

SERV TRAYVOU INTERVERROUILLAGE



Railway Catalogue





Since 1894, STI Serv Trayvou has designed & manufactured key-transfer locking and interlocking safety solutions. Originally developed for railway applications, our safety products were quickly adopted across many industrial sectors thanks to their simplicity and efficiency. We have implemented solutions in many sectors including railway, food & beverage, chemical, energy, construction and Iron & steel.

Serv Trayvou is approved and acknowledged throughout the world as a leader in providing railway safety solutions.

SPECIFIC PRODUCT RANGE

The ranges presented below are divided in 2 families: SERV & HFS

'S-MS' RANGE

Copper-aluminum
locks
designed for heavy-
duty applications
or aggressive
environment such
aggregates.

'NX' RANGE

Fully stainless
steel locks.
Suitable for all
types of indus-
trial applications
(mechanical or
electrical)

'HFS' RANGE

Mainly used in the
Energy sector to
guarantee safety on
ML/LV applications
such as transformer,
breakers, switchgear
or UPS)

'ROTARY' RANGE

Rotary Lock portion
Made in nicked brass
to secure any power or
control circuit.

We also recommend other interlocking devices to secure your hazardous plant.

AVOCATION

Strengthened by a century of expertise, STI has a solid R&D department conceiving not only standard products but also customised safety solutions.

All SERV products comply with directive 2006/42/CE for any machine and components ensuring a safety function.



Our main railway references

France : SNCF

Algeria : SNFT

Germany : DB (Adtranz)

England : EUROSTAR

Austria : OBB

Belgium : SNCB

Canada : BOMBARDIER

Swiss : SBB/CCF

Chile : FEPASA

China : CNR

South Korea : EUKORAIL, ROTEM

Spain : RENFE

Luxembourg : SCFL

Morocco : ONCF

Portugal : REFER

Tunisia : SNCFT, SYSTRA

Worldwide : ABB, ALSTOM, ANSALDO, BALFOUR BEATLY, BOMBARDIER, CONNEX, GE TRANSPORTATION, NIPPON SIGNAL, SDCM, SIEMENS TRANSPORTATION, VOSSLOH

Metro - Subway

France : Paris (RATP), Semali, Lyon, Marseille

Chile : Santiago

China : Shanghai Metro

Egypt : Cairo

Spain : Bilbao

Mexico : Mexico

Portugal : Porto

Venezuela : Caracas

Brasilia : Rio

Summary



RAIL SIGNALLING

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RAIL SIGNALLING



TYPE "S" BOLTLOCKS AND KEYS



Keys and locks "S" series are intended for railway applications for locking different moving parts such as:

- Lever operated junction
- Operated junction box
- Overhead wire (catenary) disconnecter
- Transmitter
- Key switch
- Etc.

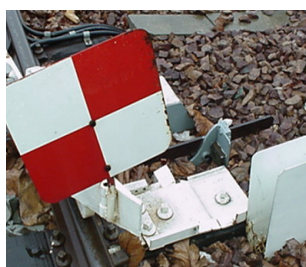
APPLICATION EXAMPLE



OVERHEAD CABLE (CATENARY) SWITCH



OPERATED JUNCTION BOX



LOCKS FOR RAILBOX



OPERATED JUNCTION BOX



KEY SWITCH



TRANSMITTER

TYPE "S" BOLTLOCKS AND KEYS S1P1

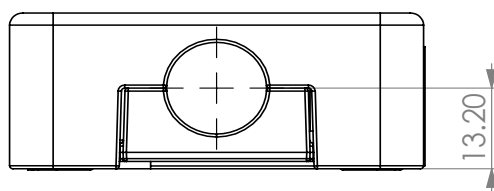
FUNCTION

S- lock series is intended for railway applications for locking different moving parts such as:

- Lever operated junction
- Operated junction box
- Overhead wire Disconnector
- Transmitter
- Electrical Key Switch
- Etc.



DIMENSION



FEATURES

Material : Bronze

Bolt diameter : 15 mm

Fixing :

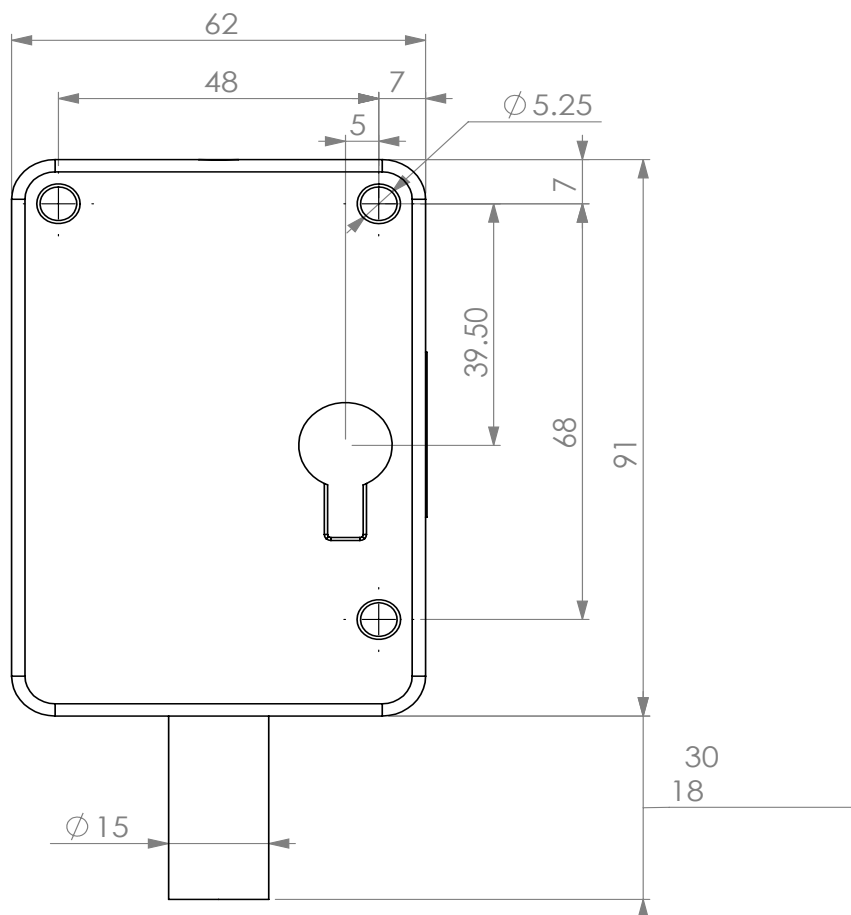
3 holes with a 5 mm diameter

Options :

Electrical contact 2NO-2NC
Switch operates in key free position

Electrical contact 1NO-1NC
Switch operates in key free position

Switch position : Front, back, reversed



TYPE "S" BOLTLOCKS AND KEYS S1P2

FUNCTION

S Lock series is intended for railway applications for locking different moving parts such as:

- Lever operated junction
- Operated junction box
- Overhead Wire Disconnector
- Transmitter
- Key switch
- Etc.

