

# ***Guide***

**live working tools**  
**L.V.**



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# L.V. live working



## Framework of conditions for working with live electricity

Working with live electricity is part of daily operations for transport network and energy distribution companies. It remains rare for all other types of facilities and is only necessary if working without electricity would be dangerous (hospital operating theatres, airfield lighting, furnaces etc.).



## Responsibilities and management chain

When working with live electricity, the **site manager** is responsible for all operations. He decides on the live work to be done, appoint staff, take the necessary measures for their safety and issue them with a written work order. Only the **site manager** may authorise, by written order, an external company to perform live work.

The **operations manager** grants access to the worksite for high voltage. He is responsible for the special operating conditions for the high voltage facility on which live work will be carried out.

He will also take part in preparing the work with the project manager.

The **project manager** will explain to his operator teams how the work will proceed. He must ensure the safety of these operators and the their teams; prepare suitable tools and ensure they are in a good condition.

**They must receive specific training for live work from an organisation approved by the Live Work Committee.**

# ***L.V. live working***

Each operator must ensure their own safety.

They must receive specific training for the live work from an organisation approved by the Live Work Committee.

Trained and authorised live-work personnel must perform this type of work regularly, or, failing this, they must have regular refresher training courses in training centres approved by the Live Work Committee. Heightened medical monitoring is compulsory.

## **Special training elements for live work**

For live work, only the **Live Work Committee** is authorised to:

- approve a training programme,
- approve working conditions,
- approve the technical documents for the special work tools,
- approve training bodies,
- approve suitable live work tools,
- approve laboratories for periodic live-work tool checks.

## **Introduction to live work methods**

There are three methods for live work:

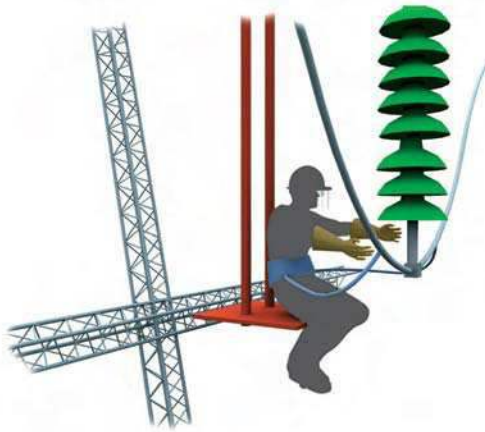
- The insulated gloves method involves **working at the contact** point whilst protecting oneself from bare live parts with insulating protective equipment, adjusted to the voltage level (insulating gloves etc.). This method is generally used between **50V** and **33kV**.



# ***L.V. live working***



- **Safe clearance work** involves constantly maintaining at least a minimum clearance distance using insulating poles for live work. This method is generally used between 400V and 225kV.



- **The bare hand method** is reserved for very high voltage and involves the worker taking on the power of the line part being worked while protecting the worker from parts of different potential and from earth.

This method is generally used between 225kV and 400kV.

Whatever method is used, it is vital to wear individual protective equipment which is appropriate to the voltage level.



# ***L.V. live working***

## **Atmospheric conditions**

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Weather conditions such as drizzle, spray drift, storms etc. play an important role and must be taken into consideration as these will affect the feasibility of the work and the risk assessment. Unfavourable weather conditions may damage the insulating protective equipment installed or may lead to overvoltage, or even affect visibility.

## **live cleaning operations**

Operators who perform live cleaning operations on electrical facilities must receive specific training with an approved training body and use equipment approved by the Live Work Committee.

1

## Personal protective equipment

### Helmets

EN 397 440 V  
EN 50365  $\Delta$  1000 V  
ANSI Z89.1/2003 20000 V  
Class E  
CE



MO-182/1-B

Safety industrial helmet.  
Electrical insulation 1000 V.

EN 166/EN 170

CE

MO-184

EN 166/EN 170/EN 397  
EN 50365  $\Delta$  1000 V

CE



MO-185

| Ref               | Weight (g) |                              |
|-------------------|------------|------------------------------|
| <b>MO-184</b>     | 170        | Face shield on MO-182 helmet |
| <b>MO-182/1-B</b> | 300        |                              |
| <b>MO-185-BL</b>  | 270        | With built-in face shield    |

### Insulating rubber gloves

- Our gloves are made of latex especially treated to obtain high dielectric characteristics.
- Composite gloves (CG-02) with mechanical properties (use of over-gloves not necessary).



CEI-60903  $\Delta$

CE

| Ref              | Weight (g) |                  |
|------------------|------------|------------------|
| <b>CG-02 (*)</b> | 300        | Composite gloves |
| <b>CG-05 (*)</b> | 150        | Latex            |
| <b>CG-10 (*)</b> | 220        | Latex            |

(\*) References to be completed by size A, B, C, D.  
Correspondence with standard sizes: A = 8, B = 9, C = 10, D = 11

### Pneumatic glove tester

For compulsory control  
of gloves before use.



| Ref           | Weight (g) |
|---------------|------------|
| <b>CG-117</b> | 600        |

### Safety glasses

EN 166/EN 170

CE



Protection against UV radiation, anti-scratch product treatments.

### Undergloves

Cotton undergloves.  
To be used with insulating  
rubber gloves.



CE

| Ref             |             |           |
|-----------------|-------------|-----------|
| <b>CG-80(*)</b> | * : H = Men | F = Women |

### Overgloves

Silicon grain leather, very flexible.  
Adhesive strap



EN 388

CE

| Ref             |
|-----------------|
| <b>CG-98(*)</b> |

### Carrying bag

Made from reinforced waterproof  
fabric for transport of rubber  
gloves.



| Ref          | Dim. (mm)      |
|--------------|----------------|
| <b>CG-36</b> | 60 x 180 x 400 |

### Insulating shoes



Out of flexible leather, sole anti perforation resisting heat and hydrocarbons.

| Ref           | Weight (g) | Sizes    |
|---------------|------------|----------|
| <b>MV-132</b> | 400        | 39 to 44 |

### Insulating boots



Made from elastomer canvas support, very flexible and resistant. Anti-perforation stainless steel sole and shell.

EN 345



| Ref           | Weight (g) | Sizes    |
|---------------|------------|----------|
| <b>MV-135</b> | 730        | 39 to 47 |

### Electrician suit



100% cotton.  
Without metallic parts  
(to protect from flash hazards)

| Ref           | Sizes    |
|---------------|----------|
| <b>MO-104</b> | 40 to 66 |

### Tool bag



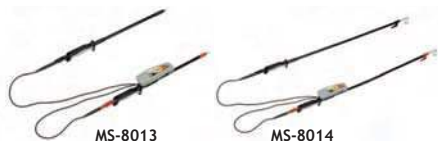
Leather tool bag with handle and shoulder strap. Reinforced bottom. With tool tray

| Ref          | Dim. (cm)    | Weight (kg) |
|--------------|--------------|-------------|
| <b>MO-36</b> | 20 x 25 x 45 | 4,8         |

## Voltage detection

### Contact probes for L.V. tester

For overhead lines (MS-8014) or installation et boîtiers de trottoirs (MS-8013).



| Ref            | Weight (g) | Dim. (mm)       |
|----------------|------------|-----------------|
| <b>MS-8014</b> | 400        | 50 x 130 x 1300 |
| <b>MS-8013</b> | 750        | 50 x 150 x 470  |

### Voltage multi-tester



Voltage detector (AC and DC) and a multi-tester.  
- check the voltage levels  
6 to 400 V with phase rotation.  
- check the continuity of disconnected electric circuit, phase rotation.  
- determine polarities.

CEI-61243-3  
CEI-61557-7  
EN 50110-1



| Ref             |                             |
|-----------------|-----------------------------|
| <b>MS-911/2</b> | Delivered with power supply |

# L.V. live working

## Individual equipment for working on pole

### Mechanical climbers for rectangular shaped concrete poles



Used for clamping onto poles 14 to 42 cm wide. Automatic locking of jaws by elastic cord.

| Ref            | Weight (Kg) |
|----------------|-------------|
| <b>MO-17-A</b> | 9           |

### Forged steel climbers for round wooden poles



Hard forged steel. Leather belts with cast buckles. Delivered by pair.

NFS-071-012

| Ref          | Weight (Kg) |
|--------------|-------------|
| <b>MO-25</b> | 2,8         |

### Anti-fall kit

#### Constraint tie

EN 795

CE

Tie in polyamid, L : 1,5 m.



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MO-52034</b> | 0,150       |

#### Pro electric full body fall arrest harness

EN 361

EN 358

CE



| Ref               | Weight (kg) |
|-------------------|-------------|
| <b>MO-563 (*)</b> | 3           |

\*S,M,XL.

