BVK DOOR

(U-BAR)

INSTALLATION & MAINTENANCE MANUAL



Document	BVK Door (U-Bar) Installation & Maintenance Manual
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1. PRODUCT INFORMATION

1.1 Definition

The BVK (U-Bar) Door is a hinged access door designed for integration into PORSAFE machine-guarding fence systems. Safety distances and guard heights shall be selected in accordance with EN ISO 13857 and the risk assessment for the machinery or protected area.

The door leaf is mounted between two prepared fence posts using BVK hinges. Depending on the project configuration, the door may be equipped with a mechanical lock or an approved safety interlock. When an interlock is used, access to the hazardous area can be controlled as part of the machine safety system.

CAUTION	Use the product only for its intended purpose and within the limits of the applicable machine-safety risk assessment.

1.2 Fields of Application

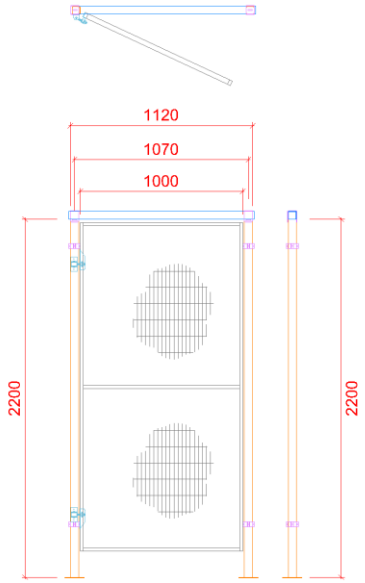
The BVK Door is an access component for perimeter guarding systems used to separate personnel from hazardous machinery, equipment or processes. Typical applications include automatic and semi-automatic production equipment, robotic cells, assembly lines, and areas containing hot, cold or otherwise hazardous processes.

The complete guarding layout, including door location, opening direction, safety distance and interlocking arrangement, shall be validated for the specific application before installation.

1.3 Standard Dimensions



BVK (U-Bar) door - typical configuration



Standard system dimensions shown for reference. Project-specific dimensions may vary.

NOTE	Always verify the approved project drawing before installation. Do not scale dimensions from the illustration.

2. INSTALLATION - DISMANTLING - TRANSPORT

2.1 Before Beginning the Work

Installation shall be carried out by trained and authorized personnel. Before starting work, verify the approved layout, door handing, post locations and required clearances.

- Wear appropriate personal protective equipment (PPE), including safety helmet, protective footwear, gloves and eye protection as required by the site risk assessment.
- Secure the work area and prevent unauthorized access during installation.
- Use only suitable, serviceable tools and lifting equipment.
- Confirm that the floor and supporting structure are suitable for the specified fixing method.
- Check all components for transport damage and verify quantities before installation.

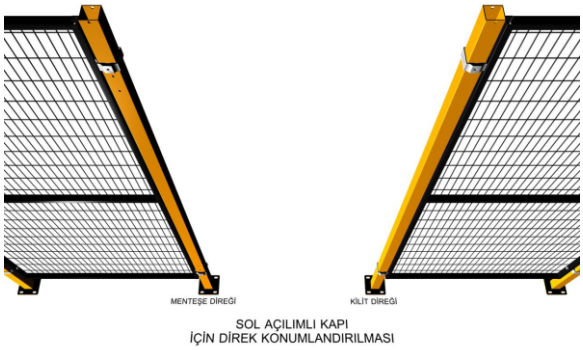
SAFETY	The machine or hazardous process shall be safely isolated before work is carried out inside or adjacent to the protected area.

2.2 Installation

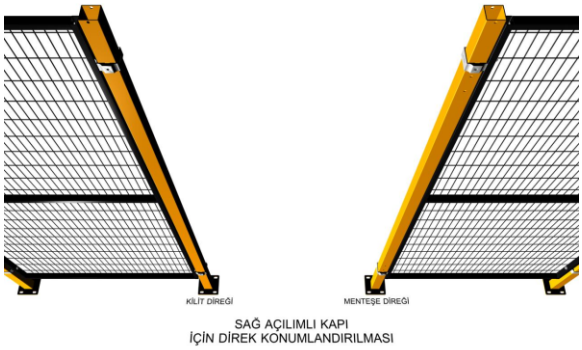
2.2.1 Positioning of Door Posts

BVK door leaves are mounted directly to prepared fence posts. The mounting holes required for the hinges and lock-side components are provided during manufacturing; therefore, the correct posts must be identified and positioned on the correct side of the door opening.