FEATURES

Material : Bronze

Bolt diameter : 15 mm

Fixing :

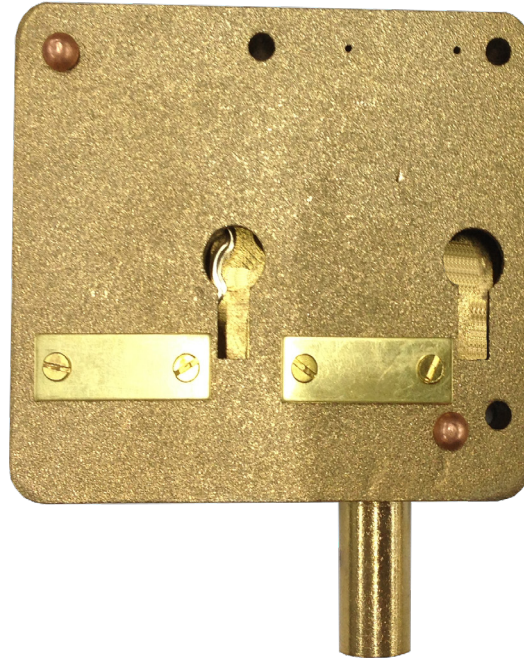
3 holes with a 5 mm diameter

Options :

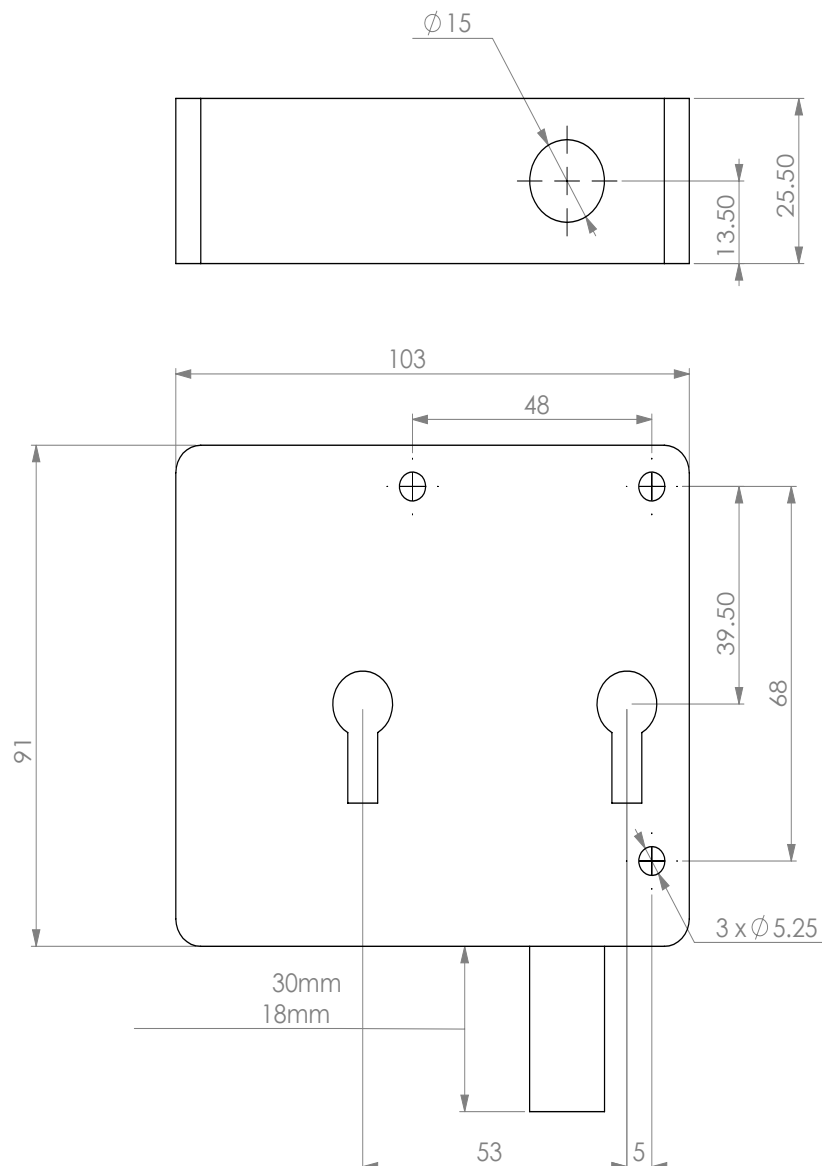
Electrical contact 2NO-2NC Switch operates in key free position

Electrical contact 1NO-1NC Switch operates in key free position

Switch position : Front, back, reversed



DIMENSION

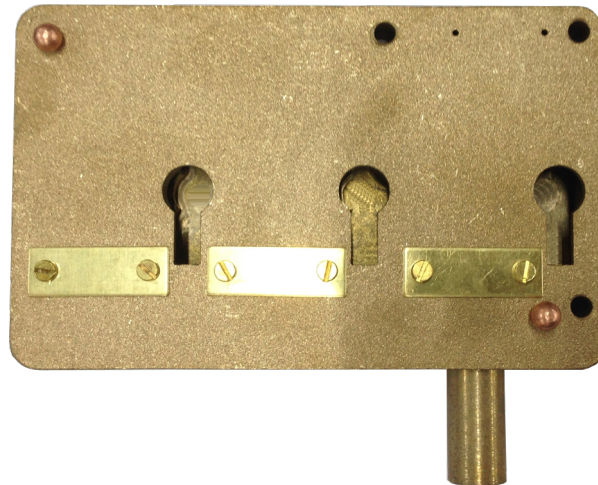


TYPE "S"

BOLTLOCKS

AND KEYS

S1P3



FUNCTION

S Lock series is intended for railway applications for locking different moving parts such as :

- Lever operated junction
- Operated junction box
- Overhead Wire Disconnecter
- Transmitter
- Key switch
- Etc.

DIMENSION

FEATURES

Material : Bronze

Bolt diameter : 15 mm

Fixing :

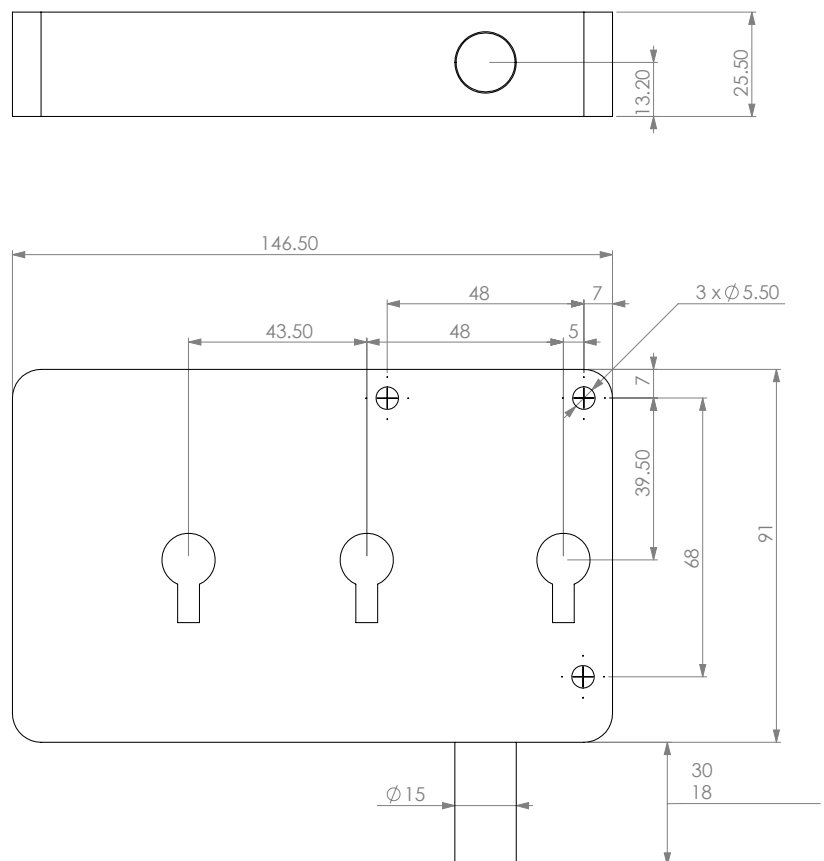
3 holes with a 5 mm diameter

Options :

Electrical contact 2NO-2NC
Switch operates in key free position

Electrical contact 1NO-1NC
Switch operates in key free position

Switch position : Front, back, reversed



PADLOCKABLE PUSH BUTTON

SIMPLE VERSION

FUNCTION

System used to lock access to push-button to limit or secure access.

