	-
VIC-0101, VIC-0102	24 V DC / 5.0 – 6.3 A	-
VIC-0122, VIC-0123, VIC-0124	230 V AC / 24 V DC / 1.2 – 1.9 A	drive unit with gravity activation

Possibility of given drive application depends on the door size.

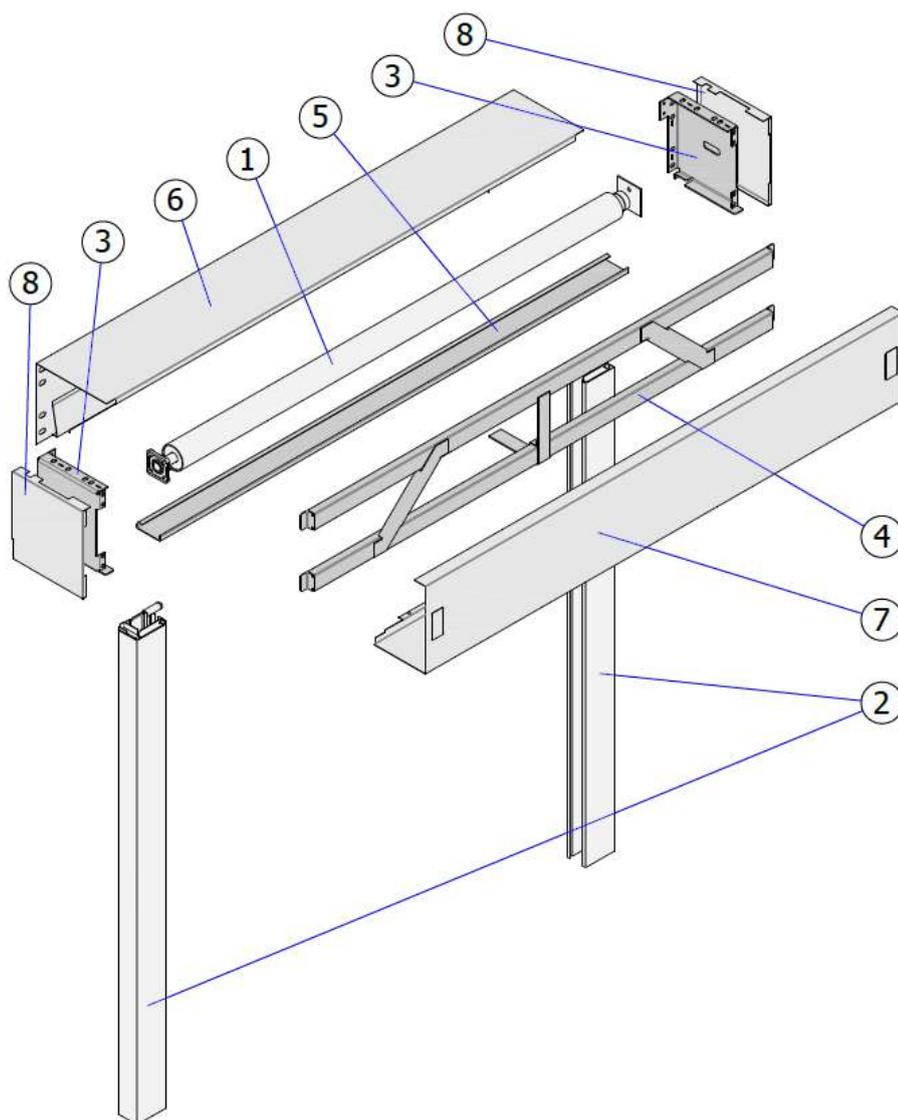


Fig. 2 – ISOiK-Ok60-01.02 MARC-Ok + EI60 fire protection curtain gate with internal drive

#	Designation	Quantity	Drawing no./ Part no. / Standard
1	Winding shaft with door sheet and internal drive	1	5 – ISOiK-Ok60-01.05 [driven shaft] 6 – ISOiK-Ok60-01.06 [gate sheet]
2	Guide rail	2	7 – ISOiK-Ok60-01.07
3	Shaft support	2	8 – ISOiK-Ok60-01.08 9 – ISOiK-Ok60-01.09 [drive handles]
4	Structural lattice with wall channel section	1	10 – ISOiK-Ok60-01.10
5	Push bar	1	11 – ISOiK-Ok60-01.11
6	Top guard	1	12 – ISOiK-Ok60-01.12
7	Front guard	1	13 – ISOiK-Ok60-01.13
8	Side guard	2	14 – ISOiK-Ok60-01.14

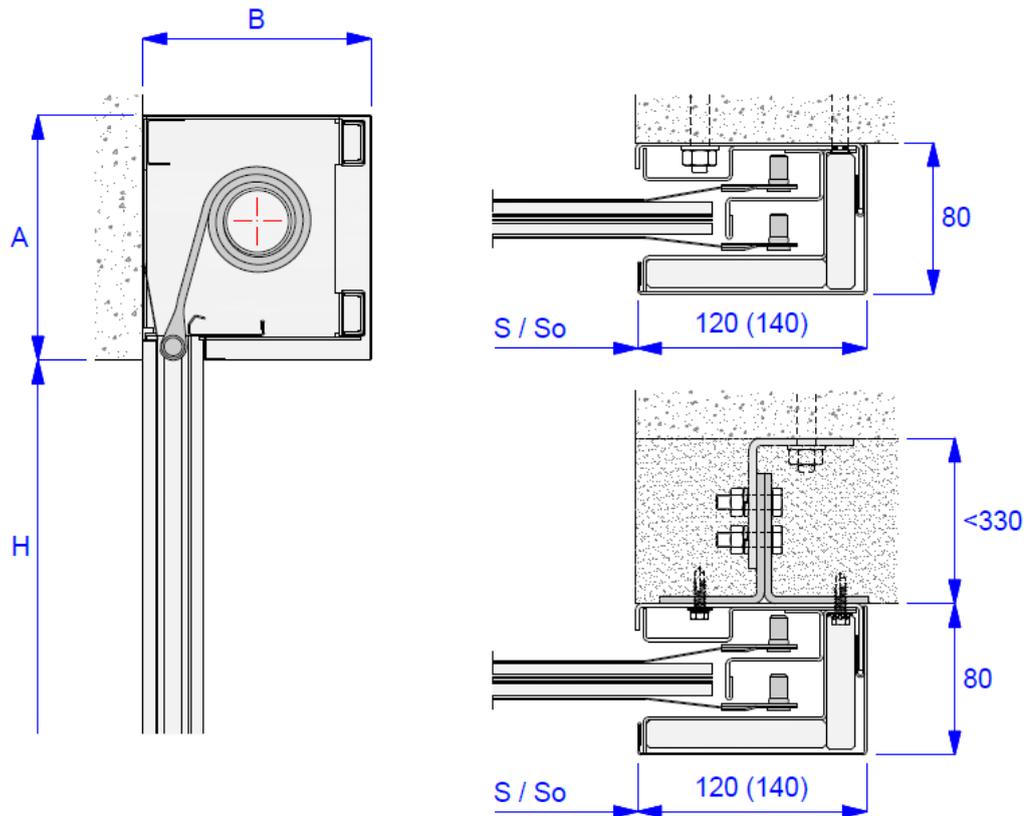


Fig. 3 – ISOiK-Ok60-01.03 MARC-Ok + EI60 fire protection curtain door – wall-mounted

S – clear travel width, So – gate opening / building wall opening width
 H – clear travel height, Ho – gate opening / building wall opening height

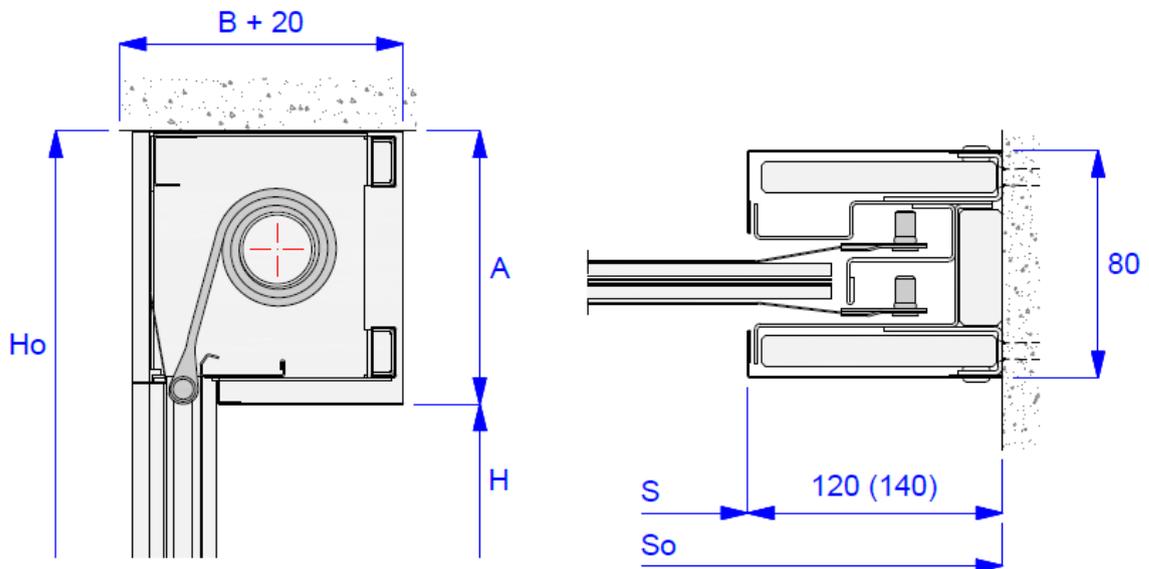


Fig. 4 – ISOiK-Ok60-01.04 MARC-Ok + EI60 fire protection curtain door – corridor installation (recessed)

S – clear travel width, So – gate opening / building wall opening width
 H – clear travel height, Ho – gate opening / building wall opening height

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LIST OF ANCHORING ELEMENTS FOR SHAFT SUPPORTS

NOTE:

- The standard set of fasteners supplied with the product includes the hardware for installation on concrete (C20/25) and reinforced concrete walls.
- It is possible to use different fasteners provided if they are marketed with the CE marking or the Polish Construction Mark "B" and have the same or better strength and the same intended use.

#	Anchoring fasteners	Notes
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A. REGULAR/PRE-STRESSED CONCRETE HOLLOW CORE SLAB CEILINGS

A.1	Hollow core slab anchor (hole-mounted) Fischer FHY; Hilti HKH	- element size and type selected for transferred loads (load tables / charts are available from the Małkowski- Martech S.A. company)
A.2	Sleeved anchor (driven) e.g. Fischer EA II; Hilti HKD	

B. WALLS, FLOORS, AND BEAMS OF SOLID/RF CONCRETE

B.1	Bolt anchor e.g. MKT BZ; Fischer FAZ II; Hilti HST3	- element size and type selected for transferred loads (load tables / charts are available from the Małkowski- Martech S.A. company)
B.2	Sleeved anchor (driven) e.g. Fischer EA II, Hilti HKD	
B.3	Threaded anchor e.g. Fischer FBS II; Hilti HUS HR/CR	
B.4	Chemical anchoring with threaded bars e.g. MKT VM Multi-plus; Fischer FIS SB	- min. bar size M8 (DIN 976), min. strength class 8.8 (PN-EN ISO 898-1)

C. MASONRY WALLS OF CELLULAR CONCRETE UNITS (e.g. Ytong, Solbet, or Termalica)

C.1	Threaded anchor e.g. Fischer FBS II; Hilti HUS HR/CR	- anchoring size and depth selected for transferred loads (load tables / charts are available from the Małkowski- Martech S.A. company)
C.2	Fischer FPX M8-I / M10-I / M12-I anchor	
C.3	Chemical anchoring with threaded bars e.g. MKT VM Multi-plus; Fischer FIS V/FIS P	- min. bar size M8 (DIN 976), min. strength class 8.8 (PN-EN ISO 898-1)
C.4	Through-and-through fastening with threaded bars	- DIN 976 bar; size specified for transmitted loads, min. class 8.8 (PN-EN ISO 898-1) - PN-EN ISO 4032 nut, min. strength class 8; - wide washer as per PN-EN ISO 7093, 200 HV

D. SOLID MASONRY WALLS (e.g. concrete blocks, silicate blocks, solid bricks) AND ROLLING BRICKS (e.g. perforated blocks, porotherm)

D.1	Chemical anchoring with threaded bars e.g. MKT VM Multi-plus; Fischer FIS V/FIS P	- min. bar size M8 (DIN 976), min. strength class 8.8 (PN-EN ISO 898-1)
D.2	Threaded anchor e.g. Fischer FBS II; Hilti HUS HR/CR	- anchoring size and depth selected for transferred loads (load tables / charts are available from the Małkowski- Martech S.A. company)
D.3	Through-and-through fastening with threaded bars	- as in C.4 with replacement of the washers - PN-EN ISO 4079 washer, 200 HV;

E. FIRE-PROOFED STEEL STRUCTURES AND FIRE STUD WALLS ¹⁾

E.1	Steel sheet-metal screws e.g. Hilti S-MD; Stalco WS / FD / FM; Etanco GT	- min. St 4.8 x 25 (DIN 7504); - used only for gates with limited dimensions (load tables / charts are available from the Małkowski-Martech S.A. company),
E.2	Threaded fastening	- PN-EN ISO 4014 / 4017 bolt; the size is specified for the transmitted loads, min. class 8.8 (PN-EN ISO 898-1) - PN-EN ISO 4079 washer, 200 HV;

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	- PN-EN ISO 4032 nut, min. strength class 8;
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1) - The inner steel profiles must withstand the static and dynamic loads caused by the fire protection curtain installation and operation.

LIST OF ANCHORING ELEMENTS FOR GUIDE ANCHORS ²⁾

F. REINFORCED CONCRETE WALLS, MASONRY OF AERATED CONCRETE BLOCKS, SOLID AND HOLLOW MASONRY		
F.1	Steel wall plug (frame anchor)	- M8, M10, - Min. length 72 mm
F.2	Plastic frame anchor plug, Hilti HRD-CR	- Size 8, 10 - Min. length 60 mm

2) – Apart from the items mentioned below, hardware listed in B, C, D, and E can also be used.

6.1 WINDING SHAFT WITH INTERNAL DRIVE

Made of a steel tube with a cross-section of 88.9 x 3.6; 127.0 x 4.5; 159.0 x 4.5; 244.5 x 7.1 or 323.9 x 8.8. The correct diameter is selected in relation to the entire curtain gate width.

On one side, the shaft is terminated by a journal which allows the shaft to be seated in a bearing bolted to the shaft support. On the other side, a tubular drive is mounted inside the shaft, which is attached to the second shaft support via a special bracket.

