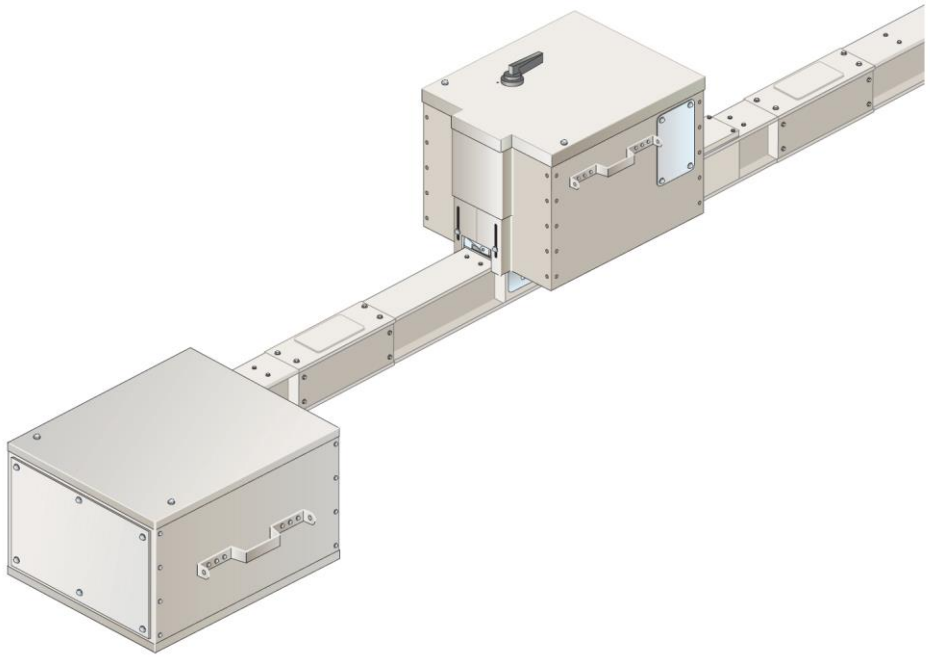
BX-E SYSTEM

INSTALLATION,USE AND MAINTENANCE INSTRUCTIONS

BX-E SYSTEM

COPPER and ALUMINIUM

800A UP TO 5000A RATINGS



CHARACTERISTICS OF BLINDOCOMPATTO® BX-E SYSTEM

- Compliance to international standards IEC 61439-6 and IEC 61439-1, and to all European and national standards derived from them (CEI EN 61439-6, CEI EN 61439-6); CE Marking.
- Voltage up to 1000 V , Frequency 50 / 60 Hz
- Protection degree IP55
- Conductor bars made either of 99.9% ETP pure copper EN 13601 or tin-plated aluminium alloy.
- Housing made of structural 1,5 mm thick zinc-plated painted steel.
- The protective conductor is the housing.
- Safety switch tap-off boxes, either fused or with circuit breakers.
- It is possible to remove individual elements of one line without removing the adjoining trunking lengths.
- Single-bolt joint torque: 60 Nm

BX-E SYSTEM®

SAFETY, STORING AND MAINTENANCE

ATTENTION – Read the following instructions carefully before beginning with the assembling operation

HEALTH AND SAFETY
The design and manufacturing features of Pogliano's products can guarantee a totally safe operating if the following instructions are followed most closely.

INSTALLATION – QUALIFIED PERSONNEL
The bus ducts must be installed under the supervision of competent staff, experienced in assembling industrial electrical equipments and adequately trained, according to PPeF Pogliano's assembling instructions.

HANDLING and LIFTING
Can be done either manually or by means of non metallic slingings for each element. (see figure 1).

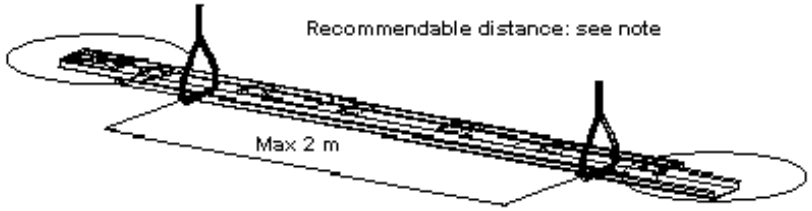


FIGURE 1
Note: the distance between the two lifting points must not be longer than 2m. These two points can't be the busduct's ends.

Mechanical shovel hoists can only be used when products are packaged in wooden cases, or when they have been laid on wooden pallets.

Storing: Straight elements have to be piled up (maximum 5 elements) one on the other, horizontally.

STORING ON THE PREMISES

All Pogliano products must be stored in dry, clean and dust-free premises, at ambient temperature before installation. Great temperature changes may cause condensation to settle, thus producing insulation leakage.
Any statement of IP protection degrees on Pogliano's catalogues only refers to equipments which have been installed correctly.