Push-button is available with or without coloured light signalling



FEATURES

Push button :

Diameter 22 mm

Type of button :

Various colours, with or without LED
(Please refer to us)

Switch :

To lock and push button

Type of switch :

Different type are available
(Please refer to us)

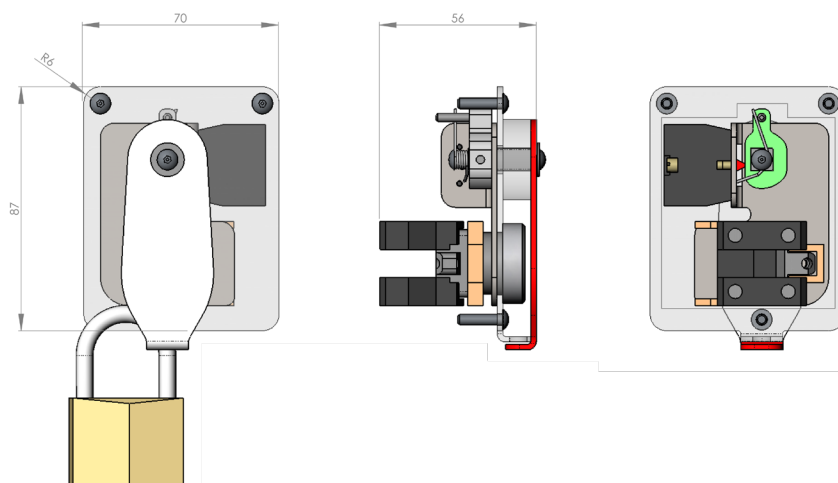
Padlock side bolt :

8 mm maximum

Operating voltage :

Different type are available
(Please refer to us)

DIMENSION



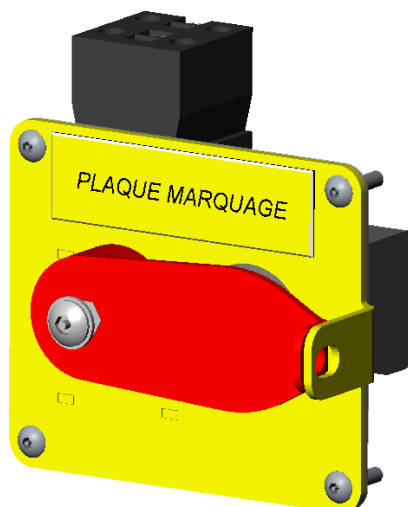
PADLOCKABLE PUSH BUTTON

WITH MARKING

FUNCTION

System used to lock access to push-button to limit or secure access.

Push-button is available with or without coloured light signalling



FEATURES

Push button :

Diameter 22 mm

Type of button :

Various colours, with or without LED
(Please refer to us)

Switch :

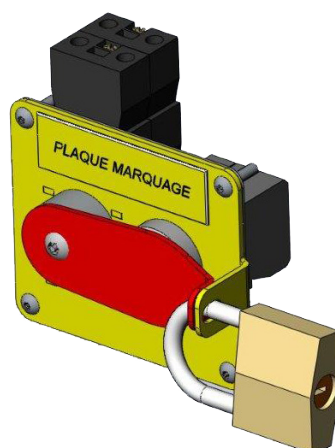
To lock and push buttons

Type of switch : Different type are available (Please refer to us)

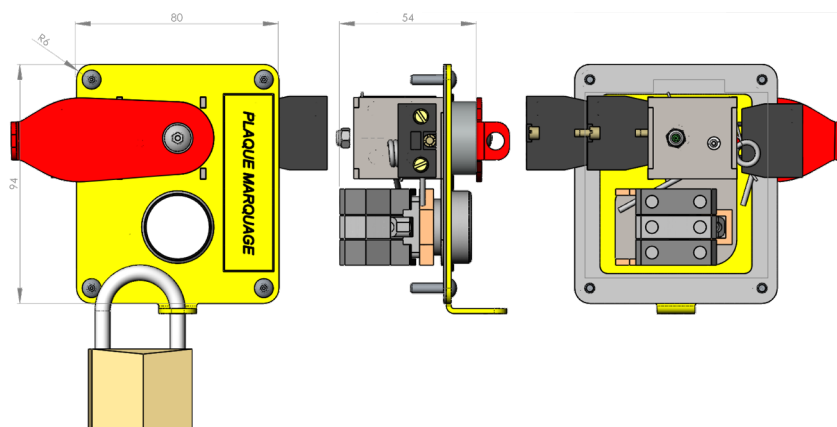
Padlock side bolt : 8 mm maximum

Operating voltage :

Different type are available
(Please refer to us)



DIMENSION



PADLOCKABLE PUSH BUTTON

EXAMPLES

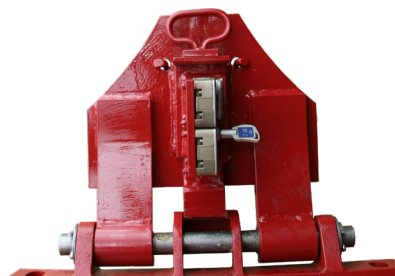


SAFETY LOCK FOR RAILBLOCKS / STOPPER

WAGON SHOE

FUNCTION

This system is used to fix the cargo wagon during loading and unloading.

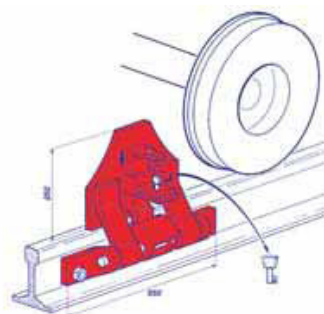
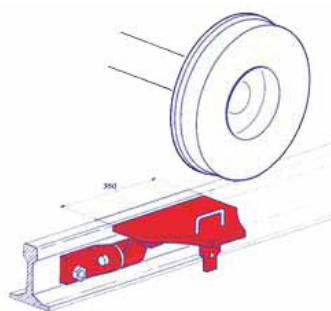


FEATURES

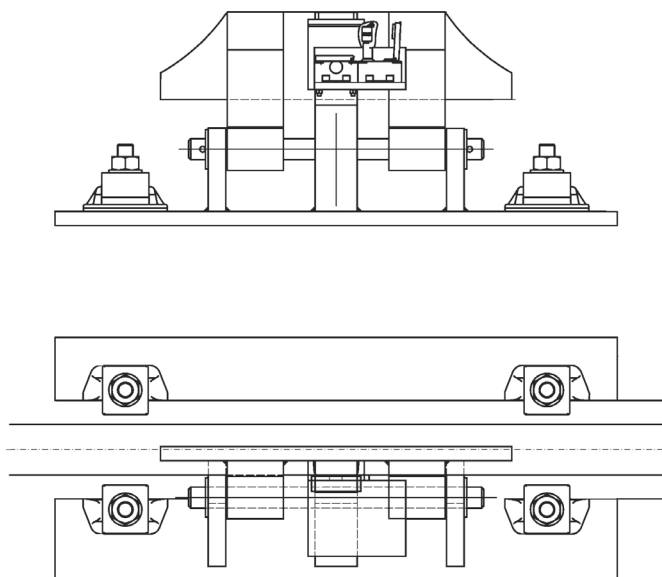
Lock:

Standard solution with MS range
(Example: Bolt lock NXO1P)

(refer to the MS datasheet for details)

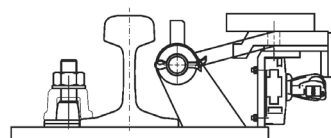


After locking the wheel, the key is released. To remove the wagon shoe, trap the key and pull the handle.