Winding shaft specifications

Specification	U.m.	Value	Notes
Length (shaft tube)	mm	S ¹⁾ + 80	-
Diameter	mm	88.9, 127, 159, 244.5, 323.9	depending on door dimensions
Quantity	pcs.	1	-
Total weight	kg/m	8.5 – 75	depending on the tube type

1) – See Figures 3, 4

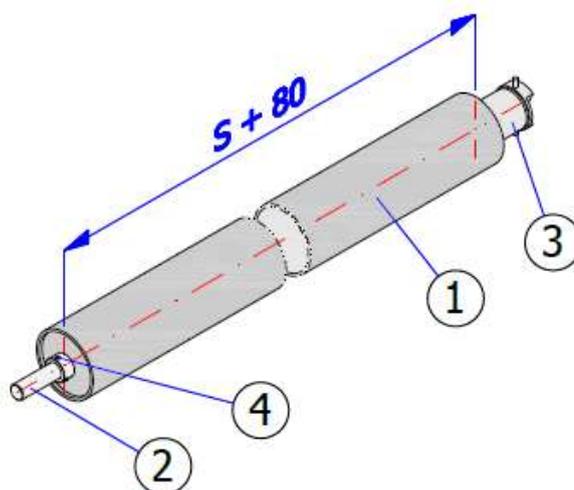


Fig. 5 – ISOiK-Ok60-01.05 [winding shaft with internal drive]

1 – Shaft tube, 2 – Journal, 3 – VIC type internal drive, 4 – Pressure screw

6.2 CURTAIN SHEET

The curtain sheet consists of three layers, with two identical outer layers approximately 1.5 mm thick, type FM1D, and the core layer approximately 6 mm thick, type MH-6. The total curtain sheet thickness is approx. 10 mm. The upper edge of the sheet is fixed to the winding shaft with steel self-drilling screws or steel rivets. Inside the bonded materials of the curtain sheet and along the entire clear opening width, plus 30 mm from each side edge, there is a counterweight unit made of a 30 or 50 mm dia. steel bar. The vertical sheet edges (both outer layers) are equipped with guides made of M6 x 20 rivet nuts and mounting plates.

Curtain sheet specifications

Specification	U.m.	Value	Notes
Width / height / thickness	mm	$H^{1)} + x / S^{2)} + 135 / 10$	dimension "X" depends on the diameter of the winding shaft
Colour	-	grey, similar to RAL 7035	-
Quantity	pcs.	1	-
Total weight	kg / m ²	6.5	-

1), 2) – As shown in Figures 3, 4

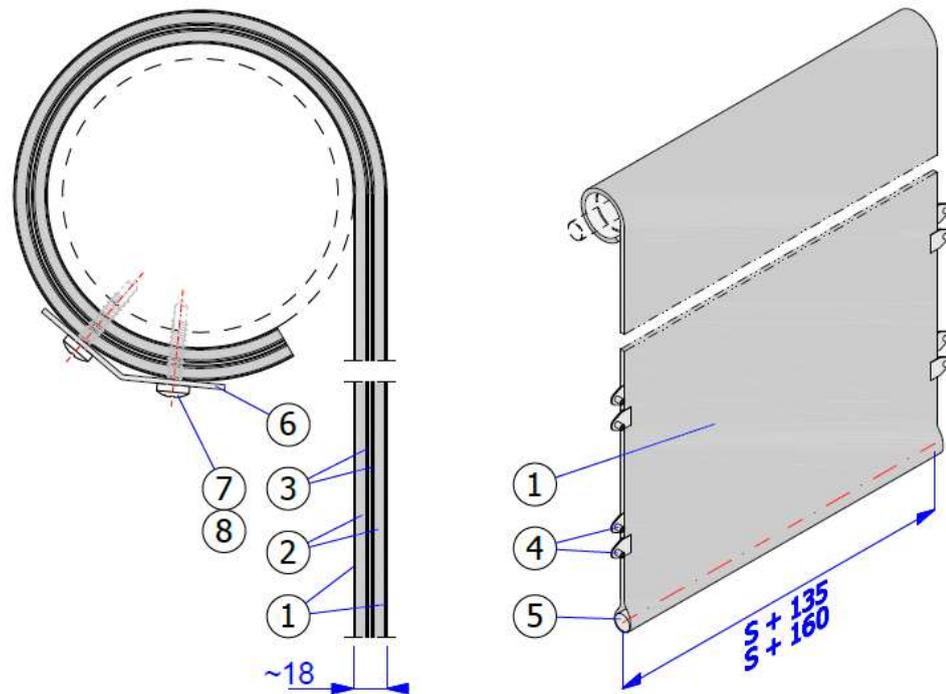


Fig. 6 – ISOiK-Ok60-01.06 [door sheet]

1 – Outer layer; 2 – Core layer; 3 – Guide shoe; 4 – Counterweight bar, 5 – Mounting strip; 6 – Self-tapping screw

6.3 GUIDE RAIL

The guide rail cross-section is 80 x 120 mm or 80 x 160 mm – for doors with width exceeding 6,000 mm. The wall-side and middle sections are made of a 1.5 and 2.0 mm thick galvanized steel sheet protected with fire protection panels. The guide rail fascia is made from 0.7 mm galvanized steel sheet. EPDM cover gaskets are fitted to the edges of the guide rail recess.

In fire protection and smoke control doors, the gaskets have a different shape and an additional gasket is attached inside the guide rail, see variant B in Fig. 7.

Guide rail specifications

Specification	U.m.	Value	Notes
Length	mm	H ¹⁾ + 50	-
Thickness / width	mm	80 x 120 (160)	160 for doors with a width of S > 6000 mm
Colour	-	hot-tip galvanised / any RAL	Standard colours: RAL 7035, 9010, 9002
Quantity	pcs.	2	-
Total weight	kg/m	11.20	-

1) – See Figures 3, 4

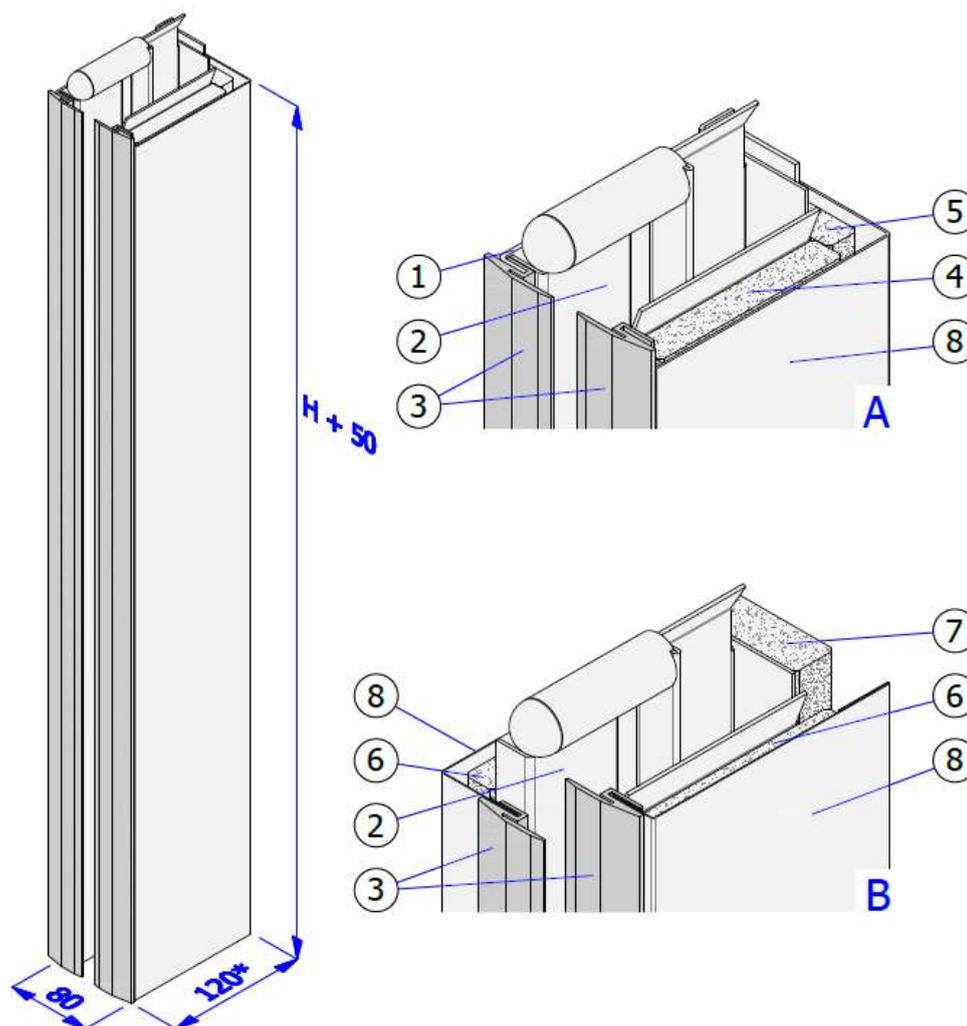


Fig. 7 – ISOiK-Ok60-01.07 [Guide rail, A – fire protection version, wall-mounted, B – fire protection and smoke control version, wall-mounted, C – fire protection version, corridor-mounted]

1 – Wall-side section, 2 – Middle section, 3 – Outer edge gasket, 4 – Inner edge gasket, 5 – Double inner gasket, 6 – Fire-retardant plate 92 x 15, 7 – Fire-retardant plate 70 x 15, 8 – Fire-retardant plate 108 x 15, 9 – Fire-retardant plate 53 x 20, 10 – Cover

6.4 SHAFT SUPPORT

Each door comes with two shaft supports. They are made of 4.0 – 6.0 mm thick galvanized steel sheet. A self-adjusting bearing in a UCF cast iron enclosure is attached to the bracket on the passive side, in which the shaft journal is seated. The bracket on the drive side is mounted on the VIC internal drive handle. Both the bearing and the drive holder are mounted to the brackets through a special insertion and position lock system. The drive handle type varies depending on the drive bracket itself, see Fig. 9.

Shaft support specifications

Specification	U.m.	Value	Notes
Width / height (B' / A')	mm	250 / 250 – 600 / 600	dimensions depending on door size
Quantity	pcs.	2	-
Total weight	kg / pc.	2.30 – 13.0	depending on the support size

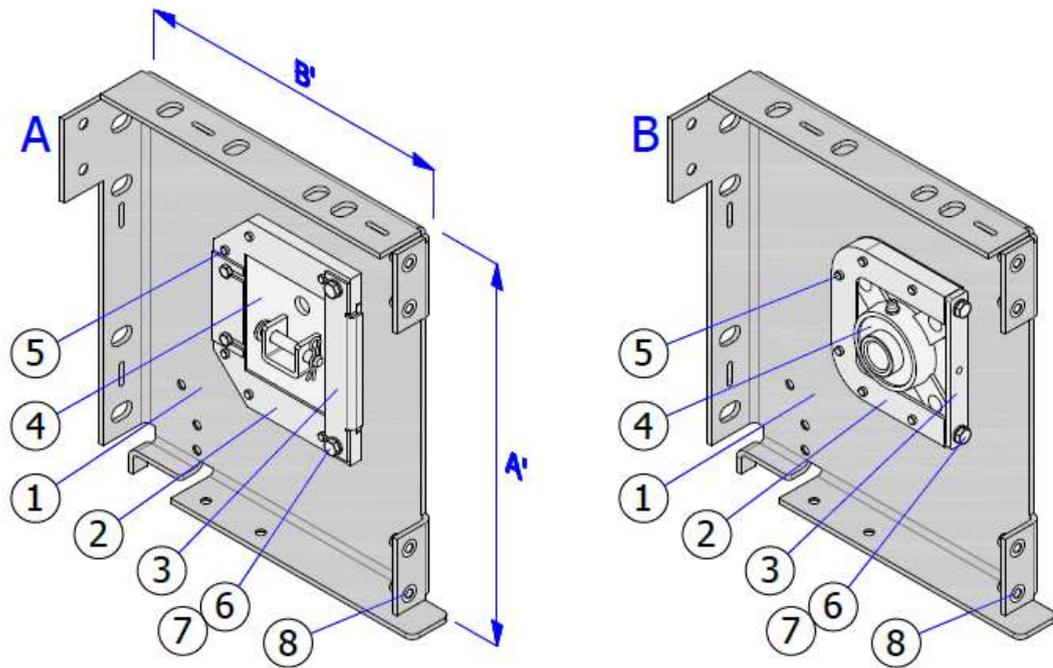


Fig. 8 – ISOiK-Ok60-01.08 [Shaft bracket, A – drive side, B – passive side]

1 – Bracket body, 2 – Drive / bearing bracket, 3 – Drive / bearing lock, 4 – Drive holder / bearing, 5 – M8 x 25 screw, 6 – M6 x 12(14) screw, 7 – Spring washer, 6.1, 8 – Rivet nut, M6

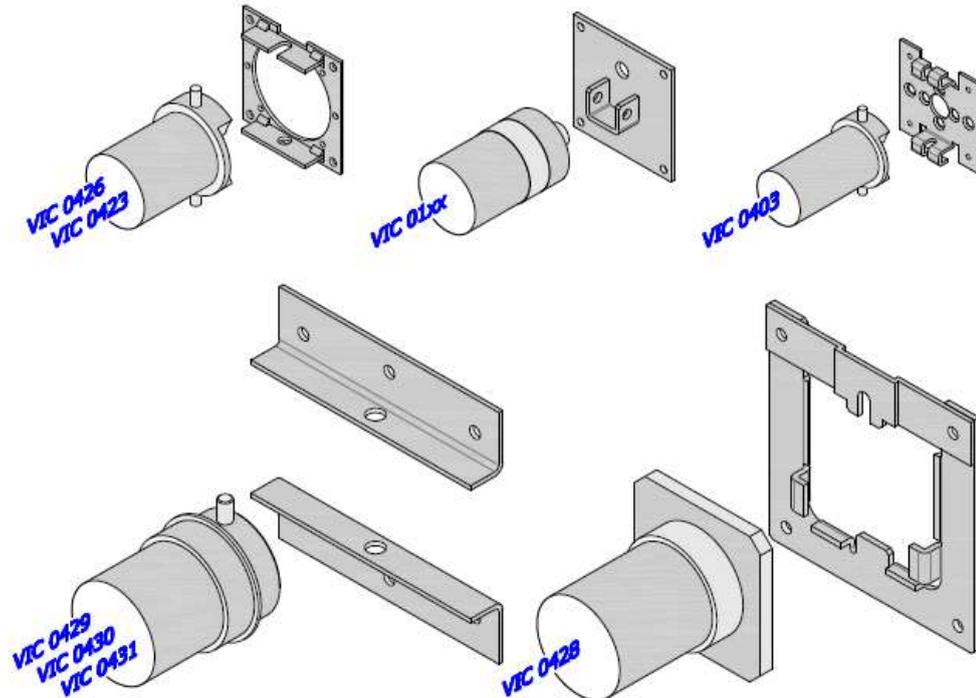


Fig. 9 – ISOiK-Ok60-01.09 [handles for individual internal drives]

6.5 STRUCTURAL LATTICE WITH WALL-MOUNTED CHANNEL SECTION

This design is used for doors with width exceeding 2500 mm. It consists of a front lattice structure and wall-mounted channel section. Both elements come with additional factory-installed and non-replaceable bracing and connection profiles.

The structure is screwed to the shaft supports with M6 screws.