For a left-hand opening door, position the hinge post on the left-hand side of the opening and the lock/receiving post on the opposite side. For a right-hand opening door, reverse the arrangement. Always confirm the required opening direction on the approved project drawing before fixing the posts.



Typical post arrangement - one handing

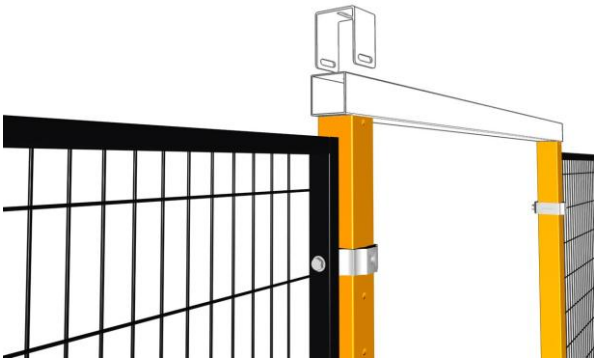


Typical post arrangement - opposite handing

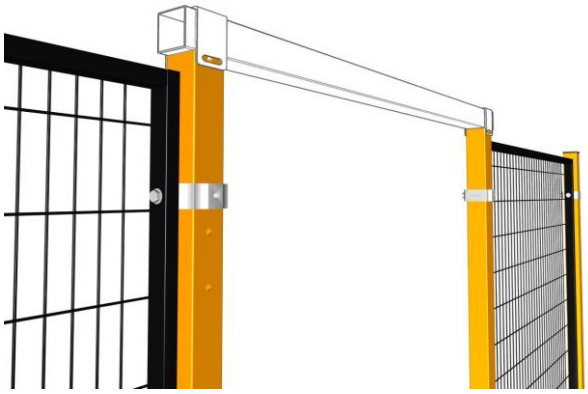
CHECK	Before drilling or fixing, verify the clear opening, post-to-post dimension and door handing.

2.2.2 Installation of the Upper Door Bar

Place the upper door bar between the prepared posts and align it horizontally. Position the installation brackets over the bar and align each bracket with the corresponding post.

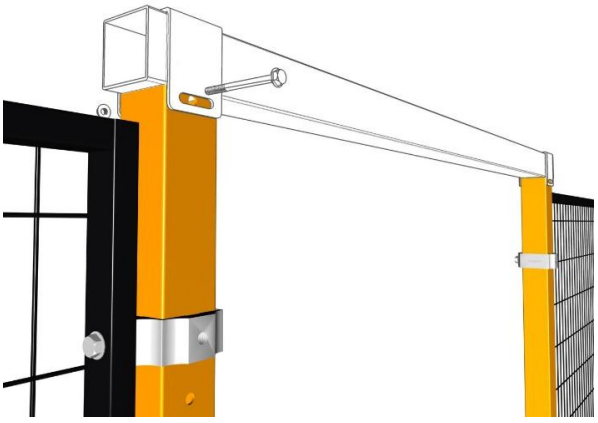


Position the bar between the posts

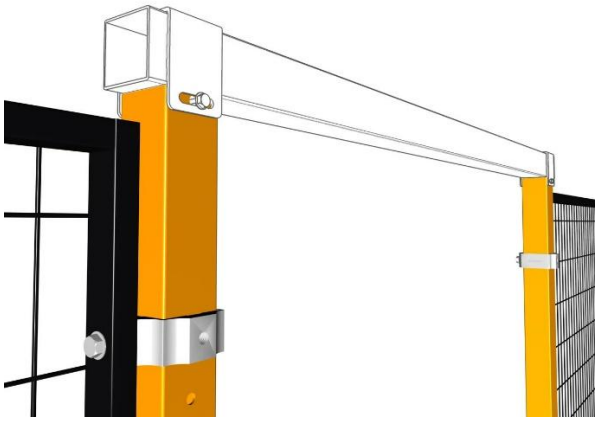


Align the installation brackets

Secure the brackets to the posts using the specified bolts and nuts. Tighten both sides evenly while maintaining the alignment of the bar and posts.