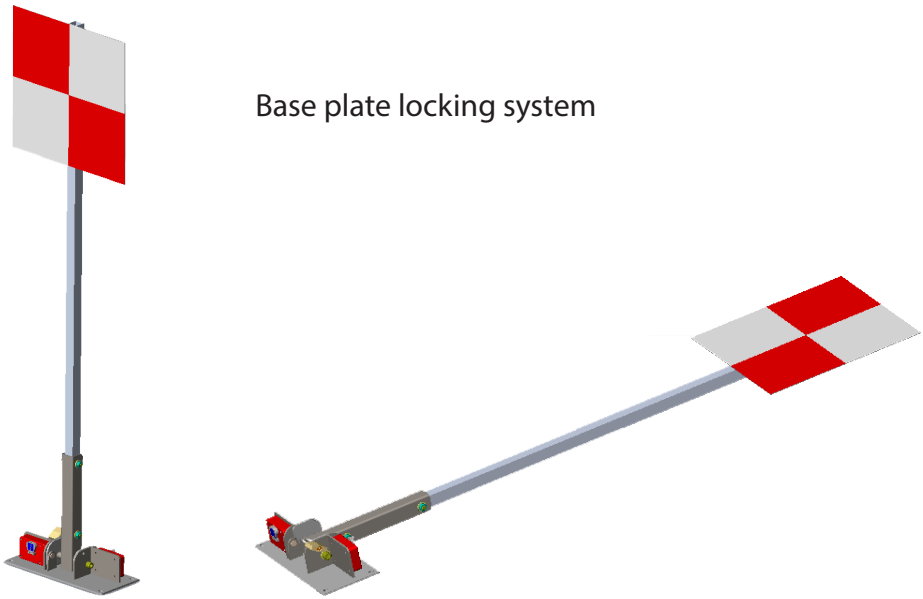


DIMENSION

According to the type of rail and the bogie diameter.



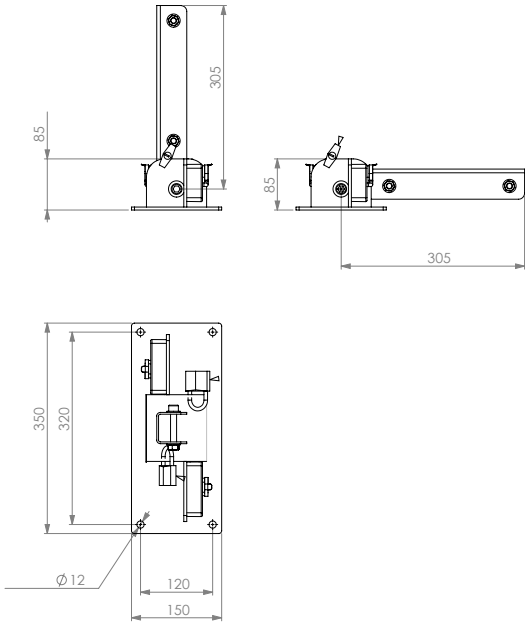
MARKER WITH SAFETY LOCKING



EXAMPLE



DIMENSION



KEY SWITCH UNIT

FUNCTION

Example: Key switch unit with "S" lock, used to safely manoeuvre junction operations. With or without Trayvou locks.

Without lock:

- Reference Saxby 1959

With lock type «S»

SNCF* symbol:

- Switch block with 1 key and 1 switching element

79440312

- Switch block with 1 key and 2 switching elements

79440313

- Switch block with 2 keys and 1 switching element

79440314

- Switch block with 2 keys and 2 switching elements

79440308

- Switch block with 3 keys and 1 switching element

79440573

- Switch block with 3 keys and 2 switching elements

79440574

*This product is used by the SNCF the moment it is equipped with a lock type «S». Therefore, the key switch unit is symbolised SNCF.



FEATURES

Material: Enclosure stainless steel 316

Lock: 1 to 3 key entries, "S" or MS type lock

Switch: 2NO-1Nc on operating key position

Top: Protective cover per key

KEY TRANSMITTER WITH REPEATER

FUNCTION

The key transmitter with repeater is used to :

- Trapped the key in a given location and release the duplicate key in other location
- For motorised operation with ending signal, to release the key from a remote location (example: a motorised switch catenary with transmitter in maintenance area)

Transmitter is identified by a special plate marked.

A circular and mechanical indicator with symbols shows the status of the transmitter.

With or without Trayvou locks :

Without lock :

Reference Saxby 674

- With lock type «S»
SNCF* symbol :
- Transmitter with 1 key
79471079
- Transmitter with 2 keys
79471080
- Transmitter with 3 keys
79471081

*This product is used by the SNCF the moment it is equipped with a lock type «S». Therefore, the key switch unit is symbolised SNCF.

FEATURES

Material : Enclosure stainless steel 316

Lock : 1 to 3 key entries, "S" or NS type lock

Switch : 1 or 2 switching elements

Options : Protective cover per key secured with a padlock



ELECTRICAL KEY TRANSMITTER

TR

FUNCTION

When two units installed in a remote position are associated, an electrical key transmitter can be used to eliminate the need to carry keys thus ensuring prompt and safe operation. Electric connection between each transmitter is required.

Description:

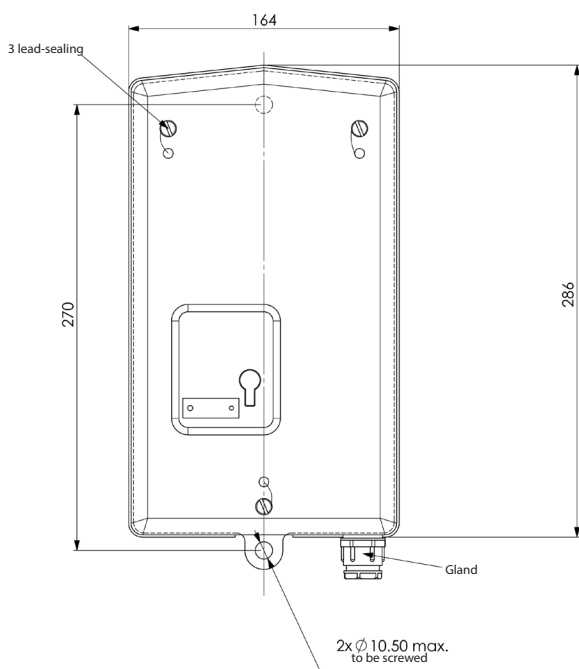
- A projecting bolt lock to receive the key or keys to be transmitted (maximum 4)
- An electrical magnet locking device and set of contacts actuated by the bolt lock, inhibiting key release if all conditions are not met.

• **Option :** 2 or 3 key entries

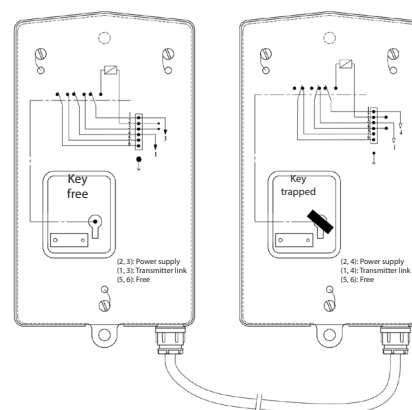
Electrical specifications = 24 VDC



DIMENSION



WIRING DIAGRAM



ANTI-VANDALISM CABINET FOR RAILWAY TRACK



FUNCTION

To secure equipment used on the rail network.

Anti-vandalism cabinet.

Small and Large version.





MAINTENANCE

INTERLOCK FOR MECHANICAL DEVICE

«MS»



MSOP15 is a lock available with 1 or more key entries (according to your application) used for the mechanical locking of switches, circuit breakers, etc..

• **Without electrical contacts**, this device does not require any wiring (Key transfer function)

• **With an electrical contact** in positive condition (exchange, latch or bolt), the lock MS allows to lock a control circuit or a feedback of information.