Structural lattice with wall-mounted channel section – parameters

Specification	U.m.	Value	Notes
Length	mm	S ¹⁾ + 163	-
Quantity	pcs.	1	-
Total weight	kg/m	8.00	approximate value

1) – See Figures 3, 4

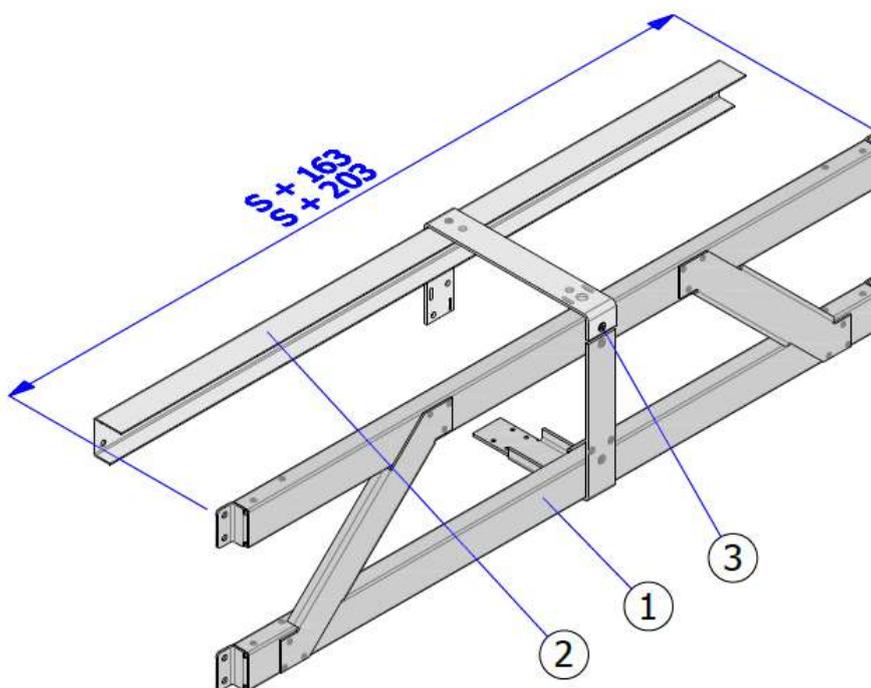


Fig. 10 – ISOiK-Ok60-01.10 [structural lattice with wall-mounted channel section]

1 – Lattice structure, 2 – Wall-mounted channel section, 3 – Sheet-metal screw

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6.6 PUSH BAR

The push bar is made of 2.0 mm thick galvanized steel sheet. It is screwed to the shaft supports with M6 screws through rivet nuts attached to it. It comes in two shapes – see Fig. 11; depending on the door width.

Push bar – parameters

Specification	U.m.	Value	Notes
Length	mm	$S^{1)} + 204$	-
Quantity	pcs.	1	-
Total weight	kg/m	2.60 – 4.10	depending on the bar type

1) – See Figures 3, 4

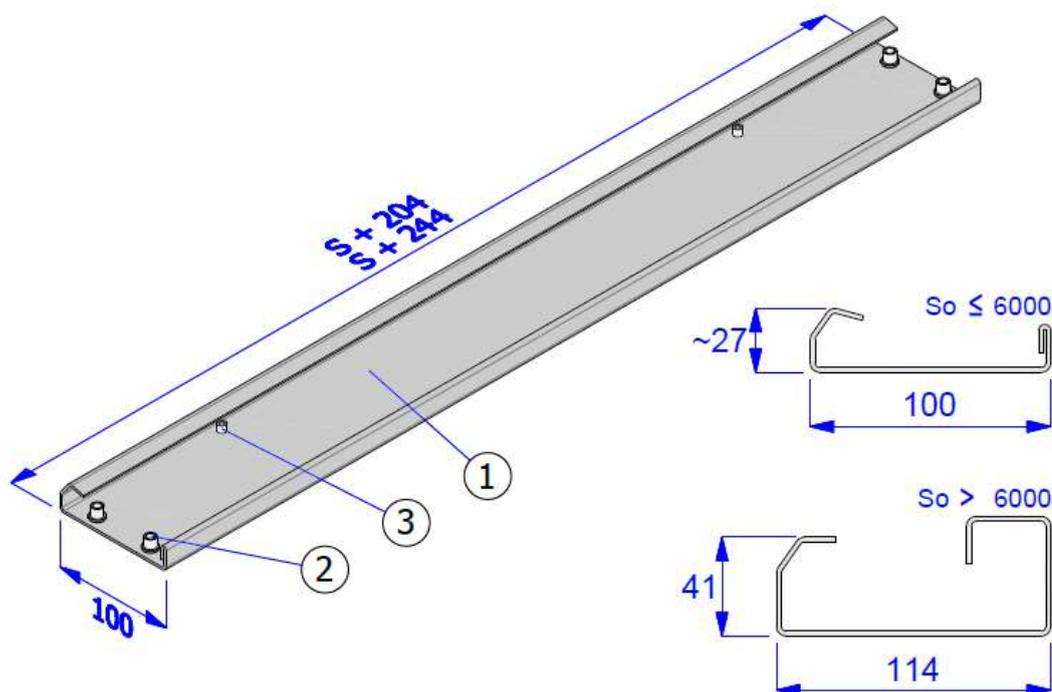


Fig. 11 – ISOiK-Ok60-01.11 [push bar]
 1 – Bar profile, 2 – Rivet nut, M6, 3 – Rivet nut, M5

6.7 REAR GUARD

The guard is made of 0.7 – 1.0 mm thick galvanized steel sheet, depending on the entire door size. It consists of a main and sliding profile. In the case of a smoke control rated door, an elastic EPDM gasket is additionally installed.

Rear guard – parameters

Specification	U.m.	Value	Notes
Width / height (B / A)	mm	250 / 275 – 600 / 625	depending on the door size
Length	mm	$S^{1)} + 240$	-
Colour	-	hot-dip galvanised / RAL	Standard colours: RAL 7035, 9010, 9002
Quantity	sets	1	-
Total weight	kg/m	3.50 – 7.30	depending on the door size

1) – See Figures 3, 4

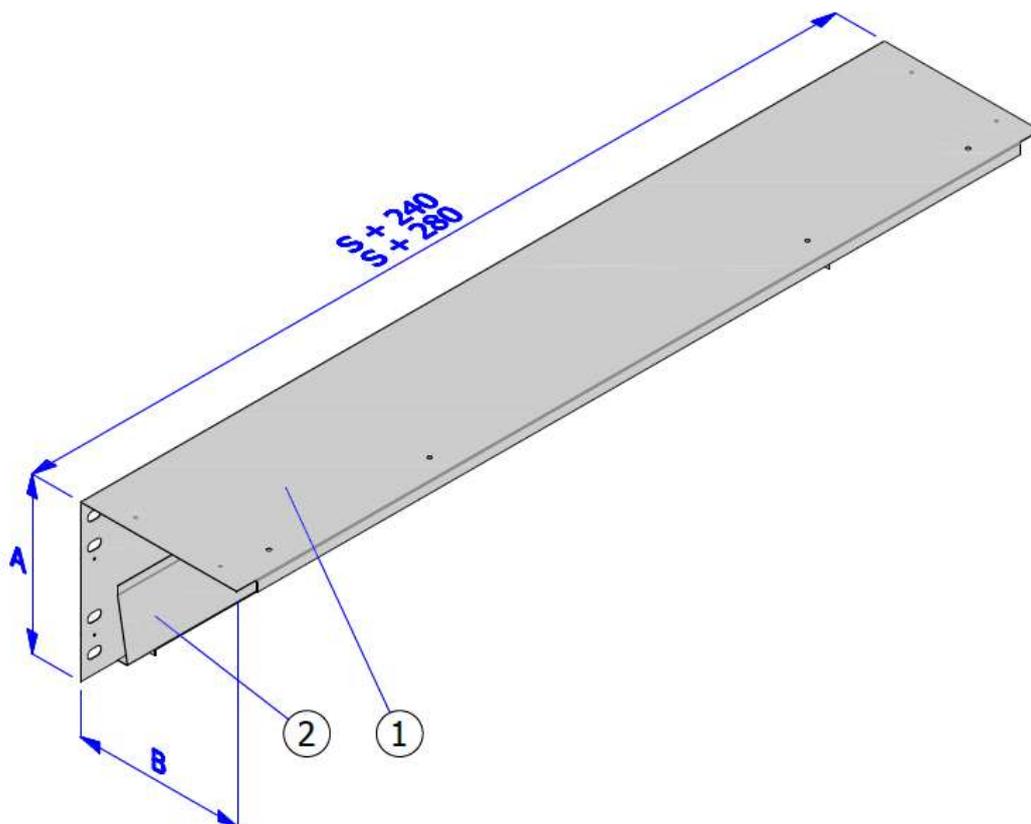


Fig. 12 – ISOiK-Ok60-01.12 [rear guard]

6.8 FRONT GUARD

The guard is made of 0.7 – 1.0 mm thick galvanized steel sheet, depending on the entire door size. Two inspection hole caps are installed in the front wall, enabling adjustment of drive limit switches, without the need to remove the guard.

In the case of a smoke control rated door, an elastic EPDM gasket is additionally installed.

Front guard – parameters

Specification	U.m.	Value	Notes
Width – height	mm	170 / 275 – 520 / 625	depending on the door size
Length	mm	S ¹⁾ + 240	-
Colour	-	hot-dip galvanised / any RAL	Standard colours: RAL 7035, 9010, 9002
Quantity	sets	1	-
Total weight	kg/m	2.70 – 6.50	depending on the door size

1) – See Figures 3, 4

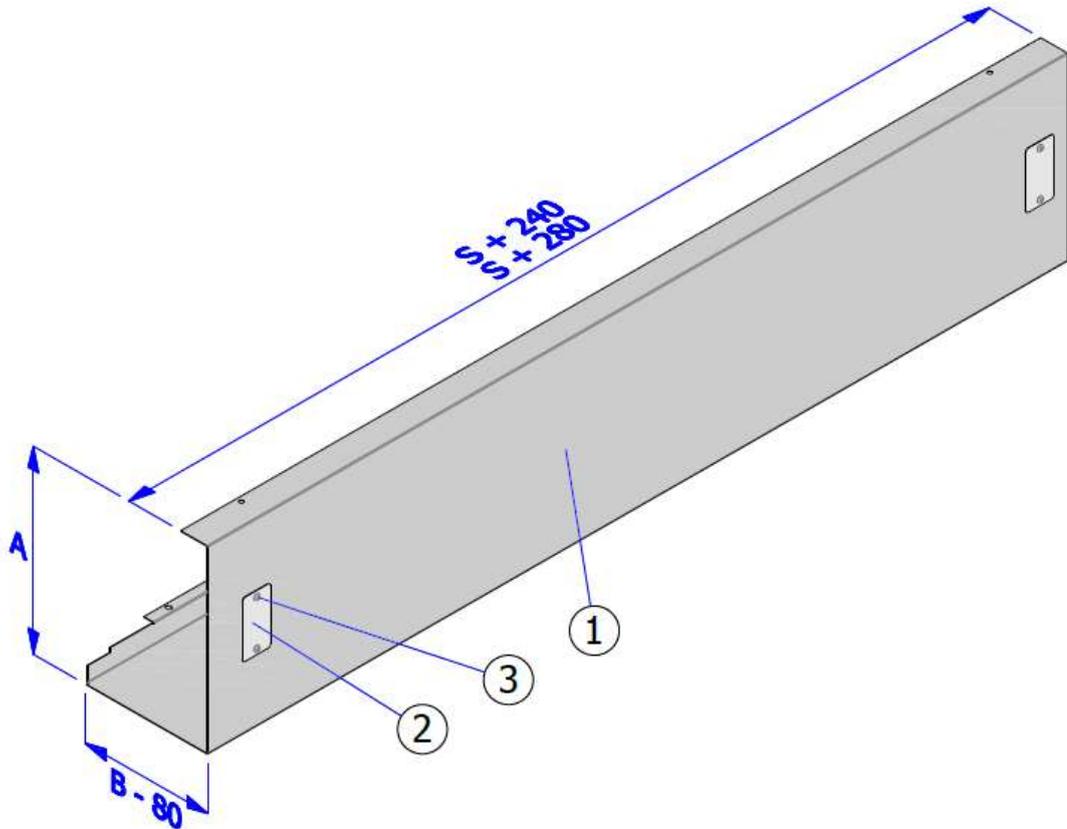


Fig. 13 – ISOiK-Ok60-01.13 [front guard]
1 – Guard profile, 2 – Inspection hole cap

6.9 SIDE GUARD

The guard is made of 0.7 – 1.0 mm thick galvanized steel sheet, depending on the entire door size.

Front guard – parameters

Specification	U.m.	Value	Notes
Width / height	mm	248 / 273 – 598 / 623	depending on the door size
Colour	-	hot-dip galvanised / any RAL	Standard colours: RAL 7035, 9010, 9002
Quantity	pcs.	2	-
Total weight	kg/m	0.50 – 2.00	depending on the door size

1) – See Figures 3, 4

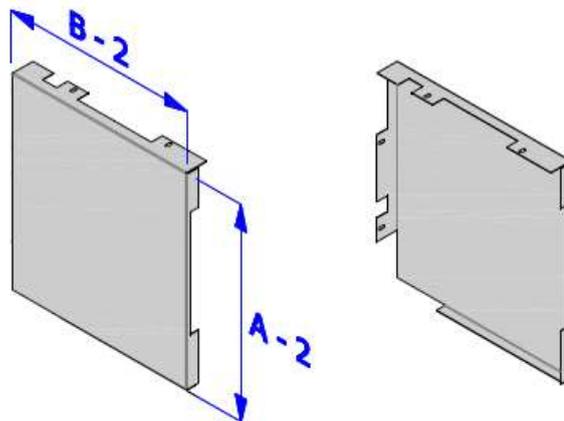
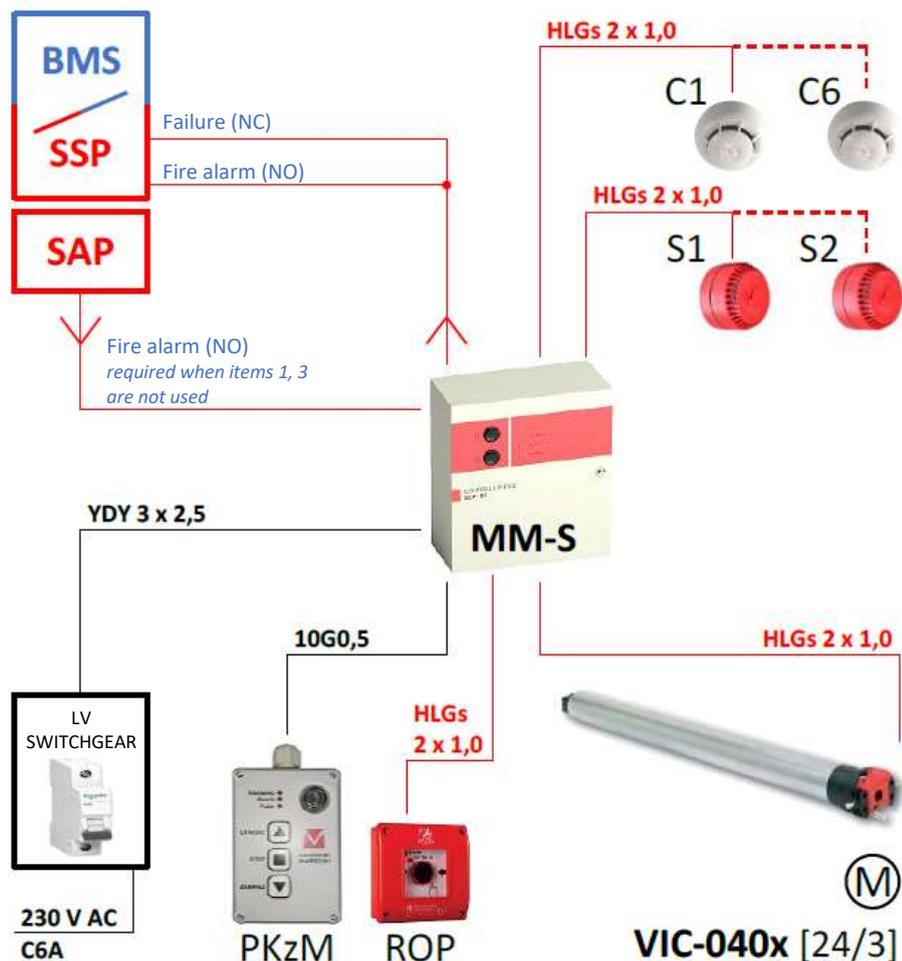