#### Snap hooks

EN 362

CE

stainless steel.



| Ref          | Weight (kg) |
|--------------|-------------|
| <b>MO-54</b> | 0,154       |

#### Tether rope with energy absorber

EN 355

CE

L : 1,5 m



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MO-52020</b> | 0,590       |

#### Anti-fall grip

EN 353-2

CE

Delivered with 15 m of rope Ø 15 mm



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MO-68/15</b> | 2,90        |

#### Tether rope equipped with a tension device

EN 358

CE

L : 3 m



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MO-56009</b> | 1,425       |

### Working on pole kit



Composition : 1 MO-563 (\*), 1 MO-52020, 1 MO-52034, 1 MO-56009, 1 MO-68/15, 1 MO-54 and 1 carrying bag M-87-295

| Ref                   | Size    |
|-----------------------|---------|
| <b>KIT-HAUT-01(*)</b> | M ou XL |

\*To specify the size with the command

### INSULATED TOOLS IEC 60900 - EN 60900 1000 VOLTS

#### Phase tester insulated screwdriver

Signaling by intermittent lighting through ultra high intensity diode.  
Phase detection from 127 V A.C..

CE



| Ref             | Characteristics      | Weight (g) |
|-----------------|----------------------|------------|
| <b>MO-65222</b> | Flat blade 4 x 85 mm | 65         |

#### Flat blade screwdrivers

Chrome - molybdenum vanadium steel blade.



#### POZIDRIV screwdrivers

Chrome - molybdenum vanadium steel blade.



| Ref             | Characteristics        | Weight (g) |
|-----------------|------------------------|------------|
| <b>MO-65240</b> | n° 0 Blade 3 x 60 mm   | 25         |
| <b>MO-65242</b> | n° 1 Blade 4,5 x 80 mm | 50         |
| <b>MO-65244</b> | n° 2 Blade 6 x 100 mm  | 75         |
| <b>MO-65246</b> | n° 3 Blade 8 x 150 mm  | 150        |
| <b>MO-65248</b> | n° 4 Blade 10 x 200 mm | 230        |

#### PHILLIPS screwdrivers

Chrome - molybdenum vanadium steel blade.



| Ref                                   | Characteristics        | Weight (g) |
|---------------------------------------|------------------------|------------|
| <b>MO-65230</b>                       | n° 0 Blade 3 x 60 mm   | 25         |
| <b>MO-65232</b>                       | n° 1 Blade 4,5 x 80 mm | 50         |
| <b>MO-65234</b>                       | n° 2 Blade 6 x 100 mm  | 75         |
| <b>MO-65236</b>                       | n° 3 Blade 8 x 150 mm  | 150        |
| <b>MO-65238</b>                       | n° 4 Blade 10 x 200 mm | 230        |
| <b>MO-653-D Set of 3 screwdrivers</b> | n° 0, n° 2, n° 3       | 250        |

#### Universal pliers

Special steel, oil-hardened. Burnished head.

MO-66002



MO-66005



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66001</b> | 160                 | 210        |
| <b>MO-66002</b> | 180                 | 260        |

| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66003</b> | 200                 | 300        |
| <b>MO-66005</b> | 250                 | 510        |



### Flat nose pliers

Special tool steel, oil-hardened. Burnished head.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66300</b> | 145                 | 115        |
| <b>MO-66302</b> | 160                 | 160        |

### Bent snipe nose pliers

Chrome-vanadium steel. Burnished head.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66402</b> | 160                 | 160        |
| <b>MO-66404</b> | 200                 | 185        |

### Round nose pliers

Special tool steel, oil-hardened. Burnished head.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66202</b> | 160                 | 150        |

### Long nose pliers with side cutter

Special tool steel, oil-hardened. Burnished head.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66102</b> | 160                 | 145        |

### Plug pliers for preinsulated pin terminals

Chrome-vanadium steel for pin terminals 2,8/5/6,35 mm.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66105</b> | 200                 | 200        |

### Water pump pliers

Chrome-vanadium steel. Burnished head.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-66502</b> | 250                 | 410        |

### End cutting pliers

Special carbon steel, oil-hardened. Burnished head.



MO-67402



MO-67404

| Ref             | Overall length (mm) | Cutting capacity (mm)<br>Hard 140kg/mm <sup>2</sup> | Weight (g) |
|-----------------|---------------------|-----------------------------------------------------|------------|
| <b>MO-67401</b> | 140                 | Ø 1                                                 | 165        |
| <b>MO-67402</b> | 160                 | Ø 2                                                 | 210        |

| Ref             | Overall length (mm) | Cutting capacity (mm)<br>Hard 140kg/mm <sup>2</sup> | Weight (g) |
|-----------------|---------------------|-----------------------------------------------------|------------|
| <b>MO-67404</b> | 200                 | Ø 3                                                 | 450        |

### Side cutters

Special carbon steel, oil-hardened. Burnished head.



| Ref             | Overall length (mm) | Cutting capacity (mm)<br>Hard 140kg/mm <sup>2</sup> | Weight (g) |
|-----------------|---------------------|-----------------------------------------------------|------------|
| <b>MO-67101</b> | 140                 | Ø 1                                                 | 150        |
| <b>MO-67102</b> | 160                 | Ø 1,5                                               | 180        |
| <b>MO-67103</b> | 180                 | Ø 2,5                                               | 210        |

### Cable cutter

Chrome-vanadium forged steel, oil-hardened.



| Ref             | Overall length (mm) | Cutting capacity (mm <sup>2</sup> )<br>Cu Al | Weight (g) |
|-----------------|---------------------|----------------------------------------------|------------|
| <b>MO-67500</b> | 180                 | 2,5 16                                       | 420        |

### Cable cutters

Chrome-vanadium forged steel, oil-hardened.

**MO-67501**



| Ref             | Overall length (mm) | Cutting capacity maxi (mm) | Weight (g) |
|-----------------|---------------------|----------------------------|------------|
| <b>MO-67501</b> | 170                 | Ø 15                       | 285        |

**MO-67502**



| Ref             | Overall length (mm) | Cutting capacity maxi (mm) | Weight (g) |
|-----------------|---------------------|----------------------------|------------|
| <b>MO-67502</b> | 230                 | Ø 20                       | 520        |

### Ratchet cable cutters

For copper and aluminium cables only. Treated forged steel blade.



| Ref             | Cutting capacity (mm <sup>2</sup> )<br>Cu Al | Weight (g) |
|-----------------|----------------------------------------------|------------|
| <b>MO-67599</b> | 180 250                                      | 900        |
| <b>MO-67600</b> | 240 300                                      | 950        |



| Ref             | Cutting capacity (mm <sup>2</sup> )<br>Cu Al | Weight (g) |
|-----------------|----------------------------------------------|------------|
| <b>MO-67601</b> | 300 450                                      | 975        |

### Frontal ratchet cable cutter

Hardened steel for copper and aluminium cables only.



| Ref             | Cutting capacity (mm <sup>2</sup> )<br>Cu Al | Weight (g) |
|-----------------|----------------------------------------------|------------|
| <b>MO-67611</b> | 180 250                                      | 900        |

### Hacksaw

Protected hard forged steel. Blade length 300 mm.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-64502</b> | 450                 | 780        |

# L.V. live working

**Insulated tools 1000 Volts**

## Stripping pliers for L.V. cables

Aluminium casting plier.  
To strip L.V. twisted cables from 16 to 150 mm<sup>2</sup>.



| Ref             | Overall length (mm) | Weight (g) |
|-----------------|---------------------|------------|
| <b>MO-67304</b> | 220                 | 470        |

## Stripping pliers for L.V. cables

Aluminium casting plier. To strip L.V. twisted cable



| Ref             | Overall length | Capacity mm <sup>2</sup> | Weight (g) |
|-----------------|----------------|--------------------------|------------|
| <b>MO-67305</b> | 265            | from 16 to 150           | 650        |
| <b>MO-67306</b> | 270            | from 50 to 240           | 670        |

## Stripping knives

Delivered with pouch.