MAINTENANCE

When the run has been operating for **6 months**, it will be highly recommendable to check that the single-bolt joint is torqued properly (60 Nm).
For lines with tap-off boxes **every 12 months** it is recommendable to open and close the tap-off boxes lids, as well as to put in and then take out fuses. By doing this, it will be possible to prevent micro resistances from forming on contacts, which might cause overheating.
It is also advisable to check that the terminals of the cables have been torqued properly.
Finally it is recommendable, from time to time, to check the cables insulation conditions.

INSULATION TEST – ELECTRICAL CHECK

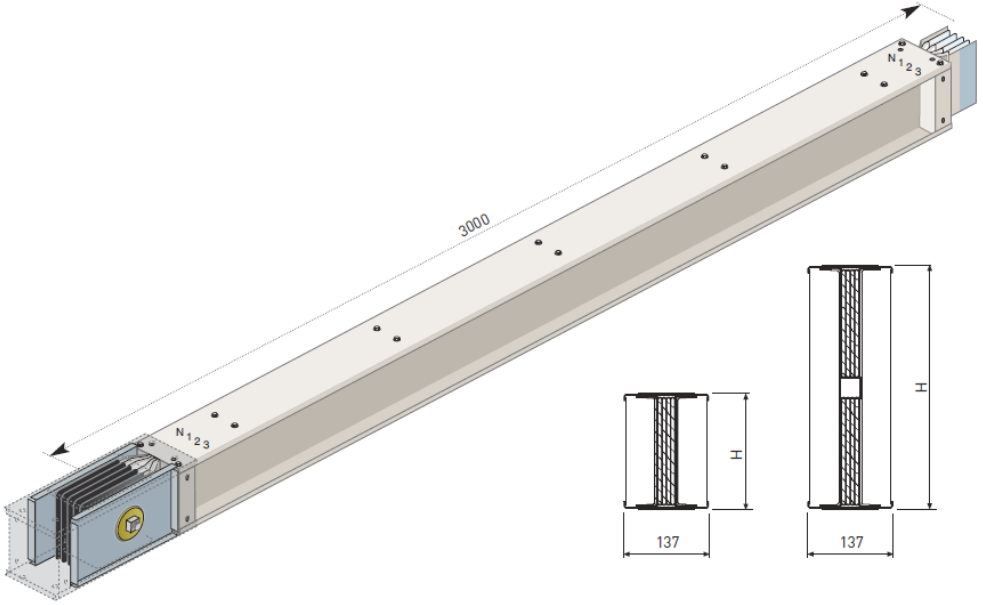
In areas where metal powders are present, and/or with a high humidity rate, insulation tests may have to be carried out every 12 months. After disconnecting the tap-off boxes loads, the resistance rates (measured on 3m-long elements) **mustn't be lower than 500 MΩ**.

BX-E SYSTEM®
SYSTEM ELEMENTS

ATTENTION: When the system consists of two ducts, these form a whole system, as they are packed together as a single structure. The different sections of the same phase are wired in parallel at every joint (every 3 meters for standard elements). This solution presents two important advantages, compared to other systems:

- Quick and easy installation (ducts are bracketed only once).
- Power distribution is balanced.