Fig. 14 – ISOiK-Ok60-01.14 [side guard]

6.10 ELECTRICAL ACCESSORIES KIT – VIC-0403



Notes

230

voltage supplied to the control panel [V]

/3

minimum connection value [A]

regular wires

fire alarm system rated wires

230 V AC

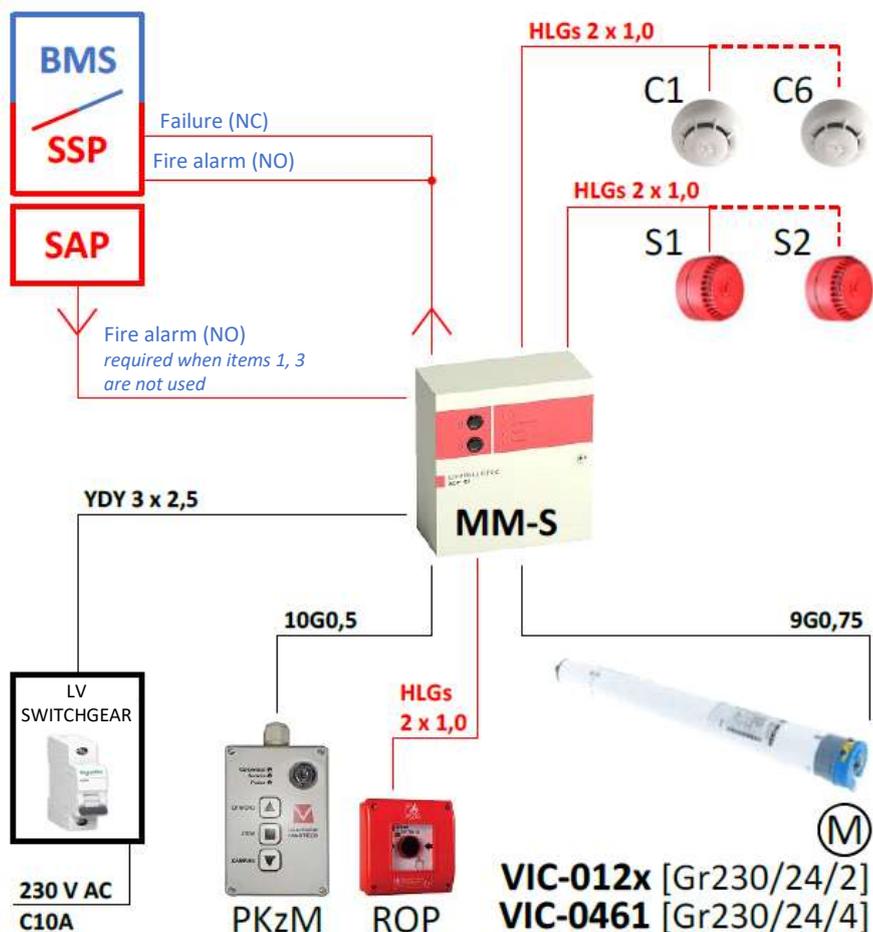
power supply upstream the main switch not required

Fig. 15 – MARC-Ok control system with internally-mounted (tubular) 24 V DC drive unit

#	Designation on the drawing	Item type	Item designation	Item code	Recommended qty	Notes
1	C1 – C6	Spot-type fire detector	Optical smoke detector	ID100	2	ID100 is recommended, max. 6 pcs.
			Class A1R heat detector	ID200	2	
			Smoke and heat detector	ID300	2	
2	C1 – C6	Detector receptacle	Standard fire detector receptacle	EB0010	2	Qty = detector qty
3	ROP	Manual call point	Standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	acoustic signalling device	fire protection acoustic signalling device	SPP-100	1	max. current 200 mA
5	M	drive system	internal electric drive (tubular)	VIC-0403	1	24/3
6	PKzM	panel	elevated control panel	PKzM	1	-
7	MM-S	Control unit	Universal drive controller	MM-S	1	-

Items 5 and 7 are obligatory; other items TBA with the project owner

6.11 ELECTRICAL ACCESSORIES KIT – VIC-012x, VIC-0461



Notes

Gr
drive unit with gravity activation

230
voltage supplied to the control panel [V]

/2-4
minimum connection value [A]

regular wires

fire alarm system rated wires

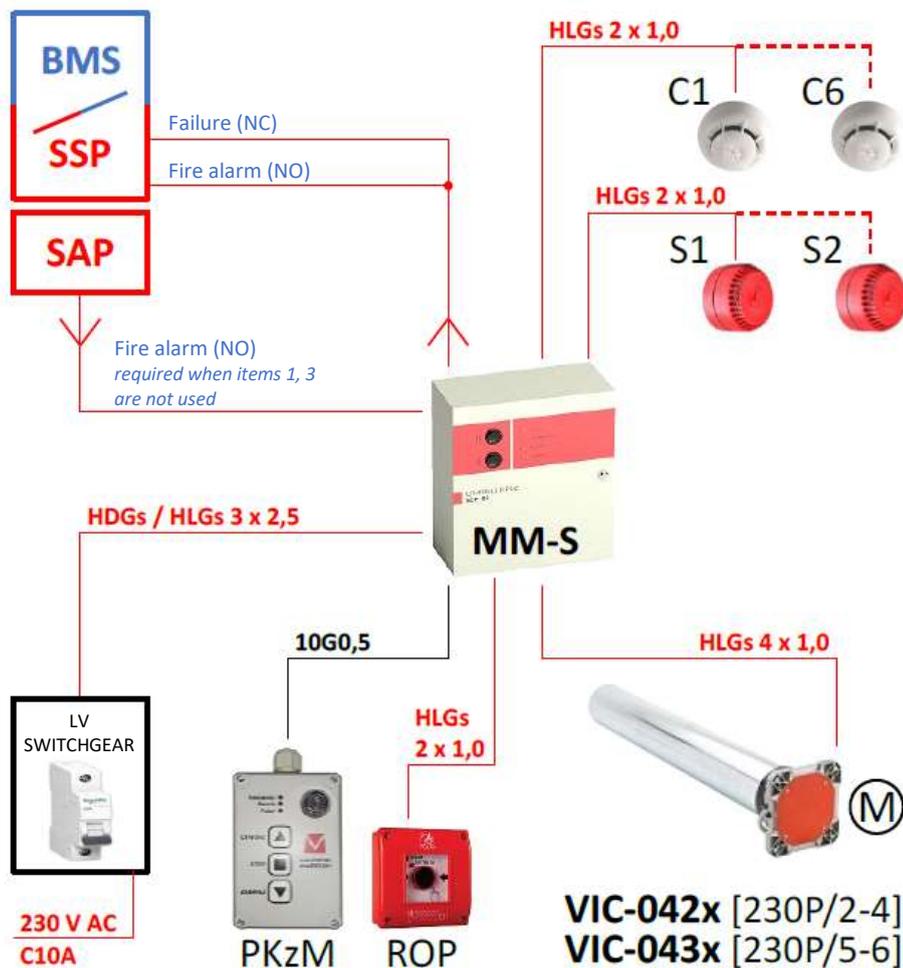
230 V AC
power supply upstream the main switch not required

Fig. 16 – MARC-Ok control system with internally-mounted (tubular) 230 V AC drive unit

#	Designation on the drawing	Item type	Item designation	Item code	Recommended qty	Notes
1	C1 – C6	Spot-type fire detector	Optical smoke detector	ID100	2	ID100 is recommended, max. 6 pcs.
			Class A1R heat detector	ID200	2	
			Smoke and heat detector	ID300	2	
2	C1 – C6	Detector receptacle	Standard fire detector receptacle	EB0010	2	Qty = detector qty
3	ROP	Manual call point	Standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	acoustic signalling device	fire protection acoustic signalling device	SPP-100	1	max. current 200 mA
5	M	Electric drive	internal (tubular)	VIC-0121 VIC-0122 VIC-0123 VIC-0461	1	230/24/2 230/24/2 230/24/2 230/24/4
6	PKzM	panel	elevated control panel	PKzM	1	-
7	MM-S	Control unit	Universal drive controller	MM-S	1	-

Items 5 and 7 are obligatory; other items TBA with the project owner

6.12 ELECTRICAL ACCESSORIES KIT – VIC-042x



Notes

P
it is required to route fire protection lines to the connection

230
voltage supplied to the control panel [V]

/4-6
minimum connection value [A]

regular wires

fire alarm system rated wires

230 V AC
power supply upstream of the main switch is required*

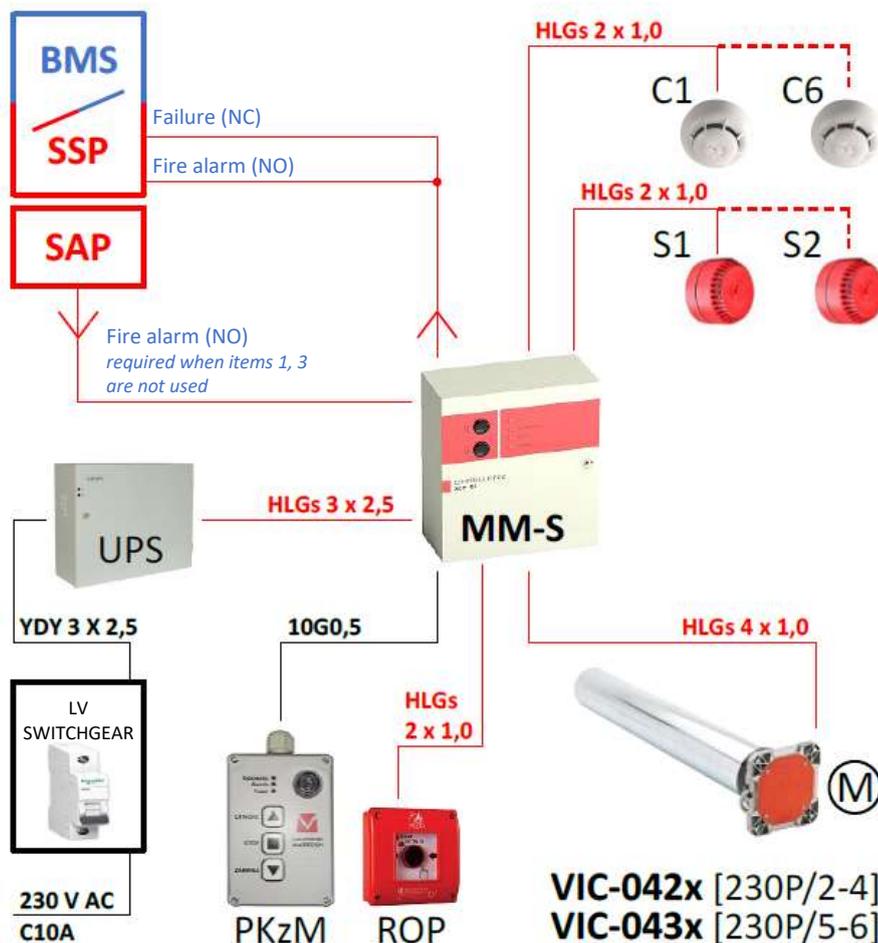
Fig. 17 – MARC-Ok control system with internally-mounted (tubular) 230 V AC drive unit

* – power supply upstream the main switch is the most economically advantageous option, although not the only one – please contact Małkowski-Martech S.A. for more details.

#	Designation on the drawing	Item type	Item designation	Item code	Recommended qty	Notes
1	C1 – C6	Spot-type fire detector	Optical smoke detector	ID100	2	ID100 is recommended, max. 6 pcs.
			Class A1R heat detector	ID200	2	
			Smoke and heat detector	ID300	2	
2	C1 – C6	Detector receptacle	Standard fire detector receptacle	EB0010	2	Qty = detector qty
3	ROP	Manual call point	Standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	acoustic signalling device	fire protection acoustic signalling device	SPP-100	1	max. current 200 mA
5	M	Electric drive	internal (tubular)	VIC-0428 VIC-0429 VIC-0430 VIC-0431	1	230P/4 230P/4 230P/5 230P/6
6	PKzM	panel	elevated control panel	PKzM	1	-
7	MM-S	Control unit	Universal drive controller	MM-S	1	-

Items 5 and 7 are obligatory; other items TBA with the project owner

6.13 ELECTRICAL ACCESSORIES KIT – VIC-042x with inverter



Notes

P
it is required to route fire protection lines to the connection

230
voltage supplied to the control panel [V]

/4-6
minimum connection value [A]

regular wires

fire alarm system rated wires

230 V AC
power supply upstream the main switch not required

Fig. 18 – MARC-Ok control system with internal (tubular) 230 V AC drive unit with inverter

#	Designation on the drawing	Item type	Item designation	Item code	Recommended qty	Notes
1	C1 – C6	Spot-type fire detector	Optical smoke detector	ID100	2	ID100 is recommended, max. 6 pcs.
			Class A1R heat detector	ID200	2	
			Smoke and heat detector	ID300	2	
2	C1 – C6	Detector receptacle	Standard fire detector receptacle	EB0010	2	Qty = detector qty
3	ROP	Manual call point	Standard manual call point	ROP OP1	1	max. 10 pcs.
4	S1, S2	acoustic signalling device	fire protection acoustic signalling device	SPP-100	1	max. current 200 mA
5	M	Electric drive	internal (tubular)	VIC-0428 VIC-0429 VIC-0430 VIC-0431	1	230P/4 230P/4 230P/5 230P/6
6	PKzM	panel	elevated control panel	PKzM	1	-
7	MM-S	Control unit	Universal drive controller	MM-S	1	for drives with power rating < 1500 W
8	UPS	UPS	emergency uninterruptible power supply	UPS	1	-

Items 5, 7 and 8 are obligatory; other items TBA with the project owner.

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7. TROUBLESHOOTING

Every failure of the fire protection gate curtain shall be reported to the manufacturer and rectified by authorized personnel strictly as instructed by the manufacturer (ref. Section 8 INSPECTION, MAINTENANCE, AND REPAIRS).