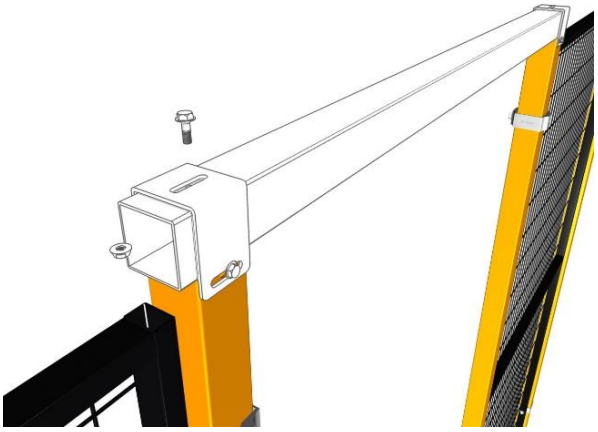
Insert the fixing bolts



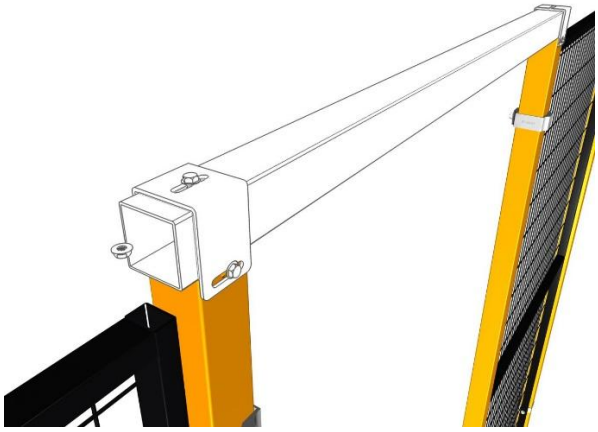
Tighten the post-side fasteners

2.2.2 Installation of the Upper Door Bar - continued

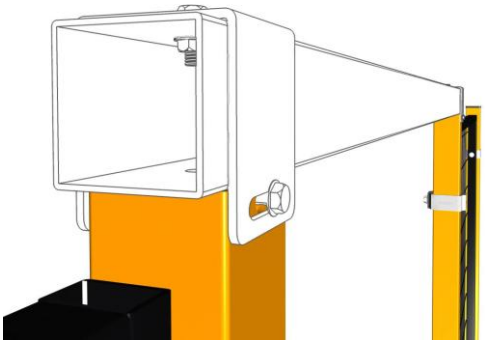
Secure the upper side of each bracket to the door bar using the specified fasteners. Confirm that the bar remains level and that the brackets are seated correctly.