STRAIGHT ELEMENTS

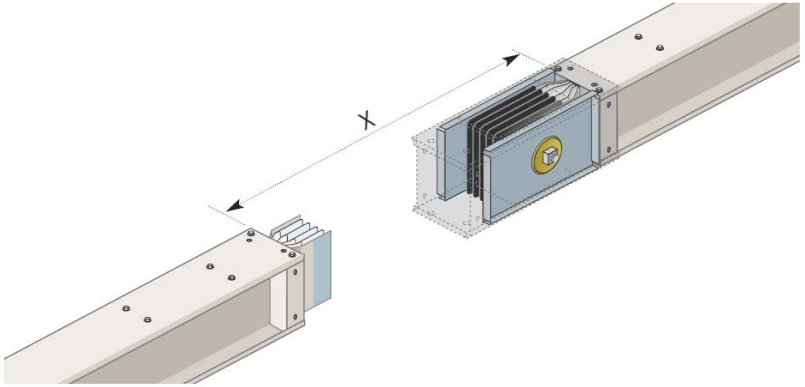


4 POLES, WITH NEUTRAL CROSS SECTION EQUAL TO PHASE

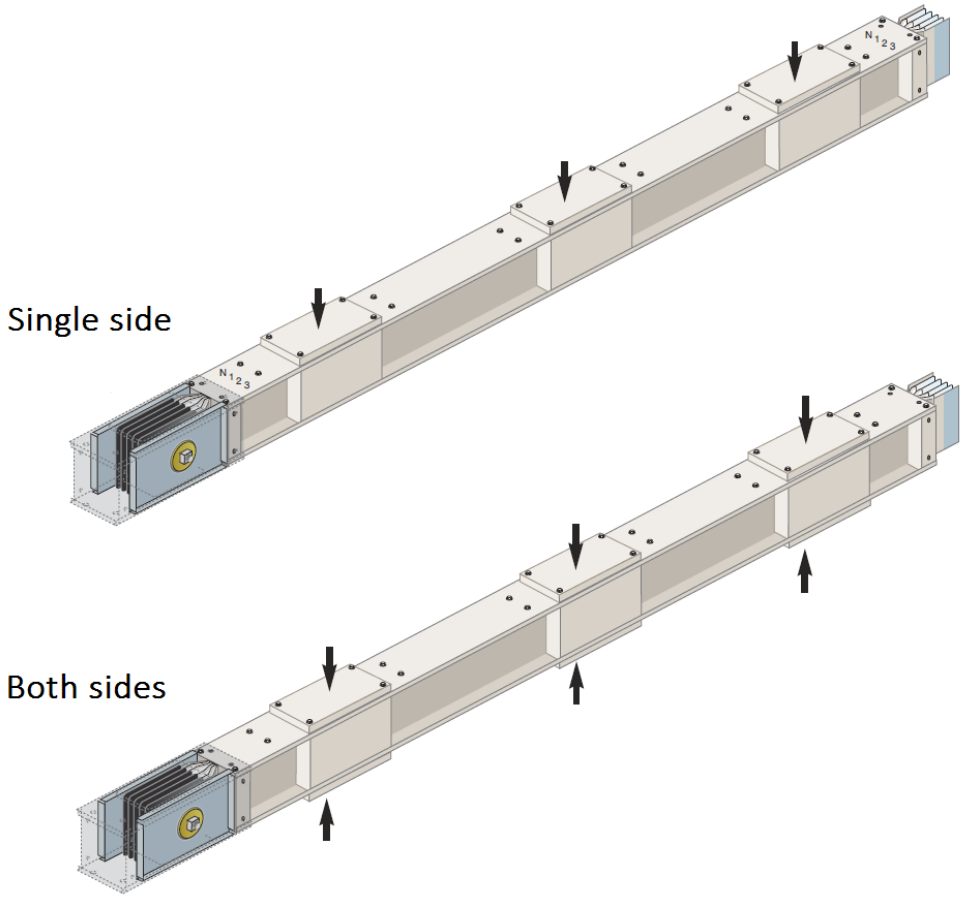
- Feeder
- Plug-in
- Systems realized in one-duct, two-duct.
- The protection degree guaranteed by the standard housing for both the plug-in and the feeder types is IP55.
- Plug-in and feeder type elements are interchangeable.

- The phases' positions (named as 321 N) are indicated on both ends of the duct (on the narrow side).
- The plug-in tap-off units, which can be used on elements of any Ampere rating, can be installed when the run is being operated.
- Tap-off units are polarized.
- The single-bolt joint ensures both the electrical and the mechanical junction of the bars (protective conductor included), between adjacent elements and the wired-in-parallel connection in multiple ducts.
- Every joint can be supplied with either 1, 2 or 4 bolts, according to the height of the duct's bars.
- The joint's inside is made of plates of different materials: copper silver-plated plates packed up in alternation with the insulating material plates.
- The verification of the joint's torque can be done when the line is being operated, using dedicated holes.
- All the duct's elements are supplied complete with their joints.
- Heat dissipation occurs by conduction through the housing's surface, while the housing's temperature-rise at rated current is always lower than 55°C, whatever the position in which the duct has been installed.
- The isolation materials will be up to F-class, with a rated temperature of 155°C.
- The dielectric test voltage is 3500V.

HOW TO MEASURE ELEMENTS TO CLOSE A GAP, E.G. WHEN A FEW ELEMENTS HAVE BEEN LEFT "OPEN" IN THE DRAWINGS.