Fault type	Causes of fault / operating error	Method of rectifying the fault by the operator
Curtain sheet does not unwind, drive motor is running	Guide rails obstructed or damaged	Call the Technical Service to clear or replace the guide rails
	Structural component damage	Call the Technical Service to repair or replace the failed part(s)
	Mechanical drive damage	
	Extended load profile from the curtain sheet	Insert load profile into the groove of the curtain sheet
Drive motor does not start	No power, power off	Check key switch positions, turn to "I" ON position
	Battery discharged	Charge the battery
	Electricity supply fuse blown	Replace the fuse
Fire detector inoperative / fails to trigger the control system	Dirty or damaged	Call the Technical Service to clean and readjust or replace the parts
Fire alarm sounder/beacon fails to come on	System component failure	
Local control system (control panel) indicates an error		Call the Technical Service to troubleshoot
Manual call point does not work / has failed	MCP glass broken	Call the Technical Service to replace the part(s)

8. INSPECTION, MAINTENANCE, AND REPAIRS

8.1 INSPECTION & MAINTENANCE SCHEDULE

The fire protection door shall be inspected, maintained and repaired by personnel with sufficient qualifications and professional experience for such activities.

The fire protection door manufacturer or its authorized installation contractors (ref. the guidelines in Section 1 INTRODUCTION and Section 2.4 SERVICE PERSONNEL REQUIREMENTS in this Manual) provide paid service inspections, maintenance, repairs, and troubleshooting according to the specific sales contract provisions. This personnel have the required technical resources, spare parts, and qualifications.

Send your service requests for these tasks to the Małkowski-Martech S.A. Technical Service: (serwis@malkowski.pl or fax: + 48 61 22 27 501). The Technical Service contact details are also on the manufacturer's official website and in the Warranty Certificate.

The inspections and maintenance must be done in compliance with this Manual (ref. the guidelines in the schedule tables below) to ensure correct and safe operation; they are prerequisite to maintain the declared performance of the overhead fire door and during the warranty period, otherwise the warranty rights and liability will be made void.

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Inspection type	Frequency	Ownership
Pre-operation inspection	Before each use (does not apply to a fire emergency)	Operator
Monthly inspection	Every 1 month	
Service inspection and maintenance	Every 6 months	Authorized technical service

S – Check, inspect, clean; **X** – Adjust and lubricate

Inspection & maintenance schedule

Assembly / component	Tasks required	Before each use	Every 1 month	Every 6 months
Whole product				
Product structure	Check the painted surfaces (for dirt, etc.) and clean as required.		S	S
	Check that no part is missing and there is no evidence of damage of failure from operation.	S	S	S
	Check the product's identification markings (the nameplate must be present and legible).		S	S
Curtain sheet	Check for dirt, damage, etc.; clean as required.	S	S	S
	Check the position and attachment of the load profile		S	S
Brackets, guards, fascias	Check the fasteners and their condition			S
Winding up / winding down system of the door curtain				
Guide rails	Check the fasteners and their condition; look for obstructions			S
Masking gaskets	1). Check the fasteners and their condition, lubricate as needed			S
	Check for damage, cracks		S	S
Electrical / control system				
All electrical accessories	Trigger the sensors/detectors to test for proper operation of the accessories kit; readjust as required.			SX
Fire detector	Check the condition and clean the component; readjust as required.			SX
Manual call point	Check the condition and test the operation.			S
Control unit (panel)	Test the operation of all control panel components			S
	Check for error displays.	S	S	S
Key switch	Check the condition and test the operation.		S	S
Electric drive motor	Check the condition and test the operation (the component must run smoothly and without stuttering, audible noise, and evident vibration).		S	S
Battery pack	Inspect the terminals and wiring; clean and lubricate as required ¹⁾ .		S	SX
	Check the battery acid level and state of charge; refill with battery acid and recharge as required.		S	S
Electrical wiring system ²⁾	Inspect the fastening and condition of fittings and cable trays.		S	S

1) – petroleum jelly is recommended

2) - power wiring insulation resistance tests and wiring continuity tests are to be done at least every 5 years

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Worn parts of the fire protection curtain type MARC-Ok and damaged parts must be replaced with new parts. Maintain and repair with genuine components and parts which are approved by the fire protection door manufacturer. Each inspection, maintenance, and repair shall be completed and certified by the authorized personnel according to the scheduled scope in the Periodic Inspection and Maintenance Log (appended to this Manual in section 11 – APPENDICES) or in a separate certificate.

The fire protection door user shall retain all records of inspections, maintenance, repairs, and overhauls.

8.2 OPERATOR'S INSPECTIONS

The operator's inspections shall be done by the operator assigned by the product user and trained by the fire protection door manufacturer or its authorized installation contractor (ref. also the guidelines in Section 2.4 SERVICE PERSONNEL REQUIREMENTS and Section 8.1 INSPECTION & MAINTENANCE SCHEDULE).

During inspections, use basic personal protective equipment, e.g. rubber gloves, etc. In the event of a failure, damage to the fire protection gate or any irregularities in its operation, notify the superior and the manufacturer or the manufacturer's authorised installation contractor.

8.3 SERVICE INSPECTIONS & MAINTENANCE

The technical services of the manufacturer are provided by qualified and professionally experienced service technicians of the Małkowski-Martech S.A. company or its contractors who are authorized for servicing the fire protection door.

To verify for the buyer that the service is provided by a fully professional/authorized contractor or technician, the latter should hold and present their Installation Authorization Certificate, while the service technicians should hold and present their Site Authorized Service Certificate issued by the fire protection door manufacturer, i.e. the Małkowski-Martech S.A. company.

In the Lists of Components and Parts (ref. Section 6 TECHNICAL SPECIFICATIONS of this Manual), the fire protection door manufacturer specifies the ownership and right of repair/replacement of components, assemblies, and parts; failure in compliance to these specifications will void the product warranty and declaration of performance.

CAUTION!

Pursuant to the Polish Regulation ref. Journal of Laws 2010.109.719, as amended: §3.2 "Fire protection equipment (...) shall be technically inspected and maintained in compliance with the procedures and methods established in the Polish Standards [PN] concerning fire protection equipment and fire extinguishers, the equipment's operating and maintenance manuals, and the user manuals issued by the respective equipment manufacturers." §3.3 "Technical inspections and maintenance shall be carried out with the frequency established by the respective manufacturer and at least once a year."

The service inspections, maintenance, repairs, and overhaul of the fire protection door shall only be done by trained personnel of the manufacturer or its authorized service contractor.

The fire protection door user or the personnel or contractor it has authorized is liable for collection and retention of documented proof that the service inspections and maintenance are carried out at least every six months, unless specified otherwise in the sale contract (or special requirements/site conditions of the user require other frequency of the service inspections and maintenance).

8.4 CLEANING

The operating personnel is required to keep the work place and the fire protection door clean. Cleaning must be conducted with commercially available household cleaning products, e.g. dish-washing liquids.

Do not use any aggressive cleaners or organic solvents, or pressure washing methods (with water or other liquids). If the fire protection door is contaminated with insoluble substances, remove them mechanically without damage to the sheet surface.

9. REPLACEMENT PARTS

Use the following drawings to correctly identify a correct replaceable part (no. 19 – 30).

Order the replacement parts by specifying: a drawing numbers part number and name and quantity.

ALL REPLACEMENT PARTS USED FOR INSPECTION, MAINTENANCE, REPAIRS AND OVERHAULS SHALL BE GENUINE SPARE PARTS SPECIFIED BY THE MANUFACTURER IN THE LISTS BELOW.

CAUTION!

If the parts to be serviced only by the manufacturer or their authorised service centre are replaced by anyone else, it will immediately void the CE marking of the product and its declaration of performance, in particular the fire resistance rating.

9.1 WINDING SHAFT WITH INTERNAL DRIVE

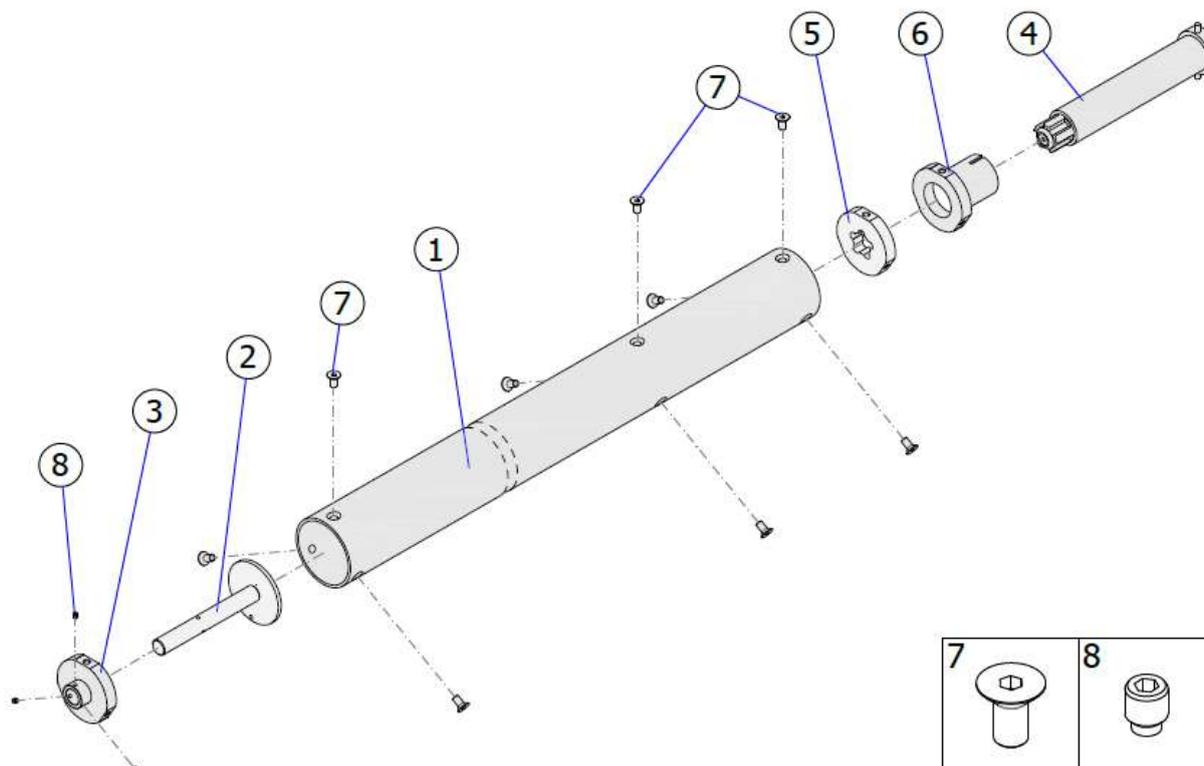


Fig. 19 – ISOiK-Ok60-01.19 [winding shaft with internal drive]

Winding shaft: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Shaft tube	1	-	Yes	Yes	-
2	Journal	1	-	Yes	Yes	-
3	Journal seat	1	-	Yes	Yes	-
4	VIC type internal electric drive	1	-	Yes	Yes	drive type selected in relation to the door size
5	Drive carrier	1	-	Yes	Yes	-
6	Drive adapter	1	-	Yes	Yes	-
7	Pan head screw, M8 x 16	9	-	Yes	Yes	with hexagon socket, PN-EN ISO 10642
8	Pressure screw, M5 x 6	3	-	Yes	Yes	with hexagon socket, ISO 4028

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.2 SHEET

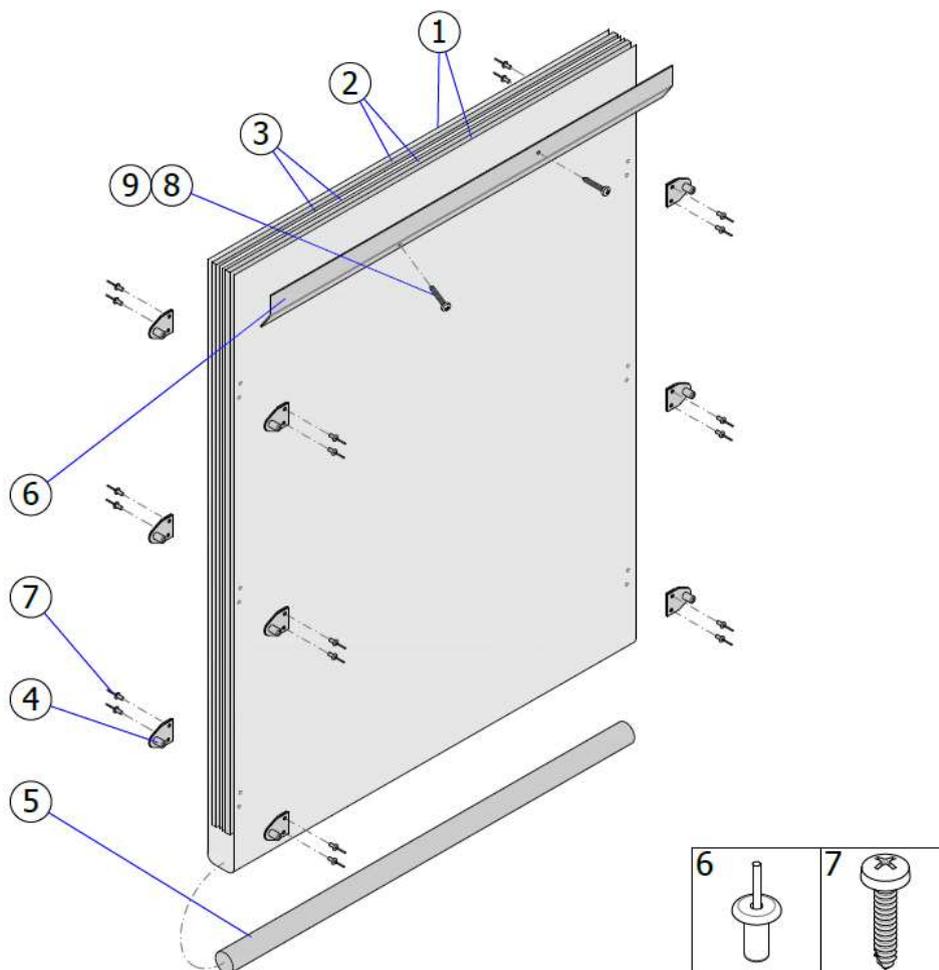


Fig. 20 – ISOiK-Ok60-01.20 [door sheet]

Door sheet: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Outer layer	2	-	-	Yes	-
2	Core layer	1	-	-	Yes	-
3	Guide	2*	-	Yes	Yes	* – per side, every ~500 mm
4	Counterweight bar	1	-	Yes	Yes	diameter 30 or 50 mm
5	Mounting strip	1	-	Yes	Yes	-
6	Steel blind rivet, 4 x 6	2*	-	Yes	Yes	DIN 7337, * – for each guide shoe
7	4.2 x 25 self-tapping screw	1*	-	Yes	Yes	with ball head, DIN 7504 N-H, * – every 500 mm
8	4.2 x 19 self-tapping screw	2	-	Yes	Yes	DIN 7504 N-H, used on the drive side