MO-61001



| Ref             | Characteristics    | Capacity mm <sup>2</sup> | Weight (g) |
|-----------------|--------------------|--------------------------|------------|
| <b>MO-61001</b> | Blade length 62 mm | 180                      | 110        |

MO-61002



| Ref             | Characteristics          | Capacity mm <sup>2</sup> | Weight (g) |
|-----------------|--------------------------|--------------------------|------------|
| <b>MO-61002</b> | Curve blade length 50 mm | 180                      | 110        |

## Wire stripping pliers

Chrome-vanadium steel. Burnished head.



| Ref             | Overall length | Capacity mm <sup>2</sup> | Weight (g) |
|-----------------|----------------|--------------------------|------------|
| <b>MO-67302</b> | 160            | 0,6 to 10                | 170        |

## Adjustable spanner

Special steel, oil-hardened.



| Ref             | Overall length (mm) | Maximum capacity (mm) | Weight (g) |
|-----------------|---------------------|-----------------------|------------|
| <b>MO-69002</b> | 210                 | 24                    | 295        |
| <b>MO-69003</b> | 250                 | 28                    | 450        |
| <b>MO-69004</b> | 310                 | 34                    | 550        |
| <b>MO-69005</b> | 385                 | 43                    | 1 350      |

## Reversible hexagonal ratchet handle

Special steel, oil-hardened.



| Ref             | Size (mm) | Weight (g) |
|-----------------|-----------|------------|
| <b>MO-69210</b> | 10        | 160        |
| <b>MO-69213</b> | 13        | 190        |
| <b>MO-69216</b> | 16        | 350        |
| <b>MO-69217</b> | 17        | 370        |
| <b>MO-69218</b> | 18        | 380        |
| <b>MO-69219</b> | 19        | 390        |

### Combination wrench

Special steel inserts insulated using one-piece injection.  
150 mm x 150 mm. 4 sockets - 6 sided.



| Ref             | Characteristics (mm) | Weight (g) |
|-----------------|----------------------|------------|
| <b>MO-68701</b> | 6-8-10-12            | 225        |
| <b>MO-68702</b> | 8-10-12-14           | 260        |
| <b>MO-68703</b> | 7-9-11-13            | 250        |
| <b>MO-68704</b> | 8-10-13-17           | 260        |

### Right angle hexagonal key wrench

Chrome-vanadium steel.



| Ref             | Characteristics   | Weight (g) |
|-----------------|-------------------|------------|
| <b>MO-69903</b> | 3 mm/83 x 123 mm  | 30         |
| <b>MO-69904</b> | 4 mm/84 x 124 mm  | 40         |
| <b>MO-69905</b> | 5 mm/84 x 126 mm  | 50         |
| <b>MO-69906</b> | 6 mm/85 x 126 mm  | 70         |
| <b>MO-69908</b> | 8 mm/87 x 128 mm  | 110        |
| <b>MO-69910</b> | 10 mm/87 x 130 mm | 150        |
| <b>MO-69912</b> | 12 mm/90 x 132 mm | 240        |

### Hexagonal spanner with T handle, 130 mm

Chrome steel.



| Ref             | Size (mm) | Weight (g) |
|-----------------|-----------|------------|
| <b>MO-68610</b> | 10        | 145        |
| <b>MO-68613</b> | 13        | 185        |

| Ref             | Size (mm) | Weight (g) |
|-----------------|-----------|------------|
| <b>MO-68614</b> | 14        | 220        |

### Insulated torque wrench 3/8"

Capacity : 8 to 54 Nm (ibF Ft : 5-40).

Linear graduation, english and french scales (ibF Ft and Nm).

Length : 325 mm. Tolerance : 4%



| Ref             | Characteristics (mm) | Weight (g) |
|-----------------|----------------------|------------|
| <b>MO-69050</b> | 8 to 54 Nm           | 790        |

### Open end spanners

Chrome-vanadium steel.



| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68008 | 8         | 40         |
| MO-68009 | 9         | 40         |
| MO-68010 | 10        | 45         |
| MO-68011 | 11        | 50         |
| MO-68012 | 12        | 60         |
| MO-68013 | 13        | 80         |
| MO-68014 | 14        | 100        |
| MO-68015 | 15        | 110        |

| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68016 | 16        | 120        |
| MO-68017 | 17        | 140        |
| MO-68018 | 18        | 160        |
| MO-68019 | 19        | 170        |
| MO-68020 | 20        | 185        |
| MO-68021 | 21        | 200        |
| MO-68022 | 22        | 220        |
| MO-68023 | 23        | 250        |

| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68024 | 24        | 260        |
| MO-68025 | 25        | 280        |
| MO-68026 | 26        | 300        |
| MO-68027 | 27        | 340        |
| MO-68028 | 28        | 360        |
| MO-68029 | 29        | 400        |
| MO-68030 | 30        | 500        |
| MO-68032 | 32        | 570        |

| Ref         | Characteristics                                   | Weight (g) |
|-------------|---------------------------------------------------|------------|
| MO-68008/19 | 8 open end spanners set 8/10/11/12/13/14/17/19 mm | 685        |

### Cranked ring wrench

Chrome-vanadium steel.



| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68107 | 7         | 35         |
| MO-68108 | 8         | 40         |
| MO-68109 | 9         | 45         |
| MO-68110 | 10        | 50         |
| MO-68111 | 11        | 65         |
| MO-68112 | 12        | 80         |
| MO-68113 | 13        | 100        |
| MO-68114 | 14        | 120        |
| MO-68115 | 15        | 150        |

| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68116 | 16        | 180        |
| MO-68117 | 17        | 190        |
| MO-68118 | 18        | 195        |
| MO-68119 | 19        | 200        |
| MO-68120 | 20        | 240        |
| MO-68121 | 21        | 260        |
| MO-68122 | 22        | 260        |
| MO-68123 | 23        | 270        |
| MO-68124 | 24        | 280        |

| Ref      | Size (mm) | Weight (g) |
|----------|-----------|------------|
| MO-68125 | 25        | 300        |
| MO-68126 | 26        | 360        |
| MO-68127 | 27        | 400        |
| MO-68128 | 28        | 440        |
| MO-68129 | 29        | 480        |
| MO-68130 | 30        | 500        |
| MO-68132 | 32        | 540        |

# L.V. live working

**Insulated tools 1000 Volts**

## Sockets 3/8" Long series

65 mm length. Chrome steel.



| Ref             | Socket (mm) | Weight (g) |
|-----------------|-------------|------------|
| <b>MO-69610</b> | 10          | 75         |
| <b>MO-69613</b> | 13          | 80         |
| <b>MO-69614</b> | 14          | 100        |
| <b>MO-69616</b> | 16          | 115        |

| Ref             | Socket (mm) | Weight (g) |
|-----------------|-------------|------------|
| <b>MO-69617</b> | 17          | 125        |
| <b>MO-69618</b> | 18          | 140        |
| <b>MO-69619</b> | 19          | 160        |
| <b>MO-69621</b> | 21          | 190        |

3

## 6 sided male hex Key / Socket 3/8"

Steel.



| Ref             | Socket (mm) | Weight (g) |
|-----------------|-------------|------------|
| <b>MO-69393</b> | 3           | 45         |
| <b>MO-69394</b> | 4           | 55         |
| <b>MO-69395</b> | 5           | 60         |
| <b>MO-69396</b> | 6           | 65         |

| Ref              | Socket (mm) | Weight (g) |
|------------------|-------------|------------|
| <b>MO-69397</b>  | 7           | 70         |
| <b>MO-69398</b>  | 8           | 70         |
| <b>MO-693100</b> | 10          | 80         |

## Sockets 3/8" U.S. Standard

Chrome steel.



| Ref             | Socket (mm) | Weight (g) |
|-----------------|-------------|------------|
| <b>MO-69735</b> | 3/8"        | 25         |
| <b>MO-69736</b> | 7/16"       | 30         |
| <b>MO-69737</b> | 1/2"        | 35         |
| <b>MO-69738</b> | 9/16"       | 35         |
| <b>MO-69739</b> | 5/8"        | 42         |
| <b>MO-69740</b> | 11/16"      | 50         |
| <b>MO-69741</b> | 3/4"        | 55         |
| <b>MO-69742</b> | 13/16"      | 60         |

## Tool bag

Black grained leather with handle. The interior includes : an all-purpose pocket, a separation which forms a tool tray and a fold-down tool tray.



| Ref          | Characteristics (mm) | Weight (kg) |
|--------------|----------------------|-------------|
| <b>MO-34</b> | 410 x 280 x 150 mm   | 3,2         |

### Sockets wrench sets

Chrome steel.