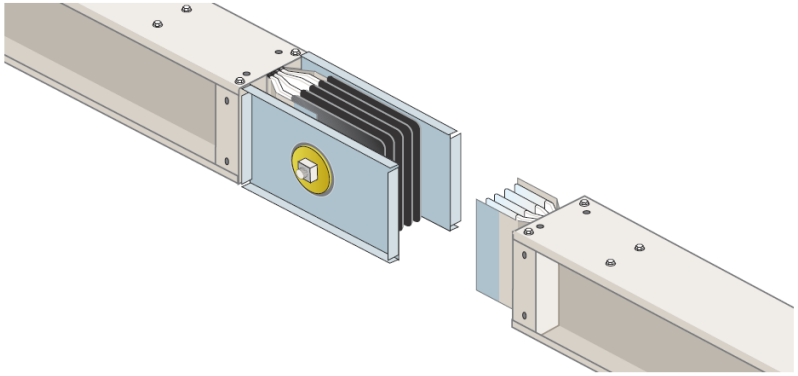


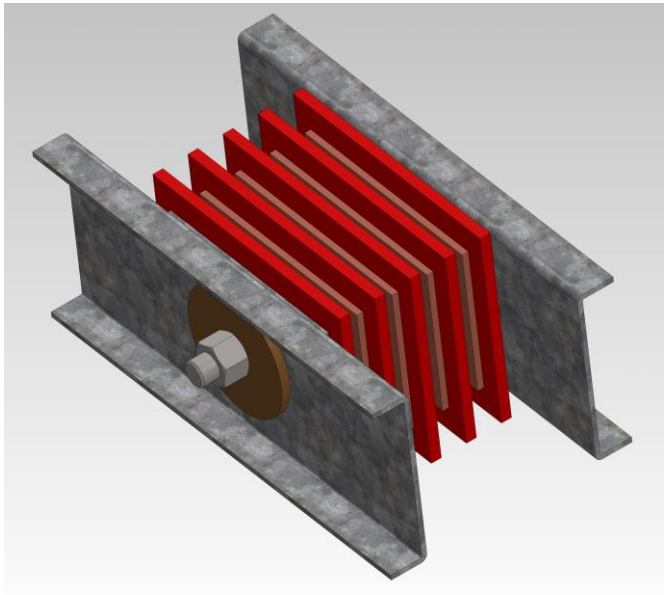
PLUG-IN BUSDUCT ELEMENTS



- The protection degree ensured by the plug-in's enclosure is IP55.
- Plug-in straight elements are perfectly interchangeable with feeder elements.
- The phases' position (321 N) is indicated at both ends (on the 137mm long sides).
- Provided with up to 6 openings on every element (max 3 per side, on both narrow sides) available for plug-in tap-off boxes installation.

JOINT



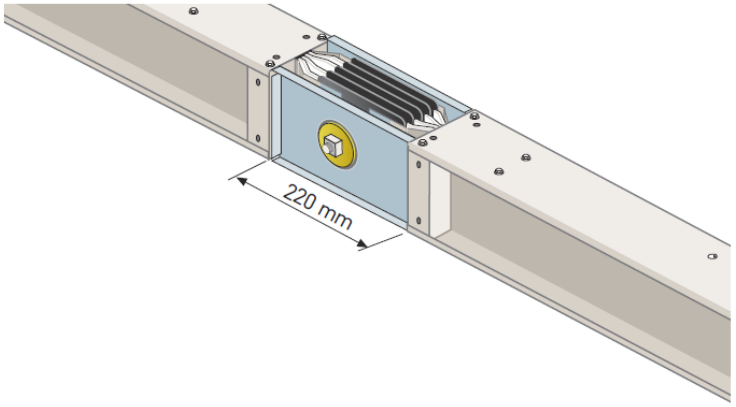


The bolts have to be tightened by means of a wrench, until the double head bolt breaks off (60 Nm).
Every joint can be supplied with either 1, 2 or 4 bolts, according to the height of the duct's bars.

INSTALLATION OF BX-E SYSTEM®
STRAIGHT and ELBOW ELEMENTS

When straight elements are installed flatwise, the neutral will have to be in lower position.
If any, follow the installation drawing and the numbered marked sequence.

- Remove the two safe-transport protection steel plates at the end of the element (no joint side) and waste them.
- Remove the joint's 4 covers.
- Take the joint off.
- Lay the two BX-E straight elements horizontally, allowing a 220mm distance between their enclosures.