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.3 GUIDE RAIL

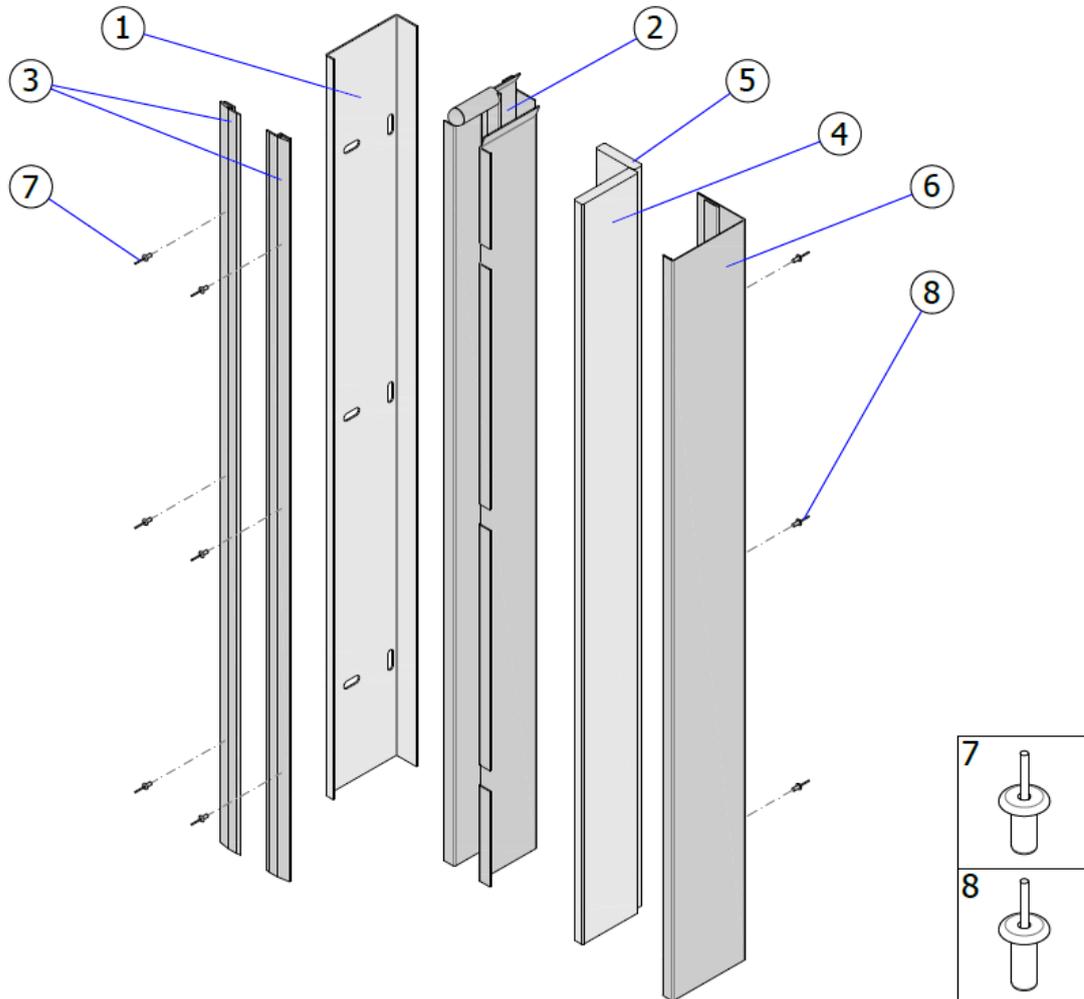


Fig. 21 – ISOiK-Ok60-01.21 [guide rail – wall-mounted version]

Guide rail, wall-mounted: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Wall-side section	1	-	Yes	Yes	-
2	Middle section	1	-	Yes	Yes	-
3	Outer edge gasket	2	-	Yes	Yes	-
4	Fire-retardant plate, 92 x 15	1	-	Yes	Yes	-
5	Fire-retardant plate, 70 x 15	1	-	Yes	Yes	-
6	Fascia	1	-	Yes	Yes	-
7	Steel blind rivet, 4 x 10	2*	-	Yes	Yes	DIN 7337, * – every 500 mm
8	Steel blind rivet, 4 x 12	1*	-	Yes	Yes	DIN 7337, * – every 500 mm

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

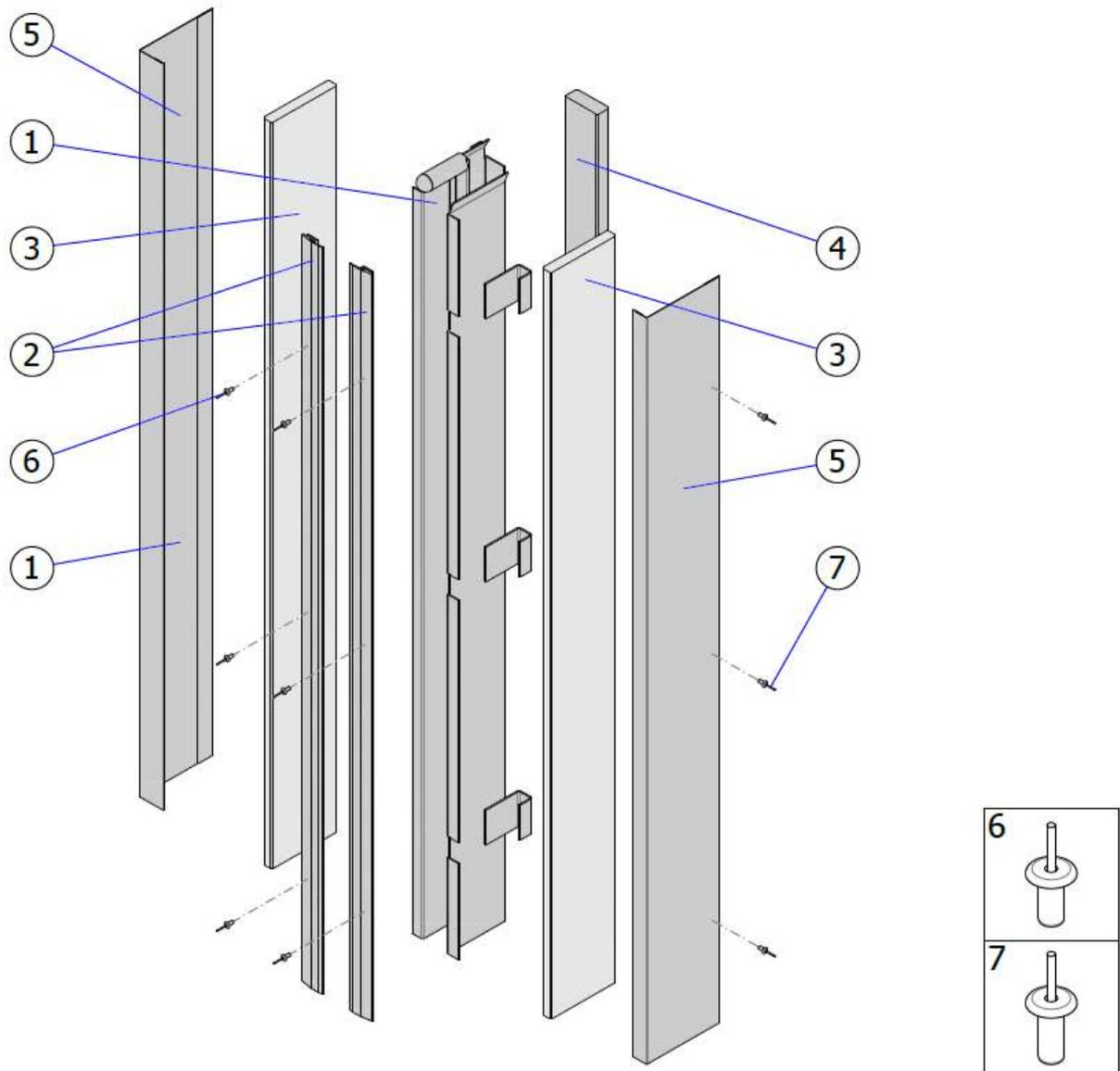


Fig. 22 – ISOiK-Ok60-01.22 [guide-rail – corridor-mounted version]

Guide rail, corridor-mounted: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Middle section	1	-	Yes	Yes	-
2	Outer edge gasket	2	-	Yes	Yes	-
3	Fire-retardant plate, 108 x 15	2	-	Yes	Yes	available only for the corridor-mounted version
4	Fire-retardant plate, 53 x 20	1	-	Yes	Yes	available only for the corridor installation option
5	Fascia	2	-	Yes	Yes	-
6	Steel blind rivet, 4 x 10	2*	-	Yes	Yes	DIN 7337, * – every 500 mm
7	Steel blind rivet, 4 x 12	1*	-	Yes	Yes	DIN 7337, * – every 500 mm

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.4 SHAFT SUPPORT

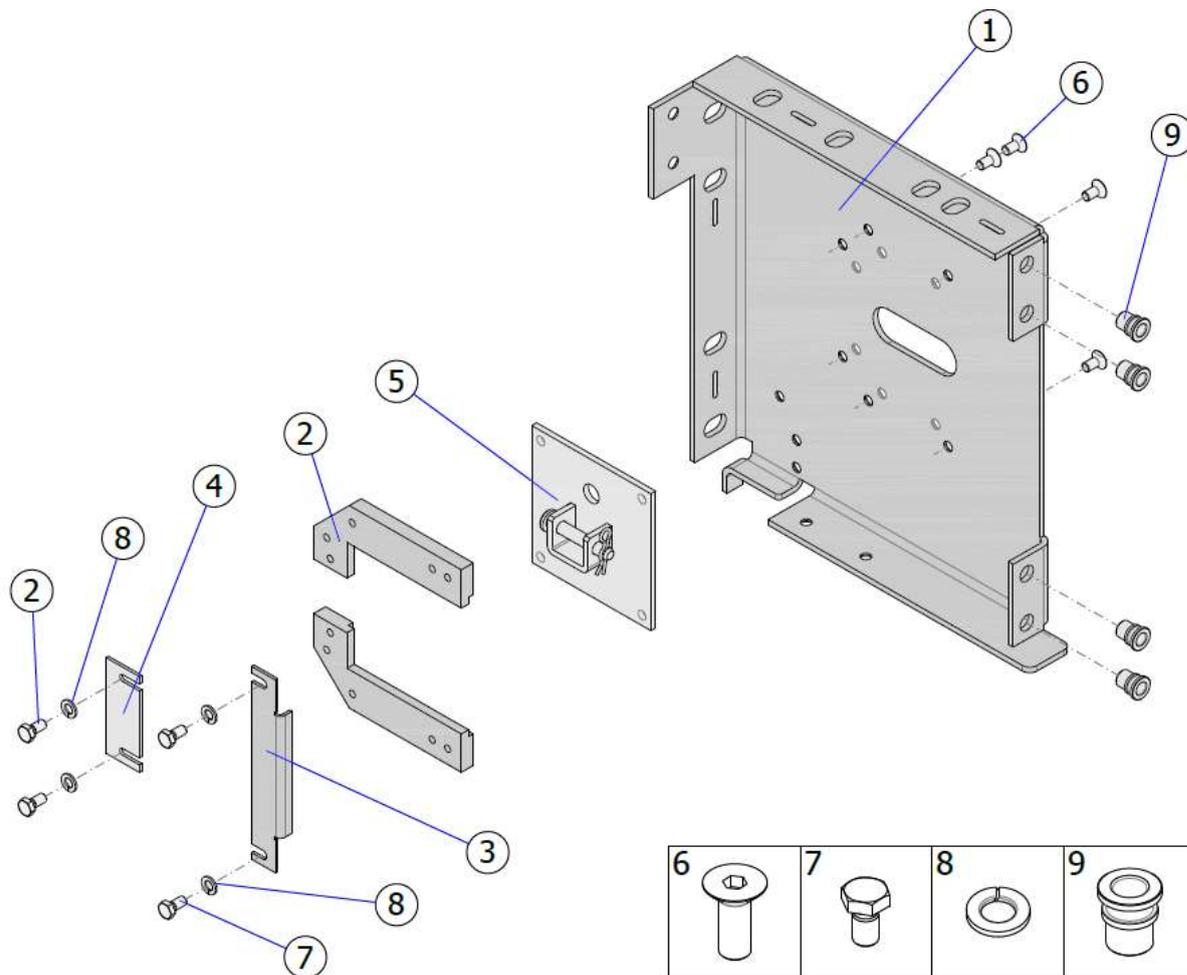


Fig. 23 – ISOiK-Ok60-01.23 [shaft bracket – drive side]

Shaft bracket, drive side: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Bracket body	1	-	Yes	Yes	-
2	Drive bracket	1	-	Yes	Yes	selected for a given drive type
3	Drive lock	1	-	Yes	Yes	-
4	Cable lock	1	-	Yes	Yes	-
5	Drive holder	1	-	Yes	Yes	-
6	Screw, M8 x 25	6	-	Yes	Yes	with conical head, ISO 10642
7	Screw, M6 x 12	2	Yes	Yes	Yes	with hexagon head, PN-EN ISO 4017
8	Spring washer, 6.1	2	Yes	Yes	Yes	DIN 128
9	Rivet nut, M6	4	-	-	Yes	with conical flange

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

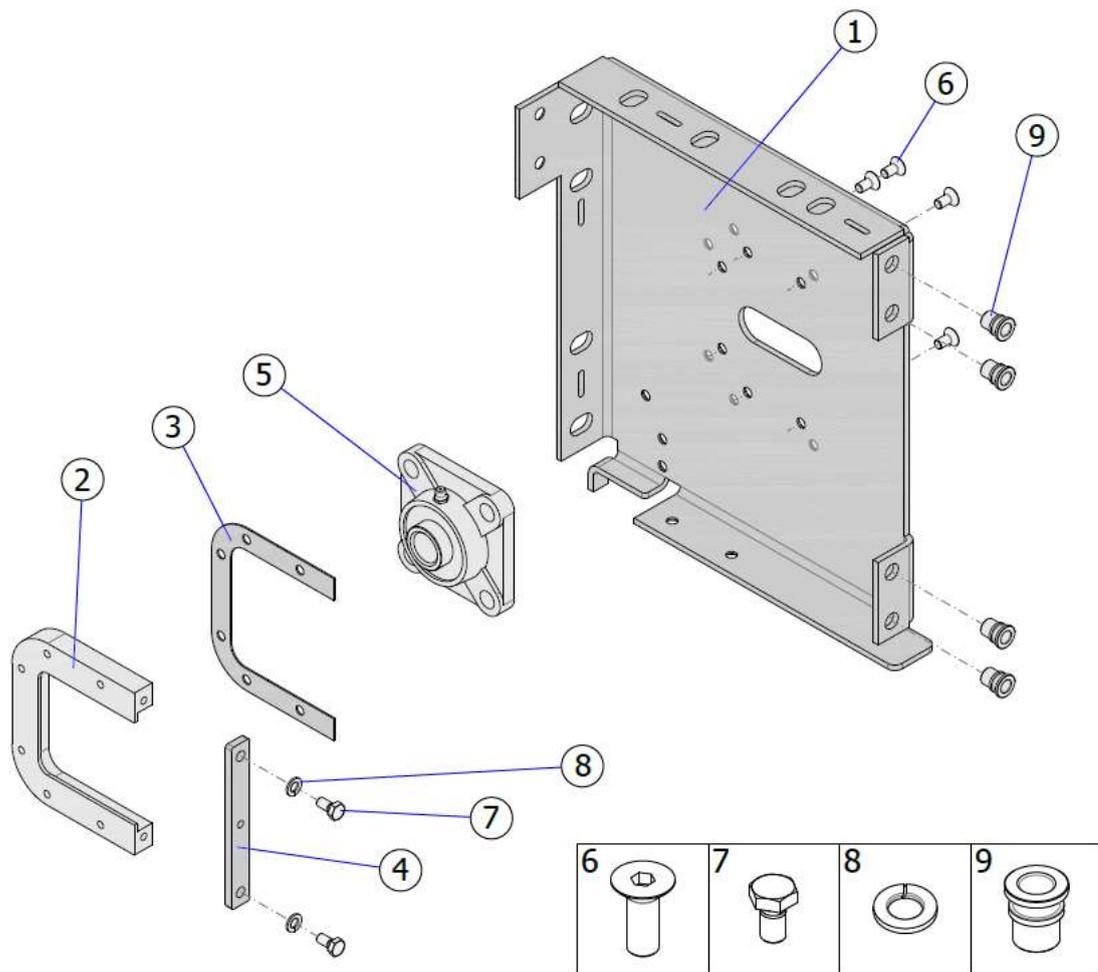


Fig. 24 – ISOiK-Ok60-01.24 [shaft bracket – passive side]