3



### Sockets 3/8" (9,53 mm) - 6 sided

| Ref       | Characteristics<br>(mm) | Weight<br>(g) |
|-----------|-------------------------|---------------|
| MO-69306  | 6                       | 25            |
| MO-69307  | 7                       | 30            |
| MO-69308* | 8                       | 30            |
| MO-69309  | 9                       | 30            |
| MO-69310* | 10                      | 35            |
| MO-69311  | 11                      | 35            |
| MO-69312* | 12                      | 35            |
| MO-69313* | 13                      | 45            |

\*Sockets composing the sets.

| Ref       | Characteristics<br>(mm) | Weight<br>(g) |
|-----------|-------------------------|---------------|
| MO-69314* | 14                      | 45            |
| MO-69315  | 15                      | 50            |
| MO-69316  | 16                      | 55            |
| MO-69317* | 17                      | 60            |
| MO-69318  | 18                      | 65            |
| MO-69319* | 19                      | 70            |
| MO-69321* | 21                      | 85            |
| MO-69322* | 22                      | 90            |

| Ref       | Characteristics<br>(mm) | Weight<br>(g) |
|-----------|-------------------------|---------------|
| MO-69323* | 23                      | 100           |
| MO-69513* | Reversible ratchet      | 600           |
| MO-69523* | Extension 130           | 124           |
|           |                         | 270           |
|           |                         | 220           |
|           |                         | 380           |
|           | <b>the set</b>          | <b>1250</b>   |

### Sockets 1/2" (12,7 mm) - 12 sided

| Ref       | Characteristics<br>(mm) | Weight<br>(g) |
|-----------|-------------------------|---------------|
| MO-69408* | 8                       | 60            |
| MO-69410* | 10                      | 60            |
| MO-69411  | 11                      | 60            |
| MO-69412* | 12                      | 70            |
| MO-69413* | 13                      | 70            |
| MO-69414* | 14                      | 70            |
| MO-69415  | 15                      | 75            |
| MO-69416  | 16                      | 75            |

\*Sockets composing the sets.

| Ref       | Characteristics<br>(mm) | Weight<br>(g) |
|-----------|-------------------------|---------------|
| MO-69417* | 17                      | 80            |
| MO-69418  | 18                      | 80            |
| MO-69419* | 19                      | 85            |
| MO-69420  | 20                      | 90            |
| MO-69421* | 21                      | 100           |
| MO-69422* | 22                      | 100           |
| MO-69423* | 23                      | 115           |
| MO-69424  | 24                      | 130           |

|                                  | Weight<br>(g) |
|----------------------------------|---------------|
|                                  | 160           |
| et                               | 600           |
|                                  | 250           |
|                                  | 435           |
| MO-69544                         | 520           |
| <b>Sockets composing the set</b> |               |
| MO-69408/23                      | <b>1500</b>   |

### Low voltage complete set



Ref

**MO-510-03** Composition of the set:

#### Personal equipment

**MO-186** 1 face shield  
**CG-98-C** 1 working gloves, size C

#### Voltage detector

**MS-911** 1 voltage multimeter

#### Insulation

**CG-05-B** 1 rubber gloves, size B  
**CG-36** 1 carrying bag for rubber gloves  
**MP-42/16** 1 insulating mat  
**MP-26-A** 10 insulating caps  
**MP-35/12** 1 insulating blanket  
**MP-39** 10 wood clamp for insulating blanket  
**MP-32/15** 6 line protectors  
**MP-19** 5 insulated adhesive tapes

#### Insulated tools

**MO-61001** 1 stripping knife  
**MO-67502** 1 cable cutter 230 mm  
**MO-68008/19** 1 open end spanners set with 8, 10, 11, 12, 13, 14, 17, 19 mm open end spanners

**MO-69903** 1 right angle hexagonal key wrench 3 mm  
**MO-69904** 1 right angle hexagonal key wrench 4 mm  
**MO-69906** 1 right angle hexagonal key wrench 6 mm  
**MO-751** 1 insulating folding rule  
**MO-69003** 1 adjustable spanner 250 mm  
**MO-66002** 1 universal pliers 180 mm  
**MO-66202** 1 round nose pliers 160 mm  
**MO-66502** 1 water pump pliers 250 mm  
**MO-67102** 1 side cutter 160 mm  
**MO-69308/23** 1 sockets 3/8" wrench set with 10 sockets : 8-10-12-13-14-17-19-21-22-23  
**MO-65205** 1 flat blade screwdriver 4 x 100  
**MO-65207** 1 flat blade screwdriver 6.5 x 150  
**MO-65209** 1 flat blade screwdriver 8 x 175  
**MO-65232** 1 Phillips screwdriver n° 1  
**MO-65234** 1 Phillips screwdriver n° 2  
**MO-65236** 1 Phillips screwdriver n° 3

### Complete export kit

Réf

**MO-510-03-EX** Composition of the set:

#### Personal equipment

**MO-11001** 1 tinted lenses safety glasses  
**CG-98** 1 working gloves

#### Voltage detector

**MS-911-EX** 1 voltage multimeter

**Insulation** Same **MO-510-03**

**Insulated tools** Same **MO-510-03**

### Insulating ladders

#### Fitting ladders



MP-402-MB

| Ref        | Overall length<br>(m) | Weight<br>(kg) |
|------------|-----------------------|----------------|
| MP-402-MB* | 2,10                  | 5,4            |
| MP-403-MB* | 3,00                  | 7,6            |
| MP-402-MI  | 2,10                  | 4,8            |
| MP-403-MI  | 3,00                  | 7,0            |
| MP-501-D   | 1,20                  | 3,3            |
| MP-502-D   | 2,10                  | 5,8            |
| MP-503-D   | 3,00                  | 8,3            |

\* Adjustable feet.

#### Insulating 2 section extension ladders, rope and pulley operated

| Ref      | Overall length<br>(m) | Weight<br>(kg) |
|----------|-----------------------|----------------|
| MP-506/2 | 6,05                  | 22,9           |
| MP-508/2 | 8,30                  | 35,4           |
| MP-509/2 | 8,86                  | 38,6           |
| MP-510/2 | 10,26                 | 43             |

MP-506/...



#### Insulator cover

Made of synthetic rubber orange color.

| Réf   | Field of use                                  | Weight (kg) |
|-------|-----------------------------------------------|-------------|
| MP-22 | Supporting insulator rubber hoods - Diam. 110 | 0,475       |
| MP-23 | Dead end insulator rubber hoods - Diam. 180   | 1,145       |



#### Bag for insulator covers

Nylon basket with reinforced bottom and rope handle. Strong waterproof. Steel suspension hook.



Ref  
MP-50

# L.V. live working

## Overhead bare networks

### Insulating blanket clamp

| Ref              |                   | Length (mm) |
|------------------|-------------------|-------------|
| <b>MP-41/10</b>  | Plastic           | 160         |
| <b>MP-41-530</b> | Rubber mini plier |             |

MP-41/10



MP-41/530



### Flexible rubber insulating tube

Section  $\Omega$ , thickness 3,3 mm.  
For conductors  $\varnothing$  16 mm maxi.



| Ref             | Length (m) | Weight (kg) |
|-----------------|------------|-------------|
| <b>MP-32/10</b> | 1,00       | 0,41        |
| <b>MP-32/15</b> | 1,50       | 0,62        |
| <b>MP-33</b>    | 3,00       | 1,23        |

### Lockable conductor protector

Assembly using notches.  
For conductors  $\varnothing$  20-22 mm.



| Ref          |                       | Weight (kg) |
|--------------|-----------------------|-------------|
| <b>MP-31</b> | Protector 5 m         | 0,6         |
| <b>MP-59</b> | Indent tool for MP-31 |             |

### Insulating flexible cover

MP-35/12  
MP-35  
MP-40



| Ref             | Size          | Weight (kg) |
|-----------------|---------------|-------------|
| <b>MP-35/12</b> | 1,3 x 12,5 m  | 6           |
| <b>MP-35</b>    | 1,3 x 25 m    | 11,8        |
| <b>MP-40</b>    | 1,3 x 20 m    | 24,8        |
| <b>MP-37</b>    | 90 mm x 25 m  | 0,800       |
| <b>MP-123</b>   | 360 x 660 mm  | 0,150       |
| <b>MP-123/1</b> | 500 x 900 mm  | 0,290       |
| <b>MP-123/2</b> | 800 x 1200 mm | 0,600       |



MP-37

MP-123  
MP-123/1  
MP-123/2

4

### Poles, accessories and tools

#### Sticks

Distance method.  
insulating tube in white colour epoxy resin and glass fiber composite material.



| Ref      | Length (m) | Weight (kg) |
|----------|------------|-------------|
| MG-116-S | 2          | 2,10        |
| MG-117-S | 2,60       | 2,30        |
| MG-125-K | 2,60       | 1,30        |
| MG-130   | 2,60       | 3,80        |

#### Measuring stick

Consisting of 2 elements of epoxy resin and glass fiber composite material.  
Thick : 0,80 mm.



| Ref      | Weight (kg) |
|----------|-------------|
| MG-208-K | 0,52        |

#### Pig tail hook

K end-pieces steel  
Dim. : 120 x 65 x 60 mm.