Positive condition: Opening of the circuit by switching the contact while turning the key

FEATURES

Material:

- Copper brushed aluminium for mechanisms
- Stainless steel lid 304

Temperature:

- - 25°C to 125°C (without electrical contact)
- - 25°C to 70°C (with electrical contact)

Finish: Passivation

Options:

- 400°C, not painted, without electrical contacts, without flip cap
- Concentric bolt
- Contact 2NO-2NF (IP66 for electrical contact only, sealing possible)
- NS22 - Switch function in key free position
- Without flip cap

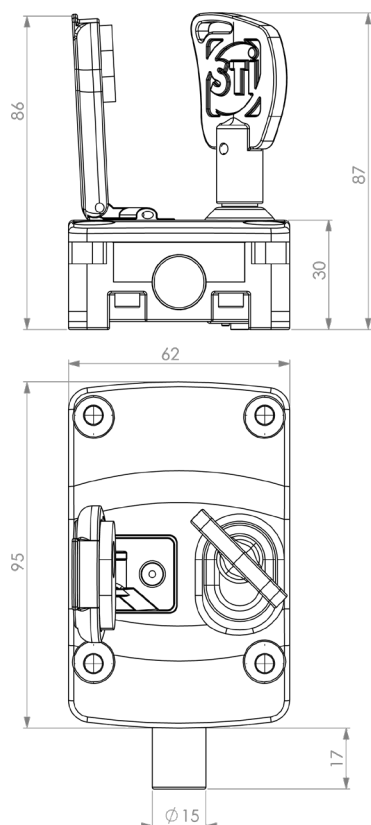
OPERATION

Key position defines the position of the bolt. The key rotation moves the bolt.

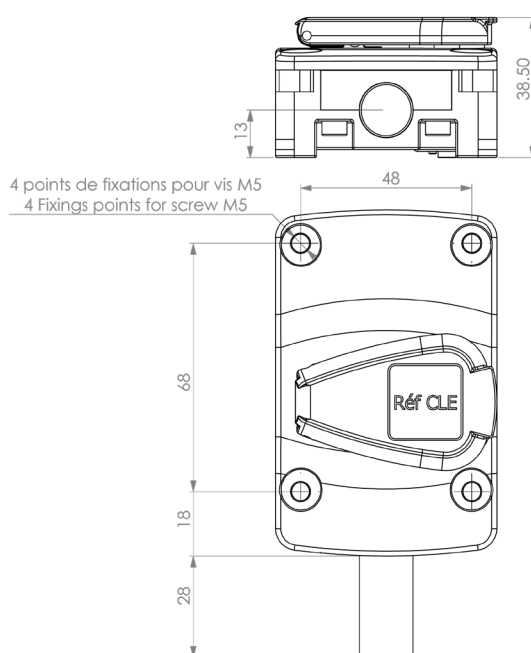
The electrical contacts allow the locking of control circuits and/or the information feedback.

- Key free / bolt extended
- Key trapped / bolt retracted

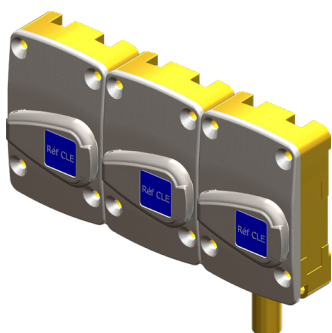
	Machine ON Key trapped	Mid Position Key turned	Machine OFF Key free
PRINCIPLE			



DIMENSION



OTHER EXISTING CONFIGURATIONS



- **MS00OP 15** : bolt lock with 3 key entries (release of 3 keys)
3 free keys – bolt extended

- **MS10OP15** : bolt lock with 3 key entries (Exchange function)
1 Key trapped - 2 Keys free - bolt extended

- **MS11OP15** : bolt lock with 3 key entries (Exchange function)
2 Keys trapped - 1 Key free - bolt extended

- **Option** : left or central bolt



- **MS0OP 15** : bolt lock with dual key entry (2 keys free)
2 free keys – bolt extended

- **MS1OP15** : bolt lock with 2 key entries (Exchange function)
1 Key trapped - 1 Key free - bolt extended

SOLENOID CONTROLLED KEY SWITCH ERTK WITH "S" KEY

This device is used to lock power and/or control circuits in open position up to 22Kw under 3x380V AC3, with authorisation of the end of cycle, robot, temporisation, null velocity, pick-up...

Lock is panel mounted with 1 or several key entries also available in an enclosure. It can be equipped with a rotary switch allowing the release or the trapping (by voltage output) of one or more keys after signal authorisation.

The electromechanical lock is equipped with:

- A solenoid for the locking or unlocking of the principal key.

Contact position is linked to the main key action (left key when there are several entries).

- Recall System of the main key locking in case of a solenoid malfunctioning (100% positive security).

- A green light power indicator.

- A pushbutton of voluntary operation and energy savings

- An internal wiring connector block.

- A mechanical override system with a key that is used in case of power failure

OPERATION

• SP version (key release):

After authorisation signal, the green indicator illuminates. To release the key, press the pushbutton (maximum 30s.).

• RP version (key trapped):

After authorisation signal, the green indicator illuminates. To trap the key, press the pushbutton (maximum 30s.).

The mechanical override system with a key to be used in the event of power failure (where there is no authorisation signal). It is necessary to keep this key in a protected place.



FEATURES

Number of key entries: 1 to 5

Barrel: Nickelled brass

Finish of front panel: Red (RAL 3000) polyester paint valid from 2 to 5 key entries

Temperature: - 20° to +70°C

Key entry: Stainless steel 304

Mounting: On panel

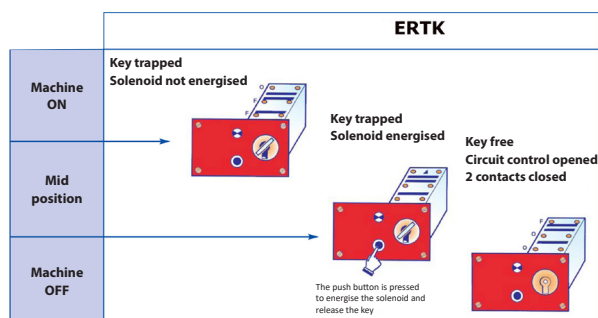
Protection: IP40 depending on type of mounting

Voltage: 24V, 48V, 110V or 220V AC or DC

Solenoid: Duty ratio 15%

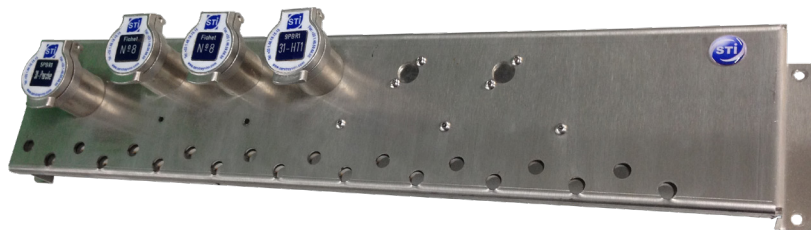
Wiring limit: Wiring connection on electronic card = 1.5mm² maximum

Switch: Number of contacts, power and connection, see table



KEY MANAGEMENT PANEL

PADLOCK HARROW



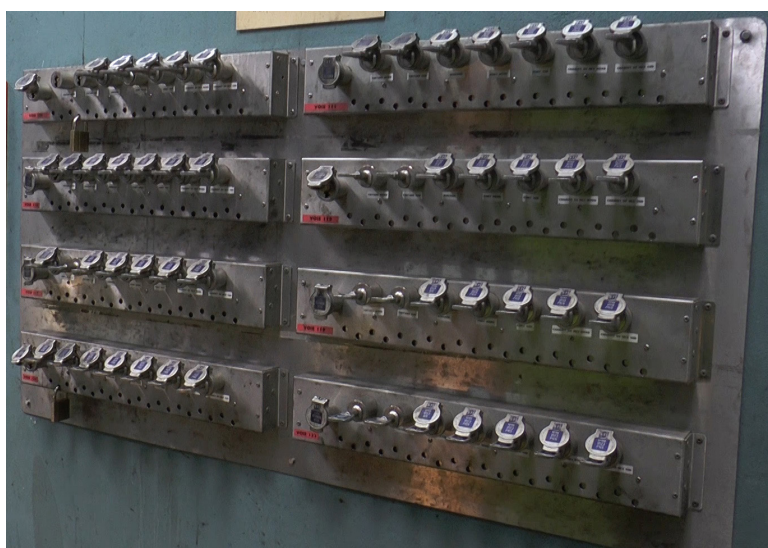
FEATURES

Multiclasp Exchange box allows to trap keys to ensure the safety in maintenance area.