Shaft bracket, passive side: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Bracket body	1	-	Yes	Yes	-
2	Bearing bracket	1	-	Yes	Yes	size selected for bearing type
3	Spacer washer	1	-	Yes	Yes	-
4	Bearing lock	1	-	Yes	Yes	-
5	Self-aligning bearing, UCF type	1	-	Yes	Yes	size selected to shaft journal diameter
6	Screw, M8 x 25	6	-	Yes	Yes	with conical head, ISO 10642
7	Screw, M6 x 14	2	Yes	Yes	Yes	with hexagon head, PN-EN ISO 4017
8	Spring washer, 6.1	2	Yes	Yes	Yes	DIN 128
9	Rivet nut, M6	4	-	-	Yes	with conical flange

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.5 STRUCTURAL LATTICE WITH WALL-MOUNTED CHANNEL SECTION

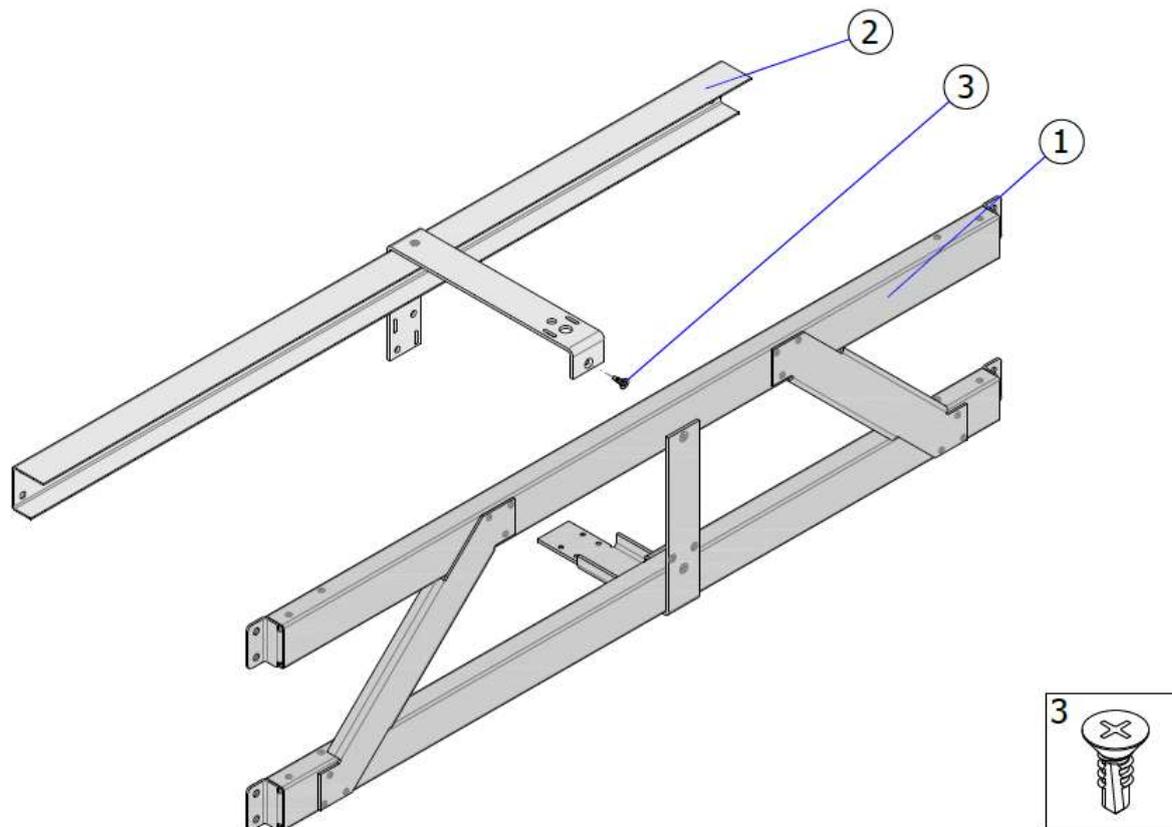


Fig. 25 – ISOiK-Ok60-01.25 [structural lattice with wall-mounted channel section]

Structural lattice with wall-mounted channel section: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Lattice structure	1	-	Yes	Yes	-
2	Wall-mounted channel section	1	-	Yes	Yes	-
3	Self-tapping sheet-metal screw, 5.5 x 16	1	-	Yes	Yes	with conical head, DIN 7504 P / ISO 15482

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.6 PUSH BAR

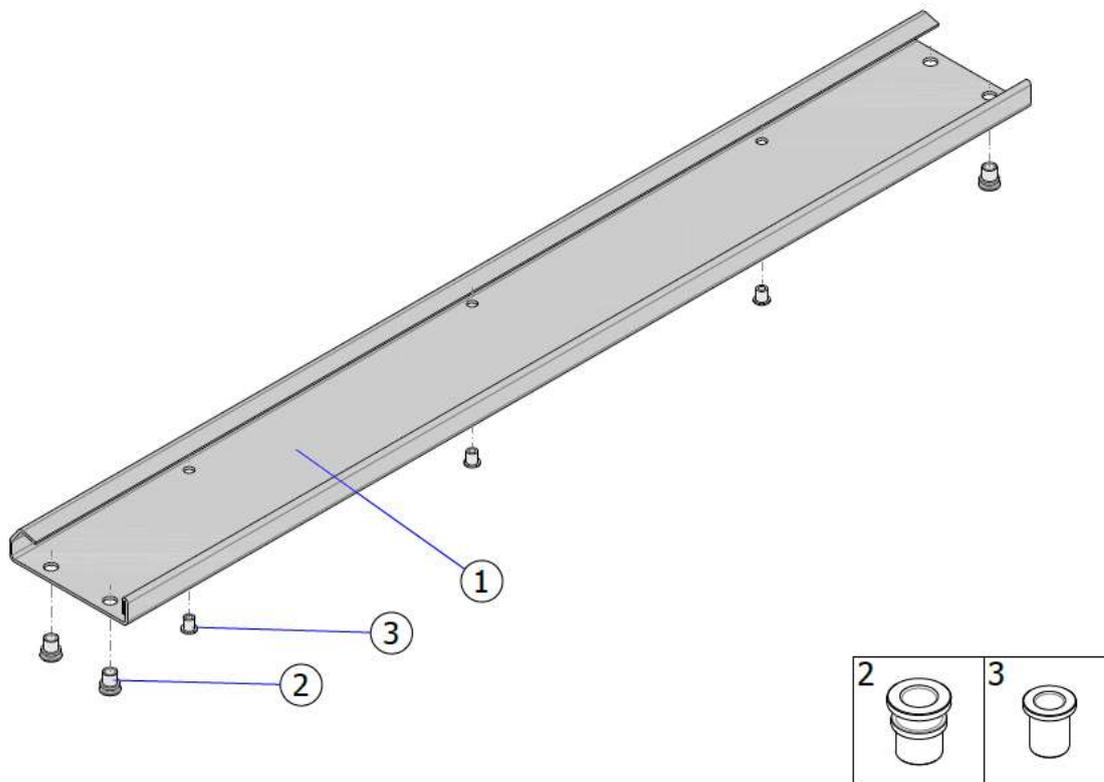


Fig. 26 – ISOiK-Ok60-01.26 [push bar]

Push bar: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Bar profile	1	-	Yes	Yes	-
2	Rivet nut, M6	4	-	-	Yes	with flat flange
3	Rivet nut, M5	1*	-	-	Yes	* – every 500 mm, with flat flange

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.7 REAR GUARD

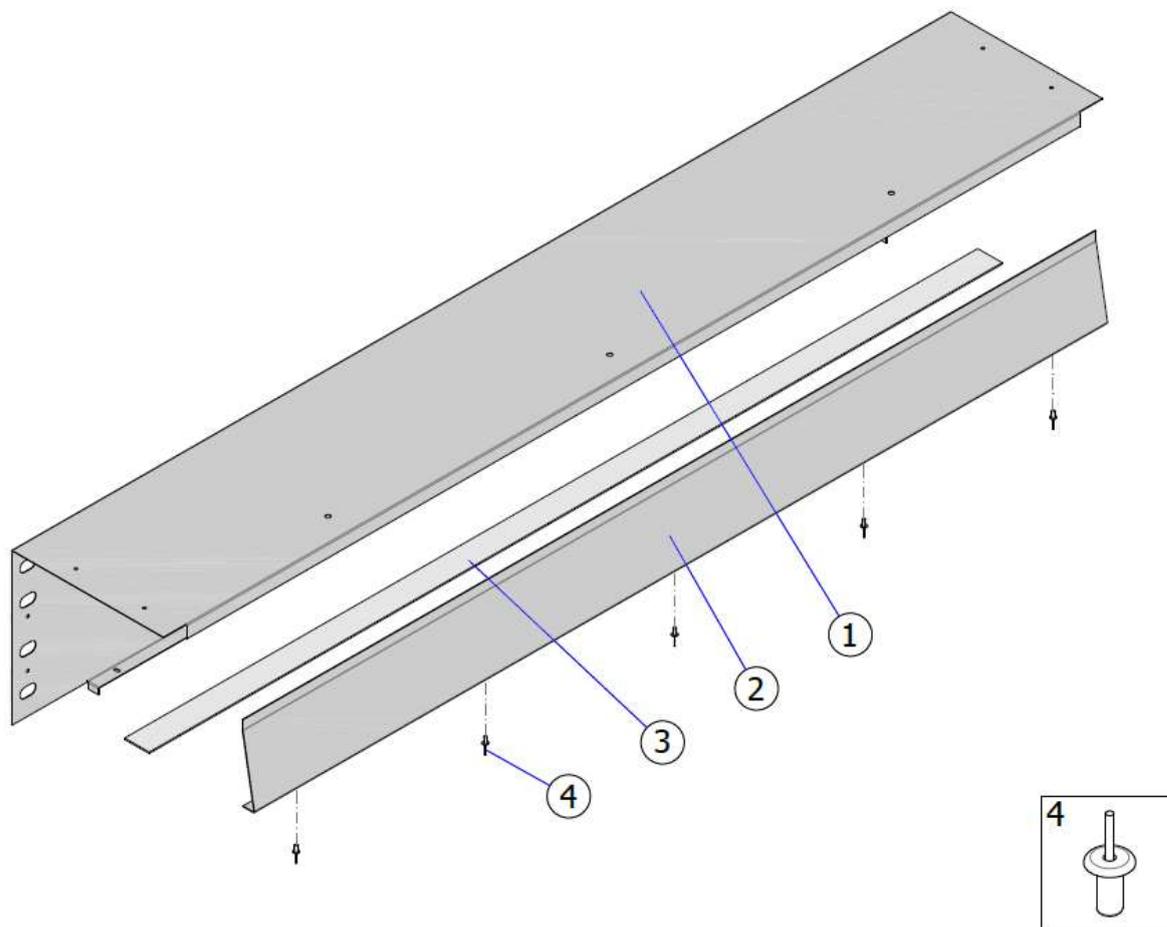


Fig. 27 – ISOiK-Ok60-01.27 [rear guard]

Rear guard: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Guard profile	1	-	Yes	Yes	-
2	Sliding strip	1	-	Yes	Yes	-
3	Edge gasket	1	-	Yes	Yes	-
4	Steel blind rivet, 4 x 12	1*	-	Yes	Yes	DIN 7337, * – every 500 mm

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.8 FRONT GUARD

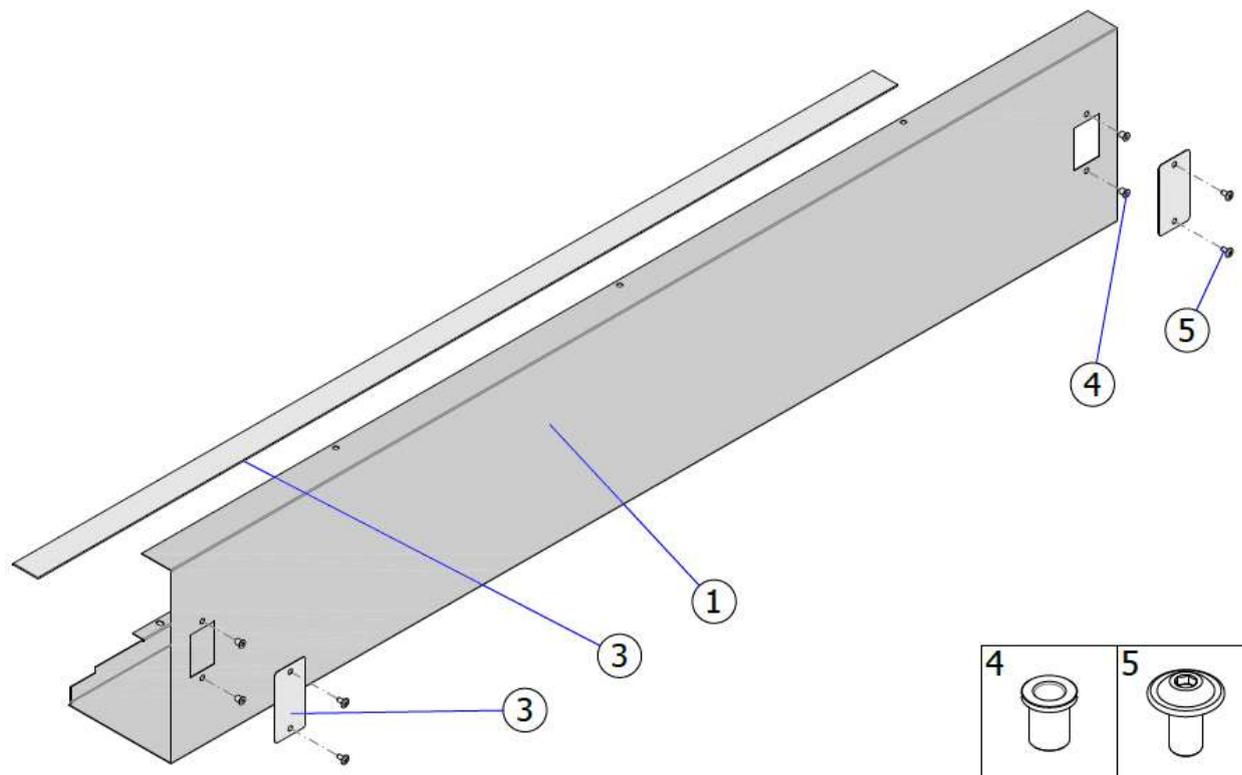


Fig. 28 – ISOiK-Ok60-01.28 [front guard]

Front guard: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Guard profile	1	-	Yes	Yes	-
2	Inspection hole cap	2	Yes	Yes	Yes	-
3	Screw, M5 x 10	4	Yes	Yes	Yes	ISO 7380-1
4	Edge gasket	1	-	Yes	Yes	-
5	Rivet nut, M5	4	-	Yes	Yes	with flat flange

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

9.9 SIDE GUARD

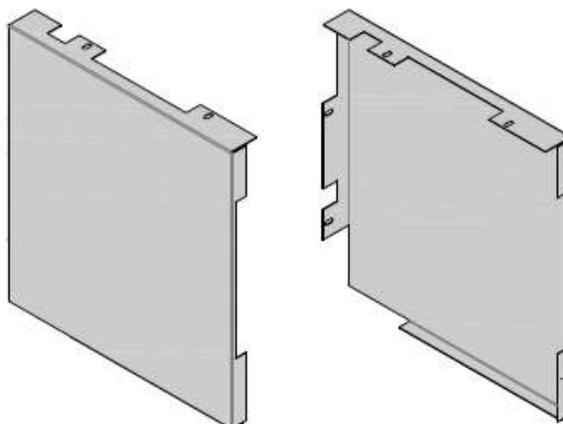


Fig. 29 – ISOiK-Ok60-01.29 [side guard]

Side guard: list of components

#	Designation	Qty.	Replacement / Repair			Notes
			U ¹⁾	A ²⁾	P ³⁾	
1	Guard	2	Yes	Yes	Yes	-

1) – Done by the user, 2) – Done by the authorized service, 3) – Done by the manufacturer

10. DISPOSAL

Dispose of the fire protection door and all its worn out parts in compliance with applicable regulations.