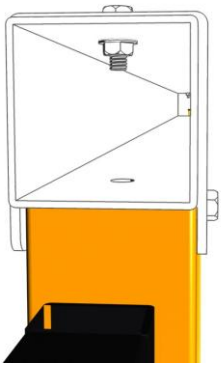
Fit the upper fastener



Tighten the bracket to the bar

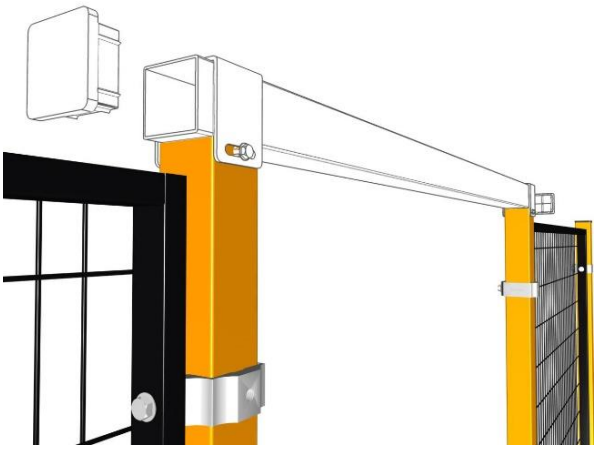


Verify bracket seating

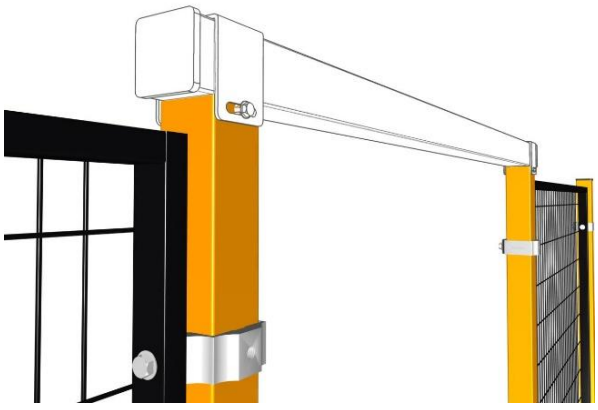


Check final bracket alignment

Complete the upper-bar installation by fitting the end caps to both ends of the bar.

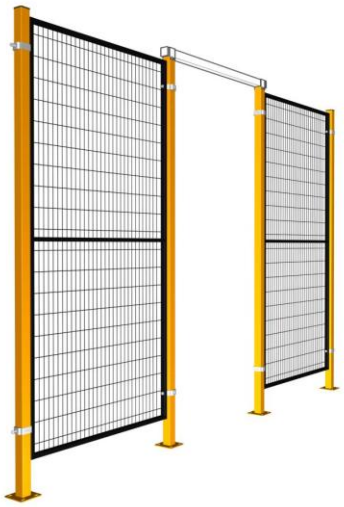


Fit the end cap



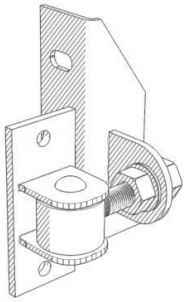
Completed upper-bar assembly

2.2.3 Preparation of the Door Leaf for Installation

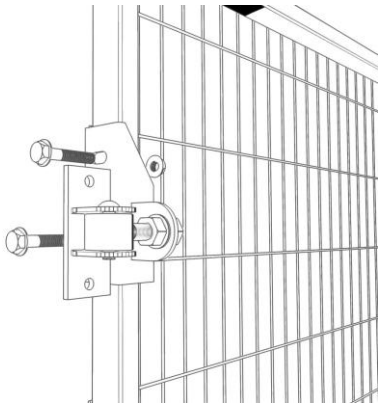


Prepared door opening before leaf installation

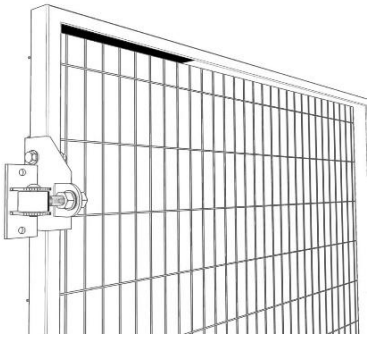
Install the BVK hinges to the upper and lower prepared holes on the door leaf. Use two M8 x 35 bolts and nuts for each hinge unless otherwise specified on the approved assembly drawing.



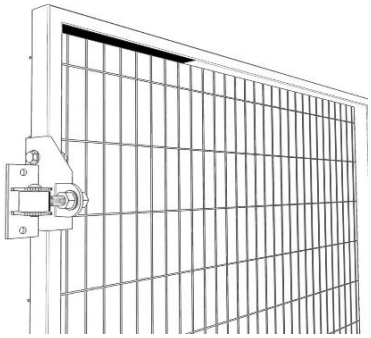
BVK hinge assembly



Hinge fixed to the door leaf



Upper hinge position



Lower hinge position

CHECK	Hinge axes must be aligned. Do not force the hinge into position by misaligning the door frame.