With primary key trapped, all maintenance operators can release the area equipment keys.

The holes underneath key entries allow for several operators in the same area. Each operator traps his/her padlock.

All maintenance area keys and all padlocks must be released to retrieve the primary key.

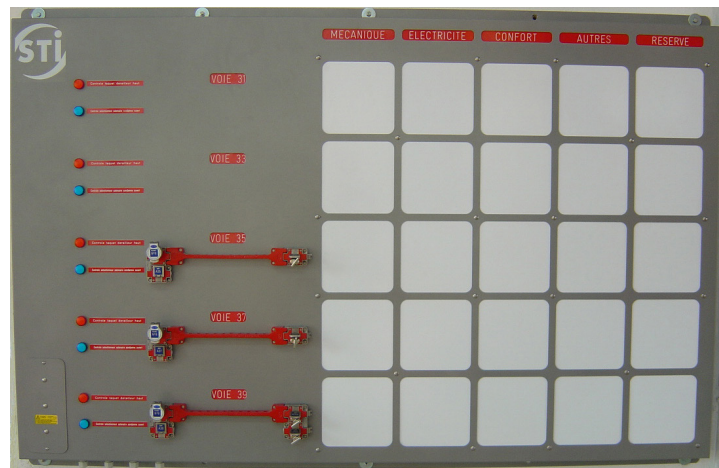


KEY MANAGEMENT PANEL

OPTICAL PANEL

FEATURES

Management panel for train lane operation.



PLATFORM ACCESS MANAGEMENT WITH GAP FILLER CONTROL SYSTEM



Operator traps the key and can manage mobile platform with Gap Filler.

This system can be installed inside or outside area.

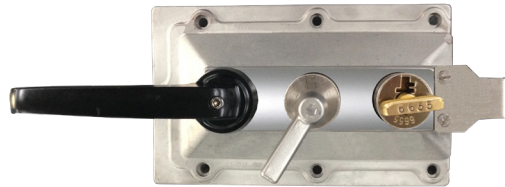


When workshop area is safe, the system **releases the key to open the gate lock.**





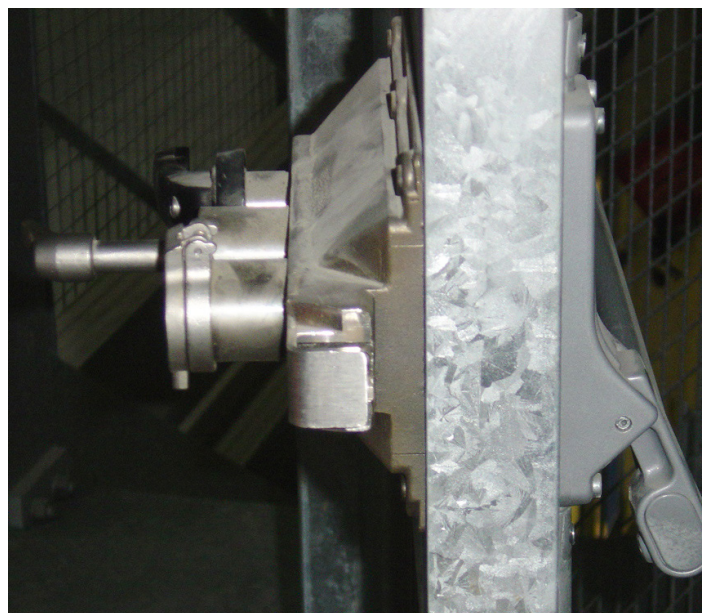
ROOF ACCESS PLATFORM KCEDIX



OPERATION

Locking roof platform area with crash-bar for emergency exit.

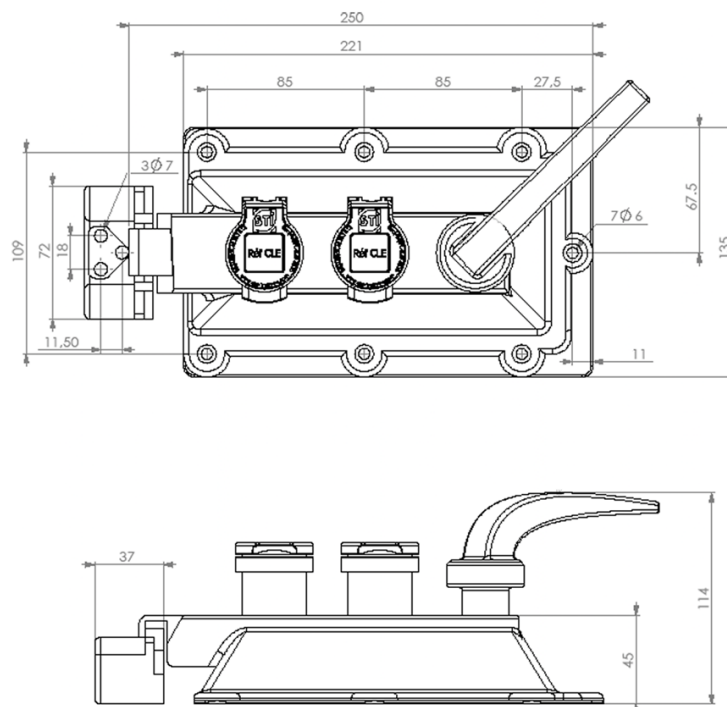
- Very long platform
- Single system with trapped key interlocking and crash-bar



FEATURES

Material: Brass / Stainless Steel

DIMENSION



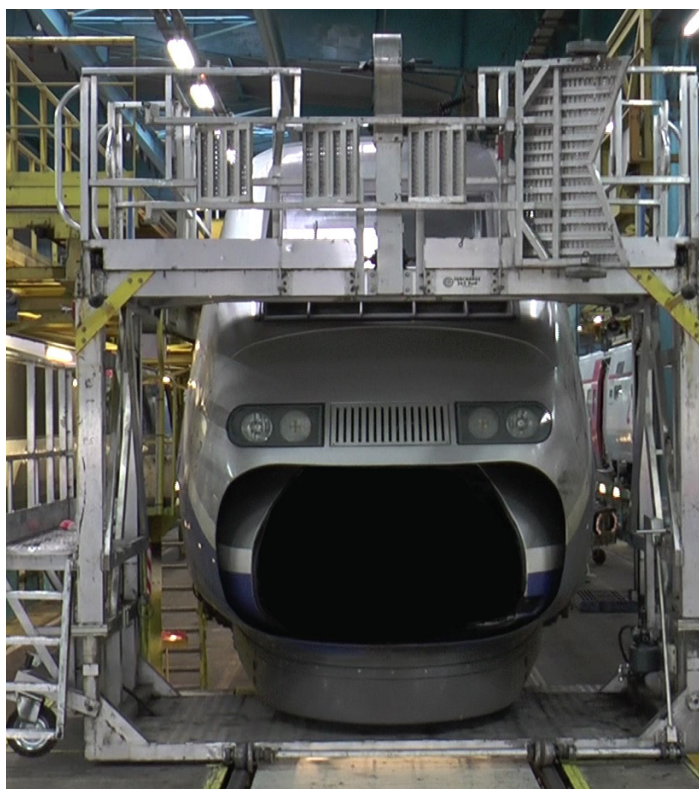


TRAIN HEAD PLATFORM

OPERATION

Securing the Head Platform.