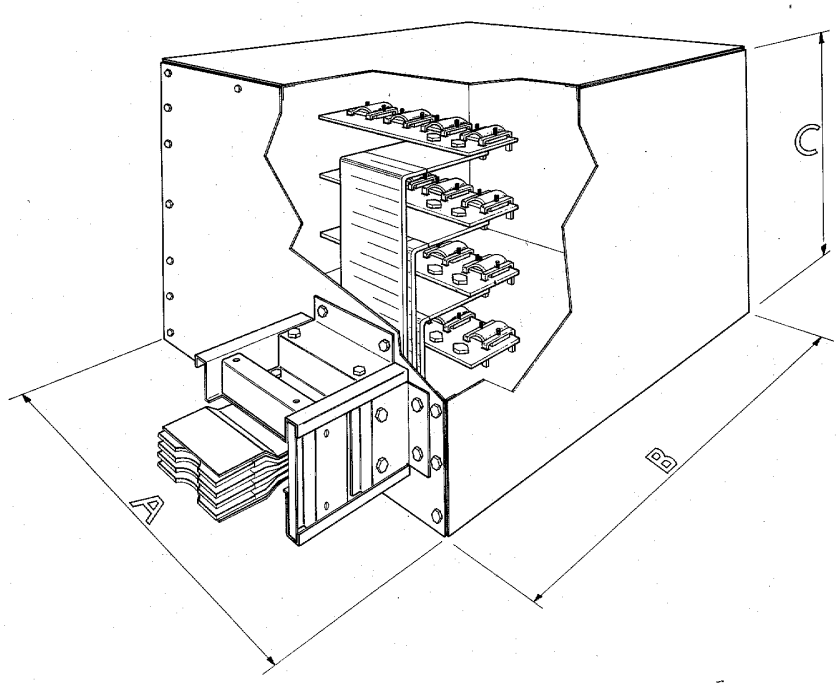


- Insert the joint, making sure that the two earth bars have been inserted into their respective slots.
- Put the 4 remaining covers on.
- Make sure that the single-bolt joint's nut has been torqued up properly: the bolts have to be tightened by means of a wrench, until the double head bolt breaks off (60 Nm).

INSTALLATION OF END FEED-IN BOXES

- They are supplied complete with joint.

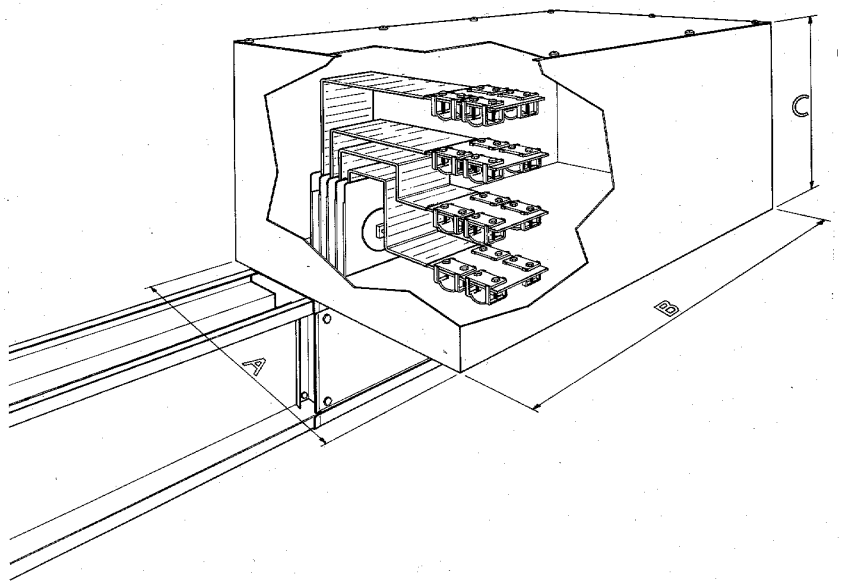
PLEASE REFER TO THE ELEMENTS INSTRUCTIONS ABOVE, PREVIOUS PAGE.



INTERMEDIATE FEED-IN BOX

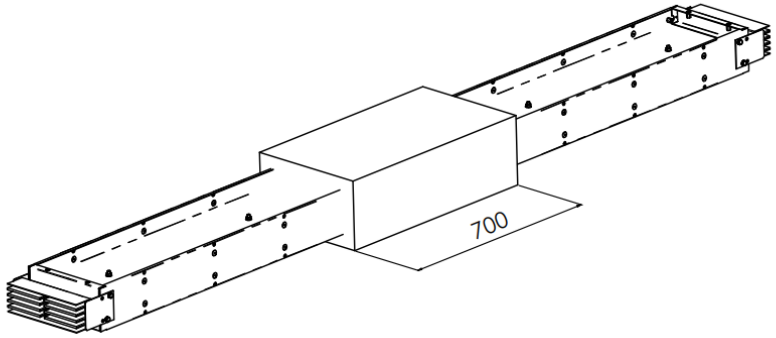
- It is used to feed the line from an intermediate point.
- The two sections of the line will be fed simultaneously.
- It is not possible to feed the two sections independently.
- They can be used to reduce voltage drop at the end of long runs.
- Their maximum Ampere rating is 2000A Al / 2500A Cu.

ATTENTION
The intermediate feed-in boxes can only be installed on the joint between adjacent elements.
The installation and disassembly of the feed-in boxes can only be done after turning **POWER OFF**.



FIRE BARRIERS

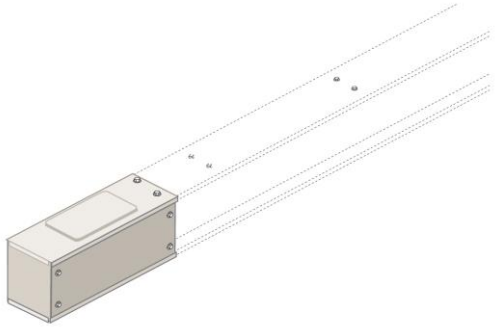
Fire barriers are designed for busbars running through walls and slabs.
They are placed on to the duct during the manufacturing process, and are realized by means of fire insulation between the housing and an additional steel-plate cover.