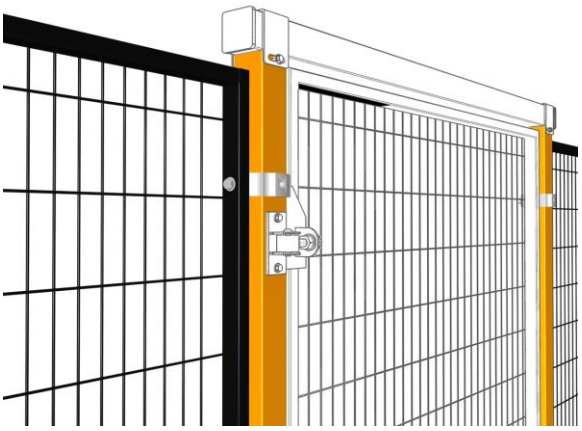
2.2.4 Installation of the Door Leaf on the Posts

Bring the prepared door leaf into the opening and align the hinges with the corresponding mounting holes on the hinge post. Support the leaf securely throughout the operation.

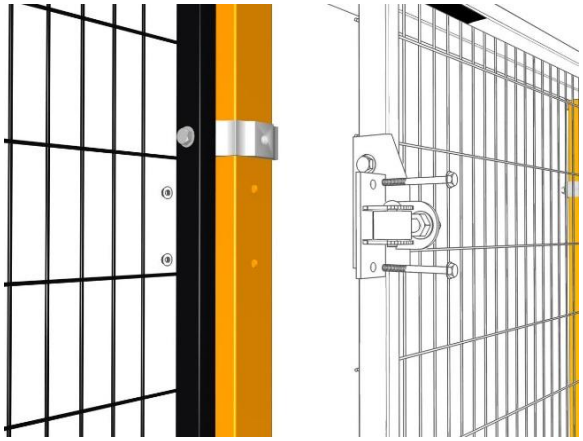
Fix each hinge to the post using two bolts and nuts. Tighten the fasteners progressively, then verify that the leaf opens and closes freely without binding.



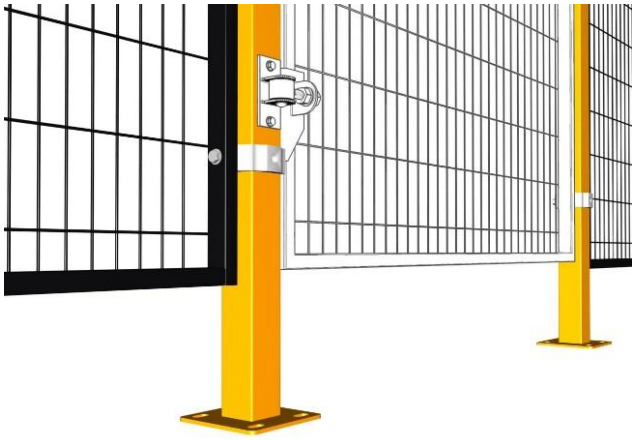
Door leaf prepared with BVK hinges



Align the leaf with the hinge post



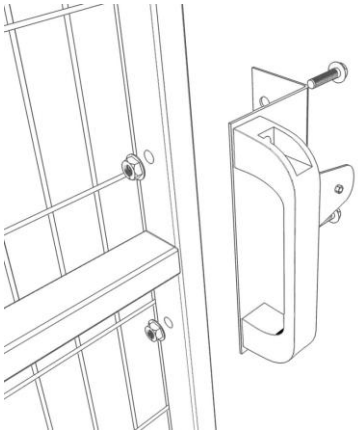
Engage and fasten the hinges



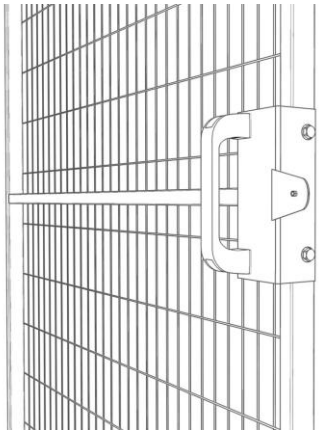
Completed hinge-side installation

2.2.5 Installation of the Door Lock

Position the supplied mechanical or magnetic lock over the prepared mounting holes on the door leaf and/or receiving post, as applicable to the project configuration. Secure the lock using the specified fasteners and verify correct engagement.