| Ref      | Weight (kg) |
|----------|-------------|
| MG-207-K | 0,210       |

#### Conductor brushes

Pivoting  
Dim. : 110 x 110 x 70 mm



| Ref      | Weight (kg)                             |
|----------|-----------------------------------------|
| MG-352-K | Reserved for aluminium conductors 0,250 |
| MG-353-R | Recharge for MG-352-K                   |
| MG-354-K | V-Shape brush 0,150                     |
| MG-358-K | Turk's head brush                       |

#### Conductor gauge

For conductors 3 to 16 mm Ø.  
Entirely insulated material  
270 x 35 x 12 mm  
- Delivered in bag.



| Ref      | Weight (kg) |
|----------|-------------|
| MG-535-K | 0,090       |

#### Pruning saw

Dim. : 485 x 70 x 36 mm.



| Ref        | Weight (kg) |
|------------|-------------|
| MG-292/2-K | 0,23        |

#### Stranded polypropylene rope



| Ref          | Length (m) | Breaking load (daN) |
|--------------|------------|---------------------|
| MO-492/100-L | 80         | 2940                |



# L.V. live working

## Overhead bare networks

### Live line connectors

RG-110-S1



RG-210-S1



| Ref              | Weight (kg) |
|------------------|-------------|
| <b>RG-110-S1</b> | 0,20        |
| <b>RG-210-S1</b> | 0,50        |

### Universal adaptor

Dim. : 75 x 55 x 33 mm.



| Ref           | Weight (kg) |
|---------------|-------------|
| <b>CI-6-K</b> | 0,14        |

### Insulating hanger

Dim. : 95 x 90 x 55 mm.



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MG-210-S</b> | 0,22        |

### Connector spanner

Dim. : L 30 mm - Thickness 120 mm .



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MG-380-D</b> | 0,16        |

### Insulated holding fork

Dim. : 140 x 55 x 33 mm.



| Ref              | Weight (kg) |
|------------------|-------------|
| <b>MO-204-AK</b> | 0,2         |

### Insulated connector spanner

Dim. : L 250 mm - Diam. 23 mm .



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MG-203-D</b> | 0,25        |

### Siliconed cloth



| Ref           |
|---------------|
| <b>MO-984</b> |

### Neutral grease



| Ref           | Weight (kg) |
|---------------|-------------|
| <b>MO-980</b> | 0,23        |

### Pole cleaning product



| Ref           | Weight (kg) |
|---------------|-------------|
| <b>MO-985</b> | 1 Litre     |

4

### Hoisting equipment

#### Hook for service rope

Body in alloy with security tongue.



| Ref           | Breaking load |
|---------------|---------------|
| <b>MO-303</b> | 200 daN       |

#### Insulating running-block

Laminated polyester.  
Retractable safety pawl  
Swivel-mounted hook  
Ø of groove-based pulley: 130mm.  
Ø maxi of rope : 24,5 mm.  
Breaking load : 1 000 daN.  
Hook opening capacity : 30 mm.



| Ref           | Weight (kg) |
|---------------|-------------|
| <b>MO-371</b> | 1,7         |

4

#### Insulating hoist

Insulating hoist including :  
2 blocks in insulating moulded material with pivoting cupro aluminium hook with eyelet ring.  
Block diameter at throat bottom : 60 mm.  
Hook opening capacity : 22 mm.



| Ref              | With rope | Breaking load (daN) |
|------------------|-----------|---------------------|
| <b>MO-346-S</b>  | 25 m      | 240 daN             |
| <b>MO-348-35</b> | 35 m      | 550 daN             |
| <b>MO-348-70</b> | 70 m      | 550 daN             |

#### Tools holder strap

Length : 1 m



| Ref           | Weight (kg) |
|---------------|-------------|
| <b>MG-792</b> | 0,67        |

#### Parallel jaws “Come-along”

Forged steel against corrosion.



| Ref                | Breaking load (daN) | Weight (kg) |
|--------------------|---------------------|-------------|
| <b>MO-331/04-B</b> | 500                 | 0,25        |
| <b>MO-331/08-B</b> | 1000                | 0,85        |
| <b>MO-331/10-B</b> | 1700                | 1,20        |
| <b>MO-331/16-B</b> | 3000                | 1,85        |
| <b>MO-331/26-B</b> | 3500                | 3,80        |

#### “TIRVIT” mechanical adjusters

Equipped with a chain and handle for fixed anchoring.



| Ref           | Force (daN) | Weight (kg) |
|---------------|-------------|-------------|
| <b>MK-40</b>  | 400         | 4           |
| <b>MK-60</b>  | 600         | 5,2         |
| <b>MK-100</b> | 800         | 6,2         |

# ARC FLASH

In many countries regulations have been established to protect workers from electrical shock and flash hazards in specific areas within which arc flash protection is required. These equipment must be used with insulating gloves and leather overgloves. Equipment up to 100 cal/cm<sup>2</sup> on request.



Available on our general catalogue

### Ladders, insulation and tools

#### Spliced ladders



| Ref        | Length<br>(m) | Weight<br>(kg) |
|------------|---------------|----------------|
| MP-402-MB* | 2,10          | 5,4            |
| MP-403-MB* | 3,00          | 7,6            |
| MP-402-MI  | 2,10          | 4,8            |
| MP-403-MI  | 3,00          | 7,0            |
| MP-501-D   | 1,20          | 3,3            |
| MP-502-D   | 2,10          | 5,8            |
| MP-503-D   | 3,00          | 8,3            |

\*Adjustable feet.

#### Insulating 2 section extension ladders, rope and pulley operated

| Ref      | Length<br>(m) | Weight<br>(kg) |
|----------|---------------|----------------|
| MP-506/2 | 6,05          | 22,9           |
| MP-508/2 | 8,30          | 35,4           |
| MP-509/2 | 8,86          | 38,6           |
| MP-510/2 | 10,26         | 43             |

MP-506/...



#### Insulating wedge



| Ref      | Dimensions (mm) |
|----------|-----------------|
| MG-221-D | 180 x 35 x 20   |

#### Phase separator



| Ref      | Weight (kg) |
|----------|-------------|
| MG-222-D | 0,25        |

#### Stranded polypropylene rope



| Ref          | Length<br>(m) | Breaking load<br>(daN) |
|--------------|---------------|------------------------|
| MO-492/100-L | 80            | 2940                   |

### Insulating blanket clamp

| Ref       | Length (mm)       |
|-----------|-------------------|
| MP-41/10  | Plastic 160       |
| MP-41-530 | Rubber mini plier |

MP-41/10



MP-41/530



### Voltage take-off punch



| Ref   | Capacity (Ø mm) | Weight (kg) |
|-------|-----------------|-------------|
| MS 62 | 5,6 - 14,4      | 0,015       |
| MS 63 | 12-31           | 0,05        |

### TTD

Sicame BT connector.



Ref  
TTD 2710 X

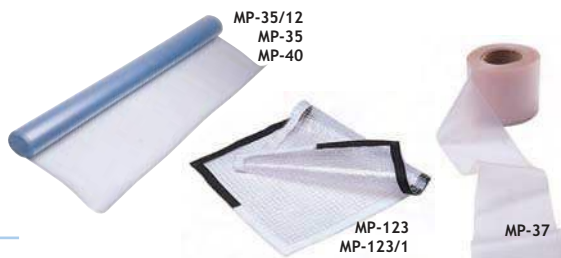
### Insulating lever

Synthetic bar. Tool for preparation of the cables underground.



| Ref      | Length (cm) | Weight (g) |
|----------|-------------|------------|
| MO-218-D | 19          | 80         |

### Insulating flexible cover



MP-35/12  
MP-35  
MP-40

MP-123  
MP-123/1  
MP-123/2

MP-37

### Insulated adhesive tapes



Ref  
MP-19 set with 5 tapes

| Ref      | Length        | Weight (kg) |
|----------|---------------|-------------|
| MP-35/12 | 1,3 x 12,5 m  | 6           |
| MP-35    | 1,3 x 25 m    | 11,8        |
| MP-40    | 1,3 x 20 m    | 24,8        |
| MP-37    | 90 mm x 25 m  | 0,800       |
| MP-123   | 360 x 660 mm  | 0,150       |
| MP-123/1 | 500 x 900 mm  | 0,290       |
| MP-123/2 | 800 x 1200 mm | 0,600       |

### Hoisting equipment

#### Bracket with strap for stringing block with hook

Made in plastic.  
Rotating safety hook.