NOTICE : After crossing fire resistant walls or ceilings, any cavity must be sealed (by the installer) with material meeting current regulations for the required building fire resistance class.

END COVERS

They are used to cover the joint at the bottom of the line safely.
They are assembled by means of bolts.



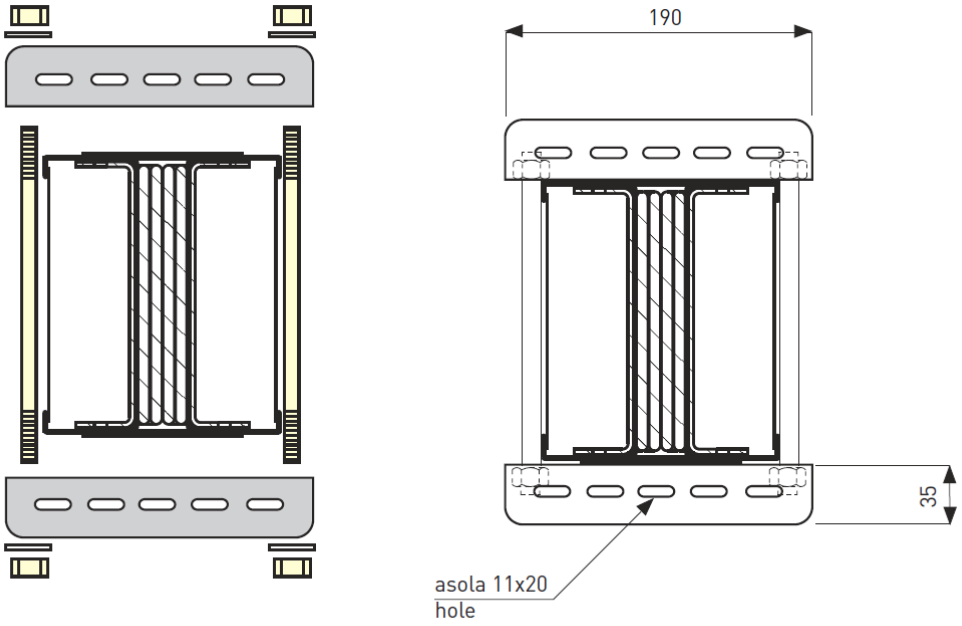
HANGERS

The busbar trunking can be installed either flatwise or edgewise, in horizontal or vertical runs, with standard hangers which have to be placed two by two at the following distances:

Flatwise installation: 2 m for single and double straight ducts

Edgewise installation: 3 m for single and double straight ducts

Rising main installation: 2 m for single and double straight ducts



BX-E SYSTEM® TAP- OFF BOXES

PLUG - IN TAP OFF BOXES RATING 125A ÷ 630A FOR PLUG – IN ELEMENTS

- They are equipped with MCCB breakers or isolators of European production.
- The range is available in the IP55 versions.
- They are of the safety switch plug type.
- The tap-off boxes rated up to 630A can be installed when power is on.
- They are supplied with a safety mechanical block which **prevents** them from being installed onto or uninstalled from the busduct when the switch is turned ON.
- They can be used on elements of any Ampere rating.
- Tap-off boxes are exclusively manufactured in the 3P+N+Pe version.

The isolator tap-off boxes set for the following knife-type fuses:

- Size 00 for tap-off boxes rated 125A
- Size 1 for tap-off boxes rated 250A
- Size 2 for tap-off boxes rated 315A
- Size 3 for tap-off boxes rated 400A – 630A