Lock-side bracket / handle component



Lock assembly installed on the door leaf

INTERLOCKS	If a safety interlock is supplied, electrical installation, validation and integration into the machine safety circuit shall be performed by qualified personnel in accordance with the interlock manufacturer instructions and the machine risk assessment.

2.2.6 Final Inspection

- Verify that all structural fasteners are installed and tightened.
- Check the door opening direction, clear opening and freedom of movement.
- Confirm that the lock or interlock engages correctly and securely.
- Remove tools, packaging and temporary installation materials from the work area.
- Complete a final visual and manual inspection before the guarding system is released for use.

2.3 Dismantling

Dismantling shall be carried out by trained and authorized personnel. Follow the installation sequence in reverse order, while supporting the door leaf and upper bar to prevent uncontrolled movement.

Group removed components by assembly, protect finished surfaces, and place parts securely on a pallet or suitable rack for storage or transport.

2.4 Transport

- Use a forklift, pallet truck or approved manual-handling method appropriate to the weight and dimensions of the packed components.
- Protect sharp edges and finished surfaces with suitable packing material.
- Secure all components against sliding, tipping, impact and weather exposure during transport.



Typical BVK door integrated into a machine-guarding enclosure

3. OPERATION

The BVK Door forms part of a machine-guarding system intended to control access to a defined protected area. The guarding system does not replace the machine risk assessment, operating procedures, lockout/tagout procedures or other safety measures required for the application.

- Only trained and authorized personnel may enter the protected area.
- Keep the door opening and swing path free from obstructions.
- Do not bypass, defeat or modify any safety interlock or locking device.
- Observe all warning signs and site-specific safety procedures.
- Report damage, looseness, misalignment or abnormal operation immediately and keep the door out of service until corrected.

IMPORTANT	Where access is required while hazardous machinery remains energized, additional safeguarding measures shall be established by the responsible machine integrator / employer.

4. MAINTENANCE

Routine inspection and maintenance are required to preserve the function of the guarding system. Unless the site risk assessment requires a shorter interval, inspect the door at least every three months and after any impact, abnormal event or repair.

- Check hinge fasteners, post fixings and upper-bar connections for looseness or damage.
- Check the door leaf for deformation, corrosion or contact with adjacent panels.
- Verify smooth opening and closing and correct lock/interlock engagement.
- Replace damaged or excessively worn components with approved parts.

5. SAFETY

Installation, dismantling, transport, maintenance and adjustment shall be performed only by authorized personnel using appropriate PPE and safe work procedures.

The protected area shall be adequately illuminated and identified with appropriate warning signs. Where forklifts, cranes or other vehicles operate near the guarding system, suitable impact-protection measures shall be provided to prevent collision with the fence or door.

6. IMPORTANT WARNINGS

- The product shall not be used outside its intended application or in conditions for which it has not been designed.
- Where the door is part of a machine safeguarding system, the complete arrangement shall be assessed and implemented in accordance with the applicable requirements of EN ISO 14120, EN ISO 12100 and EN ISO 13857.
- Locks, switches, interlocks or start/stop devices not supplied as part of the PORSAFE package shall be selected, installed and validated by the responsible machine integrator / competent person.
- Where there is a risk of hazardous electrical potential or electrostatic charge, appropriate bonding, grounding and electrical safety measures shall be implemented by qualified personnel.
- The guarding layout shall maintain the required safety distances from hazardous zones in accordance with EN ISO 13857.
- Warning signs shall be installed where required by the site risk assessment and local regulations.
- Unauthorized access to the protected area shall be prevented at all times.
- Any modification to the door, posts, hinges, upper bar, lock or interlock may affect the safety performance of the guarding system and shall be subject to engineering review before use.

DOCUMENT NOTE	This manual provides installation and maintenance guidance for the BVK Door (U-Bar). Project-specific approved drawings and safety documentation take precedence where they contain additional or more stringent requirements.