When the fire protection door or any of its parts reaches its end of life and requires dismantling and disposal:

- Remove the door components and electrical system by performing the assembly and installation in the reverse order, and follow by handing over the parts (like the electric motor) for waste recovery.
- Hand over all plastic, rubber, and mineral wool parts for disposal.
- Cut and scrap the steel structure, metal sheets, profiles, bars and other hardware with all other steel parts (including anchors, plugs, and bolts).
-

10.1 CHEMICAL NOTICE

None of the fire protection door components contains asbestos or coatings or elements which release any gases harmful to the ozone layer. The pigments and anti-corrosive treatment of the structure and components are free of cadmium, chromium and other air and soil aquifer layer pollutants.

11. MARKING

Type MARC-Ok fire protection curtain is identified with the nameplate the specimen of which is shown below. The parameters of the delivered fire protection door are featured on the nameplate.

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Figure 31 – Examples of MARC-Ok + EI60 fire protection curtain door nameplate according to EN 16034:2014-11)

The nameplate is located at the factory on the lower shaft housing, on the right-hand side next to the guide rail.

12. APPENDICES

- Periodic Inspection and Maintenance Log
- Warranty Certificate (SPECIMEN)
- Copy of the Declaration of Performance
- Available to the manufacturer-issued Installation Authorization Certificate holders:
 - VIC electrical accessories kit installation manual
 - MARC-Ok + EI60 fire protection curtain door installation manual

PERIODIC INSPECTION AND MAINTENANCE LOG

Equipment type:	Serial number:	Year of production:	
#	Completed servicing	Date & authorized stamp and signature	Notes
1			
2			
3			
4			
6			
7			
8			
9			
10			
11			
12			
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WARRANTY CERTIFICATE

WARRANTY CARD no. "TEMPLATE"				
Warranty for: (hereinafter referred to as "Eligible Party")				
Facility: Name: Address:				
"Małkowski– Martech" S.A. (Guarantor) grants a warranty for the following products:				
Warranty period: months		According to the agreement/order no: dated:		
Item	Product/service	Additional description	Designation	Quantity
1.				
2.				
3.				
4.				
5.				
§ 1 General warranty terms and conditions				
<ol style="list-style-type: none"> 1. The Eligible Party shall retain their rights under the Guarantee on condition that: <ol style="list-style-type: none"> 1) installation of the products has been performed by the Guarantor or an entity acting on the Guarantor's behalf, holding the Installation Authorisation Certificate (provided by the Guarantor) confirmed by an entry in the Warranty Card and in the O&MM or instructions for use, operation and maintenance regarding the products covered by the Warranty; 2) the Guarantor or an entity holding a Service Authorisation Certificate (granted by the Guarantor) conducts periodic service inspections of the products covered by this warranty, at the following intervals: <ol style="list-style-type: none"> a) every 6 months – in the case of gates remaining in the extreme position – open or closed; b) every 3 months – in the event of the gates being used in any other manner in accordance with the criteria specified by the Guarantor. 2. This Warranty applies to the Guarantor's products purchased and installed (assembled) in the territory of Poland. 3. Service inspections are payable. 4. The standard warranty period shall commence from the date of product acceptance confirmed by a suitable protocol and shall last 24 months for MARC-Ok gates and 12 months for other MARC products. 5. The rights under the Warranty do not cover lost profits, as well as compensation for possible damage due to failure of the product. 				
§ 2 Procedure of warranty claim reporting and exercise of warranty rights				
<ol style="list-style-type: none"> 1. The Eligible Party is obliged to report a defect in the product immediately, but not later than within 3 working days from the date of its discovery. 2. Notification of the claim to the Guarantor, in writing, otherwise being null and void, may only be made by a person authorised to represent the Eligible Party and incur obligations on its behalf. 3. The claim should include: <ol style="list-style-type: none"> 1) copy of the Warranty Card; 2) completed form available on the Guarantor's website, in the "Service" tab, with particular emphasis on indicating people authorised to represent the Eligible Party and documents confirming the right to representation (excerpt from the National Court Register, possible special power of attorney); 3) serial number of the product; 				

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- 4) confirmation of performing periodical service inspections of the product according to the provisions of the Warranty Card.
4. In order to ensure the efficient course of the warranty procedure, it is recommended to attach photos of the damaged product to the notification, allowing the assessment of damage.
5. The Eligible Party is obliged to provide conditions (in particular by allowing access to the product and disabling other devices that pose a threat to the person performing the repair) that allow for the repair of the product.
6. Failure to submit a warranty claim by the time specified in section 1 shall release the Guarantor from the obligation to eliminate such defects without any remuneration.
7. All warranty claims should be sent to: **serwis@malkowski.pl**.

§ 3

Warranty rights

1. If the notification of defects under the Warranty is valid, the Guarantor – at their discretion – will remove the defects of the product (make repairs) or replace the product (or its part) with a new one.
2. The defective products or their parts replaced with new ones become the property of the Guarantor.
3. In the case of revealing, during the warranty period, defects or flaws that prevent the use of the products in a manner ensuring their functionality (material defects), the Guarantor shall take the necessary steps to remove the defects or flaws or replace the Product with a defect-free one within 10 working days from the notification of defect.
4. In the case of revealing, during the warranty period, defects or flaws that do not prevent the use of the products and ensure their functionality (insignificant defects), the Guarantor shall undertake necessary actions to remove them within 20 working days from the date of defect notification.
5. The time limits specified in sections 3 and 4 above may be extended for important reasons, in particular when:
 - 1) parts necessary to exercise the warranty rights are not available on the market;
 - 2) it is necessary to import certain parts from abroad, and for reasons beyond the control of the Guarantor.
 The Eligible Party will be notified about such a case.
6. 'Working days' are understood as days from Monday to Friday, excluding holidays and public holidays.
7. In response to the notification, the Guarantor shall, via the email address indicated in the Entitled Party's notification, inform them about the date of the visual inspection, not later than 3 working days before the planned date of its performance.
8. The Eligible Party is obliged to immediately, not later than within 24 hours, confirm the date indicated by the Guarantor, as well as indicate the name, surname and telephone number of the person (hereinafter referred to as the "Eligible Party's Representative") who, acting on their behalf, will be obliged to perform the obligations of the Eligible Party indicated in section 10 below. Failure to confirm the possibility of performing a visual inspection within the above-mentioned time limit may result in the Guarantor's failure to perform it within this time limit. In this case, the Eligible Party may request the Guarantor to indicate another date of the visual inspection, following this provision.
9. Within the time limit agreed with the Eligible Party, the Guarantor shall visually inspect the product in order to verify whether the reported defect occurs and is covered by the warranty, and if this verification proves positive and it is possible to perform immediate warranty repair, they shall commence its performance.
10. In order to enable the Guarantor to perform a warranty repair, the Eligible Party is obliged to:
 - a) ensure safe conditions of the warranty repair, and if necessary, shut down other devices that may pose a threat to the safety of people near the repair site;
 - b) provide the Guarantor with the necessary part of the area and provide access to the works area enabling performance of this contract;
 - c) make available, free of charge to the Guarantor, to the extent necessary to perform works: access to electricity and water;
 - d) provide the Guarantor with devices enabling safe and legal performance of works at heights if necessary, as well as other necessary tools facilitating access to the product;
 - e) protocol-based acceptance of the performed works immediately after the Guarantor reports their completion.
11. If, on the other hand, it turns out that it is necessary to provide parts that the Guarantor does not have at the time of the inspection, they shall indicate a new date of warranty repairs within 7 days, and the Eligible Party is obliged to re-implement the provisions of section 8 above.
12. If, in the performance of their obligations, the Guarantor supplies the Eligible Party with an item free of defects instead of a defective item, or has made significant repairs of an item, the warranty period for the item shall run again from the date of delivery of the item free of defects or from the date of making the repairs. In case a part of

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the product is replaced, the above applies to this part.

13. In other cases, the warranty period shall be extended by the time during which the Eligible Party could not use it as a result of a defect in the product covered by the warranty.
14. The Guarantor is entitled to charge the Eligible Party with costs related to an unjustified request, meaning a lack of defects or a notification of a defect not covered by the warranty and also the lack of consent of the Eligible Party to perform the repair. The above costs may include, among others, the cost of travel and expert opinion provided in the product installation location, according to the rates indicated in the Guarantor's price list.
15. Notification of a defect by a person authorised to represent the Eligible Party shall be tantamount to consenting to encumber the Eligible Party with the costs indicated in section 14 above and in the § 4, section 9 below.
16. The costs of defect removal not covered by this Warranty will be evaluated according to the Guarantor's price list.

§ 4

Performing a repair not covered by the warranty

1. If during the visual inspection performed as a result of a notification made by the Eligible Party, the Guarantor considers that the reported defect is not covered by the warranty, and the Guarantor has all necessary parts and the possibility of immediate replacement or repair during the inspection, the Guarantor shall immediately estimate the repair costs, and will send this estimate to the email address of the Eligible Party indicated in the notification, in order for them to accept it. In the event of immediate acceptance, made in a documented form, by sending an email with acceptance of the estimate in question from the registered address of a person or people with the right to represent the Eligible Party, the Guarantor shall commence immediate replacement of the part or repair of the product.
2. If the acceptance of the estimate is not made immediately, i.e. not later than within 1 hour, counting from the moment of sending the estimate to the Eligible Party or the Guarantor does not have the necessary parts or the possibility of making the repairs, then they will refrain from replacing or repairing the product.
3. After obtaining the acceptance of the estimate and/or ensuring availability of necessary parts, the Guarantor shall indicate a new date and inform the Eligible Party about this fact, and they are obliged to comply with the provisions of § 3, section 8 of this Warranty Card.
4. If the cost estimate is not immediately accepted, despite the Guarantor's readiness to perform the repair, after its acceptance, the Eligible Party can be charged with the costs of another travel to the place where the product is located.
5. The cost estimate can be accepted by:
 - a) person(s) authorised to represent the Eligible Party in accordance with applicable rules of representation, or
 - b) person holding a power of attorney to represent the Eligible Party and incur obligations on their behalf, indicating the scope of the amount authorisation, after sending to the Guarantor, to the email address indicated for contact, a power of attorney document, assuming that the amount indicated in the cost estimate falls within the scope of authorisation.
6. In order to enable the Guarantor to perform works resulting from the notification, the Eligible Party's Representative is obliged to perform the obligations resulting from § 3, section 10, item a) – e) above.
7. After replacement or repair, the Eligible Party's Representative is obliged to accept the works and sign the report, and any comments or reservations may be indicated in the content of the report.
8. In the absence of the Eligible Party's Representative or refusal to sign the report, the Guarantor is authorised to unilaterally accept the works and sign the report, which will constitute the basis for issuing the invoice.
9. The obligation of the Guarantor to obtain the acceptance of the cost estimate by the Eligible Party shall not apply in the event of a threat to life as a result of a product failure. In such a case, the Eligible Party shall be charged on the basis of the as-built cost estimate presented to them according to the rates specified in the Guarantor's price list, to which sending a notification by the Eligible Party constitutes an unambiguous consent.
10. In the event of a situation described in section 9, the Eligible Party is obliged to properly secure the place of the event, and the Guarantor is obliged to commence the removal of the defect within no more than 10 working days from the date of receipt of the Eligible Party's notification.
11. In the event the works specified in the notification cannot be performed due to Eligible Party's failure to fulfil the obligations indicated in § 3, section 10 item a) – e), any costs incurred by the Guarantor in order to perform it shall be charged to the Eligible Party.

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§ 5
Exclusion of warranty rights

The warranty does not cover:

- 1) defects arising from causes other than those inherent in the product;
- 2) defects arising as a result of any interference with the product by the Eligible Party or third parties, in particular modifications and structural changes to the products without the prior written consent of the Guarantor under pain of invalidity;
- 3) defects resulting from improper use of the product or lack of ongoing maintenance of the product, in particular use of the product and its maintenance contrary to the provisions of the O&MM or Instructions for use, operation and maintenance;
- 4) defects resulting from assembly or repair work carried out by persons not authorised by the Guarantor or without the Guarantor's consent;
- 5) product installed on the site under this Warranty for which service inspections have not been performed by the Guarantor or an entity holding the Service Authorisation Certificate;
- 6) parts of the products subject to natural partial or total wear and tear in accordance with their characteristics or purpose (e.g. running gear, cables, batteries, etc.);
- 7) mechanical damage to the product and resulting defects;
- 8) defects resulting from a defective structure in which the product has been installed;
- 9) incorrect selection of the product in relation to the conditions existing on the installation site;
- 10) faulty operation of installed devices not originating from the Guarantor, having negative impact on the operation of the product originating from the Guarantor;
- 11) defects resulting from external factors, in particular: fire, extreme weather conditions, fortuitous events and force majeure;
- 12) damage caused by improper use of the product or by its use contrary to the instructions for use, including its excessive use;
- 13) products for which the Warranty Card has been altered or blurred in any way;
- 14) products with removed, damaged or altered nameplates;
- 15) products with their warranty seal damaged or removed.

THANK YOU FOR YOUR TRUST AND FOR PURCHASING THE PRODUCTS OF THE
"MAŁKOWSKI-MARTECH" S.A. COMPANY.

		<i>I hereby declare that I have read the technical documentation of the product covered by the warranty, including its operating manual and product warranty terms and conditions, which I fully accept.</i>
Signature of the authorised Guarantor's Representative	Date and signature of the authorised representative of the entity holding the Certificate of Assembly Authorisation (enter authorisation number and date of issue)	(signature of the customer)
Date of issue of the warranty document:		