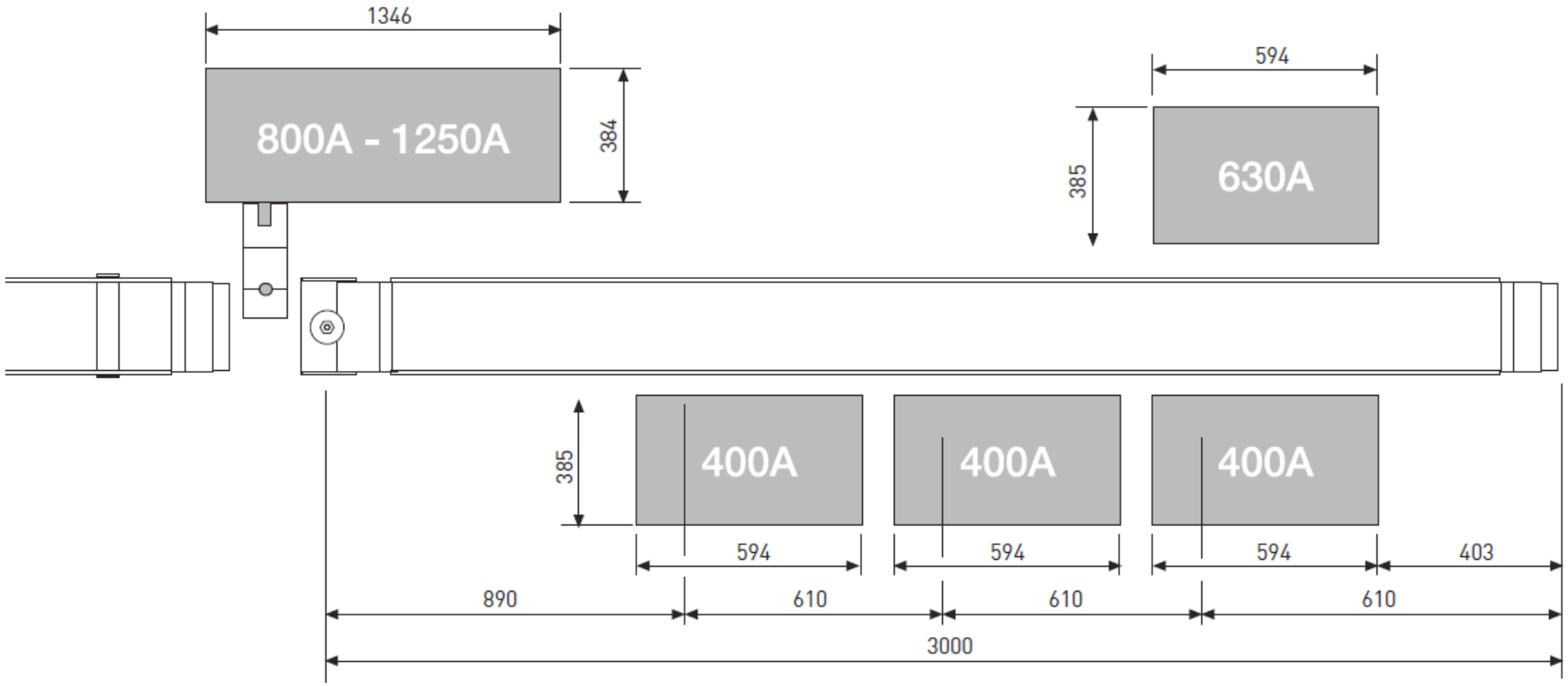
JOINT TAP - OFF BOXES RATING 250A ÷ 1250A

JOINT TAP-OFF BOXES MUST BE INSERTED OR UNINSTALLED WITH THE LINE OFF.

- They are equipped with MCCB breakers or isolators of European production.
- The range is available in the IP55 versions.
- They can be used on elements of any Ampere rating.
- Tap-off boxes are exclusively manufactured in the 3P+N+Pe version.

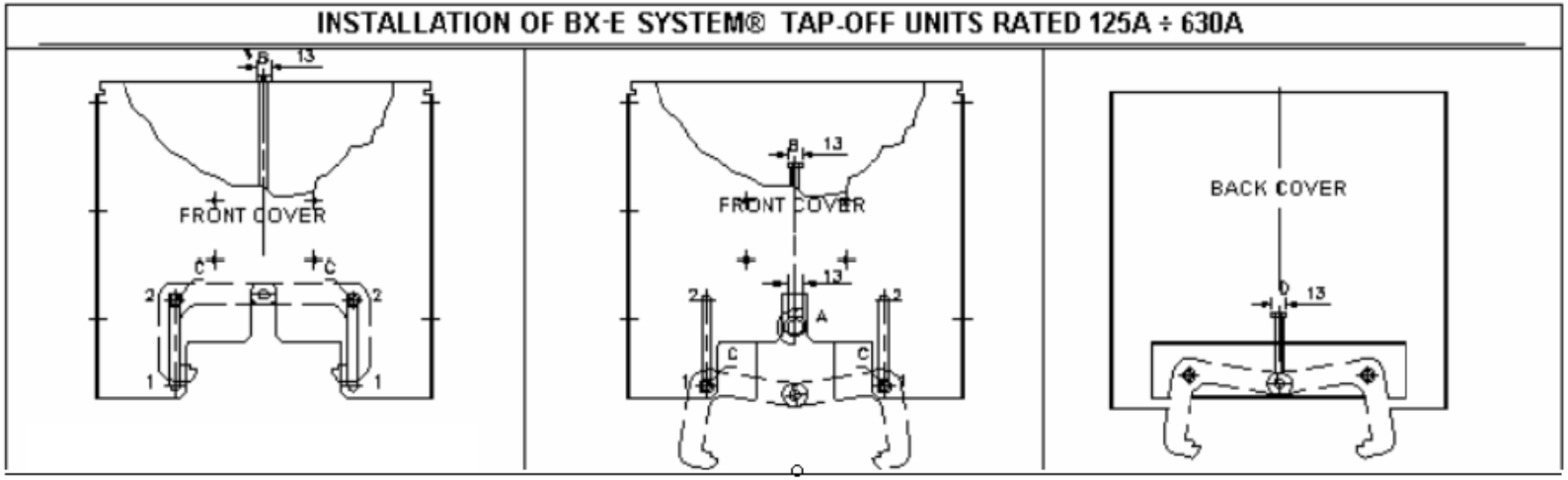
ATTENTION The 800A and 1250A TAP-OFF BOXES can only be installed on the JOINT, between adjacent elements.