MO-371/100



MO-371/1

| Ref        | Maximum load (daN) | Weight (kg) |
|------------|--------------------|-------------|
| MO-371/01  | 800                | 1,5         |
| MO-371/100 | Strap's bracket    | 2,2         |

#### Hook for service rope

Body in alloy with  
security tongue.



| Ref    | Maximum load |
|--------|--------------|
| MO-303 | 200 daN      |

### Insulating hoist

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| Ref       | with rope | Maximum load (daN) |
|-----------|-----------|--------------------|
| MO-346-S  | 25 m      | 240 daN            |
| MO-348-35 | 35 m      | 550 daN            |

| Ref       | with rope | Maximum load (daN) |
|-----------|-----------|--------------------|
| MO-348-70 | 70 m      | 550 daN            |

### Automatic come-along



| Ref         | Maximum load (daN) | Weight (kg) |
|-------------|--------------------|-------------|
| MO-331/13-P | 600                | 1           |
| MO-331/22-P | 400                | 1           |
| MO-331/38-P | 800                | 3,775       |

### "TIRVIT" mechanical adjusters

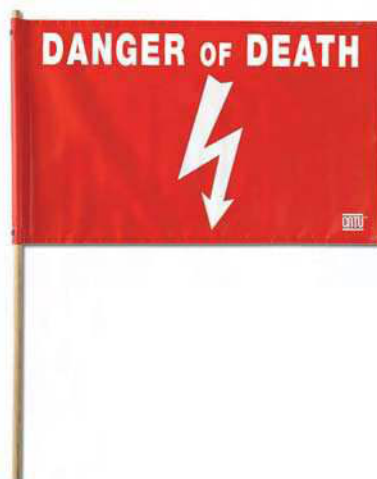
Equipped with a chain and handle  
for fixed anchoring.



| Ref    | Force (daN) | Weight (kg) |
|--------|-------------|-------------|
| MK-40  | 400         | 4           |
| MK-60  | 600         | 5,2         |
| MK-100 | 800         | 6,2         |



# WARNING AND DELINEATING



**LIVE WORKING  
DANGER OF DEATH**



Available on our general catalogue



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### Insulation, tools and accessories

#### Live line cable identifier

Delivered in ABS cases with two connection cables and an ammeter clamp.



| Ref    | Dim.<br>(mm)    | Weight<br>(kg) |
|--------|-----------------|----------------|
| MX-400 | 510 x 465 x 216 | 10,6           |

#### Conductor insulating end-cap



| Ref     | Diameter<br>(mm) | Length<br>(mm) |
|---------|------------------|----------------|
| MP-26-A | 10               | 60             |
| MP-26-B | 15               | 100            |
| MP-26-C | 20               | 120            |
| MP-26-D | 25               | 120            |



#### Insulating mats

Thickness : 3 mm - Class : 3  
Voltage : ≤ 26,5 kV



#### Voltage take-off punch



| Ref   | Capacity<br>(Ø mm) | Weight<br>(kg) |
|-------|--------------------|----------------|
| MS 62 | 5,6 - 14,4         | 0,015          |
| MS 63 | 12-31              | 0,05           |

| Ref      | Dim.<br>(m) | Weight<br>(kg) |
|----------|-------------|----------------|
| MP-42/11 | 1 x 1       | 5              |
| MP-42/16 | 0,6 x 1     | 2,9            |

### Insulating wedge



| Ref             | Dimensions (mm) |
|-----------------|-----------------|
| <b>MG-221-D</b> | 180 x 35 x 20   |

### Insulating lever

Synthetic bar. Tool for preparation of the cables underground.



| Ref             | Length (cm) | Weight (g) |
|-----------------|-------------|------------|
| <b>MO-218-D</b> | 19          | 80         |

### Insulated adhesive tapes

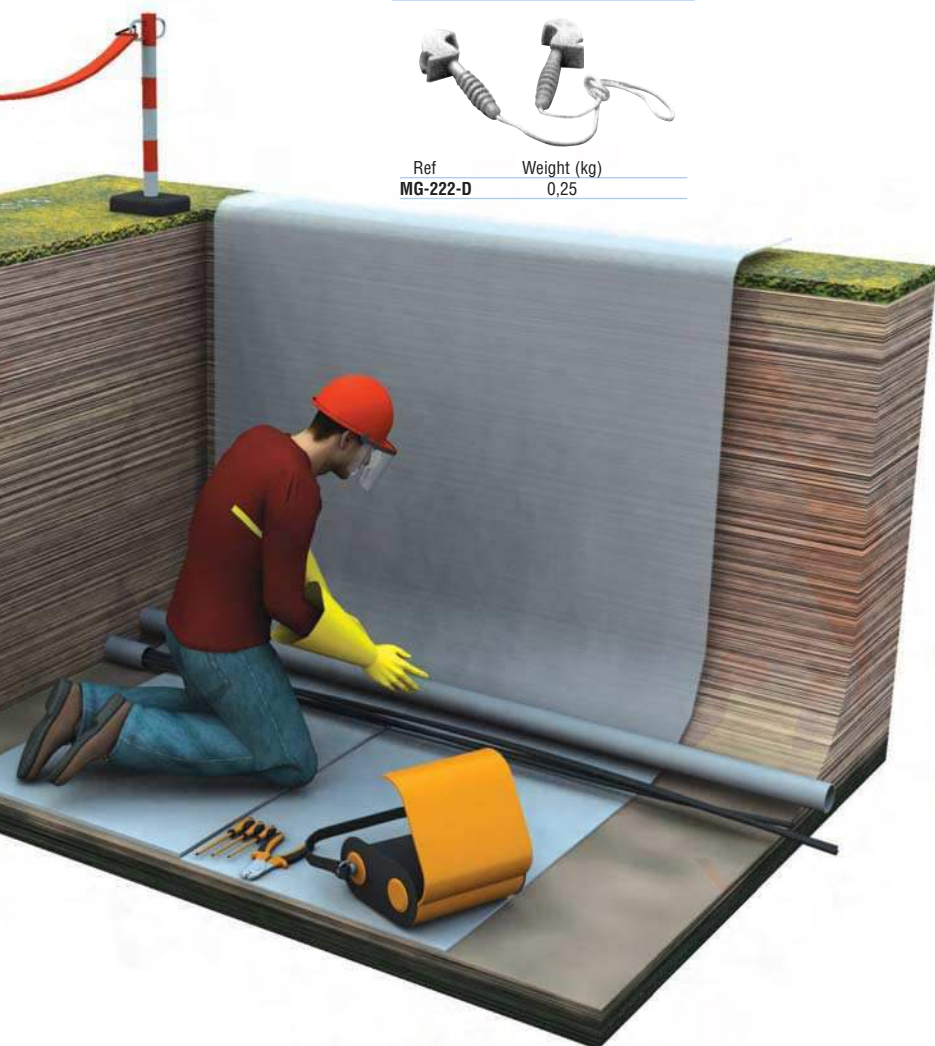


| Ref          |                  |
|--------------|------------------|
| <b>MP-19</b> | set with 5 tapes |

### Phase separator



| Ref             | Weight (kg) |
|-----------------|-------------|
| <b>MG-222-D</b> | 0,25        |



### Ladders, insulation and tools

#### Conductor insulating end-cap



| Ref     | Diameter (mm) | Length (mm) |
|---------|---------------|-------------|
| MP-26-A | 10            | 60          |
| MP-26-B | 15            | 100         |
| MP-26-C | 20            | 120         |
| MP-26-D | 25            | 120         |

#### Insulating wedge



| Ref      | Dimensions (mm) |
|----------|-----------------|
| MG-221-D | 180 x 35 x 20   |

#### Insulating mats

Thickness : 3 mm - Class : 3  
Voltage : ≤ 26,5 kV



| Ref      | Dim. (m) | Weight (kg) |
|----------|----------|-------------|
| MP-42/11 | 1 x 1    | 5           |
| MP-42/16 | 0,6 x 1  | 2,9         |

#### Phase separator



| Ref      | Weight (kg) |
|----------|-------------|
| MG-222-D | 0,25        |



### Insulating blanket clamp

| Ref       | Length (mm)       |
|-----------|-------------------|
| MP-41/10  | Plastic 160       |
| MP-41-530 | Rubber mini plier |



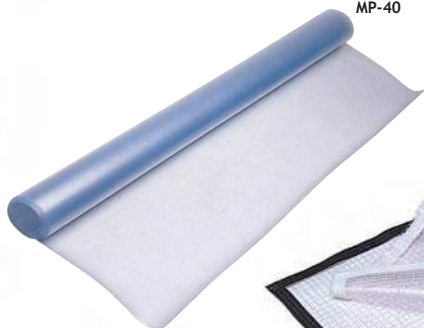
### Insulated adhesive tapes



| Ref   |                  |
|-------|------------------|
| MP-19 | set with 5 tapes |