Train Head platform is often used for different tracks. The trapped key system guarantees maintenance in safe conditions and lock head of train platform on one track



OVERHEAD CRANE

OPERATION

Overhead Craner management:

- Release the key only if the crane is in parking position (trolley and mattress at center, hook up)
- Limited use to single track or 2 tracks if 1 or all keys are trapped



OVERHEAD CRANE

ALTERNATE VARIANT



UNDERWHEEL LATHE

OPERATION

Management and access control to underwheel lathe with electromechanical trapped key system.



Example of successful collaboration with Windhoff company.

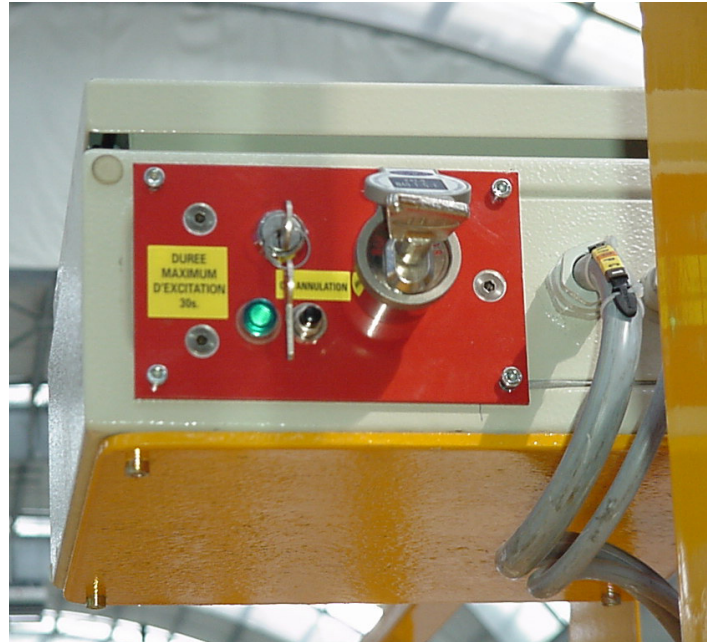


AUTOMATIC LIFTING TABLE

OPERATION

Maximum operating height without authorisation 1,20 m.

Hereafter, trapped key system allows to use the lifting table with catenary powered off.



RESTING BOX

SHORE SUPPLY

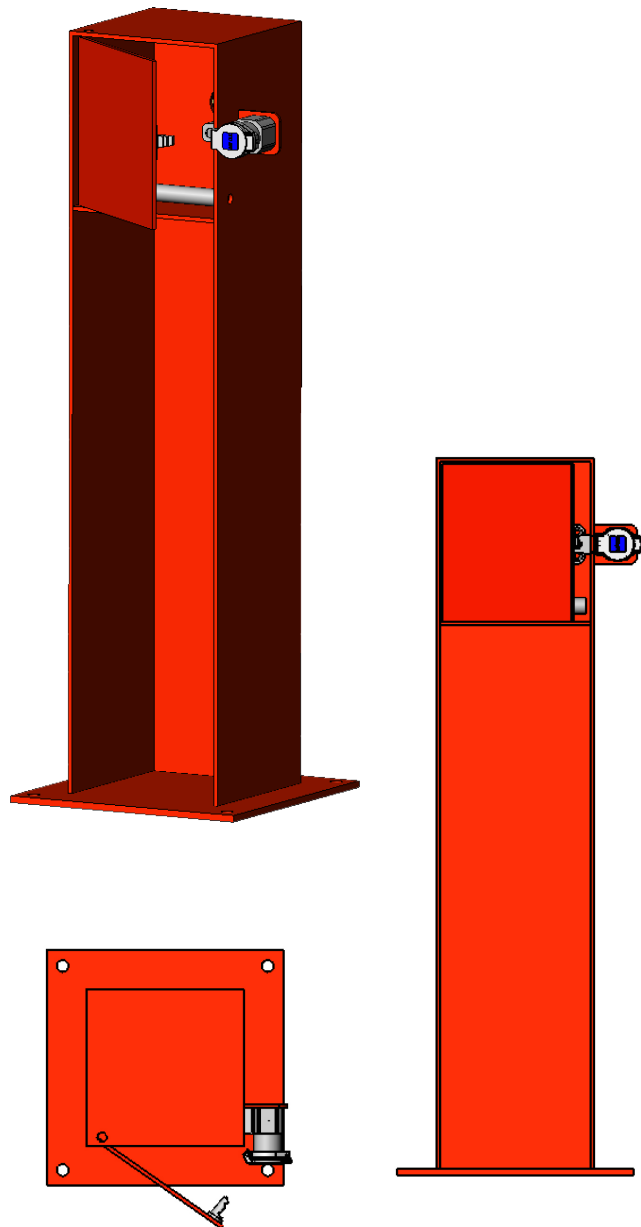
The shore supply cable / hose is secured in the resting box.

To release the hose for use, the resting box key is removed from a key exchange box once the overhead line (catenary) is isolated, and then the key inserted and turned in the resting box lock, trapping the key, releasing the latch allowing the hinged door to be opened and the hose removed.

The operation is reversed to secure the hose and release the key.

The resting box latch will not secure if box is empty preventing the key from being released until hose is secured.

- 12 Volt electrical outlet
- 4 000 Volt electrical outlet
- Also other voltages



ALTERNATIVE VARIANT

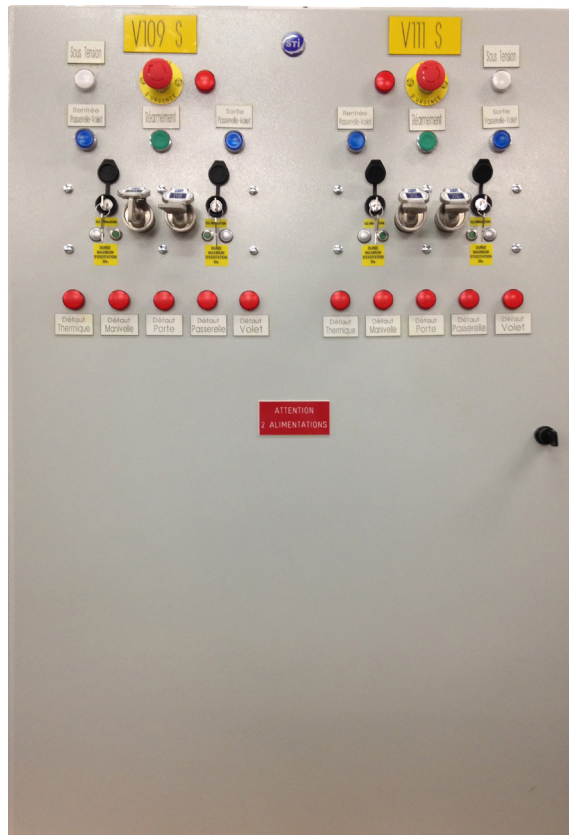


TURNKEY SOLUTIONS

STI implements a management cabinet for Gap Filler and for Roof Access.

All components are inserted into the Key Lock Cabinet in order to limit actions and provide a safe and ergonomic environment to operators.

This turnkey solution with PLC can integrate a counting people system.