INSTALLATION AND OVERALL SIZES OF TAP-OFF BOXES ON BUSDUCT



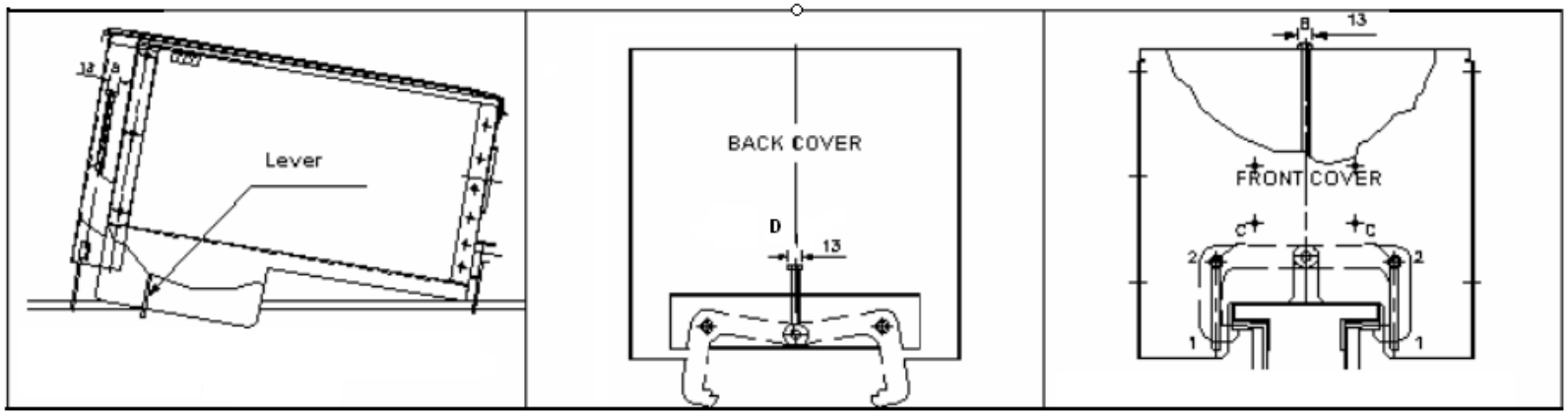
INSTALLATION OF PLUG IN TAP-OFF UNITS RATED 125A ÷ 630A

They can only be installed on plug-in busduct elements.



1. Remove the tap-off opening cover and open the tap-off cover.
2. Turn screw “B” until bolts “C” move from position 2 to position 1 and the front head’s clamps be open.
3. Turn screw “D” until the back head’s clamps be open.

Operation 1 - 2 - 3 must be carried out while the tap-off box is on the bench; following operations must be carried out when the tap-off box has been installed on the busduct.



4. Put the tap-off box onto the busduct near insertion opening and line up the position levers.
5. Unscrew “D” until the back head’s clamps be closed.
6. Unscrew “B” until bolts “C” move from position 1 to position 2 and the front head’s clamps be closed.

INSTALLATION OF JOINT TAP-OFF UNITS RATED 250A ÷ 1250A

The 800A and 1250A tap-off boxes can only be installed on the joint between adjacent elements.

ATTENTION:
The installation and disassembly of the joint tap-off boxes can only be done after turning POWER OFF.

- The joint covers have to be removed and the standard joint has to be taken off.
- Insert the joint (which is supplied along with the tap-off unit) into the junction.
- Open the tap off box cover and remove the steel bars-joint plate protection inside the tap-off box.
- Put the tap-off box onto the joint; the joint will thus have to slide inside the tap-off box.
- Close with a T-wrench the clamps at the sides of the box, turning the bolts 90°, anticlockwise.
- Position the joint's connection bars supplied with the box in the following way (in order to connect the joint with the breaker/isolator):
  - insert the two side bars into the joint;
  - insert the two central bars into the joint;
  - screw the bars to MCCB/isolator terminals;
  - refit the steel bars-joint plate protection inside the tap-off box;
  - torque the joint at 60 Nm .
- Screw in the joint protection covers.
- Close the tap-off box's cover.

ATTENTION: When ordering joint tap-off boxes, please remember to indicate the busduct type on which they are to be installed, and namely: Cu or Al.