### Insulating flexible cover

MP-35/12  
MP-35  
MP-40



MP-123  
MP-123/1  
MP-123/2

| Ref      | Length        | Weight (kg) |
|----------|---------------|-------------|
| MP-35/12 | 1,3 x 12,5 m  | 6           |
| MP-35    | 1,3 x 25 m    | 11,8        |
| MP-40    | 1,3 x 20 m    | 24,8        |
| MP-37    | 90 mm x 25 m  | 0,800       |
| MP-123   | 360 x 660 mm  | 0,150       |
| MP-123/1 | 500 x 900 mm  | 0,290       |
| MP-123/2 | 800 x 1200 mm | 0,600       |

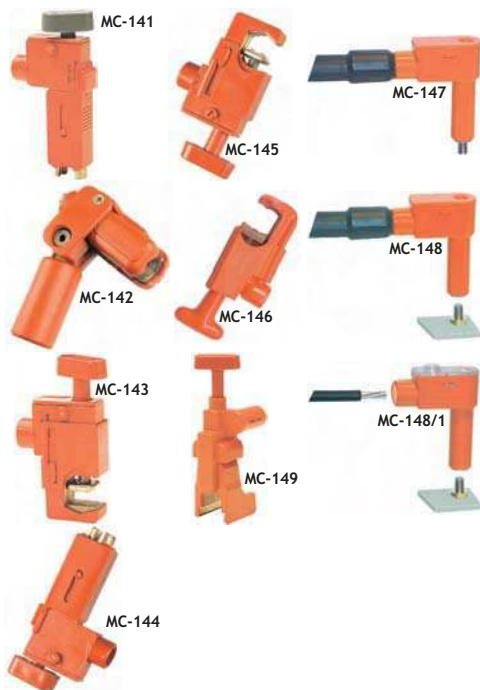
## Tools

### Mini jumper clamps fully insulated

These clamps are specially designed for use on energized parts in L.V. installations (switchboards, etc). Insulated bronze

Axial model: contact on threaded rod, nut or smooth marker.

| Ref             | Utilisation                                                                                                    | Weight (kg) |
|-----------------|----------------------------------------------------------------------------------------------------------------|-------------|
| <b>MC-141</b>   | Six-sided 17 to 19 mm                                                                                          | 0,260       |
| <b>MC-142</b>   | Round 6-10 flat 0-5 mm                                                                                         | 0,130       |
| <b>MC-143</b>   | Flat bar, thickness 2-25 mm                                                                                    | 0,230       |
| <b>MC-144</b>   | Round 8-12 square 9-10 mm                                                                                      | 0,280       |
| <b>MC-145</b>   | Full cable pliers for stripped conductors                                                                      | 0,220       |
|                 | Ø 3 à 10 mm                                                                                                    |             |
| <b>MC-146</b>   | Ø 10 à 24 mm                                                                                                   | 0,230       |
| <b>MC-147</b>   | Threaded rod M8                                                                                                |             |
| <b>MC-147/1</b> | Threaded rod M10                                                                                               |             |
| <b>MC-148</b>   | Clamp with tapped revolving rod end M8, 200 A shunt. To be used with an insulated six-sided male hex key 5 mm. |             |
| <b>MC-148/1</b> | Clamp with tapped revolving rod end M8 for 10 to 50 mm cable.                                                  |             |
| <b>MC-149</b>   | Horse-shoe pliers for terminals or bars of 20 to 30mm width.                                                   |             |



### Jumper cables with threaded ferrules

For temporary connections in LV facilities (safes, cabinets etc.). Insulated bronze.

Axial model: contact on threaded rod, nut or smooth marker.



Section : 50 mm<sup>2</sup>

| Ref              | Length (m) | Weight (kg) |
|------------------|------------|-------------|
| <b>MC-155/05</b> | 0,5        | 0,380       |
| <b>MC-155/10</b> | 1          | 0,760       |
| <b>MC-155/20</b> | 2          | 1,520       |
| <b>MC-155/30</b> | 3          | 2,280       |
| <b>MC-155/60</b> | 6          | 4,560       |
| <b>MC-155/80</b> | 8          | 6,080       |

Section : 35 mm<sup>2</sup>

| Ref              | Length (m) | Weight (kg) |
|------------------|------------|-------------|
| <b>MC-153/05</b> | 0,50       | 0,270       |
| <b>MC-153/10</b> | 1          | 0,570       |
| <b>MC-153/30</b> | 3          | 1,720       |
| <b>MC-153/60</b> | 6          | 3,460       |



### Jumper cable with insulated jumper clamps



| Ref        | Length (m) | Weight (kg) |
|------------|------------|-------------|
| MC-120/15  | 1,50       | 0,850       |
| MC-120/50  | 5          | 1,950       |
| MC-120/100 | 10         | 4           |

### Shunts complementary products



| Ref    | Field of use                                        | Weight (kg) |
|--------|-----------------------------------------------------|-------------|
| MC-121 | Junction for shunt M8                               | 0,055       |
| MC-122 | Fuse holder for shunt (Female-female end-piece)     |             |
| MC-123 | Fuse holder 30 A pour shunt (Male-female end-piece) |             |
| MC-124 | Fuse holder 30 A for mini-clamps + fiches banane    |             |



| Ref      | Field of use                                                |
|----------|-------------------------------------------------------------|
| MC-126   | Insulation piercing socket 1,5 à 16 mm <sup>2</sup> In 60 A |
| MC-126/1 | Insulation piercing socket 10 à 70 mm <sup>2</sup> In 100 A |



| Ref    | Field of use                    |
|--------|---------------------------------|
| MC-126 | M8 retractable sleeve accessory |

### Insulation and accessories

#### Tap off box

The tap off box allows on each side to connect 3 by pass jumpers type MC-153. It is delivered equipped with 6 removable fittings type MC 156/1 and an insulating wrench. This item in conjunction with by pass jumpers allows to shunt a tap off box by means of a second tap off box.



| Ref      | Utilisation                      |
|----------|----------------------------------|
| MC-156   | Box 40 x 80 x 158 mm             |
| MC-156/1 | Spare part                       |
| MO-237-D | Triangular spanner with T handle |

#### Insulating blanket clamp

| Ref       | Length (mm)       |
|-----------|-------------------|
| MP-41/10  | Plastic 160       |
| MP-41-530 | Rubber mini plier |



#### Jumper connecting box with fuse

The shunt for collective channeling is a box used to make sure, before proceeding to the removing a molten fuse situated on a channeling, that the defect which brought about the molten is eliminated. It can also be used to open a circuit in load, for example to change a damaged accessory such as a pin.



| Ref    | Utilisation                                      |
|--------|--------------------------------------------------|
| MC-116 | Shunt for collective channeling from 30 to 200 A |

#### Insulating mats

Thickness : 3 mm - Class : 3  
Voltage : ≤ 26,5 kV



| Ref      | Dim. (m) | Weight (kg) |
|----------|----------|-------------|
| MP-42/11 | 1 x 1    | 5           |
| MP-42/16 | 0,6 x 1  | 2,9         |

### Insulating flexible cover

MP-35/12  
MP-35  
MP-40



MP-123  
MP-123/1  
MP-123/2



MP-37



| Ref      | Length        | Weight (kg) |
|----------|---------------|-------------|
| MP-35/12 | 1,3 x 12,5 m  | 6           |
| MP-35    | 1,3 x 25 m    | 11,8        |
| MP-40    | 1,3 x 20 m    | 24,8        |
| MP-37    | 90 mm x 25 m  | 0,800       |
| MP-123   | 360 x 660 mm  | 0,150       |
| MP-123/1 | 500 x 900 mm  | 0,290       |
| MP-123/2 | 800 x 1200 mm | 0,600       |

### Insulation and accessories

#### Pro electric full body fall arrest harness

- 2 fall arrest attachment point : dorsal, sternal
- A work positioning belt
- 2 buckles of work positioning belt
- Leg loops and shoulder straps adjustable
- Tools holder
- Delivered in a protective bag

EN 361  
EN 358  
CE

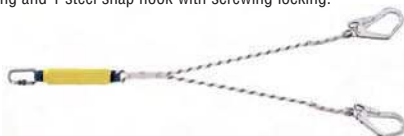


| Ref   | Size   | Weight (kg) |
|-------|--------|-------------|
| MO-71 | Unique | 1,9         |

#### Double tether rope with energy absorber

Equipped with 2 steel snap hooks with automatic locking and 1 steel snap hook with screwing locking.