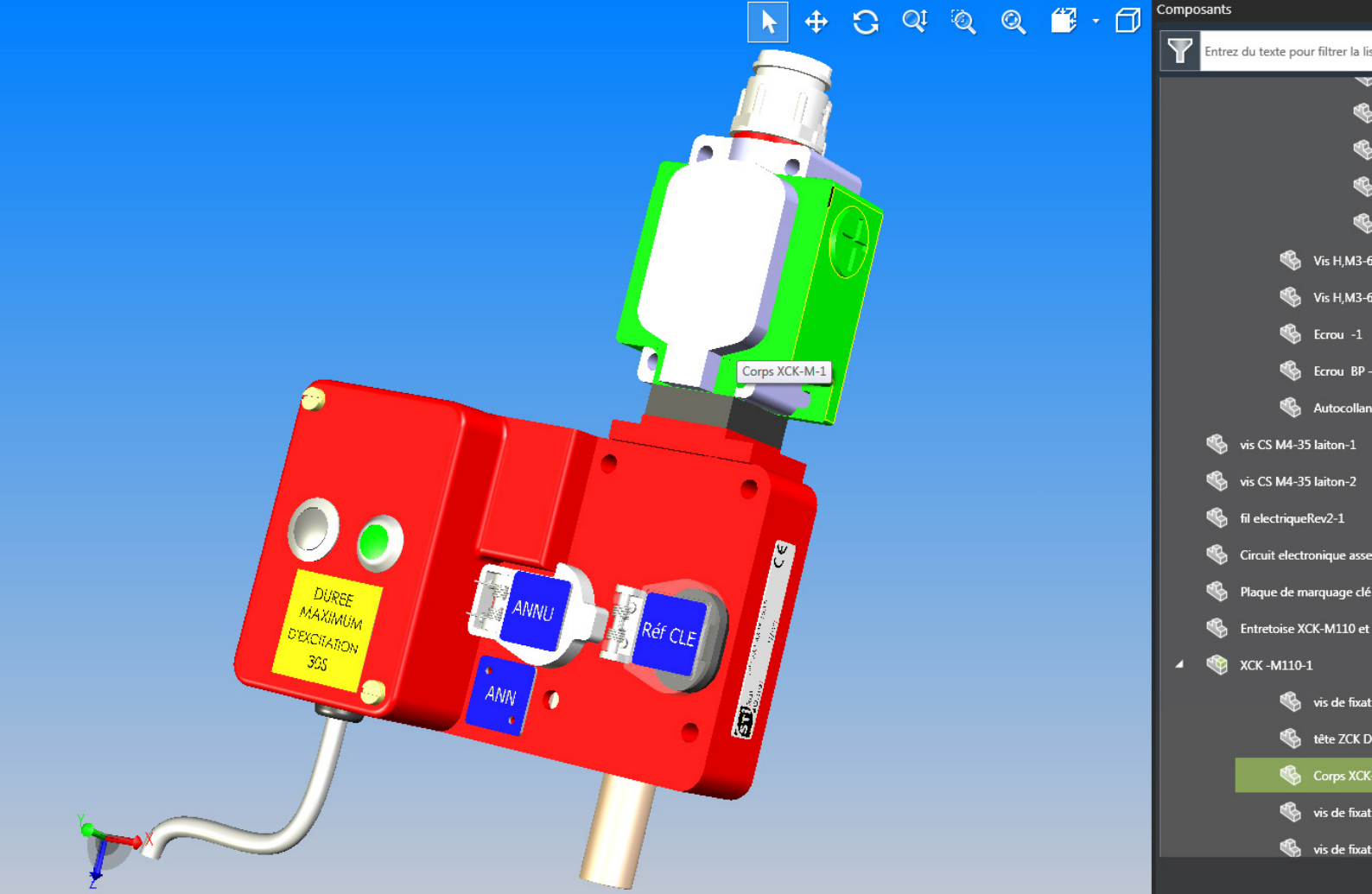


CUSTOM-MADE AND CUSTOMISED

Serv Trayvou Interverrouillage company develops some projects to find the best safety solution for each requirement.

All products can be adapted to existing facilities.





DESIGN OFFICE

PRE-SALES

ADVICES

DRAWINGS

3D

PROJECT SUPPORT

INSTALLATION

APAVE - CERTIFICATION

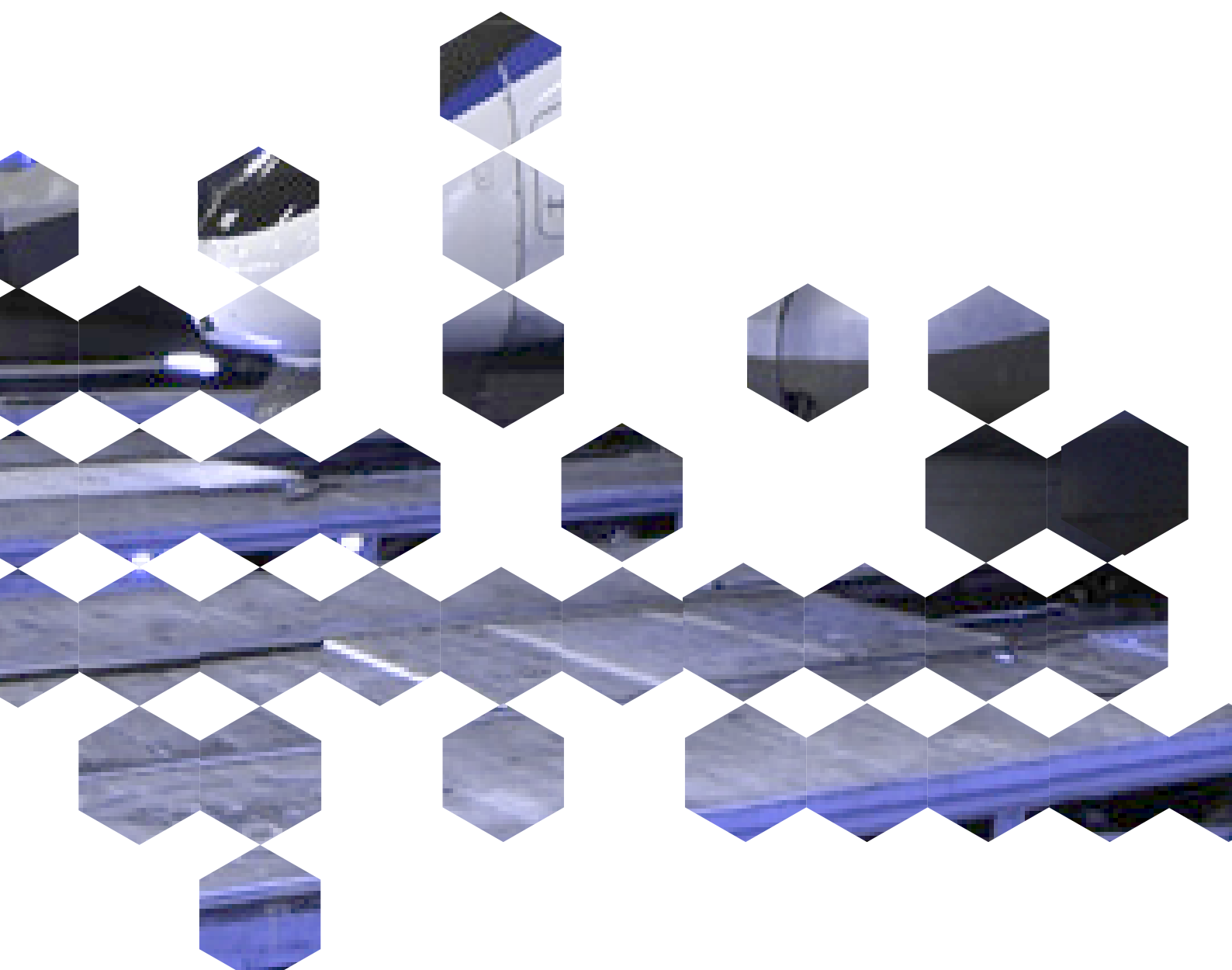
WORLDWIDE

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