EN 355  
CE



| Ref      | Length (m) | Weight (kg) |
|----------|------------|-------------|
| MO-54010 | 1,2        | 1,4         |

#### Tether rope equipped with a tension device

L : 3 m

EN 358  
CE



| Ref      | Weight (kg) |
|----------|-------------|
| MO-56009 | 1,425       |

#### Working on pole kit



Composition : 1 MO-71,  
1 MO-54010, 1MO-56009  
and 1 carrying bag M-87-295

| Ref         | Size   |
|-------------|--------|
| KIT-HAUT-05 | Unique |



### Insulated adhesive tapes



Ref  
**MP-19** set with 5 tapes



### Conductor insulating end-cap



| Ref            | Diameter<br>(mm) | Length<br>(mm) |
|----------------|------------------|----------------|
| <b>MP-26-A</b> | 10               | 60             |
| <b>MP-26-B</b> | 15               | 100            |
| <b>MP-26-C</b> | 20               | 120            |
| <b>MP-26-D</b> | 25               | 120            |

### Insulation and accessories

Insulating flexible cover and insulating tape



MP-35/12  
MP-35  
MP-40



MP-123  
MP-123/1  
MP-123/2



MP-37

| Ref      | Length       | Weight<br>(kg) |
|----------|--------------|----------------|
| MP-35/12 | 1,3 x 12,5 m | 6              |
| MP-35    | 1,3 x 25 m   | 11,8           |
| MP-40    | 1,3 x 20 m   | 24,8           |
| MP-37    | 90 mm x 25 m | 0,800          |

| Réf      | Length        | Weight<br>(kg) |
|----------|---------------|----------------|
| MP-123   | 360 x 660 mm  | 0,150          |
| MP-123/1 | 500 x 900 mm  | 0,290          |
| MP-123/2 | 800 x 1200 mm | 0,600          |

### Insulating mats

Thickness : 3 mm - Class : 3  
Voltage : ≤ 26,5 kV



| Ref      | Dim.<br>(m) | Weight<br>(kg) |
|----------|-------------|----------------|
| MP-42/11 | 1 x 1       | 5              |
| MP-42/16 | 0,6 x 1     | 2,9            |

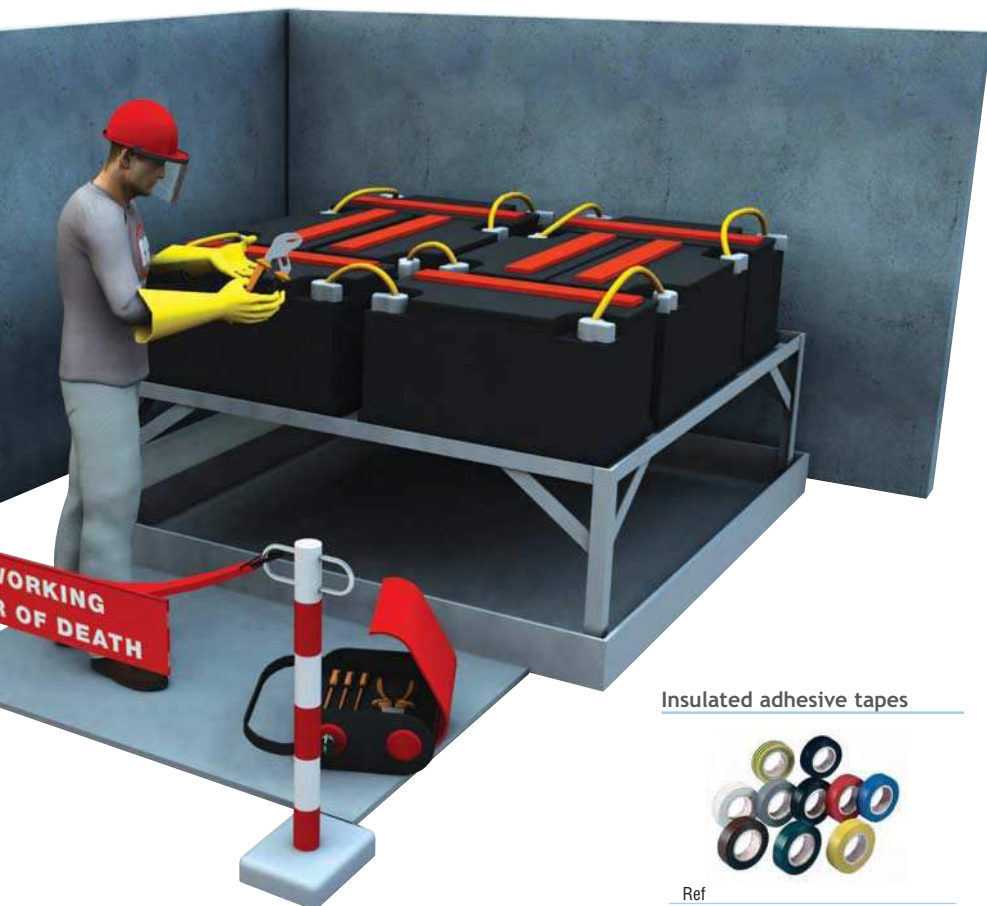


LIVE W  
DANGER

### Insulating blanket clamp



| Ref       |                   | Length (mm) |
|-----------|-------------------|-------------|
| MP-41/10  | Plastic           | 160         |
| MP-41-530 | Rubber mini plier |             |

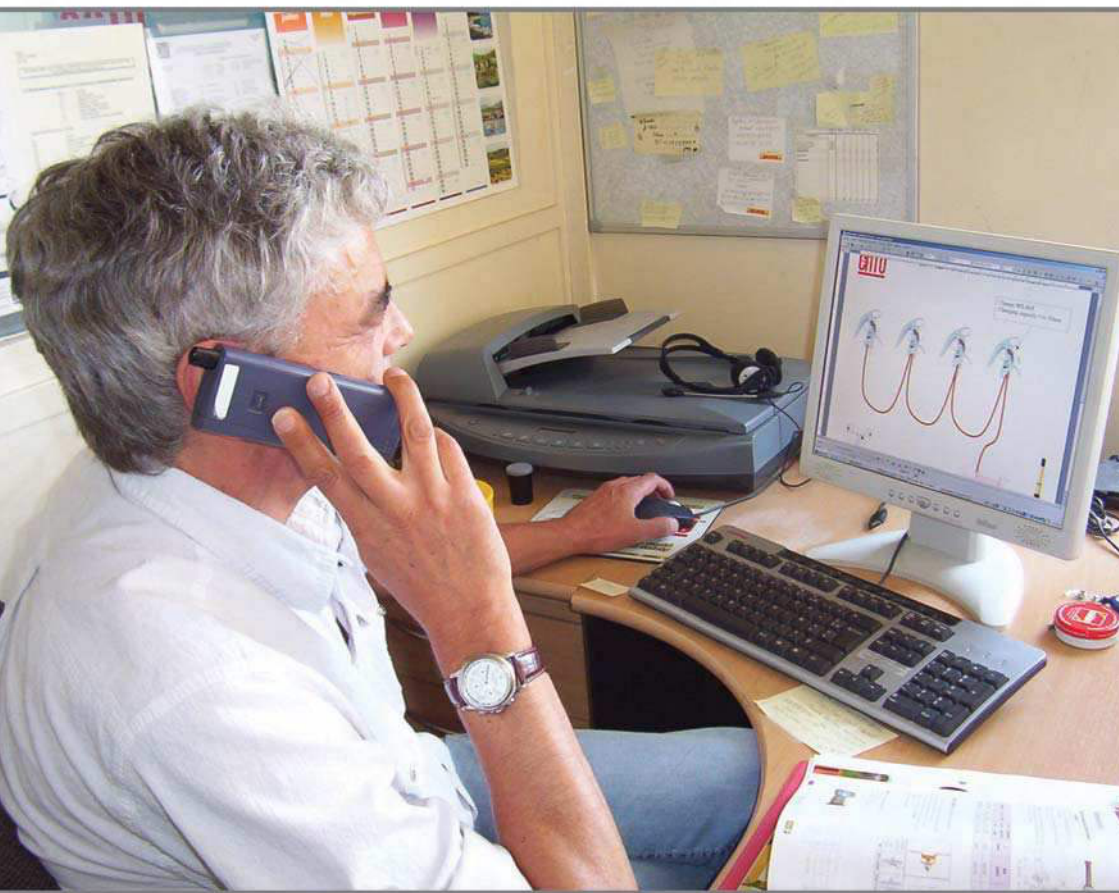


### Insulated adhesive tapes



| Ref   |                  |
|-------|------------------|
| MP-19 | set with 5 tapes |

# Technical assistance



For further information, please contact:

***No contractual document***



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